Introduction

This manual compiles the Southern Company Operations environmental, health, and safety (EH&S) policies, procedures, standards, guidelines, forms, and frequently asked question (FAQ) documents used on Technical and Project Solutions (T&PS) construction projects. Prospective contractors are required to fully understand and adhere to the provisions of these documents.

Before beginning work, each contractor is required to submit the current revision of the contractor’s EH&S manual to T&PS Construction Safety and Health for review. Each contractor’s EH&S program must meet or exceed the requirements of Southern Company Operations EH&S procedures and standards.

Feedback and Error Correction

T&PS Construction Safety and Health management values feedback on ways to improve the T&PS Construction EH&S Policy and Procedure Manual and its contents, as well as reports on typographical, administrative, or technical errors. To submit improvement suggestions or error notices, send an e-mail with detailed information to manager–Construction Safety and Health.

Instructions

Two navigation methods are available in the T&PS Construction EH&S Policy and Procedure Manual:

- **Bookmarks**: Each document, including forms, is bookmarked. If the bookmark panel is not open, click the bookmark or contents icon at the upper left of the page to open it.

![Bookmarks](image1)

Click on a title to go to the document or form.

![Bookmarks](image2)
• **Text search**: To open the text search tool, right-click anywhere on the document; then on the popup menu, click on FIND. Enter the search word or phrase and click PREVIOUS or NEXT to navigate to each occurrence of the word or phrase.

**Summary of Changes**

This table lists the changes made in this update of the T&PS Construction EH&S Policy and Procedure Manual.

<table>
<thead>
<tr>
<th>Procedures, Standards, Guidelines, and Reference Documents</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SH-S-1H, Contract Safety and Health Management</td>
<td>Standard updated, 12-20-2019</td>
</tr>
<tr>
<td>FAQ, 2A-10, Rigging and Lift Plans</td>
<td>FAQ updated, 05-15-2019</td>
</tr>
<tr>
<td>FAQ, SH-S-2E-01, Temporary Electrical Power</td>
<td>FAQ updated, 05-15-2019</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1K.1, Procedure and Standard Deviation Request</td>
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<tr>
<td>1N.1-EN, JSA: Job Safety Analysis (English)</td>
<td>Form updated, 05-15-2019</td>
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<td>1N.1-SP, JSA (Spanish)</td>
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<td>2A-10.2, Noncritical Lift – Prelift Worksheet</td>
<td>Form updated, 04-19-2019</td>
</tr>
<tr>
<td>2C-13.2, Geotechnical and Environmental Drilling Overhead and Underground Conflict Resolution Permit</td>
<td>Form updated, 03-20-2019</td>
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</tbody>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Policies

SH-1A

Project EH&S Policy

<table>
<thead>
<tr>
<th>Rev. 3</th>
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<td>Project Planning &amp; Svcs-Projects</td>
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<td>Project Planning &amp; Svcs-Construction</td>
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<td>Projects &amp; Constr-AL/GA; MS/Coast; New Gen - Projects</td>
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<td>Projects &amp; Constr-AL/GA; MS/Coast; New Gen - Construction</td>
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<tr>
<td>Safety and Health</td>
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</table>
1.0 PURPOSE

This policy provides the foundation for the management of environmental, health, and safety requirements on Technical and Project Solutions (T&PS) fossil/hydro projects.

2.0 POLICY

The safety and health of Southern Company’s employees, customers, agents, and the public, as well as the protection of our natural environment, are core values of our company. Therefore, Southern Company’s commitment is:

- To meet or surpass all environmental laws, regulations, and permit requirements, and to verify this commitment through environmental auditing.
- To provide a safe and healthy workplace for every employee based on employee involvement, ownership, teamwork, education, and leadership.
- To provide employees with a safe and healthy workplace that meets both regulatory requirements and company standards.
- To ensure all employees are provided the time, resources, and training necessary to perform their jobs safely and in compliance with environmental requirements.
- To pursue opportunities to enhance the quality of the environment and employee safety and health in the workplace.
- To value the safety and health of each other, customers, agents, and the public by conducting business in a manner designed to preserve their well-being.

Southern Company will not compromise its moral, ethical, and legal responsibilities to conduct its business in a manner that protects the environment and provides a safe and healthy workplace free from danger, injury, and illness.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1B

EH&S Responsibilities

<table>
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<tr>
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<td>Project Safety Leadership Team</td>
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<td>Approved By</td>
<td>Project Planning and Services  Bill Boyd</td>
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<tr>
<td></td>
<td>Projects and Construction  Bruce Long</td>
</tr>
</tbody>
</table>
# Contents

1.0 PURPOSE AND SCOPE ......................................................................................... 3  
  1.1 Purpose........................................................................................................ 3  
  1.2 Scope.......................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES .................................................................. 3  
  2.1 Definitions ................................................................................................... 3  
  2.2 References.................................................................................................... 3  

3.0 RESPONSIBILITY .............................................................................................. 3  
  3.1 Construction Site Manager ............................................................................. 3  
  3.2 Startup Manager .......................................................................................... 3  
  3.3 Contractors.................................................................................................. 3  

4.0 STANDARD ..................................................................................................... 3  
  4.1 Requirements ............................................................................................... 3  
  4.2 Responsibilities ........................................................................................... 4  

5.0 KEY CONTACT ................................................................................................. 9  

6.0 QUALITY RECORDS ....................................................................................... 9  

7.0 ATTACHMENTS .............................................................................................. 9
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides a description of the general administration of environmental, health, and safety (EH&S) and specific EH&S responsibilities of Technical and Project Solutions (T&PS) project personnel.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

Environmental, Health, and Safety (EH&S) standard SH-S-1N, Planning and Hazard Analysis

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for construction activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for startup activities that fall under his or her scope.

3.3 Contractors

Contractors working on T&PS construction projects are responsible for complying with the requirements established by this standard.

4.0 STANDARD

4.1 Requirements

- All levels of management are responsible for the implementation of EH&S policies and procedures to eliminate injuries, illnesses, and environmental incidents.
- Every employee has an individual responsibility for his or her personal safety and for the safety of other workers as well. Each employee should be knowledgeable of the safety rules applicable to his or her work. Employees must accept personal responsibility for cooperating and complying with all EH&S policies and procedures.
- T&PS Construction Safety and Health is responsible for facilitating management’s implementation of EH&S policies and procedures and to lead the continuous improvement of EH&S programs, practices, and techniques.

4.2 Responsibilities

4.2.1 T&PS Construction Safety and Health

- Provide guidance, direction, and assistance to T&PS management and EH&S professionals.
- Lead the development and facilitate the implementation of EH&S management system improvements.
- Lead the development and delivery of EH&S training programs.
- Assess project compliance with company and regulatory requirements.
- Lead the professional development of EH&S professionals.
- Leverage Best Practices and lessons learned.
- Track and report EH&S metrics.
- Develop and manage an appropriate EH&S budget.

4.2.2 Manager–T&PS Construction Safety and Health

- Ensure EH&S policies and procedures are adequate and enforced, with the realization that the ultimate success of an EH&S process depends upon the full support and cooperation of every employee.
- Ensure effective training and educational programs are provided.
- Establish annual safety improvement plans, including specific safety performance objectives and metrics.
- Track safety performance and initiate safety recovery plans when safety performance expectations are not being met.
- Set the example regarding personal safety behavior.

4.2.3 T&PS senior management

- Ensure sufficient funds are budgeted to provide appropriate EH&S resources, training, equipment, supplies, assessments, and compliance with company and regulatory requirements.
- Visibly support the EH&S objectives through active involvement in safety activities and programs.
• Implement safety accountability systems.
• Set the example regarding personal safety behavior.

4.2.4 Project manager

The overall responsibility for project EH&S performance rests with the project manager. The project manager’s role in meeting this responsibility includes:

• Ensure the development of an EH&S Policies and Procedure Manual implementation plan for each new major project. At a minimum, this plan shall address manual compliance issues applicable to the site T&PS organization and personnel. The plan will include, but not be limited to, the following topics:
  − Incident notification.
  − Emergency procedures.
  − Safety training.
  − Safety assessments.
  − Metrics reporting.
  − Contractor EH&S.
  − Regulatory agency inspections.
  − Incident investigations.
  − Planning and hazard analysis.
  − Fall protection.
  − Steel erection.
  − Rigging and lift plans.
  − Scaffold safety.
  − Clearance/LOTO procedure.
  − Confined-space entry.
  − Personal protective equipment.
  − Noise exposure.
  − Hazard communication.
  − Bloodborne pathogens.
  − Electrical safety.
  − Fire protection.
  − Environmental protection.
  − Office safety.
• Ensure systems are in place on their projects to ensure compliance with company and regulatory EH&S requirements.
• Ensure appropriate EH&S issues are addressed in all contracts and purchase orders.
• Be an active and visible leader and advocate of the corporate and project EH&S program and initiatives.
• Conduct regular jobsite EH&S assessments for the benefit of Southern Company personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.
4.2.5  Project Engineering Management

- Ensure engineering and procurement of engineered equipment meet the applicable environmental, health, and safety standards, such as equipment guards, noise levels, and platform guardrails.

- Ensure design and installation procedures facilitate the safety of construction, maintenance, and operations employees.

- Ensure the engineering product identifies safety-related issues, that is, load limits or restrictions, and attachment points.

- Ensure materials specified are evaluated from an EH&S perspective and, if appropriate, ensure that less hazardous materials are specified.

4.2.6  Site manager

- Establish an effective EH&S management process based on T&PS EH&S policies and procedures.

- Provide the commitment, example, direction, motivation, and accountability to assure an effective accident prevention process.

- Plan and implement all work in compliance with company and regulatory requirements.

- Ensure all staff personnel take an active role in promoting and enforcing EH&S policies, procedures, and contractual requirements.

- Ensure site personnel understand their EH&S responsibilities and applicable site specific procedures prior to beginning work.

- Ensure timely and accurate incident reporting.

- Assume responsibility for compliance by site T&PS personnel with company and regulatory EH&S requirements.

- Enforce all applicable construction EH&S policies and procedures.

- Establish a site EH&S committee and support its activities.

- Review all incident investigation reports for accuracy and completeness, and ensure that follow up action is taken.

- Establish appropriate EH&S training sessions in cooperation with project EH&S resources.

- Personally conduct at least a weekly EH&S assessment of the project for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.

- Require a weekly project EH&S assessment, involving discipline leads, discipline coordinators, and/or subcontract coordinators. This assessment is for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions.
• Set an example of safe work habits, and comply with EH&S requirements.
• Provide the necessary resources and training to meet company EH&S goals and regulatory requirements.
• Ensure all contractors submit proper insurance certificates prior to beginning work.
• Require site contractors to comply with the EH&S specifications contained in their contract.
• Participate in appropriate investigations of injuries/illnesses, near hits, and environmental incidents and communicate the lessons learned throughout T&PS.
• Develop and implement an annual site safety improvement plan based on an analysis of previous safety performance and upcoming workload and activity.
• Monitor the implementation of the job planning and hazard analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.
• Ensure a budget is developed for the site EH&S function and activities.

4.2.7 Environmental, health, and safety (EH&S) professional

• Support project and site/facility management in fulfilling their EH&S responsibilities
• Coordinate the project EH&S effort with all site employers.
• Maintain current knowledge of federal, state, and local EH&S regulations and T&PS requirements.
• Maintain current knowledge of state-of-the-art EH&S practices.
• Administer project EH&S policies and procedures with a focus on potentially hazardous operations and emphasizing proactive solutions.
• Communicate to project management and EH&S management the progress of the construction EH&S program and results.
• Lead the development and facilitate the implementation of programs for the accomplishment of short-range and long-range project EH&S objectives.
• Conduct frequent EH&S assessments of worksite activity for the benefit of Operations personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.
• Attend and provide EH&S input into weekly supervisor’s safety meetings.
• Administer the project’s T&PS construction EH&S training programs.
• Administer the project’s environmental programs, including waste management, air issues, storm-water issues, and spill prevention, control, and countermeasure (SPCC) requirements.
• As appropriate, assist in the investigation of incidents, such as injuries/illnesses, fire, property damage, and other related incidents, and issue reports as required.
• Support project management in the review and evaluation of contractor and subcontractor qualifications and EH&S programs.
- Maintain the T&PS EH&S recordkeeping system and assume responsibility for its accuracy.
- Provide appropriate information to the manager—Project Safety and Health for the classification of all occupational injuries and illnesses occurring on the project.
- Assist management during investigations by outside agencies.
- Evaluate the need for personal protective equipment, fire protection equipment, and other related equipment, and specify the equipment to meet the needs of T&PS personnel.
- Coordinate the project's hazard communication program including a review of the safety data sheet (SDS) for chemicals and hazardous material. The product SDS shall be reviewed prior to ordering the material to determine acceptability of the product.
- Maintain cumulative, historical SDS files for chemicals used on projects.
- Display and maintain safety materials on site bulletin boards.
- Recommend staff EH&S training needs to the site manager.
- Analyze project incident and injury data and trends, and make improvement recommendations to management.
- Assist site management in ensuring contractors comply with the environmental, safety, and health provisions of the contract.
- Provide input to the site's construction EH&S budget.
- Administer the safety nonconformance report process, which serves as the mechanism to formally notify contractors of noncompliance with contract provisions and to request corrective action.

4.2.8 Discipline lead

- Know, implement, and enforce the T&PS Project Safety and Health policies, procedures, and contractual requirements.
- Assist in training direct-report T&PS personnel, and ensure these T&PS personnel have required EH&S training.
- Set an example by working safely, presenting a positive safety attitude, and requiring site personnel to work safely.
- Observe contractor's weekly safety meetings, assist in resolving EH&S questions, and monitor the effectiveness of the safety meetings.
- Perform daily EH&S assessments of work areas for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective action for noncompliance.
- Participate in appropriate injury/illness and incident investigations, and review reports to ensure investigations are complete and that corrective actions are in place.
• Monitor the implementation of job planning and safety analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.

4.2.9 Discipline coordinator

• Know, implement, and enforce the T&PS Project Safety and Health policies, procedures, and contractual requirements.
• Ensure injuries/illnesses, fires, incidents, near-hits, etc., occurring in his or her area of responsibility are promptly reported and appropriately investigated.
• Monitor the implementation of job planning and safety analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.
• Participate in appropriate investigations of incidents and injuries/illnesses.
• Assess work areas daily to ensure that work practices and conditions meet company and regulatory EH&S requirements. This inspection is for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective action for noncompliance.
• Set an example of proper work habits, a positive safety attitude, and follow EH&S rules.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–T&PS Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment 1, Historical Summary of Changes.
The T&PS construction site manager is responsible for the following activities:

- Provide the commitment, example, direction, motivation, and accountability to ensure an effective accident-prevention process.
- Set an example of safe work habits, and comply with Environmental, Health, and Safety (EH&S) requirements.
- Ensure a budget is developed for the site EH&S function and activities.
- Establish an effective EH&S management process based on Technical and Project Solutions (T&PS) EH&S procedures.
- Plan and implement all work in compliance with company and regulatory requirements.
- Ensure all contractors submit proper insurance certificates prior to beginning work.
- Ensure all staff personnel take an active role in promoting and enforcing EH&S procedures and contractual requirements.
- Ensure site personnel understand their EH&S responsibilities and applicable site-specific procedures prior to beginning work.
- Assume responsibility for compliance by site T&PS personnel with company and regulatory EH&S requirements.
- Establish a site EH&S committee and support its activities.
- Participate in appropriate investigations of injuries/illnesses, near hits, and environmental incidents and communicate the lessons learned throughout T&PS.
- Ensure timely and accurate incident reporting.
- Review all incident investigation reports for accuracy and completeness; ensure follow-up action is taken.
- Establish appropriate EH&S training sessions in cooperation with EH&S project resources.
- Personally conduct at least a weekly EH&S assessment of the project for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.
- Require a weekly project EH&S assessment, involving discipline leads, discipline coordinators, and/or subcontract coordinators. This assessment is for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions.
- Provide the necessary resources and training to meet company EH&S goals and regulatory requirements.
- Require site contractors to comply with the EH&S specifications contained in their contract.
- Develop and implement an annual site safety improvement plan based on an analysis of previous safety performance and upcoming workload and activity.
- Monitor the implementation of the job planning and hazard analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.
T&PS Safety and Health - Construction

- Provide guidance, direction, and assistance to T&PS management and EH&S professionals.
- Facilitate the development and implementation of EH&S management system improvements.
- Lead the development and delivery of EH&S training and educational programs.
- Assess project compliance with company and regulatory requirements.
- Lead the professional development of EH&S professionals.
- Leverage best practices and lessons learned.
- Track and report EH&S metrics.
- Develop and manage an appropriate EH&S budget.
- Ensure EH&S procedures are adequate and enforced, with the realization the success of an EH&S process ultimately depends on the full support and cooperation of every employee.
- Establish annual safety improvement plans, including specific EH&S safety performance objectives and metrics.
- Track safety performance and initiate recovery plans when performance expectations are not met.
- Set the example regarding personal safety behavior.
T&PS Senior Management

- Ensure sufficient funds are budgeted to provide appropriate EH&S resources, training, equipment, supplies, assessments, and compliance with company and regulatory requirements.
- Visibly support the EH&S objectives through active involvement in safety activities and programs.
- Implement safety accountability systems.
- Set the example regarding personal safety behavior.
Project Manager

The overall responsibility for project EH&S performance rests with the project manager. The project manager’s role in meeting this responsibility includes the following:

- Ensure the development of an EH&S procedure manual implementation plan for each new major project. At a minimum, this plan shall address manual compliance issues applicable to the site T&P organization and personnel. The plan will include, but not be limited to, the following topics:
  - Incident notification.
  - Emergency procedures.
  - Safety training.
  - Safety assessments.
  - Metrics reporting.
  - Contractor EH&S.
  - Regulatory agency inspections.
  - Incident investigations.
  - Planning and hazard analysis.
  - Fall protection.
  - Steel erection.
  - Rigging and lift plans.
  - Scaffold safety.
  - Clearance/LOTO procedure.
  - Confined-space entry.
  - Personal protective equipment.
  - Noise exposure.
  - Hazard communication.
  - Bloodborne pathogens.
  - Electrical safety.
  - Fire protection.
  - Environmental protection.
  - Office safety.

- Ensure systems are in place on projects to support compliance with company and regulatory EH&S requirements.

- Ensure appropriate EH&S issues are addressed in all contracts and purchase orders.

- Be an active and visible leader and advocate of the corporate and project EH&S program and initiatives.

- Conduct regular jobsite EH&S assessments for the benefit of Southern Company personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.
Project Engineering Management

- Ensure engineering and procurement of engineered equipment meet the applicable environmental, health, and safety standards, such as equipment guards, noise levels, and platform guardrails.
- Ensure design and installation procedures facilitate the safety of construction, maintenance, and operations employees.
- Ensure the engineering product identifies safety-related issues, such as load limits or restrictions, and attachment points.
- Ensure specified materials are evaluated from an EH&S perspective and, if appropriate, specify less hazardous materials.
Environmental, Health, and Safety (EH&S) Professional

- Support project and site/facility management in fulfilling their EH&S responsibilities.
- Coordinate the project EH&S effort with all site employers.
- Maintain current knowledge of federal, state, and local EH&S regulations and T&PS requirements.
- Maintain current knowledge of state-of-the-art EH&S practices.
- Administer project EH&S procedures with a focus on potentially hazardous operations and emphasizing proactive solutions.
- Communicate to project management and EH&S management the progress of the construction EH&S program and results.
- Lead the development and facilitate the implementation of programs for the accomplishment of short- and long-range project EH&S objectives.
- Conduct frequent EH&S assessments of worksite activity for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective actions for noncompliance.
- Attend and provide EH&S input into weekly supervisor's safety meetings.
- Administer the project's T&PS construction EH&S training programs.
- Administer the project's environmental programs, including waste management, air issues, storm-water issues, and spill prevention, control, and countermeasure (SPCC) requirements.
- As appropriate, assist in the investigation of incidents, such as injuries/illnesses, fire, property damage, and other related incidents, and issue reports as required.
- Support project management in the review and evaluation of contractor and subcontractor qualifications and EH&S programs.
- Maintain the T&PS EH&S recordkeeping system and assume responsible for its accuracy.
- Provide appropriate information to the manager—Construction Safety and Health for the classification of all occupational injuries and illnesses occurring on the project.
- Assist management during investigations by outside agencies.
- Evaluate the need for personal protective equipment, fire protection equipment, and other related equipment, and specify the equipment to meet T&PS personnel needs.
- Coordinate the project’s hazard communication program including a review of the safety data sheet (SDS) for chemicals and hazardous material. The product SDS shall be reviewed prior to ordering the material to determine acceptability of the product.
• Maintain cumulative, historical SDS files for chemicals used on projects.
• Display and maintain safety materials on site bulletin boards.
• Recommend staff EH&S training needs to the site manager.
• Analyze project incident and injury data and trends, and make improvement recommendations to management.
• Assist site management in ensuring contractors comply with the environmental, safety, and health provisions of the contract.
• Provide input to the site’s construction EH&S budget.
• Administer the safety nonconformance report process, which serves as the mechanism to formally notify contractors of noncompliance with contract provisions and to request corrective action.


**Discipline Lead**

- Know, implement, and enforce the T&PS construction EH&S procedures and contractual requirements.
- Assist in training direct-report T&PS personnel, and ensure these T&PS personnel have required EH&S training.
- Set an example by working safely, presenting a positive safety attitude, and requiring site personnel to work safely.
- Observe contractor’s weekly safety meetings, assist in resolving EH&S questions, and monitor the effectiveness of the safety meetings.
- Perform daily EH&S assessments of work areas for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective action for noncompliance.
- Participate in appropriate injury/illness and incident investigations, and review reports to ensure investigations are complete and corrective actions are in place.
- Monitor the implementation of job planning and safety analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.
Discipline Coordinator

- Know, implement, and enforce the T&PS construction EH&S procedures and contractual requirements.
- Ensure injuries/illnesses, fires, incidents, near-hits, etc., occurring in the coordinator’s area of responsibility are promptly reported and appropriately investigated.
- Monitor the implementation of job planning and safety analyses requirements contained in standard SH-S-1N, Planning and Hazard Analysis.
- Participate in appropriate investigations of incidents and injuries/illnesses.
- Assess work areas daily to ensure work practices and conditions meet company and regulatory EH&S requirements. This inspection is for the benefit of T&PS personnel and to monitor contractor compliance with contract provisions. Initiate corrective action for noncompliance.
- Set an example of proper work habits and a positive safety attitude, and follow EH&S rules.
Attachment A - Historical Summary of Changes

Rev. 0 09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-1B, EH&S Responsibilities.

12/04/2017
Added LOTO to responsibility list for project manager (4.2.4 and p. 13 of 19).
Approved by Bill Batts

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-1C

Incident Notification

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</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................3
  1.1 Purpose ..........................................................................................................................3
  1.2 Scope ............................................................................................................................3

2.0 DEFINITIONS AND REFERENCES .................................................................................3
  2.1 Definitions .....................................................................................................................3
  2.2 References ...................................................................................................................3

3.0 RESPONSIBILITY ...........................................................................................................4
  3.1 Construction Site Manager ............................................................................................4
  3.2 Startup Manager ...........................................................................................................4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ..............................................4
  3.4 Contractors ..................................................................................................................4

4.0 PROCEDURE .................................................................................................................5
  4.1 Reportable Incidents ......................................................................................................5
  4.2 Property Damage ..........................................................................................................5
  4.3 Incident Notification ......................................................................................................6
  4.4 Reporting a Near Hit ......................................................................................................6

5.0 KEY CONTACT ..............................................................................................................6

6.0 QUALITY RECORDS ......................................................................................................6

7.0 ATTACHMENTS .............................................................................................................7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the method and responsibilities for the timely notification to Technical and Project Solutions (T&PS) management of safety-related events (nonenvironmental) that have occurred on T&PS projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

LARA (Labor and Rates Application) – An in-house data management application available on the Southern Company Intranet that, among other data, includes a safety information function used to collect incident, injury, and illness information and automatically generate incident notification reports, lessons learned/safety alerts, and various safety management reports.

near hit – Any situation or circumstance that could have resulted in an incident, but in which no person was injured or equipment damaged. Near hits are recorded as Lessons Learned – Construction in PIMS to use as job safety briefings (JSB) to prevent similar situations from occurring in the future.

Project Information Management System (PIMS) – A collaborative online project management tool built in the Microsoft SharePoint environment that provides a common place to share documents, and drawings, as well as other pertinent project information. It also performs electronic routing, approval, and retention of key business forms and historical data.

2.2 References

- Forms:
  - 1C, Incident Notification Form
  - 1J.1, Initial Communication of Injury, Illness, or Incident (ICR)
- EH&S standards:
- SH-S-1J, Incident Investigation
- SH-S-5B, Travel Safety
- SH-S-1D, Best Practices and Lessons Learned Communication

- Incident notification e-mail templates:
  - Incident Notification
  - Incident Followup

- SCS Generation Safety and Health Accident and Illness Reporting

- Southern Company Record Retention Schedule

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.
4.0 PROCEDURE

4.1 Reportable Incidents

Using the Incident Notification e-mail template to attach form 1C, the responsible direct report shall provide timely notification of significant safety-related events (nonenvironmental) within the same day as site management becomes aware of the reporting classification of the event. (See 4.3, Incident Notification.) Incident reporting is urgent, regardless of the time of the event (evenings, weekends, and/or holidays).

The following events*, whether suffered by a Southern Company Operations, T&PS personnel, employees of its contractors, or their subcontractors warrant the creation and distribution of a form 1C:

- Fatality.
- Lost time injury.
- Life-threatening injury.
- Incident impacting or potentially impacting plant operations or personnel, such as:
  - Crane incidents.
  - Fires.
  - Disruption of electrical service.
- T&PS-caused plant outage.
- Regulatory inspection.
- Any OSHA recordable injury.
- Vehicle accidents (see SH-S-5B, Travel Safety.)
- Any event having significant political or community impact.

4.2 Property Damage

Any event resulting in property damage greater than $10,000 that involves Southern Company Operations or contractor property shall be communicated to each T&PS management level (see 4.3, Incident Notification) within a week of site management becoming aware of the event.

* Certain incidents may warrant phone call prior to written INF.
4.3 Incident Notification

All incidents involving contractor or subcontractor personnel shall be reported to the T&PS site manager and safety lead using form 1J.1, Initial Communication of Injury, Illness, or Injury Report.

All incidents involving Southern Company personnel shall be reported using the SCS Generation Safety and Health Accident and Illness Reporting process.

In general, the originator of form 1C shall communicate all events occurring on T&PS projects listed in 4.1, Reportable Incidents, to T&PS line management and the manager—Construction Safety and Health via the Outlook distribution list. This distribution list is defined in the Southern Company Outlook global address list as “T&PS EHS Incident Distribution.”

Management shall use discretion in determining when more expedient communication is needed. For example, after-hours events or a fatality may warrant phone calls prior to the written form 1C. In addition to the expedient communication, the originator shall complete the incident entry section in LARA to generate form 1C and e-mail it to appropriate line management using the Incident Notification e-mail template. The e-mail containing form 1C shall include a short explanation of the incident in the body of the message to communicate basic information to those on the distribution list who cannot immediately open attachments.

4.4 Reporting a Near Hit

Any situation or circumstance that could have resulted in an incident, but in which no person was injured or equipment damaged shall be documented and reported in LARA as a near hit. Near hits with significant potential impact shall be communicated as a reportable event using form 1C within 48 hours of the event.

5.0 KEY CONTACT

For questions about the content of implementation of this procedure, contact the manager—Construction Health and Safety.

6.0 QUALITY RECORDS

The completed form 1C is a quality record that shall be maintained in LARA in accordance with the Southern Company Record Retention Schedule.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
### Attachment A – Historical Summary of Changes

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<td>Construction Safety Leadership Team E&amp;CS Procedure Consolidation Team Revised by Bob Fitzgerald</td>
<td>Added notation this procedure is for nonenvironmental incidents only. Added information about near hits, and associated distribution. Added reference to SH-1D, Best Practices and Lessons Learned Communication. Added responsibility for Design for Safety Team Representative, Incident Notification Form Originator, and Responsible Direct Report. Combined lists of incidents (previously separated according to events’ work hours).</td>
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<td>Globally changed Southern Company Generation to Southern Company Operations. Clarified purpose statement (1.1). Edited scope statement (1.2). Added definition of LARA, clarified definition of &quot;near hit,&quot; and added link to definition of PIMS (2.1). Added links to forms, standards, and e-mail notification templates (2.2). Deleted 3.2, Design for Safety Team Representative. Added responsibilities for regional construction safety and health supervisor (3.4), manager—Construction Safety and Health (3.5), and responsible contractor management (3.6). Added language at 4.3, Incident Notification, detailing the incident reporting process. Clarified the reporting requirement for near hits (4.4). Clarified the retention of completed form 1C (6.0). Deleted Incident Notification Form (was attachment A).</td>
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Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3
  1.1 Purpose ............................................................................................................................. 3
  1.2 Scope ................................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES ....................................................................................... 3
  2.1 Definitions ......................................................................................................................... 3
  2.2 References ....................................................................................................................... 3

3.0 RESPONSIBILITY .................................................................................................................. 3
  3.1 Construction Site Manager ............................................................................................... 3
  3.2 Startup Manager .............................................................................................................. 3
  3.3 Medical Case Manager .................................................................................................... 4
  3.4 Contractors ..................................................................................................................... 4

4.0 GUIDELINE .......................................................................................................................... 4
  4.1 Objectives ......................................................................................................................... 4
  4.2 Signs of Critical Incident Stress ....................................................................................... 4
  4.3 Critical Incident Stress Management ................................................................................ 4

5.0 KEY CONTACT .................................................................................................................... 6

6.0 QUALITY RECORDS ........................................................................................................... 6

7.0 ATTACHMENTS .................................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This guideline describes the process for critical incident stress management (CISM) for events resulting in a potential need for such an intervention.

1.2 Scope

This guideline applies to Technical and Project Solutions (T&PS) project-assigned personnel and contractors whose contract document includes this guideline by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

critical incident – An abnormal or traumatic event that has the potential to overwhelm a person’s usual coping mechanisms, resulting in psychological distress and an impairment of normal adaptive functioning. In the workplace, a critical incident might be an event that could result in deficits in employee conduct or productivity.

Examples of critical incidents in the workplace include accidents and injuries; natural or manmade disasters; suicide; homicide; robbery; assault; threats of violence; and organizational changes such as restructuring or reduction in force. A critical incident may affect a few individuals or an entire worksite.

2.2 References

U.S. Occupational Safety and Health Administration, Critical Incident Stress Guide

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for reviewing and implementing this guideline as applicable for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this guideline for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for reviewing and implementing this guideline as applicable for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this guideline for activities that fall under his or her scope.
3.3 Medical Case Manager

The operating company’s medical case manager (MCM) is responsible for providing the level of professional support appropriate for the critical incident.

4.0 GUIDELINE

4.1 Objectives

The objectives of CISM are:

- To provide employees with an understanding of normal responses to abnormal events.
- To equip employees with healthy coping skills and identify risk behaviors.
- To identify employees who may need additional support.
- To increase cohesion within a group following a critical event.
- To decrease risk of developing more stress-related symptoms.
- To return employees to their previous level of functioning in the workplace.

4.2 Signs of Critical Incident Stress

The signs and symptoms of critical incident stress can be physical, cognitive, emotional, or behavioral. Individuals express stress in different ways and therefore manifest different reactions. The list below is not exhaustive but will help managers, supervisors, and coworkers identify workers who are exhibiting stress reactions.

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<td>Grief</td>
<td>Inability to rest</td>
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<td>Chills</td>
<td>Confusion</td>
<td>Fear</td>
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<td>Nightmares</td>
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<td>Increased alcohol use</td>
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<td>Increase or loss of appetite</td>
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<tr>
<td></td>
<td>Poor concentration</td>
<td>Anxiety</td>
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</table>

4.3 Critical Incident Stress Management

4.3.1 Immediate Personal Support

When a critical incident occurs, monitoring workers with simple conversation and observation may help to identify early signs. The following steps can help to reduce significant stress detected early:

- If safety is an issue, assist workers in moving to a safe location as soon as possible.
- Require an immediate 15-minute rest break.
- Provide noncaffeinated fluids to drink.
- Provide low sugar and low fat food.
- Ensure the workers’ physical and emotional needs are met.
- Reestablish as much of a sense of routine and normality as possible under the circumstances to create a sense of safety and security.
• Address the central stress factor of high stimulation to allow those involved to return to a more stable and normal level of activity.

4.3.2 Professional Intervention

When Southern Company Services employees and supplementals (nonemployees) are involved, the MCM should be the initial point of contact and onsite response for all such events. If unsure who to call, the operating company’s MCM on call should be contacted. The MCM will advise site management on the appropriate process and coach the manager as needed. The MCM will work with local management to determine the type of intervention needed based on the situation, the number of people involved, and their proximity to the event. The level of support needed will be assessed as a first priority.

If employee assistance program support is indicated, the MCM should make initial contact with the employee assistance program vendor and/or local employee program assistance counselor. The employee assistance program vendor should finalize all details with the MCM. The MCM should cofacilitate any debriefing with the employee assistance program provider.

If supplementals (nonemployees) are involved, the T&PS construction site manager should contact T&PS Supplemental Staffing, so they can communicate with the appropriate staffing agencies to determine the level of involvement needed by the agencies.

4.3.3 Employee Assistance Program Vendor Contract

As soon as possible after identification for the potential need of a debriefing, the MCM should contact the appropriate employee assistance program vendor to arrange for the necessary support. The T&PS construction site manager should assist by providing the following information to the MCM for calling to request employee assistance:

• Name, title, call back number, and email address for primary contact (the MCM) at the work location.

• Suggested time and place for debriefing.

• Workplace location or address where the employee assistance program affiliate should be directed.

• Information about the incident that led to the call, including
  – Date and time of incident.
  – Duration of incident.
  – Approximate number or employees impacted.
  – Type of incident.

4.3.4 Special Incident Services

A special incident usually does not involve the workplace but still may impact personnel. Examples of special incidents may include:
• The unexpected death of an employee due to natural causes or personal accident or injury.
• The unexpected death of an employee’s immediate family member.

Special incidents may not require onsite counseling assistance and may be best handled through individual referral to counseling services through the employee assistance program vendor. Requests for special incident support can be handled through the MCM, Human Resources business consultant, HRDirect, or employee contact to the employee assistance program vendor.

4.3.5 Southern Company Services Employee Assistance Program Contact Information

• ValueOptions – 1-800-680-6333 for individual support.
• Workplace Services Advisory Line 1-800-444-9559 if group counseling is needed.
• HRDirect – 1-888-678-6787.

5.0 KEY CONTACT

For questions regarding the content or implementation of this guideline, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
08/18/2016
Approved by Bill Batts
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued.

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05/09/2017
Approved by Bill Batts
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0)

05/15/2019
Organization name changed.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1D

Best Practices and Lessons Learned

Communication

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</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
1.1 Purpose .......................................................................................................................... 3
1.2 Scope .............................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES .................................................................................... 3
2.1 Definitions ...................................................................................................................... 3
2.2 References .................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................. 3
3.1 Manager–T&PS Construction Safety and Health ................................................................. 3
3.2 Construction Site Manager .......................................................................................... 4
3.3 Startup Manager ............................................................................................................ 4

4.0 STANDARD .................................................................................................................... 4
4.1 Determine Appropriateness of Bulletin Subject ............................................................... 4
4.2 Access to Bulletin .......................................................................................................... 4

5.0 KEY CONTACT .............................................................................................................. 4

6.0 QUALITY RECORDS ....................................................................................................... 4

7.0 ATTACHMENTS .............................................................................................................. 4
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the method and responsibilities for the creation and distribution of Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) Best Practices and Lessons Learned bulletins.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedure SH-1C, Incident Notification
- Form 1C, Incident Notification
- T&PS APEX SharePoint site

3.0 RESPONSIBILITY

3.1 Manager—T&PS Construction Safety and Health

The manager—T&PS Construction Safety and Health shall perform the following:

- Determine the appropriateness of the bulletin subject based on incident reports and Best Practices requests.
- Provide T&PS personnel access to bulletins that detail the significance of EH&S-related events.
3.2 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure.

3.3 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for startup activities that fall under his or her scope.

4.0 STANDARD

4.1 Determine Appropriateness of Bulletin Subject

The manager—T&PS Construction Safety and Health shall determine the subjects of the EH&S Best Practices and Lessons Learned bulletins. The Lessons Learned bulletins may be created in response to a form 1C, Incident Notification, and/or Best Practices Requests. See attachment A, EH&S Bulletin Work Instructions.

4.2 Access to Bulletin

The manager—T&PS Construction Safety and Health shall ensure T&PS personnel and all others under their supervision (contractors, subcontractors, and so forth) have access to EH&S bulletins on APEX that detail significant EH&S-related events.

5.0 KEY CONTACT

For questions about the content of implementation of this standard, contact the manager—T&PS Construction Health and Safety.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS


Attachment C – Best Practice Bulletin Request Form.


Attachment E – Sample Lessons Learned EH&S Bulletin.

Attachment F – Historical Summary of Changes.
Attachment A – EH&S Bulletin Work Instructions

Southern Company Operations
Technical and Project Solutions
Environmental, Health, and Safety
Work Instructions - Creating EH&S Bulletins

These work instructions establish the process for creating Technical and Project Solutions (T&P) Environmental, Health, and Safety (EH&S) bulletins, as described in standard SH-S-1D, Best Practices and Lessons Learned Communication. The bulletins are intended to share best practices and lessons learned across the system to help prevent incidents. These work instructions support requirements listed in EH&S standard SH-S-1D, Best Practices and Lessons Learned Communication.

RESPONSIBILITIES

Manager–T&PS Construction Safety and Health

The manager–T&PS Construction Safety and Health will approve the draft of the EH&S bulletin.

Construction Site Safety Professional

The construction site safety professional will perform the following:

- Assist management on conducting incident analysis.
- Submit Best Practices bulletin requests.
- Approve the bulletin draft.
- Communicate the bulletin with contractors.

Technical Publications

Technical Publications personnel will perform the following:

- Write a draft of the EH&S bulletin.
- Route the draft to the construction site manager.
- Resolve any comments.
- Route the draft bulletin for approval to the manager–T&PS Construction Safety and Health.
- Route the approved bulletin to the designated distribution list, named T&PS EHS Incident Distribution.
- Post the approved bulletin on APEX; link from the S&H Web site.
Contractors

Contractors working on T&PS construction project sites will share the approved EH&S bulletin with their craftpersons.

PROCESS

1. Perform an Incident Analysis

The construction site safety professional performs an incident analysis preferably within 1 week of the incident or submits a Best Practices bulletin request.

2. Provide Information

The construction site safety professional will provide Technical Publications with the specific information to be included in the Best Practices or Lessons Learned bulletin (for example, what happened, contributing causes, corrective actions, and photos).

3. Draft Bulletin

Technical Publications personnel will draft the bulletin using the appropriate bulletin template within 1 week of the bulletin request.

4. Route to Construction Site Safety Professional

Technical Publications will route the draft of the bulletin to the construction site safety professional for his or her approval.

5. Route Comments to Technical Publications

The construction site safety professional will route any comments to Technical Publications to be resolved.

6. Resolve Comments

Technical Publications will resolve any comments from the construction site safety professional.
7. **Route to Manager–T&PS Construction Safety and Health**

After the construction site safety professional has approved the bulletin draft and all comments have been resolved, Technical Publications will route the draft to the manager–T&PS Construction Safety and Health for approval.

8. **Route to Distribution List**

Technical Publications will route the approved bulletin to the T&PS EHS Incident Distribution List in Microsoft Outlook. The distribution list contains the e-mail addresses for the following people:

- Site safety professionals.
- Site managers.
- Regional construction managers.
- Project managers.
- Director, Safety and Health, Southern Company Generation and Transmission.
- Regional safety managers.
- Vice president–Environmental Projects and Construction
- Vice president–New Generation and Construction.
- Vice president–Nuclear Construction.
- Executive vice president – T&PS.

9. **Post Bulletin to APEX**

Attachment B – Lessons Learned/Best Practices Bulletin Workflow

Incident Report Workflow

Perform an incident analysis or request a Best Practices bulletin preferably within 1 week of the incident

Provide TP with the specific information to be included in the E&HS bulletin

Draft the EH&S bulletin within 2 weeks of the incident or 1 week of the request

Route the draft to the MSHC and CSM for approval

Post to intranet

Resolve comments from the CSSM

Route approved bulletin to T&PS EHS Incident Distribution list in Microsoft Outlook and notify TP to post to the intranet

Route draft of EH&S bulletin to the CSSM

CSSM

TP

CSSM

TP

TP

MSHC

TP

TP/CSM

CSSM

TP

KEY

TP = Technical Publications
CSSM = Construction Site Safety Manager
MSHC = Manager, Safety & Health – Construction
CSM = Construction Site Manager

SH-S-1D, Best Practices and Lessons Learned Communication Rev. 0 9 of 13
Attachment C – Best Practices Bulletin Request Form

This bulletin is used to share good examples among Southern Company Operations T&PS projects. Bulletins will be submitted to the T&PS site manager for review and approval prior to publishing.

If available, attach photos to demonstrate the best practice.

Project name:    

Project contact: 

Brief description of incident and results:

Distribution:
Unused scaffolding can still be of service on a construction site. Consider using scaffolding as safety plus barricades in highly congested work areas. These barricades are equipped with safety access gates and prove to be an excellent protection for workers and equipment. Highly visible and easy to install, scaffolding makes a stable safety device in high winds or other conditions.
Attachment E – EH&S Lessons Learned Sample

EH&S LESSONS LEARNED
Lacerations can be serious

An employee working alone out of a manlift attempted to remove rusty nuts from conduit straps. He took off his gloves to try to remove the bolts with his bare hands, but was unsuccessful in his attempt. He proceeded trying to remove the bolts by using a Port-a-Hand saw to cut the rusted nuts off the conduit strap. While using the saw, he inadvertently cut through the nut while attempting to catch the uni-strut with his left hand. The saw dropped downward and struck the top of his left hand.

The employee received approximately 21 stitches.

Contributing factors:
- Employee failed to review and sign a job safety briefing (JSB).
- Improper tool selection.
- Improper use of hand tool.
- Improper body position.
- Did not have a partner when it was appropriate.
- Failed to communicate with supervisors and inform them of an obstruction to the task at hand.
- Failed to wear appropriate personal protective equipment (PPE), such as gloves.

Preventing reoccurrence:
- Perform a JSB before every task.
- Use proper tools, and use them properly.
- Appropriately position body.
- Work with a partner when appropriate.
- Communicate circumstances to supervisors.
- Wear suitable PPE, such as gloves.

The employee suffered a severe laceration to his hand when the Port-a-Hand saw dropped downward.

SH-S-1D, Best Practices and Lessons Learned Communication
Rev. 0
Attachment F - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-1D, Best Practices and Lessons Learned Communication.

05/15/2019
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1E

EH&S Training

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## Contents

1.0 PURPOSE AND SCOPE .................................................................................................................. 3  
1.1 Purpose ......................................................................................................................................... 3  
1.2 Scope ........................................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ............................................................................................... 3  
2.1 Definitions ..................................................................................................................................... 3  
2.2 References .................................................................................................................................... 3  

3.0 RESPONSIBILITY ............................................................................................................................ 3  
3.1 Construction Site Manager ........................................................................................................... 3  
3.2 Startup Manager .......................................................................................................................... 4  
3.3 Construction Safety and Health ..................................................................................................... 4  
3.4 Project Safety Leadership Team ................................................................................................... 4  
3.5 T&PS Personnel ............................................................................................................................ 4  
3.6 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ............................................................................. 4  

4.0 STANDARD .................................................................................................................................... 5  
4.1 Training Requirements .................................................................................................................. 5  
4.2 Training Plan .................................................................................................................................. 5  
4.3 Safety Topic Discussion .................................................................................................................. 5  
4.4 Total Safety Training (TST) .......................................................................................................... 5  
4.5 Education and Training ............................................................................................................... 6  

5.0 KEY CONTACT .............................................................................................................................. 7  

6.0 QUALITY RECORDS ..................................................................................................................... 7  

7.0 ATTACHMENTS ............................................................................................................................. 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard defines the requirements for the education and training of Technical and Project Solutions (T&P) personnel in the recognition of hazards and the methods used to control and/or eliminate those hazards.

1.2 Scope

This standard applies to all T&P project-assigned personnel.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

Total Safety Training – A two-phase internal T&P safety and health training curriculum, consisting of an initial course and annual updates designed to provide field-assigned project personnel with the requisite knowledge and tools to affect compliance with both internal and governmental safety and health standards among contractors performing work on T&P projects.

2.2 References

T&P Construction Safety and Health webpage

Safety Fundamentals webpage

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&P construction site manager is responsible for implementing and ensuring compliance with this standard for T&P personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope. In addition, the T&P construction site manager is responsible for the following:

- Providing the training resources necessary to equip employees with the environmental, health, and safety (EH&S) knowledge and skills required for them to accomplish their jobs in compliance with company requirements.

- Ensuring training is conducted in accordance with T&P and applicable regulatory and operating company requirements.
• Assigning tasks only to employees who have successfully completed the EH&S training required for the task.

• Designating an individual to document training according to Southern Company Operations training documentation requirements.

• Implementing an EH&S training plan based on the project’s specific needs, and reviewing and updating the plan annually.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Construction Safety and Health

Construction Safety and Health is responsible for the following:

• Maintaining the Total Safety Training process, including ensuring the safety fundamentals training is up to date and accurately reflects compliance with government and company policies, procedures, standards, and guidelines.

• Providing a chairperson and resources to the annual curriculum development team for the purpose of identifying appropriate and timely subject matter and developing and delivering the annual update modules.

• Training and qualifying trainers capable of delivering the training outlined in the Total Safety Training process.

3.4 Project Safety Leadership Team

The Project Safety Leadership Team (PSLT) is responsible for approving the annual update modules for Total Safety Training.

3.5 T&PS Personnel

All T&PS personnel either assigned to or who visit project sites are responsible for completing annual compliance training.

3.6 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their
management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Training Requirements

The T&PS construction site manager or designee shall ensure training is conducted in accordance with T&PS and applicable regulatory and operating company requirements.

All formal training delivery shall include a written test to verify understanding of the information presented. Employment decisions are not dependent on test results.

4.2 Training Plan

Each construction project management team shall prepare and implement an EH&S training plan based on its specific needs, and review and update the plan on an annual basis. The site-specific E&HS training plan shall be maintained on the project PIMS site. The project manager shall designate an individual to document training according to Southern Company Operations training documentation requirements.

4.3 Safety Topic Discussion

All meetings involving five or more people shall begin with a safety topic discussion. EH&S information to facilitate the safety topic discussion is located on the T&PS Construction Safety and Health website (http://powergeneration.southernco.com/depts/engineering/proj-sh/).

4.4 Total Safety Training (TST)

All T&PS project-assigned personnel shall be current with Total Safety Training in accordance with the following table:
Total Safety Training (TST)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Attendance Requirements</th>
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<tbody>
<tr>
<td>Safety Fundamentals</td>
<td>A 12-hour (2-day minimum) instructor-led training course designed to provide field-assigned T&amp;P project staff with appropriate knowledge in safety and health requirements for effective contract administration and contractor compliance.</td>
<td>All field-assigned T&amp;P project staff shall complete the course prior to field assignment or start the course within 10 working days and complete within 30 days of assignment. This course shall only be completed one time. Completion of an online test through LearningSource is required for credit.</td>
</tr>
<tr>
<td>Annual Update Modules</td>
<td>Up to 4 individual modules totaling 4 hours of instruction, covering topics designed to provide field-assigned T&amp;P project staff with the most current methods, processes, and initiatives to protect T&amp;P employees and contractors and improve overall project EH&amp;S performance. New modules are developed annually and approved by the Project Safety Leadership Team (PSLT).</td>
<td>All field-assigned T&amp;P project staff must complete the annual modules within the timeframe established by their respective project manager, or at a minimum, within the calendar year.</td>
</tr>
</tbody>
</table>

In addition to completing TST, all T&P personnel either assigned to or who visit project sites shall complete annual compliance training.

4.5 Education and Training

Employee EH&S education and training shall be accomplished through, but not be limited to, the following:

- EH&S orientation for all employees new to the company or new to the location.
- Formal classroom training.
- LearningSource online training.
- Supervisory EH&S orientation for all new supervisors.
- Weekly gang-box meetings.
- Job planning and safety analysis.
- Participation in EH&S assessment teams.
- Mentoring.
- On-the-job training.
- Simulator or mockup training aids.
- Third-party training.
- Near hits and lessons learned.
5.0 KEY CONTACT
   For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS
   None.

7.0 ATTACHMENTS
   Attachment A, Historical Summary of Changes.
## Attachment A – Historical Summary of Changes

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<th>Rev. 0</th>
<th>09/13/2016</th>
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**Remarks:**
Issued. This standard supersedes E&CS procedure SH-1E, EH&S Training.

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**Remarks:**
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1F

EH&S Assessments

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Contents

1.0 PURPOSE AND SCOPE ........................................................................................................3
  1.1 Purpose ..........................................................................................................................3
  1.2 Scope ................................................................................................................................3

2.0 DEFINITIONS AND REFERENCES .............................................................................3
  2.1 Definitions ......................................................................................................................3
  2.2 References .....................................................................................................................3

3.0 RESPONSIBILITY ..........................................................................................................3
  3.1 Construction Site Manager ............................................................................................3
  3.2 Startup Manager ...........................................................................................................3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .....................................................4
  3.4 Contractors ....................................................................................................................4

4.0 STANDARD.....................................................................................................................4
  4.1 T&PS Site or Facility Assessments ..................................................................................4
  4.2 Contractor EH&S Assessments ......................................................................................5
  4.3 T&PS Construction Peer Review Program ......................................................................5
  4.4 Southern Company Compliance Audits .........................................................................5

5.0 KEY CONTACT .............................................................................................................5

6.0 QUALITY RECORDS ....................................................................................................5

7.0 ATTACHMENT .............................................................................................................6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard establishes requirements and responsibilities for performing environmental, health, and safety (EH&S) assessments on Technical and Project Solutions (T&PS) projects to identify improvement opportunities.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

peer review – A T&PS internal assessment and evaluation of a project’s compliance with company and regulatory requirements, as well as established industry best practices using counterparts and resources from other projects.

2.2 References

Form 1F.1, Peer Review Worksheet

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

The site manager for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 T&PS Site or Facility Assessments

The T&PS construction site manager or designee at each site or facility shall establish a formal self-assessment process whereby all work areas are assessed for compliance with applicable EH&S requirements (regulatory, company, site or facility, contractor compliance with contract specifications, and so forth). This assessment is to ensure T&PS project’s regulatory compliance and to benefit T&PS project and site employees.

The frequency of this assessment process shall be at least:

- Quarterly for office facilities and other fixed locations.
- Weekly for construction activities.

The assessment shall be conducted by the self-assessment team, which is composed of site management representatives, with an emphasis on those work activities that could have a negative impact on the safety of site employees or the general public.

The controlling contractor or entity shall document assessment findings and discuss them in site management team meetings. A summary of findings shall be communicated to the project site workforce. Those findings that involve contractor work activities that have a negative impact on others shall be transmitted via contract guidelines for appropriate action by the contractor.

Appropriate management from the noncompliant parties shall ensure followup and correction of findings.

The T&PS EH&S group shall analyze findings for trends and recommend EH&S process improvements to the construction site manager or designee.
4.2 Contractor EH&S Assessments

Each contractor shall conduct a weekly field EH&S inspection of his or her work area(s) and those of his or her subcontractor(s). The contractor shall generate a written report of the inspection findings and the appropriate corrective actions. The report shall be submitted to the T&PS construction site manager or designee weekly.

The contractor shall also inspect his or her work area(s) and those of his or her subcontractor(s) on a continuous basis and immediately correct all noncompliant conditions and actions.

The contractor's home office shall have a corporate safety representative conduct quarterly safety audits of that contractor's work activities at each T&PS project and include a written report of the findings with the corrective actions to be implemented, including the target dates and responsible parties. This report shall be submitted to the T&PS construction site manager or designee.

Each contractor’s safety assessment process shall include the T&PS STEP safety observation program that involves observing, documenting, tracking, and trending the safe and at-risk behavior of field employees. The contractor shall communicate the results of the observations biweekly to his or her workforce. The contractor shall implement appropriate intervention actions to address deficiencies. Each contractor shall submit a biweekly report (including documentation, tracking, trending, communications, and interventions) to the T&PS construction site manager or designee.

4.3 T&PS Construction Peer Review Program

T&PS Construction Safety and Health shall coordinate the EH&S Peer Review Protocol for Projects (see attachment A, EH&S Peer Review Protocol for Projects).

4.4 Southern Company Compliance Audits

T&PS construction projects shall be included in the Operations compliance audit program.

5.0 KEY CONTACT

For information about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENT

Attachment A, EH&S Peer Review Protocol for Projects.

Attachment B, Historical Summary of Changes.
Attachment A – EH&S Peer Review Protocol for Projects

**Purpose**

The EH&S peer review program will assist project and site management in identifying areas for improvement. The program will provide site management with recommendations for improvements based on corporate standards and industry best practices. The assessment will quantify the degree of the project’s compliance with regulatory and company requirements.

**Scope**

The peer review program applies to all major T&PS construction projects as agreed on by regional safety and health managers and the Project Safety Leadership Team (PSLT). Each major project should be assessed on an annual basis.

**Responsibilities**

*T&PS Construction Safety and Health*: Lead the EH&S peer review process. Coordinate with construction management and the PSLT to determine projects to be assessed and assessment schedule.

*T&PS construction management*: Provide personnel to participate as peer review team members.

*T&PS site management*: Provide management and supervision personnel to participate in the peer review process. Review results, recommendations, and develop an action plan to address findings and recommendations.

**Audit Format**

The peer review will consist of an evaluation of the project’s compliance with company and regulatory requirements, as well as established industry best practices. The peer review criteria will be available on the T&PS Construction Safety and Health intranet site http://powergeneration.southernco.com/depts/engineering/proj-sh/

**Peer Review Team**

The peer review team will be led by members of T&PS Construction Safety and Health. The number of team members will be based on the size and scope of the project. At a minimum the team will consist of three to four team members composed of safety professionals with additional personnel representing management and construction staff personnel from other T&PS projects.
Process

1. Projects shall be selected for peer review by the T&PS Construction Safety and Health and T&PS Construction Services management. The selection shall be based on the project’s size, type of project, EH&S record, and longevity of the project.

2. The responsible regional construction manager, the project manager, and the site manager shall be notified by T&PS Construction Safety and Health of the pending peer review. The regional construction manager shall review the project’s status with the EH&S peer review schedule to confirm the timing.

3. Upon arriving at the project, the peer review team and the site team shall have an opening meeting to discuss the process, the review parameters and schedule, the written report and its distribution, and the site’s action plan for the closing of the findings.

4. The peer review team shall divide up focus areas as needed and complete the administrative and field sections of form 1F.1, Peer Review Worksheet.

5. The peer review team shall develop the first draft of the review report.

6. The peer review team and the site management team shall hold a closing meeting to discuss the draft of the written report and the site’s corrective action plan. The final written report shall be completed and provided to the construction site manager by T&PS Construction Safety and Health within 3 weeks of the assessment’s conclusion.

7. The project shall correct peer review findings by the agreed-on dates T&PS construction management or the regional manager may request periodic status updates.
## Attachment B - Historical Summary of Changes

| Rev. 0 | 09/13/2016 | Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts |
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| Rev. 1 | 05/09/2017 | Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts |
|---|---|---|

05/15/2019  
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1G

EH&S Metrics Reporting

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3

1.1 Purpose .................................................................................. 3

1.2 Scope ..................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .............................................. 3

2.1 Definitions ............................................................................. 3

2.2 References ............................................................................. 3

3.0 RESPONSIBILITY ........................................................................ 3

3.1 Construction Site Manager ..................................................... 3

3.2 Startup Manager ..................................................................... 4

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
Procurement, and Construction (EPC) Contractors) ...................... 4

3.4 Contractors ........................................................................... 4

4.0 STANDARD ................................................................. 4

4.1 Monthly Reports Requirements ........................................... 4

4.2 Contractor Reporting ............................................................ 5

5.0 KEY CONTACT ....................................................................... 5

6.0 QUALITY RECORDS .......................................................... 5

7.0 ATTACHMENTS ............................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard establishes the requirements for the monthly tracking and reporting of environmental, health, and safety (EH&S) metrics for Technical and Project Solutions (T&PS).

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS Monthly Health and Safety Report
- Form 1G.1, Injury Log.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Monthly Reports Requirements

- Each construction project and Civil Field Services shall submit a monthly report to T&PS Construction Safety and Health. Monthly reports are due by the 5th of the following month.

- T&PS Construction Safety and Health will summarize the data and issue a monthly report by the 10th of the following month.

- All data for the categories on the T&PS Monthly Health and Safety Report shall be provided by each project and group. Work-hour and injury data are to include data for all site personnel working on the project on a permanent or temporary basis.

- If notification of an injury is late or the classification of an injury is changed, the change shall be reflected in the cumulative totals on the next monthly report.

- All incidence rates shall be rounded to the nearest hundredth.

- T&PS management may require additional safety metrics to be reported. This report shall be coordinated through T&PS Construction Safety and Health.
4.2 Contractor Reporting

- T&PS contractors shall immediately report to T&PS the following events arising out of or in connection with the performance of the contractor and his or her subcontractor’s work on the project:
  - All OSHA-recordable injuries.
  - Property damage greater than $10,000.
  - Any damage to existing operating plant facilities or equipment.
  - Fires.
  - Crane incidents.
  - Personnel falls.
  - Chemical/hazardous substances spills.
  - Any incident or injury involving the general public.

- For all of the events requiring reporting to T&PS, the contractor shall, within 2 working days, submit to T&PS a written report documenting the facts of the event, including root causes and actions taken or planned to prevent recurrence.

- The contractor shall submit to T&PS the state Worker’s Compensation First Report of Injury for each occupational injury or illness requiring offsite medical treatment.

- Each month the contractor shall submit by the 5th of the following month a written safety report documenting the contractor and his or her subcontractor’s monthly safety statistics, including work-hours, number of recordable injuries and the number of lost-time cases for the month, year-to-date, and project-to-date.

- The contractor shall maintain a comprehensive (to include any injury or report only cases), up-to-date injury log. This log shall, at a minimum, include the information on the sample Injury Log (form 1G). A copy of this log will be provided by the contractor to T&PS upon request.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
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Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
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Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1H

Contract Safety and Health Management

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## Contents

1.0 PURPOSE AND SCOPE ................................................................. 3  
1.1 Purpose .................................................................................. 3  
1.2 Scope ..................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ............................................... 3  
2.1 Definitions .............................................................................. 3  
2.2 References ............................................................................. 3  

3.0 RESPONSIBILITY ..................................................................... 5  
3.1 Project Manager ...................................................................... 5  
3.2 Construction Site Manager ...................................................... 5  
3.3 Startup Manager ...................................................................... 5  
3.4 Contractor Site Manager (Third-Party Contract Management and Engineering,  
Procurement, and Construction (EPC) Contractors) .......................... 5  
3.5 Contractor’s Site Manager ........................................................ 5  
3.6 Contractors and Subcontractors ............................................... 6  
3.7 T&PS Project Personnel ......................................................... 6  
3.8 General Manager–Projects and Construction ............................ 6  

4.0 STANDARD ............................................................................. 6  
4.1 Contract Management Safety Process ..................................... 6  
4.2 Noncompliance ...................................................................... 8  
4.3 Contractor EH&S Documentation Review and Approval ............ 8  
4.4 Contractor and Subcontractor EH&S Specifications ................... 9  
4.5 Contractor Project-Specific EH&S Documentation .................... 11  
4.6 Training ................................................................................ 19  
4.7 Behavior Based Safety ............................................................ 21  
4.8 Stop Work Authority ............................................................... 22  
4.9 Personal Protective Equipment (PPE) and Clothing .................. 22  
4.10 Fall Protection ...................................................................... 24  
4.11 Reporting Occupational Injuries, Illnesses, and Incidents ........ 24  
4.12 Occupational Health/Industrial Hygiene Program ................. 25  
4.13 Scaffolds ............................................................................ 26  
4.14 Electrical Work .................................................................... 27  
4.15 Mobile Equipment and Vehicles ............................................ 28  
4.16 Cranes ................................................................................ 28  
4.17 Barricades ........................................................................... 30  
4.18 Hole Covers in Floors and Decks .......................................... 31  
4.19 Non-English Speaking Workforce ........................................ 32  
4.20 Tool Use and Inspection ....................................................... 32  
4.21 Use of Explosives ................................................................. 33  
4.22 Hazardous Waste Control and Disposal ................................. 33  
4.23 Fire Protection .................................................................... 33  

5.0 KEY CONTACT ....................................................................... 34  
6.0 QUALITY RECORDS ................................................................ 34  
7.0 ATTACHMENTS ..................................................................... 34  

SH-S-1H, Contract Safety and Health Management 2 of 35  
Rev. 2
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the policy and processes related to contractor management of environmental, health, and safety (EH&S) performance on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**hot work** (electrical) – Any work that involves intentional contact using hands or tools (except for approved test equipment) with exposed energized circuits.

**nonconformance** – Variation or deviation from procedure, technical or procurement requirement, documentation, or work process that renders the quality of an item or activity noncompliant, unacceptable, or indeterminate.

**nonconformance report (NCR)** – A form used for documenting and tracking items or activities not in conformance with specifications and/or drawings to ensure appropriate action is taken to correct the issue identified. A web-based NCR is located within the PIMS application.

2.2 References

T&PS procedures:

- CO-01, Contract Packages
- DC-01, Quality Records Requirements
- **SH-1K, Procedure and Standard Deviation Approval Process**
- **SH-2A-07, Scaffold Safety**
- **SH-2A-08, Fall Protection**
- **SH-2A-17, Excavation and Trenching**
- **SH-2A-33, Safe Work Procedures for Confined Spaces**
- **SH-2A-34, Floor Opening, Wall Opening, Grating Removal, or Guardrail Removal**
- **SH-2C-01, Qualifying Equipment Operators**
- **SH-2C-03, Cranes, Derricks, and Powered Hoists**
- **SH-2E-02, Electrical Testing and Startup**
- **SH-2E-04, Energizing Electrical Equipment**
- **SH-2E-05, Deenergizing Electrical Equipment**
- **SH-2E-07, Working On or Near Electrical Services and/or Equipment**

**EH&S standards:**

- **SH-S-1B, EH&S Responsibilities**
- **SH-S-1J, Incident Investigation**
- **SH-S-1N, Planning and Hazard Analysis**
- **SH-S-2A-05, Signs and Barricades**
- **SH-S-2C-11, Forklift Operations**
- **SH-S-2E-01, Temporary Electrical Power**
- **SH-S-2E-03, Ground Fault Protection**
- **SH-S-2E-06, Welding and Portable Generators**
- **SH-S-2E-08, Hazardous Energy Control**

**Forms:**

- **1H.1, Contractor Safety Qualification Questionnaire: Environmental, Health, and Safety (EHS) Record and Information**
- **1H.2, Contractor Safety, Health, and Environmental Orientation Checklist** (attachment IV-1, Southern Company Contracts Manual)
- **1H.3, Safety Nonconformance Report (SNCR)**
- **1H.4, Contractor Performance Evaluation**
- **1H.5, Contractor Site-Specific Safety Plan Review**
- **1H.6, Sample Glove Matrix**
- **1J.1, Initial Communication of Injury, Illness, or Incident**
- **1J.2, Injury, Illness, or Incident Investigation Report**

**SCO-SH-0900, Barricades**

**SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal**

Procedures, Standards and Guidelines library in Playbook 2.0

**T&PS Construction EH&S Policy and Procedure Manual**

**NOTE**


Southern Company Contract Manual, chapter IV, Contract Safety

Southern Company Record Retention Schedule

**Southern Company’s Behavioral Based Safety Observation Program – Safety Through Everyone’s Participation**
Southern Safety Trilateral Stop Work Authority

Third-Party Crane Inspectors

ANSI Z-87

ANSI Z41-1991


3.0 RESPONSIBILITY

3.1 Project Manager

The project manager is responsible for adding site-specific EH&S requirements to the contract special conditions. These requirements address EH&S issues related to the scope of work or applicable operating company requirements.

3.2 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.4 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plan (SSSP).

3.5 Contractor’s Site Manager

The contractor’s site manager is responsible for signing form 1H.2, Contractor Safety, Health, and Environmental Orientation Checklist, to acknowledge receipt and understanding of the information contained in this standard and ensuring compliance with the requirements established by this standard.
3.6 Contractors and Subcontractors

Contractors and subcontractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as part of the contractor’s SSSP. Each contractor is responsible to ensure any subcontractors meet the selection criteria and comply with the requirements established by this standard.

3.7 T&PS Project Personnel

T&PS project personnel are responsible for meeting the EH&S responsibilities established by SH-S-1B, EH&S Responsibilities.

3.8 General Manager–Projects and Construction

The general manager–Projects and Construction for the appropriate region is responsible for providing approval if the preferred contractor does not meet the objective selection criteria.

4.0 STANDARD

4.1 Contract Management Safety Process


This contract management safety process helps ensure independent contractors meet their EH&S responsibilities.

NOTE

The following topics, summarized for ease of reference, are requirements covered in the Southern Company Contracts Manual and T&PS procedure CO-01, Contract Packages.
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Southern Company Contracts Manual Summary</th>
</tr>
</thead>
</table>
| Contractor Qualifications   | Contracts will be awarded only to contractors with a demonstrated commitment to safety and health. T&PS shall use form 1H.1, Contractor Safety Qualification Questionnaire, to obtain objective and subjective safety information from contractors. Objective selection criteria are outlined in T&PS procedure CO-01, Contract Packages. The manager–Construction Services will review the business justification and may grant approval on any contractor who does not meet the objective selection criteria. Criteria includes:  
  • No OSHA Willful citations within last 5 years.  
  • EMR 1.0 or less for the past 3 years.  
  • TRIR of less than 3.0 for most recent year and 3.0 or less for prior two years or a downward trend.  
  • BROWZ Compliant.                                                                                                                                                                                                                                                                                        |
| Contract Preparation and Award | T&PS shall establish and communicate safety and health requirements and expectations for the contracted work. These requirements shall be included in all executed agreements between T&PS and the contractor. Contractor’s EH&S site program shall meet or exceed the requirements contained in the T&PS Construction EH&S Policy and Procedure Manual.                                                                                     |
| Orientation                 | Prior to the start of work, T&PS project personnel will review contractual safety information and requirements with the designated contractor site manager and will perform orientation training, as necessary. Form 1H.2, Contractor Safety, Health, and Environmental Orientation Checklist, shall be used to facilitate a thorough review. The contractor’s site manager shall sign the checklist to acknowledge receipt and understanding of this information and to commit that he or she will effectively communicate this information to the contractor’s personnel and subcontractors’ personnel. Contractor’s key personnel should attend the Orientation Checklist review with their site manager. |
| Contract Compliance and Monitoring | T&PS project assigned personnel will monitor compliance with the contract safety and health terms and conditions. T&PS project personnel shall document noncompliance with contract safety and health requirements and report to company and contractor management using the PIMS safety nonconformance report. For T&PS employees working in or near contractor work areas, T&PS project-assigned personnel will monitor the work environment to ensure the safety of T&PS personnel, and report any unsafe condition to the contractor’s site manager for correction. If the contractor fails to promptly correct reported conditions, the construction site manager may stop the work and/or terminate the contract. |
| Postcontract Evaluation     | When the work is completed, T&PS-designated personnel will perform an evaluation of the contractor’s safety performance using form 1H.4, Contractor Performance Evaluation. This evaluation will be communicated to T&PS management and the contractor’s representative when appropriate. Project teams shall use results and conclusions of this evaluation in consideration of awarding future work. |
4.2 Noncompliance

The purchaser reserves the right, but not the duty, to point out items of noncompliance to contractor. Safety nonconformance (SNCR) reports shall be issued for repeat nonconformance issues or first-time issues that are willful or represent a serious safety or health hazard.

SNCRs shall be issued through PIMS (PIMS form SNCR found in document center) or, for projects that do not use PIMS, form 1H.3, Safety Nonconformance Report (SNCR), will be completed and transmitted to the contractor.

Safety and Health personnel shall assist in the documentation of the nonconformance issue. The T&PS construction site manager or designee shall issue the SNCR to the contractor.

Contractors shall review and provide a response that includes, if required, a mitigation plan to correct the nonconformance issue. The T&PS construction site manager or designee, with assistance from safety and health personnel, shall review the contractor’s response and either accept and close or reject and return to the contractor for additional actions.

In the event the contractor fails or refuses to take proper corrective action in a manner acceptable to the purchaser, the purchaser has the right to stop work until such time as the contractor is in compliance, or actions up to and including the termination of the contract may be taken as deemed by T&PS management.

Observation, monitoring, or notification of the contractor of noncompliance on the part of the contractor, its agents, employees, or subcontractors of any of the requirements set forth herein or of any of the terms or provisions of the rules and regulations, laws, or ordinances referenced above shall not constitute an assumption on the part of purchaser to perform any of the obligations of contractor hereunder.

No lost time due to any such work stoppage shall constitute a claim for extension of contract time or cost or damages by the contractor.

4.3 Contractor EH&S Documentation Review and Approval

The contractor’s site-specific EH&S documentation submittals shall be reviewed to ensure all requirements of the T&PS Construction EH&S Policy and Procedure Manual and/or EH&S Special Conditions contained within the contract document are met. The review shall be documented on form 1H.5, Contractor Site-Specific Safety Plan Review. The appropriate EH&S representative shall lead the review effort and may include other T&PS discipline leads as appropriate. Discrepancies shall be noted on form 1H.5, Contractor Site-Specific Safety Plan Review, and returned to the contractor for appropriate action.
NOTE

BROWZ compliance ensures only that contractors have the required elements in their safety programs based on the type of work they select, those elements are OSHA-compliant, and the contractor is eligible to bid on work. It does not ensure the required elements meet or exceed T&PS requirements.

NOTE

A gap analysis between T&PS and the contractor is suggested at this point to aid in the resolution and timely completion of the contractor’s site-specific safety plan (SSSP).

Upon completion of the review, the completed form 1H.5 shall be submitted to the T&PS construction site manager for final approval of the contractor’s SSSP prior to the contractor beginning work.

NOTE

Contractors may be mobilizing prior to the completion of the review process. Mobilization activities such as setting up trailers, connexs, and unloading of materials may proceed with a detailed written work plan that specifies safe work practices for the activity. The appropriate T&PS EH&S representative shall review and the T&PS construction site manager or designee shall have final authority to approve and allow these limited work activities to proceed prior to the final approval of the SSSP. All other deviations to the submission of contractor’s SSSPs will be administered through the SH-1K, Procedure and Standard Deviation, process.

4.4 Contractor and Subcontractor EH&S Specifications

Contractors and subcontractors shall strictly adhere to the responsibilities assigned to them when working on an T&PS project site.

All provisions of this standard apply to all tiers of independent contractors providing services to T&PS. See 3.6, Contractors and Subcontractors.

In addition to the requirements set forth in this standard, the contractor shall perform work in a safe manner, and comply, at all times, with all federal, state, county, and municipal laws and regulations which in any manner affect the contract and its performance.

Such laws and regulations include, but are not limited to, all laws and regulations with respect to inspection of the work, inspection of construction equipment, and licensing members of crews with respect to observance of all applicable occupational safety and
health standards promulgated pursuant to the federal Occupational Safety and Health Act of 1970.

The contractor shall have, and exercise full legal responsibility for compliance to safety requirements and regulations by itself, its agents, its employees, and subcontractors with respect to its portion of the work on the project.

The safety of all persons employed by contractor and its subcontractors on purchaser’s premises, or any other person who enters upon purchaser’s premises for reasons related to this contract, shall be the sole responsibility of contractor. The contractor shall take all reasonable measures and precautions at all times to prevent injuries to or the death of any of its employees, its subcontractors, or any other person who enters upon the purchaser’s premises.

By making references to particular laws and regulations, the purchaser does not intend to restrict or limit in any way the laws and regulations which apply to the contractor’s performance under the contract. The contractor shall be solely responsible for providing for the safety and health of its agents, employees, and subcontractors.

The contractor expressly binds itself to indemnify and save harmless any person or entity of persons indemnified against all claims, demands, suits, or actions of every kind and nature presented or brought for any claim or liability arising from or based upon the violation of any such law, regulation, on the part of the contractor, or its subcontractor or agents, servants, or employees of the contractor of its requirements or measures as may be prescribed by the appropriate state board of health, or any other lawful constituted health or authorities having jurisdiction over the project.

In the event the requirements set forth within this standard differ from requirements listed in other applicable procedures, standards, rules, and regulations, the most stringent requirement shall apply.

It is understood that if the employees of the purchaser shall perform any acts for the purpose of discharging the responsibility undertaken by the contractor under this standard or under the safety requirements and regulations referenced above, whether requested to perform such acts by the contractor or not, such employees of the purchaser while performing such acts shall be considered the agents and servants of the contractor subject to the exclusive control of the contractor.

4.4.1 Environmental, Health, and Safety (EH&S) Professional

The contractor shall provide individual(s) that have the requisite knowledge, training, and experience to serve as their EH&S resource for the project in accordance with the following criteria, at a minimum:

- If the contractor’s projected workforce, including subcontractors, is a total of 25 employees or less, the contractor may, in lieu of using an EH&S professional, elect to designate an appropriately trained and experienced supervisor to assume the duties of the EH&S resource.
• If the contractor’s projected workforce, including subcontractors, is a total of 25 to 50 employees, an EH&S professional, whose primary function is EH&S, shall be assigned to the jobsite.

• If the contractor’s projected workforce, including subcontractors, is a total greater than 50 employees, an EH&S professional whose sole function is EH&S shall be assigned to the jobsite. If the workforce becomes 150 employees, a second EH&S professional whose sole function is EH&S shall be assigned to the jobsite. A 200-plus employee workforce may require additional EH&S resources. The number of EH&S professionals will be mutually agreed to by the contractor and purchaser at the 200-plus personnel level.

The EH&S resource/professional shall be assigned to the jobsite on contractor mobilization, not when the reference workforce size is attained.

Contractor shall submit the qualifications of the EHS resource/professional to the purchaser for approval prior to assigning the individual to the jobsite.

Additional site-specific criteria may apply and will be listed in the contract special conditions.

4.5 Contractor Project-Specific EH&S Documentation

4.5.1 Contractor EH&S Program

The contractor shall submit a written site-specific safety plan (SSSP) for the purchaser’s review and approval 30 days prior to beginning work. The contractor’s EH&S program shall meet or exceed the requirements of the T&PS Construction EH&S Policy and Procedure Manual.

The contents of the contractor site-specific EH&S documentation must be related directly to the project and show how the T&PS construction EH&S policies, procedures, standards, and guidelines are integrated to form the contractor’s EH&S documentation.

The contractor is responsible for reviewing the T&PS Construction EH&S Policy and Procedure Manual in its entirety and incorporating the required elements into the contractor’s SSSP.

Elements of the SSSP shall include, but are not limited to:

<table>
<thead>
<tr>
<th>SSSP Element</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Organization</td>
<td>A simple organization chart illustrating responsibilities for work at the worksite, the relationship with supervision, and the relationship with corporate office EH&amp;S resources (include names as appropriate).</td>
</tr>
<tr>
<td>Company EH&amp;S Policy</td>
<td></td>
</tr>
<tr>
<td>Composition of Project Personnel</td>
<td>Resumes of key individuals such as but not limited to:</td>
</tr>
<tr>
<td></td>
<td>• EH&amp;S lead.</td>
</tr>
<tr>
<td>SSSP Element</td>
<td>Explanation</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Emergency Action Plan</td>
<td>Details on how the contractor will respond and react to emergencies such as weather, fire, or chemical releases. Note that the contractor may be required to follow the facility's plan; however, the contractor must ensure the availability of shelter facilities is adequate for the contractor's employees. Additional facilities will be the responsibility of the contractor. Review of available facilities should occur during prebid walk down.</td>
</tr>
<tr>
<td>Environmental:</td>
<td>If part of the contractor's scope. In most cases, the contractor will be required to follow the facility's SPCC and SWPPP. Review special conditions for specifics.</td>
</tr>
</tbody>
</table>
| - Spill Prevention, Control, and Countermeasures (SPCC).  
- Storm-Water Pollution Prevention Plan (SWPPP). |                                                                                                                                               |
| Work Description             | A step-by-step breakdown of each element of work into activities or reference to job risk analysis (JRA) developed for specific activities. |
| Risk Analysis / Pretask Planning | Itemization of risk for each activity and the means by which risks are limited and or controlled. See SH-S-1N, Planning and Hazard Analysis. |
| Behavior Based Safety        | See 4.7, Behavior Based Safety. Details on how the contractor will meet the requirements for STEP.                                              |
| EH&S Training Program        | - The policies and procedures used for education and training of new and existing employees on project EHS requirements.  
- See 4.6, Training, for additional requirements. |
<p>| Incident Notification and Injury Case Management | Policies and procedures used for managing work related injuries sustained by employees. This should also include the contractor’s return to work policy where employees can be voluntarily employed in alternative activities. |</p>
<table>
<thead>
<tr>
<th>SSSP Element</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Investigation / Learning Event</td>
<td>Details on how incident investigation / learning events will be conducted incorporating the T&amp;PS specific requirements found in SH-S-1J, Incident Investigations.</td>
</tr>
<tr>
<td></td>
<td><strong>NOTE</strong> While employee discipline is solely the contractor’s responsibility, employers should consider delaying disciplinary actions until all investigation/learning event activities are complete.</td>
</tr>
<tr>
<td>Personal Protective Equipment (PPE)</td>
<td>• A catalog of PPE used on the project as mentioned in the risk analysis or JRA referenced for specific activities.</td>
</tr>
<tr>
<td></td>
<td>• A hand protection matrix that details types of hand protection used for specific activities.</td>
</tr>
<tr>
<td></td>
<td>• An eye protection matrix that details types of eye protection used for specific activities.</td>
</tr>
<tr>
<td>Tool and Equipment Inspection Program</td>
<td>• Description of the inspection method used for equipment and tools that provide a record of an item’s suitability for use.</td>
</tr>
<tr>
<td></td>
<td>• Methods for identifying tools and equipment that have been inspected (for example, color-code charts). The contractor may be required to follow a project-specific color-code scheme.</td>
</tr>
<tr>
<td></td>
<td>• Details of how mobile equipment deficiencies are identified through the inspection process and the responsible person to ensure corrections are taken.</td>
</tr>
<tr>
<td></td>
<td>• Location of retained inspection forms for potential review by the purchaser.</td>
</tr>
<tr>
<td>Crane, Derrick and Powered Hoist Inspection Program</td>
<td>• Identify the frequency of inspections and the responsible person(s) who will perform the monthly and daily inspections (See SH-2C-03, Cranes, Derricks, and Powered Hoists).</td>
</tr>
<tr>
<td></td>
<td>• Location of retained inspection forms for potential review by the purchaser.</td>
</tr>
<tr>
<td>Equipment Operator Qualification Program</td>
<td>Details on how the contractor will qualify equipment operators (See SH-2C-01, Qualifying Equipment Operators).</td>
</tr>
<tr>
<td>Fall Prevention / Fall Protection Program</td>
<td>Contractor shall submit to the purchaser a written site-specific fall prevention plan. See 4.10, Fall Protection, for specific requirements.</td>
</tr>
<tr>
<td>Steel Erection Plan</td>
<td>Details on how steel erection activities will be safely accomplished on the project.</td>
</tr>
<tr>
<td>SSSP Element</td>
<td>Explanation</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Confined Space Entry</td>
<td>The contractor shall comply with 29 CFR 1926 subpart AA and incorporate the requirements found in SH-2A-33, Safe Work Procedures for Confined Spaces, into the contractor’s program.</td>
</tr>
</tbody>
</table>
| EH&S Assessments   | • The contractor shall comply with the provisions of 29 CFR 1926.20. Additionally, the contractor’s site manager shall conduct a weekly field EH&S inspection of all contractor and their subcontractor’s work areas. The contractor shall generate a written report of the inspection findings. The report, including the resolutions of the findings, shall be submitted to the purchaser on a weekly basis. The contractor shall also inspect its work areas on a continuous basis and correct all noncompliance conditions and actions. The purchaser will perform EH&S inspections of work areas for the benefit of purchaser’s employees.  
• Note that the contractor will be required to participate in a weekly site EH&S housekeeping assessment facilitated by the purchaser or designee. |
| Housekeeping       | • Details on how the contractor will maintain acceptable housekeeping standards on project sites.  
• The contractor shall maintain a clean work area. The contractor shall clean up and remove all scrap, trash, debris, and waste materials that accumulate from its operations on an ongoing basis. If the contractor’s work area is not maintained properly, the purchaser reserves the right to clean up the contractor’s work area, by others, at the contractor’s expense.  
• The contractor shall assign a responsible person or persons as a point of contact regarding housekeeping issues. This responsible person shall have the authority to direct corrective actions and assign additional personnel as needed to maintain project housekeeping. |
<table>
<thead>
<tr>
<th>SSSP Element</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| Excavation and Trenching     | • The contractor shall comply with all aspects of 29 CFR 1926.650, 1926.651, 1926.652, and incorporate the requirements found in SH-2A-17, Excavation and Trenching, into the contractor's program.  
• The contractor shall provide the purchaser the name and qualifications of the contractor’s competent person who will perform documented inspections of excavations and trenches prior to employee entries.  
• The contractor’s excavation and trenching program shall include the methodology used to determine soil classification.  
• The contractor shall determine the need and perform any atmospheric testing required prior to entry of employees.  
• The contractor shall maintain and make all documents relative to soil classification, protective system selection, inspections, and required training available for the purchaser’s review upon request. |
| Site-Specific Barricade Plan | Must meet the requirement in SH-S-2A-05, Signs and Barricades, and SCO-SH-0900, Barricades, as appropriate.                                      |
| Others as needed based on contractor’s scope of work. See table in 4.5.3, EH&S Documentation Submission Schedule. |                                                                                                                                               |

The contractor’s SSSP shall be implemented by the contractor and shall apply to the contractor’s employees, agents, and subcontractors.

### 4.5.2 EH&S Program Change Management

The contractor’s SSSP shall be developed and maintained at all times during the performance of the work. In the event the work scope for the contractor is amended, the contractor’s SSSP shall be reviewed and revised as necessary to ensure the additional scope is covered.

### 4.5.3 EH&S Documentation Submission Schedule

Contractors shall develop, maintain, submit, or have available for review the EH&S documents as described in the table below:
<table>
<thead>
<tr>
<th>Document Type</th>
<th>Supporting Standard(s) or Procedure(s)</th>
<th>Disposition</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH&amp;S site-specific safety plan (SSSP)</td>
<td>SH-S-1H</td>
<td>Submit.</td>
<td>Submit 30 days prior to beginning work.</td>
</tr>
<tr>
<td>Site-specific program for arsenic*</td>
<td>SH-S-2D-05</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Site-specific program for silica*</td>
<td>SH-S-2D-06</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Asbestos exposure control program*</td>
<td>SH-S-2D-07</td>
<td>Submit.</td>
<td>Assume presence of asbestos unless otherwise documented.</td>
</tr>
<tr>
<td>Radiation safety program*</td>
<td>SH-S-2D-09</td>
<td>Submit.</td>
<td>As needed based on work scope.</td>
</tr>
<tr>
<td>Structural steel erection site-specific safety plan*</td>
<td>SH-S-2A-09</td>
<td>Submit.</td>
<td>If steel erection activities are part of work scope.</td>
</tr>
<tr>
<td>Site-specific program for blasting operations*</td>
<td>SH-S-2A-19</td>
<td>Submit.</td>
<td>If blasting operations are part of work scope.</td>
</tr>
<tr>
<td>Request for deviation from procedure</td>
<td>SH-1K</td>
<td>Submit.</td>
<td>Approved by contractor corporate safety prior to submittal.</td>
</tr>
<tr>
<td>Fire prevention program*</td>
<td>SH-S-3</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Site-specific barricade procedure*</td>
<td>SH-S-2A-05</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Plan for working over or near water*</td>
<td>SH-S-2A-25</td>
<td>Submit.</td>
<td>As needed based on work scope.</td>
</tr>
<tr>
<td>Written procedure for caissons, tunnels, and cofferdams*</td>
<td>SH-S-2A-18</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>PPE assessments (for entire job)</td>
<td>SH-S-1H, SH-S-2B-01</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Nonroutine task hazard analysis for when the possibility of chemical exposure exists*</td>
<td>SH-S-2D-02</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Plan for using personnel suspended baskets including evaluation of alternate methods</td>
<td>SH-2A-11</td>
<td>Submit per use.</td>
<td>Must include justification for use and be approved.</td>
</tr>
<tr>
<td>Critical lift plan</td>
<td>SH-2A-10</td>
<td>Submit per lift.</td>
<td>Submit 15 days prior to lift.</td>
</tr>
<tr>
<td>Crane operator qualifications</td>
<td>SH-2C-01</td>
<td>Submit.</td>
<td>Includes documentation for make- and model-specific written and practical testing, medical examiner’s certificate, driver’s license, employer issued authorization (license), and National Certifying Agency certification card (such as NCCCO).</td>
</tr>
<tr>
<td>Safety data sheet(s) (SDS) for approval</td>
<td>SH-S-2D-02</td>
<td>Submit.</td>
<td>Submit for approval prior to ordering material.</td>
</tr>
<tr>
<td>Chemical-specific training for chemicals present in the workplace</td>
<td>SH-S-2D-02</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Document Type</td>
<td>Supporting Standard(s) or Procedure(s)</td>
<td>Disposition</td>
<td>Comments</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Soil classification and protective systems selection, inspections, and training all documents</td>
<td>SH-2A-17</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Project-specific fall protection plan*</td>
<td>SH-2A-08</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Welding, cutting, and heating permit</td>
<td>SH-2A-21</td>
<td>Available.</td>
<td>When required by site manager and/or facility.</td>
</tr>
<tr>
<td>Scaffold preuse shift inspection tag</td>
<td>SH-2A-07</td>
<td>Available on scaffold in use.</td>
<td>Attach completed tag to scaffold.</td>
</tr>
<tr>
<td>Mobile equipment/boom truck overhead line permit form</td>
<td>SH-2C-02</td>
<td>Available in equipment cabinet.</td>
<td>Retain for review per retention schedule.</td>
</tr>
<tr>
<td>New employee orientation</td>
<td>SH-S-1H</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Weekly toolbox talks</td>
<td>SH-S-1H</td>
<td>Submit.</td>
<td>Submit subject and sign in sheets weekly per contract requirements.</td>
</tr>
<tr>
<td>Hazardous material training</td>
<td>SH-S-1H</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Hazard recognition and avoidance training record</td>
<td>SH-S-1H</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Task-specific - confined space entry, energy clearance, respiratory, trenching, fire watch, scaffold, ladders, ammonia, emergency plans, and so forth*</td>
<td>SH-S-1H</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Operator training/all mobile equipment</td>
<td>SH-2C-01</td>
<td>Available.</td>
<td>Make- and model-specific written and practical testing.</td>
</tr>
<tr>
<td>Respiratory protection medical evaluation / training</td>
<td>SH-S-2B-09</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Bloodborne pathogens program*</td>
<td>SH-S-1H, SH-S-2D-03</td>
<td>Submit.</td>
<td>If demolition is in work scope.</td>
</tr>
<tr>
<td>Demolition Engineering Survey*</td>
<td>SH-2A-28</td>
<td>Submit.</td>
<td>If demolition is in work scope.</td>
</tr>
<tr>
<td>Steel erection safety procedure*</td>
<td>SH-2A-09</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Excavation and trenching permits</td>
<td>SH-2A-17</td>
<td>Available.</td>
<td>Retain for review per retention schedule.</td>
</tr>
<tr>
<td>Bloodborne pathogens awareness – Training Records</td>
<td>SH-S-2D-03</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Bloodborne pathogens extensive for responders – Training Records</td>
<td>SH-S-2D-03</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Contractor site-manager weekly safety walk down and report of findings</td>
<td>SH-S-1F</td>
<td>Submit.</td>
<td>Includes corrective actions.</td>
</tr>
<tr>
<td>Quarterly safety assessment by corporate representative</td>
<td>SH-S-1F</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Annual crane inspections per OSHA</td>
<td>SH-2C-03</td>
<td>Submit.</td>
<td>Prior to using crane.</td>
</tr>
<tr>
<td>Document Type</td>
<td>Supporting Standard(s) or Procedure(s)</td>
<td>Disposition</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>----------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Daily crane inspections</td>
<td>SH-2C-03</td>
<td>Available.</td>
<td>Maintain per document retention schedule.</td>
</tr>
<tr>
<td>Commercial diving site-specific manual*</td>
<td>SH-S-2A-26</td>
<td>Submit.</td>
<td>Must also be available at dive site.</td>
</tr>
<tr>
<td>Monthly inspections cranes</td>
<td>SH-2C-03</td>
<td>Available.</td>
<td>Maintain per document retention schedule.</td>
</tr>
<tr>
<td>Crane hook annual NDE</td>
<td>SH-2C-03</td>
<td>Submit with annual inspection.</td>
<td></td>
</tr>
<tr>
<td>GFCI monthly inspection</td>
<td>SH-S-2E-03</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Ladders quarterly inspection documented</td>
<td>SH-S-2A-06</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Biohazard and sharps disposal records</td>
<td>SH-S-2D-03</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B vaccination or waiver for responders and persons designated to come in contact with bodily fluids</td>
<td>SH-S-2D-03</td>
<td>Available.</td>
<td></td>
</tr>
<tr>
<td>Hazardous materials employee exposure and environmental monitoring plan*</td>
<td>SH-S-1H</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Incident Reports</td>
<td>SH-S-1J</td>
<td>Submit.</td>
<td>• Verbal report immediately.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Form 1J.1, Initial Communication of Injury, Illness, or Incident within 24 hours.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Form 1J.2, Injury, Illness, or Incident Investigation Report, within 7 days.</td>
</tr>
<tr>
<td>Proof of workers’ compensation and general liability insurance</td>
<td>SH-S-1H</td>
<td>Submit.</td>
<td></td>
</tr>
<tr>
<td>Complaint, intent to inspect, or any contact with any regulatory agency</td>
<td>SH-S-1H</td>
<td>Immediate verbal notice.</td>
<td></td>
</tr>
<tr>
<td>Contractor safety professional qualifications</td>
<td>SH-S-1H</td>
<td>Submit for approval prior to assignment.</td>
<td></td>
</tr>
</tbody>
</table>
4.6 Training

EH&S training shall be conducted as described in 29 CFR 1926.21. In addition, EH&S training shall be delivered to appropriate employees in accordance with the specific training requirements contained in 29 CFR 1926 and applicable sections of 29 CFR 1910. The contractor shall provide EH&S training for its employees at its own expense, and such training shall be documented and records provided to the purchaser upon request. EH&S training shall include, but not be limited to:

- New employee orientation. See 4.6.1, New Employee Orientation and Annual Refresher.
- Annual orientation refresher. See 4.6.1.
- Hazardous energy control – Awareness level training for facility program.
- Front-line supervisor training. See 4.6.2, Front-Line Supervisor Training.
• Hazard recognition and avoidance. See 4.6.4, Hazard Recognition and Avoidance.

• Other regulatory required training or special training required based on work scope. See 4.6.5, Special EH&S Training for Those Affected.

The contractor shall maintain a training matrix that lists the employees’ names, training types, dates of training, instructors, and other pertinent information. The matrix shall be available for review by the purchaser upon request.

4.6.1 New Employee Orientation and Annual Refresher

Documented training in the EH&S program, policies, procedures and rules in place for the project. This training shall take place prior to work activity on the project. The purchaser’s site-specific requirements shall be included.

Contractor shall provide documented annual orientation refresher training to all personnel within 15 days of the employee’s 1-year anniversary and annually thereafter.

4.6.2 Front-Line Supervisor Training

The contractor shall provide specific training to the contractor’s front-line supervisors. The training shall consist of either contractor-provided front-line supervisor training or Southern Safety Trilateral Safety Supervisor Training (SST) training. The contractor shall provide the appropriate training as specified in the contract document.

If the contractor is designated to provide the front-line supervisor leadership training, the training shall include the following topics:

Foreman accountability with regards to safety

• Leadership.
• Motivation.
• Integrity.
• Behavior.
• Professionalism.
• Relationships.
• Conflict and dispute resolution.
• Communication.
• Planning and scheduling.
• Documentation and recordkeeping.
• Material handling and site planning.
• Job safety analysis.
• Hazard recognition and control.
• Human performance.

If the contractor is designated to use the Southern Safety Trilateral Safety Supervisor Training (SST), the SST training is managed through Bevill State Community College. The contractor may arrange for the training through Bevill State or may elect to have one
or more representatives attend the SST Train the Trainer course and provide the course curriculum themselves. All testing, however, will be proctored by Bevill State.

Regardless of the method selected, the training will be conducted prior to assignment of supervisory responsibilities. Exceptions based on emergency work and unforeseen manpower needs, such as during a forced outage, may be granted by the T&PS construction site manager through the SH-1K, Procedure and Standard Deviation, process and provided the contractor has an acceptable schedule to complete the training.

NOTE

Effective January 1, 2018, Southern Safety Trilateral Supervisor Safety Training will be the required training for all contractors and subcontractors.

4.6.3 Hazardous Material Training

The contractor shall provide specific training to its employees on any hazardous materials present on the project location.

4.6.4 Hazard Recognition and Avoidance

The contractor shall provide specific training to its employees on hazard recognition and avoidance.

4.6.5 Special EH&S Training for Those Affected

Such training shall include, but not be limited to, confined space entry, respiratory protection, personal protective equipment, fire watch, excavation and trenching, fall protection, lockout/tagout (LOTO), clearance, scaffolding, ladders, ammonia awareness, and/or emergency plans.

4.7 Behavior Based Safety

The contractor shall use the purchaser’s Behavioral Based Safety (BBS) Observation Program when at least two of the following criteria are met:

- The contract duration is greater than 30 days.
- The contractor expects to have 25 employees or more on the project site.
- The contractor expects to expend 5,000 work-hours or more during the course of the contract.

If the contractor does not expect to meet these criteria at the time of award, but at any point during the contract duration becomes eligible by meeting two of the three criteria, the contractor shall be expected at that time to begin using the purchaser’s BBS Observation Program.
Information on the purchaser’s STEP Program can be accessed from the document titled Southern Company’s Behavioral Based Safety Observation Program – Safety Through Everyone’s Participation at the link in 2.2, References.

For contractors working less than 3,000 hours per month, a minimum of 2 onsite personnel, of which 1 may not be in the contractor’s safety organization, will be assigned to perform observations totaling 2 per week each (8 per month each).

For contractors working in excess of 3,000 hours per month, personnel and observation goals shall be assigned to perform 5 observations per 1,000 work-hour rate. The makeup and goals of the observers shall be at the contractor’s discretion, except that no more than 1/3 of the total observers may be assigned to the contractor’s safety organization.

Contractors must include subcontractor hours in their total hours for the purposes of determining observation rates. Contractors may choose to include their subcontractors as participants in the STEP program as active observers. The contractor’s observers will perform STEP observation focused on the contractor’s or the subcontractor’s work areas and employees. Each observer will be assigned a unique identifier to track observations. Observations shall be evenly spread throughout the month.

The contractor will assign one employee from outside the safety organization to serve as the contractor’s STEP champion. The STEP champion will participate in the site’s STEP sustainability process. The contractor may elect to assign a site administrator to input observation data into the STEP database using the unique identifier for each observer.

The purchaser will provide Train the Trainer STEP training. The contractor is responsible for training and monitoring each observer’s performance within the contractor’s organization. The purchaser, at the purchaser’s sole discretion, can modify the required observation rate and will notify the contractor of such modification.

4.8 Stop Work Authority

Contractors shall adopt the Southern Safety Trilateral Stop Work Authority program into their SSSP or provide their own program that meets or exceeds the requirements of the Southern Safety Trilateral program.

4.9 Personal Protective Equipment (PPE) and Clothing

Contractor’s employees shall wear all applicable personal protective equipment as required in 29 CFR 1926. This requirement shall include, but is not limited to:

4.9.1 Eye Protection

The contractor shall produce a matrix that identifies approved safety eyewear and the conditions that each shall be used; this matrix shall be included in the contractor’s SSSP. Safety glasses that meet ANSI Z-87.1 requirements must be worn in all areas of the project. For work areas that are subject to dust or fine debris, safety glasses with foam backing or similar material that provides a tight fit against the face will be used.
Prescription safety glasses must have rigid side shields. Slip-on, flexible plastic side shields are not allowed. Visitor spectacles conforming to ANSI Z-87.1 worn over prescription glasses are acceptable. A full faceshield over approved safety foam-backed glasses is required for all grinding, abrasive cutting operations, or any other operation that generates high-speed particles.

4.9.2 Head Protection

Hardhats that meet ANSI Z-89.1 Class B requirements must be worn in all areas of the project except administrative areas. A hardhat must be worn for welding operations. Cowboy-style hardhats are prohibited.

4.9.3 Foot Protection

Hard-soled, heavy leather safety-toed boots meeting ANSI Z41-1991 must be worn in all areas of the project, except administrative areas. Metatarsal guards shall be worn by employees operating hand vibratory tampers, jackhammers, and similar operations with a potential for serious foot injuries.

4.9.4 Hearing Protection

The appropriate level of hearing protection shall be worn when noise levels exceed 90 dBA.

4.9.5 Hand Protection

Contractors shall produce a glove matrix that identifies the style of glove and conditions each are used in (see form 1H.6, Sample Glove Matrix); this matrix shall be included in the contractor’s SSSP. The contractor shall maintain sufficient stock of identified gloves. Leather or cut-resistant gloves are required when handling sheet metal, rough or unfinished lumber, metal bands, and other materials likely to cause hand injuries. Cut-resistant gloves must be worn when handling or using sharp instruments, tools, or equipment that could cause lacerations if hand contact would occur (for example, knives, razors, and/or handsaws). Impact-resistant gloves must be worn when performing activities that expose hands and fingers to crushing injuries.

4.9.6 Basic Clothing

Shirts must have at least a 4-in. sleeve. Trousers covering the legs and ankles shall be worn at all times. Perforated or mesh shirts or trousers are prohibited.

4.9.7 Arc Flash Protection

Fire-resistant (FR)-rated clothing shall be worn by any employee working on or near exposed, energized electrical parts.

4.9.8 Traffic Vests

High visibility clothing meeting ANSI Class II requirements may be required.
4.10 Fall Protection

Contractors shall comply with provisions of 29 CFR 1926.500; 1926.501; 1926.502; 1926.503, and T&PS procedure SH-2A-08, Fall Protection. Additionally, 100-percent fall protection shall be instituted when employees are exposed to a potential fall hazard of 4 ft or greater. One-hundred percent fall protection may be accomplished through the use of a guardrail system (per 1926.502(b)), approved safety net system, covers, or personal fall arrest systems.

The contractor shall submit to the purchaser a written site-specific fall prevention plan. Elevated work includes, but is not limited to, scaffold erection, steel erection, work in pipe bridges, roof work, Q-decking or grating installation and removal, formwork and reinforcing steel, and any other work with potential for a 4-ft or greater fall, except work performed from ladders. The fall protection plan must include:

- A list of elevated work tasks.
- The proposed method(s) of fall protection for each task. If a personal fall arrest system is to be used, the plan shall identify anchor points.
- Rescue provisions.
- Means of access and egress to elevated work locations.
- Name(s) and qualifications of the contractor’s fall protection and prevention competent person(s).
- Description and content of the contractor’s fall protection training program.

Full-body harnesses shall be equipped with dual shock-absorbing lanyards.

The use of employee-owned fall arrest equipment is strictly prohibited.

Snaphooks and/or carabineers shall be of the double-action, self-locking type at a minimum. Snaphooks and/or carabineers with a throat opening greater than 25/32 in. are prohibited on Southern Company Generation T&PS projects except for scaffold erection and dismantling operations and must have an approved site-specific fall protection program that includes, at a minimum:

- Specific training about connection compatibility.
- Allowable connections.
- Methods of distribution and control.
- Inspection requirements.

4.11 Reporting Occupational Injuries, Illnesses, and Incidents

The contractor shall immediately report to the purchaser all injuries, illnesses, and incidents resulting in property damage, fires, crane incidents, personnel falls, near hits and all environmental spills arising out of or in connection with the performance of the contractor and the contractor’s subcontractor’s work.

For all incidents, an initial report is required within 24 hours with initial information and determination of incident severity. For injury incidents, the report shall include a preliminary determination, that is, first aid, doctor visit, recordable, lost time, and other
information of immediate importance. Form 1J.1, Initial Communication of Injury, Illness, or Incident shall be used unless the contractor’s own report covers the required information and has been reviewed and approved for use by site management. The initial report shall be accompanied by pertinent documents such as the job safety analysis (JSA) and photographs if available.

The results of the contractor’s full investigation shall be documented in a final report and shared with T&PS within 7 calendar days of the event. The contractor’s report will include an adequate explanation of who, what, when, where, how, and why along with a final injury classification determination, and corrective actions to prevent similar events. All supporting documents, including, but not limited to, JSAs, photographs, witness statements (unless privacy is a concern), damage estimates, training documents, certifications, and so forth, are to be included with the final report. All employee personal identification information such as Social Security numbers and driver’s license numbers should be redacted from the final report. See form 1J.2, Injury, Illness, or Incident Investigation Report.

For all occupational injuries and illnesses requiring offsite medical treatment, the contractor shall submit to the purchaser the state workers’ compensation First Report of Injury.

On or before the 5th of each month, the contractor shall submit to the purchaser a report documenting the safety statistics for the contractor and the contractor’s subcontractors, including work hours, number of recordable injuries and illnesses, and the number of lost workday cases for the month, year-to-date, and project-to-date.

All contractors shall post and keep current their OSHA 300 and 300A Logs for site work at their onsite office while the contractor is employed by the purchaser. A copy of the OSHA 300 and 300A log(s) will be provided to the purchaser upon request.

4.12 **Occupational Health/Industrial Hygiene Program**

4.12.1 **General**

The contractor shall submit a list of hazardous materials and a safety data sheet (SDS) for each hazardous material to the purchaser for approval prior to bringing the hazardous material on site.

The contractor shall develop and submit a plan to the purchaser that details both the personal and environmental monitoring that they will perform for any special hazardous operations such as spray painting, sandblasting, and large chemical applications.

The contractor shall make available to the purchaser the results of atmospheric monitoring conducted on purchaser’s premises.
4.12.2 Hazard Communication

The contractor shall comply with all aspects of 29 CFR 1910.1200 and all applicable state and local hazard communication requirements. Basic requirements include, but are not limited to:

- Developing and implementing a written site-specific hazard communication program. The contractor shall submit a copy of their site program to the purchaser.
- Training of employees in all aspects of handling and working with hazardous materials.
- Developing and maintaining a list of hazardous materials used by the contractor.
- Obtaining and maintaining SDSs for all hazardous materials on site.
- Appropriate labeling the containers of hazardous materials.

4.12.3 Respiratory Protection

Contractor shall comply with all aspects of 29 CFR 1910.134 including the development of a written site-specific respiratory protection program. The contractor shall submit a copy of the site program to the purchaser. The contractor employee's medical approval, respirator training, and fit test records shall be available upon request.

4.12.4 Bloodborne Pathogens

The contractor shall comply with 29 CFR 1910.1030. The contractor shall provide the purchaser with its required site-specific exposure control plan.

4.12.5 Inorganic Arsenic

The contractor shall comply with all aspects of 29 CFR 1910.1018 and the purchaser's arsenic work requirements.

4.12.6 Lead

The contractor shall comply with all aspects of 29 CFR 1910.1025 and 1926.62 and the purchaser's lead work requirements.

4.12.7 Asbestos

The contractor shall comply with all aspects of 29 CFR 1910.1001 and 1926.1101 and the purchaser's asbestos work requirements.

4.13 Scaffolds

The contractor shall erect, use, maintain, and dismantle scaffolds in accordance with 29 CFR 1926 Subpart L and T&PS procedure SH-2A-07, Scaffold Safety.

All scaffolds shall be constructed as physically complete as possible, including handrails and midrails on all sides at all elevations used as a work location, complete work decks, toe boards on all sides, and ladder access.
Scaffolds and scaffold components shall be inspected for visible defects by a competent person before each work shift. This inspection shall be documented on the scaffold tag.

Contractor shall use a scaffold tag system meeting the following criteria:

- A green scaffold tag designates a complete scaffold.
- A yellow scaffold tag designates a scaffold that is not complete, but may be used with special precautions, such as 100-percent tie-off. Yellow scaffold tags shall identify the scaffold deficiency and applicable precautions/requirements.
- A red scaffold tag designates a scaffold is in the process of being erected, changed, dismantled, or is otherwise unfit for occupancy and shall not be used under any circumstances.
- A competent person shall attach the appropriate tag to each scaffold access ladder. All tags shall identify the responsible contractor and shall be dated and signed by the erecting supervisor and competent person.

### 4.14 Electrical Work

The contractor shall comply with all aspects of 29 CFR 1926 subpart K and T&PS procedures and standards:

- SH-2E-02, Electrical Testing and Startup.
- SH-2E-04, Energizing Electrical Equipment.
- SH-2E-05, Deenergizing Electrical Equipment.
- SH-2E-07, Working On or Near Electrical Services and/or Equipment.
- SH-S-2E-01, Temporary Electrical Power.
- SH-S-2E-03, Ground Fault Protection.
- SH-S-2E-06, Welding and Portable Generators.
- SH-S-2E-08, Hazardous Energy Control.

The contractor shall provide ground fault circuit interrupter (GFCI) protection for all cord sets, receptacles, and electrical tools and equipment connected by cord and plug that are used or available for use by employees. The contractor shall inspect each GFCI device monthly. Inspection shall be documented and records provided to the purchaser upon request. Inspected components shall be identified with the appropriate color code for the period as established by the project.

The contractor shall not perform any electrical hot work above 50 volts.

The contractor shall not connect electrical conductors to the permanent power source until all field installation work associated with the equipment, device, or apparatus is complete.

The contractor shall not energize any permanent electrical equipment, device, or apparatus without prior approval of the purchaser.
4.15 Mobile Equipment and Vehicles

Mobile equipment and vehicles shall be operated, maintained, and stored in accordance with the requirements of 29 CFR 1926 and manufacturer’s recommendations. Additionally:

- Each employee must have a valid state driver’s license to operate any mobile equipment or vehicle on the project.
- Daily pre-use inspections shall be performed on each vehicle and item of mobile equipment. The inspection shall be documented and available for review.
- Each vehicle and item of mobile equipment arriving on site for use on the project shall be inspected before use. Operator training is required for all mobile equipment and shall be documented and available for review. See T&PS procedure SH-2C-01, Qualifying Equipment Operators.
- Seatbelts, when provided by the manufacturer, shall be used by vehicle and mobile equipment operators and any other occupants. Passengers are not allowed on mobile equipment (dozers, backhoes, cranes, fork trucks, graders, and so forth) unless a space was specifically designed by the manufacturer and seat belts provided.
- All mobile equipment and any vehicle with an obstructed view to the rear shall have an operable back-up alarm.

All telescopic-boom material handlers (forktrucks) shall provide operator visibility in 360 degrees through:

- Equipment design.
- Operational or safety aids such as:
  - Camera system.
  - Mirror system.
  - Proximity warning devices.
  - Spotters (with written plan and training).

See EH&S standard SH-S-2C-11, Forklift Operations, for additional details and requirements.

4.16 Cranes

The contractor shall comply with all provisions of 29 CFR 1926.550 and applicable ANSI/ASME standards.

An anti-two block device is required on all cranes.

All annual crane inspections shall be performed by an T&PS-approved third-party crane inspector that meets OSHA/ASME qualification requirements (see Third-Party Crane Inspectors, linked at 2.2, References). The contractor shall provide a copy of the results of the current OSHA-required annual crane inspection.

The contractor shall submit details of its proposed work platform and rigging method for the purchaser’s review and concurrence before conducting any work from a platform.
suspended from a crane. The details must include a clear justification for using a crane-suspended work platform rather than another method. The contractor shall comply with all provisions of 29 CFR 1926.550(g).

The contractor shall develop a rigging plan for all critical lifts. Plans shall be stamped by a professional engineer (P.E.) registered in the state in which the work is performed. The contractor shall submit the plan, approved by the contractor’s site manager, to the T&PS construction site manager or designee 15 calendar days, or as otherwise approved by the T&PS construction site manager, prior to the lift. A lift is considered critical when any of the following conditions exist:

- The lift involves more than one crane to handle a common load.
- The lift is greater than 25 tons.
- The weight of the load is 75-percent or more than the crane’s capacity.

The rigging plan shall include at least the following information:

- Manufacture, model, and capacity of the crane(s).
- Capacity charts of the crane(s).
- Working radius of the crane(s).
- Boom length and angle of the crane(s).
- Weight of the load, including rigging, load block, headache ball, cable.
- The method used to determine the weight of the lift.
- Size and capacity of all rigging hardware (slings, shackles, and so forth).
- Plot plan showing crane location with pick, swing, and set points.
- Plan approval signatures. The contractor’s site manager shall approve the written plan prior to submittal to the purchaser for review.

The contractor shall submit the resumes and qualifications of the following personnel involved in critical lift planning or execution for review:

- Rigging and lift site supervisor.
- Rigging and lift supervisor(s).
- Lift director(s).
- Rigging and lift professional engineer (P.E.).

Contractors that do not self-perform any or all aspects of critical lift planning or execution shall submit the equivalent resumes and qualifications of their subcontractor for review.

Reviews of resumes and qualifications shall be conducted by the T&PS construction site manager, T&PS rigging and lift subject matter expert (SME), and the manager—Construction Safety and Health or his or her designee. The purchaser or its agent reserves the right to reject any individual or party for cause.

All crane operators shall have current certification and hold a license for the class of crane to be operated. The certification shall be issued by a nationally recognized certifying agency, accredited by a nationally recognized agency, such as the National Commission for Certifying Agencies (NCCA). The contractor shall submit to the purchaser the methods used to assure the crane operator is qualified in accordance with
the applicable ANSI/ASME standards and is qualified to operate the specific crane to be used, in the configuration that it will be used, in compliance with manufacturer’s specifications and limitations, and with any applicable regulation. See T&PS procedure SH-2C-01, Qualifying Equipment Operators.

All loads being landed or received by personnel shall be controlled by the use of tag lines. Workers shall keep hands off suspended loads.

All cranes shall receive a documented daily inspection and a more detailed monthly inspection (periodic) by a qualified individual. Inspection records shall be maintained and available for review.

Hand signals to crane operators shall be in accordance with the applicable ANSI standard for the type of crane in use. Employees giving and receiving hand signals shall be trained and qualified in hand signals.

All rigging shall be performed by qualified personnel under the direction of a competent person.

4.17 Barricades

The contractor shall furnish, erect, maintain and dismantle barricades required for their work activity in accordance with SH-S-2A-05, Signs and Barricades, or SCO-SH-0900, Barricades, as appropriate.

Warning barricades (tape and stand) shall be used to alert employees to potential hazards. Each barricade shall be identified regarding the date it was erected, the potential hazard, and the person responsible for the barricaded area. Warning barricades shall be about 42 in. high and shall be removed when no longer needed.

<table>
<thead>
<tr>
<th>Barricade tape color</th>
<th>Indicates….</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow-black barricade tape</td>
<td>Caution or warning</td>
<td>An employee may enter the barricaded area only after reviewing the identified potential hazard and taking the necessary precautions.</td>
</tr>
<tr>
<td>Yellow-magenta barricade tape</td>
<td>Radioactive material or radiography in progress</td>
<td>Used to restrict access to a work area where radioactive material is present or where industrial radiography is being conducted.</td>
</tr>
<tr>
<td>Barricade tape color</td>
<td>Indicates….</td>
<td>Restrictions</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
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</tr>
<tr>
<td>Red barricade tape</td>
<td>Immediate danger</td>
<td>No one may enter a red barricaded area unless the supervisor responsible for the barricaded area specifically authorizes them. Examples include, but are not limited to, overhead rigging operations, work, crane or aerial work platform counterweight swing area, and pneumatic test areas.</td>
</tr>
<tr>
<td>Green barricade tape</td>
<td>Material storage or staging areas where no safety hazard exists</td>
<td>The use of green staging tape is site-specific to generating facilities and therefore, may not be used at all locations.</td>
</tr>
</tbody>
</table>

Protective (rigid) barricades shall consist of a guardrail system meeting the requirements of 29 CFR 1926.502(b). Protective barricades are required for, but not limited to, unattended floor and roof openings, unprotected floor edges or platforms, and ladderway floor openings.

Barricades shall be tagged on all sides and the tag shall include the following information:

- Company name.
- Name of the person responsible for the barricade for each shift where work is being performed.
- Means of contact (for example, radio or phone number).
- Date barricade was erected.
- Reason for barricade — include actual and/or potential hazard(s).

### 4.18 Hole Covers in Floors and Decks

The contractor shall comply with 29 CFR 1926.502(i), SH-2A-34, Floor Openings, Wall Openings, Grating Removal, and Guardrail Removal, or SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal, as appropriate.

Wooden hole covers shall, at a minimum, be constructed of three-quarter-inch plywood provided one dimension of the opening is less than 18 in.; otherwise, 2-in. lumber or doubled ¾-in. plywood is required.

Material or equipment shall not be stored on any hole cover.

The contractor shall identify hole covers with warning labels as prescribed in 29 CFR 1926.502(i)(4).
4.19 Non-English Speaking Workforce

The contractor shall at all times assure that an English-speaking representative of the contractor is provided for non-English-speaking contractor employees and its subcontractors (“contractor workers”). The representative must have the ability to communicate with and translate the foreign language of all non-English-speaking contractor workers to assure that the ability to communicate vital information is readily available. If the non-English-speaking contractor workers are divided into work groups, it shall remain the responsibility of the contractor that an English-speaking representative of the contractor is provided so as to assure that the ability to communicate vital information is still readily available to all non-English-speaking contract workers.

The contractor represents and warrants that it has communicated and translated to its non-English-speaking workforce, including all information and training required by applicable laws and regulations and all other safety and health requirements, in addition to all job-related duties of the contract. These requirements include, but are not limited to OSHA, the contractor’s safety program, contractual safety requirements, JSAs, work instructions, procedures, safety data sheets, and the specific project safety plan for the work to be performed for the purchaser, in addition to any relevant hazards and special site conditions that the purchaser has notified the contractor may be encountered by the contractor or its workforce.

4.20 Tool Use and Inspection

All contractor tools and equipment shall be marked with the contractor’s name or a unique identifier to denote ownership.

All contractor tools shall be stored, used, and maintained in accordance with 29 CFR 1926 Subpart I. Additionally, all contractor tools and equipment shall be subject to inspection by the purchaser at any time while on the project site. The purchaser retains the right to prohibit or restrict the use of tools and equipment determined to be in unsafe working condition. The use of homemade tools is prohibited unless approved by the T&PS construction site manager or designee. The modification of tools and equipment is prohibited without the express written consent of the manufacturer or by the design of a registered professional engineer. The contractor shall make provisions to remove defective tools and equipment from service immediately by such means as DO NOT OPERATE tags or similar methods determined to be effective.

The use of personal knives is prohibited on T&PS sites.

Guards shall remain intact and used per manufacturer’s instructions.

Power tools shall be equipped with a positive pressure switch (dead-man switch).

Stepladders shall not exceed 12 ft in height

All ladders shall be type 1A, extra heavy duty. Metal ladders are prohibited.
All oxy-fuel burning and welding units shall be equipped with flashback arrestors installed between the regulator and the hose, and between the hose and the torch.

4.21 Use of Explosives

In the event the use of explosives is required under the contract, all blasting operations shall be conducted in strict accordance with 29 CFR 1926 Subpart U and any other applicable ordinance or regulation. Only experienced and licensed blasters shall perform blasting. The contractor shall acquire all licenses and/or permits applicable to the use of explosives. A whistle or siren shall be provided by the contractor and shall be sounded immediately before blasting. The contractor is responsible for assuring all persons are fully aware of the meaning of the signal and that all personnel and vehicles are cleared from the area where they might be injured or damage might occur as a result of the blasting. No blasting shall be performed without the written consent of the T&PS construction site manager.

4.22 Hazardous Waste Control and Disposal

The contractor shall not cause or permit to be released in connection with the work to be performed any hazardous wastes or toxic substances and/or any other waste, pollution, noxious gases or substances, or any other substances in violation of applicable laws, rules, and regulations.

The contractor is responsible for spill cleanup in accordance with applicable regulations.

The contractor shall properly package any hazardous waste or toxic substances that may be generated through the execution of its work for disposal by the purchaser.

The contractor shall store any hazardous waste generated only in designated, approved storage areas prior to shipment from the site.

4.23 Fire Protection


The contractor shall comply with the purchaser’s applicable hot-work permit systems.

The contractor shall provide adequate numbers of trained firewatches and fire extinguishers in locations to support and protect the scope of work. Firewatches may perform collateral duties that do not interfere with the fire prevention efforts.

For generating facilities that use Powder River Basin (PRB) coal, certain areas will require a firewatch on duty for 8 continuous hours after the completion of welding, cutting, or burning operations.
5.0 KEY CONTACT

For questions about the content or implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

The contractor and T&PS personnel shall file, store, and maintain all quality records throughout the construction project to completion in accordance with DC-01, Quality Records Requirements, and the Southern Company Record Retention Schedule.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
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<th>Reviewed by</th>
<th>Revised by</th>
<th>Remarks</th>
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<tr>
<td>Rev. 0</td>
<td>09/13/2016</td>
<td>Chad Kendrick and Bill Boyd</td>
<td>Project Safety Leadership Team</td>
<td>Bill Batts</td>
<td>Issued. This standard supersedes E&amp;CS procedure SH-1H, Contract Safety and Health Management.</td>
</tr>
<tr>
<td>Rev. 1</td>
<td>07/25/2017</td>
<td>Bruce Long and Bill Boyd</td>
<td>Project Safety Leadership Team</td>
<td>Bill Batts</td>
<td>This revision is a complete rewrite of standard SH-S-1H. No revision bars were applied. Significant changes in this revision include:</td>
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|          |        |             |             |            | • Revised 3.0, Responsibility, to reflect updated E&CS contract strategy.  
|          |        |             |             |            | • Deleted attachment A, Environmental, Health and Safety Specifications, and incorporated information in appropriate sections of 4.0, Standard.  
|          |        |             |             |            | • Deleted attachment B, Southern Company Contracts Manual, chapter IV, Contract Safety and substituted a link to chapter IV in 2.2, References.  
|          |        |             |             |            | • Moved documentation submission schedule from attachment C, Generation Projects Contractor Safety Documentation Requirements, to 4.5.3, EH&S Documentation Submission Schedule. |
|          | 10/30/2017 |            |             | Bill Batts | Added link to Southern Safety Tri-Lateral Stop Work Authority (2.2). |
| Rev. 2   | 03/05/2019 | Robin Hurst and Bill Boyd | Project Safety Leadership Team | Bill Batts | Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (4.10). |
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1I

Regulatory Agency Inspections

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<th>Rev. 1**</th>
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<td>05/09/2017</td>
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<tr>
<td>Revised By</td>
<td>Bill Batts, manager—Construction Safety and Health</td>
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<td>Project Services: Bill Boyd</td>
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<td>Project Support: Bruce Long</td>
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</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3  
1.1 Purpose .............................................................................................................................................. 3  
1.2 Scope .................................................................................................................................................. 3  

2.0 DEFINITIONS AND REFERENCES ...................................................................................... 3  
2.1 Definitions ........................................................................................................................................... 3  
2.2 References ......................................................................................................................................... 3  

3.0 RESPONSIBILITY ..................................................................................................................... 3  
3.1 Construction Site Manager ................................................................................................................. 3  
3.2 Startup Manager ............................................................................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................................................. 4  
3.4 Contractors ....................................................................................................................................... 4  

4.0 STANDARD .............................................................................................................................. 4  
4.1 Onsite Inspection – Operating Facility .............................................................................................. 4  
4.2 Onsite Inspection – Greenfield Construction Project ........................................................................ 4  
4.3 Employee Complaints ....................................................................................................................... 6  

5.0 KEY CONTACT ......................................................................................................................... 6  

6.0 QUALITY RECORDS .................................................................................................................. 6  

7.0 ATTACHMENTS ......................................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides guidelines for managing an inspection by a regulatory agency on an Technical and Project Solutions (T&PS) project.

1.2 Scope

The standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

Company practice is to admit any lawfully delegated government employee who, upon presentation of proper credentials from a local, state, or federal regulatory agency, has the authority to conduct a site/facility inspection.

Each T&PS project management team, in conjunction with the host operating company, shall develop a site-specific protocol for managing regulatory agency inspections of T&PS-managed construction activities. The protocol shall be reviewed with all T&PS employees, contractors, and site security personnel. If an inspection occurs, T&PS corporate management shall be notified immediately or as soon as practical.

4.1 **Onsite Inspection – Operating Facility**

If a regulatory agency compliance officer arrives to conduct an inspection of the construction project, the T&PS construction site manager or site safety professional shall go the security gate to meet with the compliance officer to verify the individual’s credentials. Concurrently, the host operating department representative shall be notified, and the site’s protocol for managing regulatory agency inspections shall be implemented.

4.2 **Onsite Inspection – Greenfield Construction Project**

If a regulatory agency compliance officer arrives to conduct an inspection of the construction project, the T&PS site manager or site safety professional shall go to the
security gate to meet with the compliance officer to verify the individual’s credentials. If
the credentials of the regulatory agency compliance officer are appropriate, the
compliance officer shall be escorted directly to the site manager’s office to discuss the
following:

- The nature of the inspection: random, scheduled, or complaint. If complaint, request
  a copy.
- Activity and personnel being inspected: Southern Company, contractors, or both.
- Scope of the inspection: complaint, limited to a specific contractor, activity, or area;
  or wall-to-wall.
- Clarify the role of Southern Company as the site owner and that each employer
  working on the site has responsibility for his or her own regulatory compliance.
- Review safety requirements applicable to the compliance officer during the field
  inspection.
- Explain Southern Company’s desire to be present during the opening conference,
  field inspection, and closing conference involving site contractors.

4.2.1 General Guidelines

- Treat inspectors in a courteous and professional manner.
- Answer all pertinent questions, but do not volunteer information. A U.S.
  Occupational Safety and Health Administration (OSHA) compliance officer is entitled
to see OSHA injury forms, written policies, and training records.
- Do not sign any forms or statements during any phase of the inspection.
- The inspector should be escorted to the specific location to be inspected. The path
  should be the one that reveals the least of the rest of the workplace or employees at
  work that do not relate to the inspection scope.
- Any photographs, measurements, samples, and so forth taken by the inspector
  should be duplicated if at all possible.
- Notes should be taken to document the activities and comments of the inspector.
- Ensure each contractor being inspected has a management/supervisory
  representative present while that contractor’s activity is being inspected. The
  contractor’s representative shall respond to inquiries from the inspector regarding the
  contractor’s work activity.
4.3 Employee Complaints

Site contractors shall notify T&PS site management if the contractor receives an inquiry from OSHA regarding an employee complaint arising from activities on the construction site. The contractor shall investigate the complaint and share his or her response to OSHA with T&PS prior to its submittal.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-1I, Regulatory Agency Inspections.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1J

Incident Investigation

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</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
  3.1 Construction Site Manager .................................................................................... 4
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD ............................................................................................................... 4
  4.1 General .................................................................................................................. 4
  4.2 Investigation of T&PS Construction Incidents ........................................................ 5
  4.3 Investigation of Contractor Incidents ...................................................................... 5
  4.4 Investigation Reports ............................................................................................. 7
  4.5 Corrective Actions ................................................................................................. 7
  4.6 General Investigation Process Requirements ........................................................ 7

5.0 KEY CONTACT ......................................................................................................... 8

6.0 QUALITY RECORDS ................................................................................................ 8

7.0 ATTACHMENTS ....................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for investigating incidents involving Technical and Project Solutions (T&PS) projects and/or contractor personnel or property.

1.2 Scope

This standard applies to T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

incident – An unplanned, undesired event that adversely affects the completion of a task. Incidents include injuries, illnesses, property damage, near hits, and chemical spills.

2.2 References

- Generation Employee Injury Report.
- Generation Vehicular Accident Report.
- Form 1J.1, Initial Communication of Injury, Illness, or Incident.
- Form 1J.2, Injury, Illness, or Incident Investigation Report.
- SCG-SH-0050, Safety Incident RCA Process.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- When an injury-producing incident occurs, the priority shall be obtaining appropriate medical treatment for injured personnel and securing the scene to prevent additional injuries.

- All incidents shall be investigated. The investigation effort shall be commensurate with the results, or potential results, of the incident.
• The purpose of the investigation is to determine the facts associated with the event to develop preventive measures.

• The investigation shall determine and document facts, not opinions or subjective commentary, including the following information:
  – Who was involved.
  – What happened.
  – When it happened.
  – Where it happened.
  – How it happened.
  – Why it happened.
  – What should be done to prevent similar events.

4.2 Investigation of T&PS Construction Incidents

The following requirements apply to the investigation of an incident involving T&PS employees:

• A formal investigation with the participation of a T&PS safety professional shall be conducted for all U.S. Occupational Safety and Health Administration (OSHA)-recordable injuries and other specific incidents as determined by management.

• The formal investigation report shall be submitted to T&PS management within 1 week of the incident.

• The investigation of business-related vehicle accidents shall be conducted, at a minimum, by the supervisor and employee using the Generation Vehicular Accident Report.

• For incidents that require a formal root cause analysis, investigators shall follow SCG-SH-0050, Safety Incident RCA Process.

4.3 Investigation of Contractor Incidents

The following requirements apply to the investigation of an incident involving workers employed by a contractor:

• At times, the investigation of some contractor incidents, such as personnel fall incidents, lost workday injuries, crane incidents, and fires, should include T&PS personnel to ensure the contractor performs a quality job of determining the facts, root causes, and adequate corrective actions, because these incidents have the potential to impact T&PS. T&PS involvement is especially important when the incident has the potential to injure Southern Company personnel or damage critical equipment.
• The contractor shall immediately notify the T&PS construction site manager or his or her designee of such incidents so as to provide T&PS personnel the opportunity to observe the contractor's investigation of contractor incidents.

• For all incidents, an initial report is required within 24 hours with initial information and determination of incident severity. For injury incidents, the report shall include a preliminary determination, that is, first aid, doctor visit, recordable, lost time, and other information of immediate importance. Form 1J.1, T&PS Initial Report of Injury, Illness, or Incident (ICR) shall be used unless the contractor's own report covers the required information and has been reviewed and approved for use by site management. The initial report shall be accompanied by pertinent documents such as the job safety analysis (JSA) and photographs if available.

• The results of the contractor's full investigation shall be documented in a final report and shared with T&PS within 7 calendar days of the event. The contractor's report will include an adequate explanation of who, what, when, where, how, and why along with a final injury classification determination, and corrective actions to prevent similar events. All supporting documents, including, but not limited to, JSAs, photographs, witness statements (unless privacy is a concern), damage estimates, training documents, certifications, and so forth, are to be included with the final report. All employee personal identification information such as Social Security numbers and driver's license numbers should be redacted from the final report. See form 1J.2, Injury, Illness, or Incident Investigation Report.

• For minor incidents only, the ICR may be used in lieu of the full investigation report with site management's approval. The ICR must have an adequate description of the incident and the immediate corrective actions must be adequate to prevent similar incidents in the future.

• In addition to the investigation report, a formal root cause analysis (RCA) performed by the contractor will be required for, but not limited to:
  - An incident resulting in injury(-ies) classified as OSHA Recordable.
  - Lost workday case.
  - Damage to plant equipment affecting reliability.
  - A reportable environmental incident.
  - Upon request of T&PS management.

Exceptions to the above list may be granted by T&PS management based on the circumstances of the case. For example, a bee sting that resulted in medical treatment beyond first aid would not normally require an RCA.

The RCA report will be made available to T&PS within 21 days of the initial incident.

• The contractor's senior site representative shall review and sign all contractor investigation reports.

• The investigation of contractor incidents involving injury or potential injury to Southern Company personnel or significant damage to Southern Company
equipment, and/or materials shall be led by T&PS or the appropriate operating company with appropriate participation by T&PS, the involved operating company, and involved contractors. The results of the investigation shall be documented and reviewed by Legal prior to being issued.

- The investigation of incidents resulting in serious injury to contractor personnel because of Southern Company activities, facility operation, or equipment shall be investigated by T&PS and/or the appropriate operating company in accordance with the directions and consultation received from the operating company risk management group. The results of the investigation shall be documented and reviewed by Legal prior to being issued.

4.4 Investigation Reports

The investigation report of all investigations conducted by T&PS shall use form 1J.2, Injury, Illness, or Incident Investigation Report.

Contractors may use their own company report formats as long as the report includes, at a minimum, the same information found on form 1J.2, and the form has been reviewed and approved by site management.

4.5 Corrective Actions

Contractors shall maintain a log of all corrective actions developed as a result of any incident. The purpose of this log is to ensure corrective actions are fully implemented to prevent recurrence. Contractors shall review the log on a monthly basis and indicate the implementation status of the action. The log shall be made available for review by T&PS upon request.

4.6 General Investigation Process Requirements

In general, an accident investigation shall proceed as follows:

1. Establish an investigation committee.
2. Visit the scene of the incident and take photographs from all pertinent angles. Photographs shall be taken by a person approved by the T&PS construction site manager. All photographs included with the accident investigation shall be reviewed and approved by the T&PS construction site manager prior to release.
3. Collect and secure pertinent physical evidence such as tools, materials, and equipment.
4. One at a time, question involved personnel, supervision, and witnesses.
5. Determine the sequence of events associated with the incident: who did what, when, where, how, and why.

6. Determine the planning efforts and instructions given.

7. Determine personnel training history, work experience, physical conditions, and mental state.

8. Evaluate involved protective, mechanical, and electrical equipment to determine any contribution these items may have had to the event.

9. Review pertinent procedures, standards, and guidelines associated with the work activity.

10. Determine facts versus opinions, including opinions based on what was readily observable.

5.0 KEY CONTACT

For questions regarding the content or implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Human Performance Culpability Matrix Guidelines.
Attachment B, Historical Summary of Changes
Attachment A - Human Performance Culpability Matrix Guidelines

A1.0 PURPOSE

This guidance document provides a useful tool to aid in determining the culpability level of an individual in response to events or close calls caused by human error when completing form 1J2, Injury, Illness, or Incident Investigation Form.

A2.0 DEFINITIONS AND REFERENCES

A2.1 Definitions

culpability – Refers to a state of blameworthiness (for example, deserving of blame for an error of ignorance, omission, or negligence). Another way to look at it may be that the degree of culpability is roughly equivalent to the amount of personal responsibility one would expect to accept for an act (behavior).

knowledge-based error (KB) (patterns) – A diagnosis error; these errors are flaws in problem solving and decisionmaking based upon erroneous mental representation or an inaccurate mental picture of the situation, typically based upon insufficient information about the situation.

rule-based error (RB) (if-then) – An interpretation error; here, one does not fully understand or detect conditions calling for a particular response. Examples include the application of the wrong procedure, standard, or guideline to the situation, or application of the correct procedure, standard, or guideline to an inaccurately perceived situation.

skill-based error (SB) (auto) – An execution-type error; involves a correct understanding of the situation, followed by an unintentional omission, inadvertent slip, preoccupation (resulting in missing a changing condition), inattention, or over attentiveness to a point at which pertinent information is missed.

A2.2 References


A3.0 APPROACH

The Human Performance Culpability Matrix process may be used in responding to incident investigations, involving injury and near hits. After facts and timelines are gathered from the initial investigation and interviews are completed, the results can be used to understand the mindset of the personnel involved, the organizational influences, and the context of the situation. These factors then can be applied to the culpability matrix to determine if the situation occurred due to individual (knowledge, rule, or skill-based) errors or organizational process weaknesses. Knowing the error mode of a situation will aid in determining corrective actions that are appropriate for addressing individual errors and organizational process weaknesses. The results of the Human Performance Culpability Matrix can be used as an aid in determining corrective actions, control measures, recovery actions, and lessons learned.

Fewer and fewer errors will be committed where actions are taken in response to human error only. Conscientious workers will take personal responsibility for their actions and will respond accordingly as long as the rules, process, and consequences are equitable and clearly understood up front.

A4.0 USE OF CULPABILITY MATRIX TOOL

The Culpability Matrix provides a decision tree to be used in evaluating an error. See figure 1, Culpability Matrix Decision Tree.
The key questions on the culpability matrix relate to intention. Unintended actions define slips and lapses – in general, the least blameworthy of errors – while unintended consequences cover mistakes and violations.

The supervisor and worker should work together to agree upon the specific error being evaluated and strive for consensus on each of the decision points. The purpose of the review is to identify the method of best control; not to question competence. Also, during the evaluation it is important to understand the type of error being evaluated: rule, skill, or knowledge-based (see figure 2, Performance Modes). This determination will help you determine what types of corrective measures are required.
Were Actions As Intended

If both the actions and consequences were intended, the situation is out of the error realm and into the arena of intentional acts. These acts are possibly sabotage, malevolent damage, willful violation, and so forth. If the actions were not as intended (“I meant to push button A, but somehow pushed button B”), the accident was probably dealing with a mental slip or lapse. Such errors generally are skill-based errors.

Were the Consequences Intended?

If the actions were as intended but the consequences were not, the error was most likely a mistake or violation (not willful). These violations are rule and knowledge-based errors. If the answer to this question is NO, proceed to the next section. If YES, the situation probably is not an error at all (intentional act) and needs the attention of management.

Did the employee have medical restrictions

Was the employee on medication that could cause impairment either physically or mentally? Did the employee have restrictions such as not working at height or limitations on the amount that they could physically lift?
<table>
<thead>
<tr>
<th>Block</th>
<th>Explanation</th>
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<tbody>
<tr>
<td><strong>Were the restrictions communicated and clearly understood</strong></td>
<td>Did the employee report the restrictions to management and supervision? Were the restriction understood by the employer and employee? Was the employee working in a manner that was inconsistent with the restrictions?</td>
</tr>
<tr>
<td><strong>Did the employee knowingly violate a requirement</strong></td>
<td>Reasonable requirements and expectations consist of guidance communicated through procedures, standards, guidelines, policies, work practices, verbally, or just plain common sense. Once again, it is necessary to establish the intent of the individual being evaluated. If it is established that the individual was aware of the expectations, but consciously elected not to conform to those expectations, the answer would be YES. If the answer is YES, proceed to the next section. If NO, proceed to the substitution test. The worker’s intent will come into play later.</td>
</tr>
<tr>
<td><strong>Were the requirements available, workable, intelligible, and correct</strong></td>
<td>The availability, workability, and accuracy of reasonable requirements and expectations are an important concept. Once again, this aspect must be evaluated from the perspective of the immediate user. Gaining an understanding of the worker’s perception on this matter is important. If it is established that the reasonable expectations were readily available, workable, intelligible and correct, the answer would be YES.</td>
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<td>If it is established or suspected that noncompliance has become more or less automatic (as happens in the case of routine shortcuts), the supervisor should question the accuracy of the requirements.</td>
</tr>
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<td>Violations generally involve a conscious decision on the part of the individual to bend or break the rules. However, while the actions are deliberate, the potential bad consequences are not, in contrast to sabotage and so forth. If in establishing the intent (or motive) of the violation, it can be argued that “the individual was attempting to achieve the proper desired outcome but the situation at hand rendered the expectations unsuitable,” the answer will most likely be NO to this question.</td>
</tr>
<tr>
<td></td>
<td>If the answer to this question is YES, there was a possible reckless violation. If the answer was NO or cannot be established, the error or violation may have been system induced.</td>
</tr>
<tr>
<td></td>
<td>If it is determined that the violation may have been system induced, proceed to the substitution test. The supervisor must also consider another error or violation at this point. The expectation to stop and seek additional guidance in situations like these (unworkable procedures) is generally understood by workers.</td>
</tr>
<tr>
<td></td>
<td>Failure to adhere to this and other expectations of this nature should be evaluated as separate acts.</td>
</tr>
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<td>Block</td>
<td>Explanation</td>
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<tr>
<td>Did the employee pass the substitution test</td>
<td>This step is probably the most critical and difficult evaluation to conduct. To evaluate this question, the supervisor needs to perform the following mental test.</td>
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<tr>
<td></td>
<td>• Substitute the individual concerned with someone else coming from the same domain of activity, possessing comparable qualifications and experience.</td>
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<td></td>
<td>• Then ask the following question, “In the light of how events unfolded and were perceived by those involved in real time, is it likely that this new individual would have behaved any differently?”</td>
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<td></td>
<td>If the answer is “probably not,” apportioning blame has no material role to play other than possibly to obscure potential systemic deficiencies and blame one of the victims.</td>
</tr>
<tr>
<td></td>
<td>One method of conducting the substitution test is to ask approximately 10 of the individual’s peers, “Given the circumstances that prevailed at the time, could you be sure that you would not have committed the same or similar unsafe act (error)?”</td>
</tr>
<tr>
<td></td>
<td>If the answer again is “probably not”, blame is inappropriate. The answer to the substitution test is YES. If the answer to the substitution test is YES, the error is most likely blameless. The supervisor should proceed to the section addressing whether or not the individual has a history of unsafe acts.</td>
</tr>
<tr>
<td></td>
<td>If the substitution test is not passed, proceed along the NO path and evaluate the next section.</td>
</tr>
<tr>
<td>Did the employee have a history of unsafe acts</td>
<td>People vary widely and consistently in their liability to everyday slips and lapses. Some individuals are considerably more absentminded than others. For the purpose of determining a history of unsafe acts, the supervisor should consider only the documented events involving this individual in the previous 6 months. If the person in question has a history of unsafe acts or errors, it does not necessarily bear upon the culpability of the error committed on this particular occasion. However, it probably indicates the necessity for corrective training or other intervention to reinforce desired performance and take full advantage of lessons learned. Absentmindedness has nothing to do with ability or intelligence. Someone who continually commits errors along these lines would obviously require some individual assistance in overcoming these tendencies. The emphasis here is on improving this individual’s performance in their current position or considering other career options that they may be more suited to. Discipline should not be an automatic response. It should only be implemented after carefully considering all options, and in response to a specific problem.</td>
</tr>
</tbody>
</table>
Were there deficiencies in training, in employee selection or was the employee inexperience?

If it is established that there were no deficiencies in the individual’s training, selection, or experience, a possible negligent error must be considered. In other words, should this task have been assigned to this person in the first place? If there are questions about the person’s training, qualification or selection for the task, there is a likelihood that the unsafe act was a system-induced error.

NOTE: The dotted line from the Possible Intentional Violation block to the Pass Substitution Test block indicates the need to perform the Pass Substitution Test to determine the degree the organization has influenced the behavior.

A6.0 SUGGESTIONS FOR CORRECTIVE ACTIONS

The following are example suggestions for corrective actions based upon the type of error.

- **Rule-based errors:**
  - Clearly delineate key decision points in a procedure, standard, or guideline.
  - Eliminate procedure, standard, or guideline inconsistencies.
  - Simplify procedures, standards, or guidelines.
  - Train individuals to skill-based mode (fluency).
  - Eliminate drawing and technical manual errors.
  - Improve knowledge of procedure, standard, or guideline bases.
  - Practice using multiple, alternative indications.
  - Promote practice of verbalizing intentions.
  - Practice on transitions between procedures, standards, or guidelines.
  - Eliminate use of rules of thumb.

- **Skill-based errors:**
  - Install blocking devices.
  - Identify the critical steps.
  - Increase supervision.
  - Avoid multimode switches.
  - If distracted, reread previous two or three steps in the procedure, standard, or guideline.
  - Improve planning.
  - Improve personal experience with the task.
  - Eliminate unnecessary time pressure through scheduling.
  - Rotate individuals.
  - Practice using skills to maintain job proficiency.
  - Promote the value of peer checking.
- Improve human factors identification and layout of controls.

- Knowledge-based errors:
  - Practice, practice, practice using methodical problem-solving techniques.
  - Practice using team and communication skills.
  - Assign the role of a devil’s advocate.
  - Train on and verify accuracy of system and social mental model.
  - Use system or component knowledge and fundamental principles of science in unfamiliar problem situations.

It is not desirable to default to the blameless error mode continually. Even though many experts claim “a great majority of unsafe acts in high tech environments fall in this category since the system or organization induces most of the errors,” there are strong arguments in favor of disciplining the few who commit egregious unsafe acts. In most organizations, the people in the front line know very well who the “cowboys” and habitual rule benders are. Seeing them get away with it on a daily basis does little for morale or the credibility of the disciplinary process.

Fair and consistent application of an accountability model serves to reinforce where the boundaries of acceptable behavior lie.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-1J, Incident Investigation.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-1K

Procedure and Standard Deviation Approval Process

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
1.1 Purpose .................................................................................................................................. 3
1.2 Scope ...................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ..................................................................................... 3
2.1 Definitions ............................................................................................................................. 3
2.2 References ........................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................... 4
3.1 Construction Site Manager ................................................................................................. 4
3.2 Startup Manager .................................................................................................................. 4
3.3 Deviation Requestors ........................................................................................................... 4

4.0 PROCEDURE ....................................................................................................................... 4
4.1 Deviations ............................................................................................................................ 4
4.2 Contractors .......................................................................................................................... 5

5.0 KEY CONTACT .................................................................................................................... 5

6.0 QUALITY RECORDS .......................................................................................................... 5

7.0 ATTACHMENTS .................................................................................................................. 6
1.0  PURPOSE AND SCOPE

1.1  Purpose

This procedure provides requirements for approving deviations from environmental, health, and safety (EH&S) procedures or standards contained in the EH&S Procedures, Standards, and Guidelines library in Playbook 2.0 and in the Technical and Project Solutions (T&PS) Construction EH&S Policy and Procedure Manual for work on T&PS projects.

1.2  Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0  DEFINITIONS AND REFERENCES

2.1  Definitions

None.

2.2  References

EH&S Procedures, Standards, and Guidelines library in Playbook 2.0
T&PS Construction EH&S Policy and Procedure Manual

NOTE


Form 1K.1, Procedure and Standards Deviation Request
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 Deviations

Requests for deviations must be in writing and include the procedure or standard to be deviated from, the justification for the deviation, the engineering or administrative controls to be implemented to ensure an acceptable level of risk for the operation, and whether the deviation is a one-time event or for the duration of the project. Any Southern Company Operations or contractor deviation requires the following written approvals:
• Project manager.
• Construction site manager.
• Site and regional safety and health manager.

A copy of each approved request must be provided to the following personnel immediately:
• General manager–Projects and Construction for the affected region.
• General manager–Project Services.
• Vice president–Projects and Construction.
• Manager–Construction Safety and Health.

T&PS-originated deviation requests shall follow these steps for approval.

T&PS personnel shall not approve any deviation request, whether T&PS originated or contractor originated, that violates Southern Company policy, local, state, federal law, or regulatory requirement.

4.2 Contractors

When contractors request a deviation from an T&PS or facility-specific EH&S procedure or standard, they shall first complete form 1K.1, Procedure and Standard Deviation Request. Form 1K.1 must be completed and accompanied with all supporting materials to justify the deviation and approved by the contractor’s corporate offices.

The contractor’s completed and approved form 1K.1 shall then be submitted to construction site manager for approval and routing to additional T&PS approvers listed in 4.1, Deviations.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0 12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker

Remarks:
Issued.

Rev. 1 03/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Will Taylor

Remarks.
Added 1.2, Scope, and 3.1, Deviation Requestors. Added language requiring the use of the procedure deviation form.

Rev. 2 07/30/2012
Approved by PCT chair
Revised by Bob Fitzgerald

Remarks.
Revision approved by PCT chair as nonsubstantive change.

Rev. 3 05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks.

05/15/2019
Organization name changed.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1L

EH&S Standard and Guideline Development

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1.0 PURPOSE AND SCOPE .................................................................................. 3
  1.1 Purpose .................................................................................................. 3
  1.2 Scope .................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .................................................................. 3
  2.1 Definitions .............................................................................................. 3
  2.2 References ............................................................................................. 3

3.0 RESPONSIBILITY .......................................................................................... 4
  3.1 Construction Site Manager ..................................................................... 4
  3.2 Startup Manager ..................................................................................... 4
  3.3 Technical Publications ........................................................................... 4

4.0 STANDARD .................................................................................................. 4
  4.1 General .................................................................................................... 4
  4.2 Standards ................................................................................................ 5
  4.3 Guidelines ............................................................................................... 6

5.0 KEY CONTACT ............................................................................................ 6

6.0 QUALITY RECORDS .................................................................................... 6

7.0 ATTACHMENTS ........................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides a method for Technical and Project Solutions (T&PS) personnel to propose new and revised construction, safety, and health environmental, health, and safety (EH&S) standards and guidelines.

1.2 Scope

This standard applies to all T&PS personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference. This standard supplements T&PS process ECS-AD-01B, Reviewing and Approving Procedures in E&CS, and specifically supports Construction Safety and Health EH&S standards and guidelines.

EH&S procedures will continue to be proposed, reviewed, approved, published, trained to, and revised following the requirements of process ECS-AD-01B.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

guideline – A document that identifies a suggested expectation or course of action, or provides options that allow the use of judgment to achieve the desired results.

policy – A document that defines management’s expectations with regard to a specific practice or an organizational goal or objective.

procedure – A document that provides detailed instructions for specific tasks.

standard – A document that identifies the criteria or rules upon which other documentation, nomenclature, or actions are based.

2.2 References

T&PS process ECS-AD-01B, Reviewing and Approving Procedures in E&CS
Style Guide for E&CS Procedures and Standards
EH&S Procedures, Standards, and Guidelines library in Playbook 2.0
T&PS Construction EH&S Policy and Procedure Manual
NOTE


3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Technical Publications

Technical Publications is responsible for processing standards and guidelines for client review similarly to process ECS-AD-01B.

4.0 STANDARD

4.1 General

In addition to policies and procedures, Construction Safety and Health maintains standards and guidelines. The manager—Construction Safety and Health will determine the appropriate type for each construction safety and health document.

For the purposes of T&PS Construction Safety and Health, a procedure typically involves a step-by-step process, a work-permit system, or similar requirements as determined by the manager—Construction Safety and Health.
4.2 Standards

For the purposes of Construction Safety and Health, standards typically do not involve a step-by-step process or a work-permit system. Standards may include a requirement for other types of forms such as checklists, inspection logs, and assessments.

- Standards may prohibit or mandate certain actions, or establish requirements.
- Standards may or may not result in the production of a quality record.
- Standards are part of the contract document. Compliance with standards is mandatory.
- Standards will follow the format requirements specified in the Style Guide for E&CS Procedures and Standards.
- Standards will be developed, revised, and reviewed as follows:
  1. The manager—Construction Safety and Health will assign a subject matter expert (SME) to develop and draft the proposed standard.
  2. When the initial draft of the proposed standard is complete, the SME will provide the draft document to the PDC.
  3. The PDC will route the document to Technical Publications (Tech Pubs) for document preparation, including editing and formatting. Tech Pubs will then return the document to the PDC.
  4. The manager—Construction Safety and Health will ensure any affected department has the opportunity to review and approve the standard. The approval matrix included on the title page shall indicate the department and approving authority. Any revisions as a result of the review shall follow the process as outlined above.
  5. After review by affected departments, if any, the PDC will route the document to Tech Pubs to incorporate suggested changes.
  6. The PDC will submit the proposed standard to the PSLT for review and comment.
  7. The PDC will address any comments from the PSLT and route through Tech Pubs for final review and editing, if needed.
  8. The PDC will route the final draft of the proposed standard for management approval.
  9. The PDC will notify Tech Pubs on receiving management approval.
  10. Tech Pubs will publish the standard to the T&PS procedures SharePoint (Playbook 2.0) site.

The manager—Construction Safety and Health ensures training requirements are met for standards.
Standards are reviewed every 3 years or sooner, as needed.

4.3 **Guidelines**

Construction Safety and Health will develop guidelines as needed. The manager—Construction Safety and Health is the approving authority for guidelines.

Compliance with a guideline is recommended but is not mandatory.

The PDC will route guidelines through Tech Pubs for editing, formatting, and publishing.

5.0 **KEY CONTACT**

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 **QUALITY RECORDS**

None.

7.0 **ATTACHMENTS**

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

<table>
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<td>Reviewed by Project Safety Leadership Team</td>
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<td>Issued. This standard supersedes E&amp;CS procedure SH-1L, EH&amp;S Program Improvement and Error Correction Form.</td>
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<td>Revised by Bill Batts</td>
<td>Revised title of standard from EH&amp;S Program Improvement and Error Correction Form to EH&amp;S Standard and Guideline Development to reflect changed nature of the standard. Revised 1.1, Purpose, and 1.2, Scope. Added definitions (2.1). Added references (2.2); deleted reference and link to form. Revised responsibility for manager—Construction Safety and Health (3.1). Added responsibility for PDC—CS&amp;H (3.2), PSLT (3.3), and Tech Pubs (3.4). Added 4.1, General; 4.2, Standards; and 4.3, Guidelines. Deleted EH&amp;S Program Improvement and Error Correction Form (was 4.1). Updated attachment A, Historical Summary of Changes.</td>
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<td></td>
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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>PURPOSE AND SCOPE</td>
<td>3</td>
</tr>
<tr>
<td>1.1</td>
<td>Purpose</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Scope</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>3.2</td>
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<td>3</td>
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<tr>
<td>3.3</td>
<td>Startup Manager</td>
<td>3</td>
</tr>
<tr>
<td>3.4</td>
<td>Construction Site Management</td>
<td>4</td>
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<td>3.5</td>
<td>Construction Site Safety Committee</td>
<td>4</td>
</tr>
<tr>
<td>4.0</td>
<td>GUIDELINE</td>
<td>4</td>
</tr>
<tr>
<td>4.1</td>
<td>Construction Project Awards</td>
<td>4</td>
</tr>
<tr>
<td>4.2</td>
<td>Contractor Award</td>
<td>5</td>
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<td>4.3</td>
<td>Individual Awards</td>
<td>6</td>
</tr>
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<td>5.0</td>
<td>KEY CONTACT</td>
<td>8</td>
</tr>
<tr>
<td>6.0</td>
<td>QUALITY RECORDS</td>
<td>8</td>
</tr>
<tr>
<td>7.0</td>
<td>ATTACHMENTS</td>
<td>8</td>
</tr>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This guideline provides guidance for recognizing superior safety and health (S&H) performance at Technical and Project Solutions (T&PS) projects and describes the formal Construction Safety and Health awards program.

1.2 Scope

This guideline applies to all T&PS project-assigned personnel and contractors whose contract document includes this guideline by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Safety and Health Manager

The Construction Safety and Health manager is responsible for ensuring proper resources are committed to recognize and award projects, contractors, and individuals through the implementation of this guideline.

3.2 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this guideline for recognition and award program components that fall under his or her scope.

3.3 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this guideline for recognition and award program components that fall under his or her scope.
3.4 **Construction Site Management**

Construction site management works with the Construction Site Safety Committee to determine the project milestones and awards.

3.5 **Construction Site Safety Committee**

A project-based committee, such as the STEP Sustainability Committee, is responsible for working with the T&PS construction site manager and project management to determine the project milestones and awards, and designs and administers a site-specific Safe Worker Award program.

4.0 **GUIDELINE**

4.1 **Construction Project Awards**

4.1.1 **Construction Project Milestone Awards**

Appropriate milestones and awards will vary based on project size and duration.

Award examples include meals, mementos, shirts, and caps.

4.1.2 **QUEST Award – Quarterly Employee Safety Triumph**

The Quest Award trophy will be presented quarterly by the executive vice president (EVP)–T&PS or appropriate designee to the construction project with the best safety performance during the calendar quarter.

QUEST Award criteria include:

- Maintained a minimum STEP observance rate of 5 observances per 1,000 work hours.
- Maintained the highest Construction Safety and Health leading indicators metric score.
- Managed a project that has not caused an outage or damage to Southern Company property exceeding $10,000.
- Project work hours during the quarter total at least 10,000.
- Any tie between projects in meeting the award criteria will be broken based on the highest STEP observation rate during the quarter.
4.1.3 Safety Excellence Award

A Safety Excellence Award plaque will be presented annually by the vice president–Projects and Construction to all construction projects meeting the Safety Excellence Award criteria (calendar year performance include):

- Project work hours during the year total at least 40,000.
- Maintained a minimum STEP observation rate of 5 observations per 1,000 work hours in each month of operation.
- Completed the calendar year with a Construction Safety and Health leading indicators metric score above 2.90.
- Managed a project that has not caused an outage or damage to Southern Company property exceeding $10,000.

4.2 Contractor Award

4.2.1 Triangle Safety Award

A Triangle Safety Award plaque should be presented annually by the EVP–T&PS to each contractor company whose safety performance while working for T&PS during the calendar year meets the following criteria:

- Achieved top-quartile status for the STEP observation rate among Southern Company contractors AND maintained a minimum STEP observation rate of 5 observations per 1,000 work hours each month throughout the year for all work, including subcontracted work.
- Maintained 100-percent participation in project walk-downs and/or site assessments.
- Have zero open safety-related correction actions and achieved top-quartile status for timeliness of corrective action completion.
- Have zero open safety nonconformance reports (SNCRs) and achieved top-quartile status of contractors with fewest SNCRs issued.
- Have not caused an outage or damage to Southern Company property in excess of $10,000.
- The contractor’s work hours on T&PS projects exceed 100,000 including subcontracted work.

4.2.2 Triangle Safety Award Certificate

The Triangle Safety Award Certificate will be presented annually by the EVP–T&PS to each contractor company whose safety performance while working for T&PS during the
calendar year meets the criteria listed in 4.2.1, Triangle Safety Award, except that have 40,000 to 99,000 hours worked on T&PS projects.

4.2.3 Triangle Safety Award Letter of Appreciation

The Triangle Safety Award Letter of Appreciation will be presented by the EVP–T&PS to each contractor company whose safety performance while working for T&PS during the calendar year meets the criteria listed in 4.2.1, except that have worked less than 40,000 hours on T&PS projects.

4.3 Individual Awards

4.3.1 Lifesaver Award

The Lifesaver Award is intended to recognize project personnel including contractors and their subcontractors who have participated in the active lifesaving of others (for example, performing CPR or saving a drowning individual) or otherwise intervened in an imminently dangerous life-threatening situation.

Recognition includes a plaque and an article on Southern Today and may be accompanied by an award.

4.3.2 Safe Worker Award

The Safe Worker Award is a program designed and administered by a project-based safety committee, such as the project STEP Sustainability Committee, and is intended to recognize project personnel, including contractors and their subcontractors, who have demonstrated exceptional safe work practices and/or safety leadership and who have been nominated by their supervision.

Individuals in supervisory roles must have completed Southern Safety Trilateral Supervisor Safety Training to be eligible. Individuals must have completed STEP (Safety Through Everyone’s Participation) observer training and demonstrate active involvement. In the event STEP has not been introduced in the employee’s location or business line, consideration will be given for other safety role model behaviors such as:

- Actively pursuing a safety culture change in the respective location.
- Working with other safety organizations to facilitate safe work practices.
- Actively participating in safety meetings.
- Visibly leading safety initiatives with action-oriented behavior.
- Recognizing others for accomplishments and giving feedback.
• Taking the time to observe coworkers doing work safely and providing positive feedback.

• Demonstrating personal responsibility for the safety of others.

Award examples include gas cards, phone cards, gift certificates, hats, shirts, and preferred parking spots.

4.3.3 Safety Leadership Award

A Safety Leadership Award will be presented semi-annually by the EVP–T&PS to qualifying T&PS employees such as managers, supervisors, coordinators, group leaders, and engineers who are safety role models for the organization and meet the Safety Leadership Award criteria. The Safety Leadership Award criteria include:

• Individual has significantly contributed to improving the safety process and/or safety culture within his or her group, project, or T&PS.

• Individual must portray the characteristics of a safety leader, advocate, and champion.

• Individual must have completed STEP training and demonstrate active involvement. In the event STEP has not been introduced in a location, consideration will be given for other safety role model behaviors, such as:
  – Active life saving of others (for example, performing CPR, saving a drowning individual, certification in first aid and/or CPR).
  – Actively pursuing a safety culture change in the respective location.
  – Working with other safety organizations to facilitate safe work practices.
  – Actively participating in safety meetings.
  – Visibly leading safety initiatives; action-oriented behavior.
  – Recognizing others for accomplishments and giving feedback.
  – Taking the time to observe coworkers doing work safely and providing positive feedback.
  – Demonstrating personal responsibility for the safety of others.

4.3.3.1 Safety Leadership Award Nomination Process

The Safety Leadership Award will be awarded by region. The Safety Leadership Award nomination process should adhere to the following guidelines:

• Projects should submit a nomination semi-annually.

• Any member of T&PS management may nominate an individual.

• The nomination should be written (in essay form) and include descriptions of how the individual meets each of the three award criteria.
The nominations should be submitted to the general manager of Projects and Construction and the manager of Construction Safety and Health.

Nominations should be sent to the Project Safety Leadership Team (PSLT) for review and consideration for recommendation to the EVP–T&PS.

The EVP–T&PS should present the award.

4.3.3.2 *Items Included as Part of the Award*

The Safety Leadership Award should be comprised of the following items:

- Plaque.
- Green jacket (monogrammed).
- Green golf/polo style shirt (monogrammed).
- Picture and recognition on the company website, along with the nomination letter that was submitted.

5.0 **KEY CONTACT**

For questions about the content and implementation of this guideline, contact the manager–Construction Safety and Health.

6.0 **QUALITY RECORDS**

None.

7.0 **ATTACHMENTS**

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This guideline supersedes E&CS procedure SH-1M, Safety Performance Recognition Programs.

Rev. 1
03/21/2017
Approved by Bill Batts
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Major revisions in 3.0, 4.1.1, 4.1.2, 4.1.3, 4.2.1, 4.2.2, 4.2.3, 4.3.1, 4.3.2, 4.3.3.1, and 5.0.

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1N

Planning and Hazard Analysis

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| Revised By | Bill Batts, manager-Construction Safety and Health |
|Reviewed By | Project Safety Leadership Team |

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<td>Project Planning and Services</td>
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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE .................................................................................................................. 3
  1.1 Purpose ......................................................................................................................................... 3
  1.2 Scope ............................................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES ................................................................................................. 3
  2.1 Definitions ...................................................................................................................................... 3
  2.2 References .................................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................................. 4
  3.1 T&PS Project Manager ................................................................................................................. 4
  3.2 Startup Manager ........................................................................................................................... 4
  3.3 T&PS Supervisors ......................................................................................................................... 4
  3.4 Contractors .................................................................................................................................... 4

4.0 STANDARD ....................................................................................................................................... 4
  4.1 Project Management Requirements ............................................................................................. 4
  4.2 Job Safety Analysis (JSA) ............................................................................................................. 5

5.0 KEY CONTACT ................................................................................................................................. 6

6.0 QUALITY RECORDS ........................................................................................................................ 6

7.0 ATTACHMENTS ............................................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose
This standard provides planning and hazard analysis requirements for projects and tasks in order to identify and control potential environmental, health, and safety (EH&S) risks and compliance issues on Technical and Project Solutions (T&PS) projects.

1.2 Scope
This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions
scope book – Documented results of the conceptual phases of the Project Delivery Process for a specific project. Documents include a scope, engineering drawings, and detailed cost estimates and schedules.

2.2 References
Regulatory references applicable to this standard will include, but may not be limited to, the following:

- U.S. Occupational Safety and Health Administration, Training Requirements in OSHA Standards and Training Guidelines, OSHA publication no. 2254, 1995 (revised).
- 29 CFR 1926.21, Safety Training and Education.
- Forms:
  - 1N.1-EN, JSA: Job Safety Analysis, Pre-Work/Pre-Task Planning Tool.
  - 1N.1-SP, JSA: Job Safety Analysis (Spanish).
  - 1N.2, JSA Supplement – Specialty Work / High Risk Work.
  - 1N.3, JSA for Ash Basin Work.
3.0 RESPONSIBILITY

3.1 T&PS Project Manager
The T&PS project manager is responsible for the following:

- Develop a project EH&S policies and procedures manual implementation plan for each new major project in accordance with the engineering, procurement and construction (EPC) strategy in the project’s scope book.
- Conduct a project hazard analysis to customize the contract EH&S specifications to address the hazards peculiar to the project.

3.2 Startup Manager
The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for startup activities that fall under his or her scope.

3.3 T&PS Supervisors
T&PS supervisors are responsible for using the job safety analysis (JSA) process when assigning personnel to manual labor tasks or tasks involving exposure to typical construction hazards such as, but not limited to, working at heights, on scaffolding or ladders, entering excavations or confined spaces, chemical exposure, pressurized gas or fluid potential, or electrical and mechanical isolation.

3.4 Contractors
Each contractor shall establish a process for conducting JSAs before beginning each task.

4.0 STANDARD

4.1 Project Management Requirements
The T&PS project manager shall ensure the development of a project EH&S policies and procedures manual implementation plan for each new major project in accordance with the EPC strategy document. At a minimum, this plan shall address compliance issues applicable to the site T&PS organization and personnel. The plan will include, but is not be limited to, the following topics:

- Incident notification.
- Emergency procedures.
- EH&S training.
- EH&S assessments.
- Safety metrics reporting.
- Contractor EH&S.
- Scaffold safety.
- Clearance procedure.
- Confined space entry.
- Personal protective equipment.
- Noise exposure.
- Hazard communications.
The T&PS project manager shall ensure a project hazard analysis is conducted to
customize the contract EH&S specifications to address the hazards peculiar to the
project. A thorough project hazard analysis will identify the following types of issues that
should be addressed in the customized EH&S specifications:

- Confined spaces.
- Radiological sources.
- Hazardous materials (asbestos, lead, arsenic).
- Biological hazards (sewers, cooling towers).
- Potential explosive atmospheres.
- Process safety management covered work.
- High-temperature surfaces.
- Railroad traffic.
- Electrical clearances.
- Pressurized hazardous fluids and gases.

4.2 Job Safety Analysis (JSA)

Job safety analysis (JSA) is designed to assist supervisors and personnel in identifying
and minimizing hazards prior to beginning tasks.

T&PS supervision shall use the JSA process when assigning personnel to manual tasks
or tasks that involve typical construction hazards as described in 4.1, Project
Management Requirements.

Each contractor shall establish a process for conducting a JSA before beginning each
task. The JSA shall be used to recognize hazards, identify training needs, and plan
work. Proper use of the JSA will result in safe, efficient work processes.

A typical JSA exercise will answer, but may not be limited to, the following questions:

- What hazards are associated with this task?
- Are there any special environmental conditions that pose an increased risk?
- Do we have the right tools and materials for the job?
- Are there any special training requirements for this task; have all crewmembers
  completed the required training?
- Do machines have guards in place?
- What personal protective equipment (PPE) is required?
- Are any special work permits required for this task?
- Will this task require working from heights and have fall protection and falling object
  protection been addressed, including adequate anchor points and tool lanyards?
- If applicable, are plans in place to control hazardous energy sources, including any pressurized hazardous fluids and gases (lock out/tag out)?
- Are there other activities in the area that could create a hazard for other individuals?
- Review and incorporate operating plant procedures where applicable.

The JSA or a similar form shall be used to meet the requirements of this standard. The JSA shall be reviewed with each contractor crewmember assigned to the task. The JSA or a similar form shall be signed by each crewmember and the supervisor to document the review process.

5.0 KEY CONTACT

For questions regarding the content or implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A – Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Revised by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-1N, Planning and Hazard Analysis.

05/22/2018
Added text and links to forms 1N.1-SP, 1N.2, and 1N.3 (2.2).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-1O

First Aid Personnel and Facilities

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ............................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions ..................................................................................................................... 3
  2.2 References ................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................. 3
  3.1 Construction Site Manager .......................................................................................... 3
  3.2 Startup Manager ......................................................................................................... 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................. 4
  3.4 Contractors .................................................................................................................. 4

4.0 STANDARD .................................................................................................................... 4
  4.1 First-Aid Facility and Staff .......................................................................................... 4

5.0 KEY CONTACT .............................................................................................................. 5

6.0 QUALITY RECORDS ..................................................................................................... 5

7.0 ATTACHMENTS ............................................................................................................. 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the minimum requirements for planning and provisions of first aid personnel and facilities on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

Document 10.1, Recommended First Aid Facility Supply List

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 First-Aid Facility and Staff

The T&PS construction site manager shall ensure the jobsite is equipped with an adequate first-aid facility, supplies, and staff. The contractor, if working alternate shifts, extended hours, weekends, or holidays, is required to coordinate with the T&PS construction site manager the appropriate onsite first aid provider is available. Use the following table to determine the appropriate staffing:

<table>
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<th>Number of Craft Labor Personnel Onsite During Shift</th>
<th>First-Aid Appropriate Staffing</th>
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<tr>
<td>&lt;50</td>
<td>1 person certified in each:</td>
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<tr>
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<td>• First aid.</td>
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<td>• CPR.</td>
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<td></td>
<td>• Automated external defibrillators (AED).</td>
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<tr>
<td>50+</td>
<td>Registered nurse (RN), reporting to the safety professional</td>
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<td>-OR- (with approval of the regional construction manager and regional safety manager)</td>
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<td>2 people certified in each:</td>
</tr>
<tr>
<td></td>
<td>• First aid.</td>
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<tr>
<td></td>
<td>• CPR.</td>
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<td>• AED.</td>
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See form 1O, Recommended First Aid Facility Supply List, for a list of supplies that should be available.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09-13-2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-1O, First Aid Personnel and Facilities.

Rev. 1
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Guidelines

SH-G-1Z

EH&S Glossary

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<td>Construction Safety and Health Bill Batts</td>
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accident/incident – An unintended occurrence that either caused or may have caused personal injury, property damage, or interference with the execution of the project.

accumulation areas – Locations where containers are stationed for the collection of a waste.

accumulation point – An area onsite at which hazardous waste can be accumulated for up to 90 days without a permit. At an accumulation point, any amount of hazardous waste can be collected and stored providing no container remains in the accumulation point storage over 90 days. If hazardous waste is added to a container at the accumulation point, the 90 day limit for the container begins as soon as the waste is first added to the container.

acetylene – Acetylene is an unstable gas when compressed above 15 psig. Acetylene cylinders are filled with a porous material and saturated with liquid acetone. Acetylene, when pumped into the cylinder, dissolves in the acetone and is held in a stable condition. If the acetylene cylinder is stored or used in the horizontal position, the acetone may leak out, leaving an explosive mixture of acetylene. For this reason, all acetylene cylinders must be stored and used in the vertical position.

ACGIH (American Conference of Government Industrial Hygienists) – A governmental group of industrial hygienists who sponsor testing of a variety of substances to determine at what levels people can safely work. This organization is devoted to the administrative and technical aspects of occupational and environmental health. Each year, ACGIH publishes the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.

action level – The level set by OSHA in substance specific standards that trigger certain requirements, typically training and medical surveillance.

adequate ventilation – Ventilation (natural or mechanical) that maintains contaminant levels below OSHA action levels (if such levels exist). If action levels do not exist, a value of one-half the TLV or PEL, whichever is lower, will be substituted.

administrative controls – Control measures requiring human actions to implement such as job rotation, work assignment, time periods away from the hazard, or training in specific work practices to reduce the exposure.

anchorage point – A secure point of attachment for lifelines, lanyards, or deceleration devices. The anchorage shall be capable of withstanding the forces specified in this procedure.

approved – (a) Approved by the authority having jurisdiction; (b) Tested and listed as satisfactory jointly by the Mine Safety and Health Administration (MSHA) of the U. S. Department of Labor and the National Institute for Occupational Safety and Health (NIOSH) of the U. S. Department of Health and Human Services.

arc welding – A form of electrical welding using either coated or uncoated rods.

area supervisor – Supervisory person directly responsible for a specific location or activity.
asbestos – Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that have been chemically treated and/or altered.

asbestos–containing material (ACM) – Any material containing more than 1 percent asbestos.

asphyxiant – A gas whose primary or most acute health effect is asphyxiation (suffocation). There are two classes of asphyxiants; 1) Simple, such as nitrogen or methane, that act by replacing oxygen; 2) Chemical, such as carbon monoxide, that act by preventing oxygen uptake at the cellular level.

assistant secretary – The assistant secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

attendant – An individual stationed outside of a confined space assigned to monitor the confined space entry process and perform all of the attendant's duties.

audiogram – A chart, graph, or table resulting from an audiometric test showing an individual’s hearing threshold levels as a function of frequency.

audiologist – A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech Language Hearing Association or licensed by a state board of examiners or agency having authority.

barricade – A sign, a barrier, orange traffic cones, highly visible tape, painted ground markings, and so forth. Barricades are used to signify warning, caution, or danger, and to prevent or restrict access to the area. Barricades may be permanent or temporary barricades, flexible or rigid (standard guardrail system).

baseline audiogram – The audiogram against which future audiograms are compared.

blast area – Area in which explosive loading and blasting operations are being conducted.

blaster – Person or persons authorized to use explosives for blasting purposes.

blasting agent – Any material or mixture, consisting of a fuel and oxidizer, intended for blasting, not otherwise classified as an explosive, and in which none of the ingredients are classified as an explosive, provided that the finished product, as mixed and packaged for use or shipment, cannot be detonated by means of a No. 8 test blasting cap when unconfined.

blasting cap – A metallic tube closed at one end, containing a charge of one or more detonating compounds, and designed for and capable of detonation from the sparks or flame from a safety fuse inserted and crimped into the open end.

boom truck – Any vehicle used to transport personnel and materials with a crane attached for material handling purposes.

buoyant work vest – Will not keep an unconscious person’s face out of the water.
breathing zone – An imaginary globe of 2-ft radius surrounding the head.

calibration – For atmospheric monitoring equipment, a process by which one documents that the atmospheric monitoring equipment is working properly and giving accurate readings. The process involves zeroing the instrument and a span check.

carcinogen – A substance or agent producing or inciting cancer. These substances are listed by the National Toxicology Program (NTP) in its Annual Report on Carcinogens, the International Agency for Research on Cancer (IARC) in its Monographs, and by the Occupational Safety and Health Administration in 29 CFR Part 1926 Subpart Z, Toxic and Hazardous Substances.

catastrophe – A fatality, hospitalization of three or more employees, material or equipment damage exceeding $10,000.00, or significant fires.

ceiling concentration – The concentration of an airborne substance that shall not be exceeded.

Certified Industrial Hygienist (CIH) – One certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.


clamshell – A crane that has a clamshell assembly. The boom and hoist is used to raise and lower a clamshell bucket.

chemical – Any element, chemical compound, or mixture of elements and/or compounds. Examples include cleaning compounds, lubricants, paints, fuels, welding rods, and base metals.

christmas treeing – The hoisting of multiple loads suspended below the hook.

combustible liquid – Liquid having a flash point at or above 140 °F (60 °C).

combustible material – Liquids, solids, or gases that are relatively difficult to ignite (140 °F or more) and that burn relatively slowly (such as paper or wood).

combustion – A chemical process that involves oxidation sufficient to produce light or heat.

compressed gas cylinder – Containers approved for the storage, transport, and use of various chemicals under high-pressure conditions.

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. The individual must knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.
confined space – A space that: 1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and 2) Has limited or restricted means for entry or exit (for example, tanks, silos, vessels, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and 3) Is not designed for continuous human occupancy.

confined space, permit-required – A confined space that has one or more of the following characteristics: 1) Contains or has a potential to contain a hazardous atmosphere; 2) Contains a material that has the potential for engulfing an entrant; 3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section; or 4) Contains any other serious safety or health hazard.

consumer products – Any product or hazardous substance meeting the definition of the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 11261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure that is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.

controlling contractor (steel erection) – The designated entity during steel erection responsible certify concrete strength, determine protection from falling objects method used, notify steel erector of anchor bolt repair/ modification, provide access for movement, and assume control of fall protection systems steel erector is directed to leave after erection activities are complete.

control zone – The area between the warning line and the unprotected sides and edges of a building/structure floor or roof surface.

controlled decking zone – The restricted area during steel erection where a leading edge work activity of laying deck is performed.

crisis – Anything that can endanger the life of an employee, fall under close government or media scrutiny, significantly interfere with normal business operations, jeopardize a firm’s positive image, or threaten a firm’s financial or legal condition. Specific examples are:

- Major accident.
- Employee death through accident.
- Serious injury to an employee.
- Structure or plant failure.
- Loss of and/or damage to property above $10,000.
- Act of God (for example, hurricane, tornado).
- Explosion or fire.
- Labor dispute (strike, walk-off, and so forth).
- Improper acts by an employee, for example, major theft or felony.
- Condition that endangers the life of our employees or the public, for example, major chemical leak.
- Violation of a code, law, environmental act, or regulation.
criterion sound level – A sound level of 90 decibels.

cumulative trauma disorder (CTD) – A disorder of a musculoskeletal or nervous system component caused or aggravated by repeated and/or forceful movements of the same musculoskeletal system.

dead-man switch – Power tool control switch that requires the constant pressure of the operator to maintain energy to the tool.

deceleration device – Any mechanism, such as a rope grab, rip-stitch lanyard, or automatic self-retracting lifeline, that serves to dissipate more energy during fall arrest than a standard line or strap webbing lanyard.

decibel (dB) – The unit of measurement of sound level.

dedicated portable concrete/asphalt plant – A portable plant that is located on or next to a construction site and provides product only to that site.

detonating cord – A flexible cord containing a center core of high explosives that when detonated will have sufficient strength to detonate other cap-sensitive explosives with which it is in contact.

detonator – Blasting caps, electric blasting caps, delay electric blasting caps, and nonelectric delay blasting caps.

director – The director, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

disturbance – Activities such as clearing, grading, and/or excavations that affect the site’s drainage characteristics or runoff coefficient.

dragline – A crane that has a dragline fairlead assembly. The boom and hoist is used to raise and lower an excavator bucket. The dragline fairlead assembly is used to drag the bucket to fill it. It can be hoisted and contents dumped in another location.

EH&S – environmental, health, and safety.

EHSP (environmental, health and safety plan) – A site-specific written plan to guide implementation of the health and safety processes at the project.

electric blasting cap – A blasting cap designed for and capable of detonation by means of an electric current.

electric blasting circuitry:

- **bus wire** – An expendable wire used in parallel or series in parallel circuits to which are connected the leg wires of electric blasting caps.
- **connecting wire** – An insulated expendable wire used between electric blasting caps and the leading wires or between the bus wire and the leading wires.
- **leading wire** – An insulated wire used between the electric power source and the electric blasting cap circuit.
- **permanent blasting wire** – A permanently mounted insulated leading wire used between the electric power source and the electric blasting cap circuit.

**employee exposure** – The exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

**employer's first report of injury** – (a) A state-specific form obtainable from the project's insurance company, (b) A state specific form developed for the use of reporting an occupational injury/illness to the state or insurance company. The forms are obtainable from the project's insurance company.

**enclosed space(s)** – A space of less than 10,000 cubic ft per welder with a ceiling height of less than 16 ft.

**end-of-service-life indicator (ESLI)** – A system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

**engulfment** – A liquid or solid closing over an employee’s head or body.

**engineering controls** – Methods of controlling personnel exposures by modifying the source or reducing the quantity of contaminants released into the work environment.

**entrapment** – A person becoming trapped because of the configuration of the confined space, for example, a hopper.

**entrant** – An employee who have been trained and authorized to enter a particular confined space.

**entry supervisor** – The supervisor who is responsible for ensuring that all training requirements have been completed and all safety precautions are implemented.

**EPA** – Federal and/or state Environmental Protection Agency, where applicable.

**EPA identification number** – A registration number issued by the EPA to generators, transporters, and disposal facilities. Generators of waste oil are not required to obtain an EPA identification number.

**erosion, sediment, and pollution control plans (ES&PCP)** – A written plan developed by a licensed professional by the appropriate state under the specific requirements of the NPDES General Permit for the control measures to be used during construction activities.

**excavation** – Penetration of the ground surface (either natural rock/soils or manmade materials) by any means or method.

**explosives** – (1) Any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion, that is, with substantially instantaneous release of
gas and heat, unless such compound, mixture, or device is otherwise specifically classified by the U.S. Department of Transportation; (2) All material that is classified as Class A, Class B, and Class C explosives by the U.S. Department of Transportation.

**exposure assessment** – Air sampling performed in the breathing zone of the affected employee, using a properly calibrated air sampling pump connected via flexible tubing to the proper sampling media.

**facepiece** – That portion of a respirator that covers the wearer's nose and mouth in a half-mask facepiece or that covers the nose, mouth, and eyes in a full facepiece. It is designed to make a gas-tight or particle-tight fit with the face and includes the headbands, exhalation valve(s), inhalation valve(s) and connections for an air purifying device or respirable air source, or both.

**facility manager** – Also known as operating plant manager.

**fall arrest system** – A full body harness and lanyard, which is attached to a horizontal or vertical lifeline, which is properly secured, to an anchorage(s).

**fall restraint system** – An approved device and any necessary components that function together to restrain an employee in such a manner as to prevent that employee from falling to a lower level. When standard guardrails are selected, compliance with applicable sections governing their construction and use shall constitute approval.

**Federal Register** – A publication of U.S. government documents officially promulgated under the law, documents whose validity depends upon such publication. It is published on each day following a government working day. It is in effect, the daily supplement to the Code of Federal Regulations (CFR).

**filter or air purifying element** – A media component used in respirators to remove solid or liquid particles from the inspired air.

**final stabilization** –

- All soil disturbing activities have been completed; and
- A uniform perennial vegetative cover with a density of 70 percent of the cover for unpaved areas is established; or
- Permanent stabilization, for example riprap or geotextiles, has been installed.

**fire brigade** – An organized group of employees knowledgeable, trained, and skilled in the safe evacuation of employees during emergencies and assisting in firefighting operations.

**fire resistance** – Materials resistant to fire for a specified period of time and under conditions of standard heat intensity. The material shall not fail structurally nor permit the side opposite the fire to become hotter than a specified temperature.

**first aid** – Any one-time treatment and any followup visit for the purpose of observation or minor injuries, that do not ordinarily require medical care. First aid can be from a doctor or registered nurse.
first–aid log – A continuing log of all injuries and/or illnesses reported to supervision.

fit factor – A quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

fit test – The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

fixed scaffolds – Includes the following: tubular welded frame scaffolds, bracket scaffolds, tube and coupler (Tube-lox) scaffolds, wood-pole scaffolds, and trestle scaffolds.

flame-resistant material – (a) A material that burns slowly or is self-extinguishing after the external source of ignition is removed; (b) A material that is treated by incorporating chemical compounds into a textile fiber during manufacturing, or by chemically treating a textile fiber or fabric during processing or subsequent use to reduce the item's flammability.

flammable – Capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.

flammable liquid – Liquid having a flash point below 100 °F and a vapor pressure not exceeding 40 pounds per square inch (absolute) at 140 °F.

flammable material – Liquids, solids, or gases that are capable of being easily ignited, (at less than 140 °F) burning intensely, or having a rapid rate of flame spread (usually dusts, fine powders, or substances that ignite spontaneously at low temperatures).

flash point – The temperature at which the liquid gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid or within the vessel used.

fly ash – Finely divided particles of ash entrained in flue gases arising from the combustion of fuel.

fume – Airborne particles formed by the condensation of solid particles from the gaseous state.

foot candle – A unit of illumination. It is the illumination at a point on a surface that is 1 ft from, and perpendicular to, a uniform point source of one candle.

full-body harness – A configuration of connected straps to distribute a fall arresting force over at least the thighs, shoulders, and pelvis, with provisions for attaching a lanyard, lifeline, or deceleration device.

gas – A state of matter in which the material has very low density and viscosity, can expand and contract greatly in response to changes in temperature and pressure, easily diffuses into other gases, and readily and uniformly distributes itself throughout any container.

guardrail system – Temporary fall prevention measures consisting of a handrail 42 in. (plus or minus 3 in.) above the walking surface, a midrail halfway between (with no more than a
19 in. opening above or below), and toeboards or screens. The guardrail system shall be designed to support 200 pounds of force in either the downward or outward directions.

**general ventilation** – A ventilation system that adds or removes air in an attempt to dilute the concentration of a contaminant.

**GFCI (ground fault circuit interrupter)** – A device, either permanently or temporarily, installed in an electrical system to provide protection to personnel from electrical shock. It measures flow of electrical current, senses decrease in milliamps, and trips to cease current flow.

**hazard assessment** – The process of evaluating a confined space to determine what safety precautions are required for safe entry. The hazard assessment is documented on the Safe Work Permit/Confined Space Entry Permit.

**hazardous atmosphere** – (a) An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is escape unaided), injury or acute illness; (b) An atmosphere that exposes employees to a risk of death, incapacitation, injury, or acute illness. It may be caused by one or more of the following conditions:

- An atmospheric oxygen concentration below 19.5 percent (an oxygen-deficient atmosphere) or above 23.5 percent (an oxygen-enriched atmosphere) by volume.
- A flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL).
- A hydrogen sulfide gas concentration above 10 parts per million.
- A carbon monoxide gas concentration above 35 parts per million.
- An airborne combustible dust at a concentration that obscures vision at a distance of 5 ft or less.
- Presence of any acutely hazardous substance in an atmospheric concentration above the permissible exposure limits (PEL) published in Subpart D of 29 CFR 1926.55. If a contaminant is not published in Subpart D, consult Safety Data Sheets, or other authoritative sources.
- Any atmospheric condition recognized as immediately dangerous to life or health (IDLH) as specified by the U.S. National Institute of Occupational Safety and Health (NIOSH).

**hazardous chemical** – Any chemical that is a physical hazard or a health, hazard.

**hertz (Hz)** – A unit of measurement of frequency, numerically equal to cycles per second.

**high-efficiency particulate air (HEPA) filter** – A filter capable of trapping and retaining at least 99.97 percent of monodispersed particles of 0.3 microns in diameter.

**high-velocity guns** – Stud or fastener velocity exceeds 300 fps at 6.5 ft from muzzle.
highway – Any public street or road.

horizontal lifeline – A rail, wire rope, or synthetic rope that is installed in a horizontal plane between two anchorage points and used for attachment of a worker’s lanyard or lifeline device while moving horizontally.

hose assembly – The hose with a suitable end coupling attached, at each end of the hose, in accordance with the manufacturer’s specifications.

hydrostatic testing – The use of pressurized liquid, generally water, to test function and/or integrity of mechanical systems such as tanks, vessels, and pipes.

immediately dangerous to life or health (IDLH) – Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

IAQ – Indoor air quality.

industrial hygienist – A professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.

inert gas – A gas that does not normally combine chemically with the base metal or filler metal. Used as weld gas shield (argon) or purging agent (nitrogen). Can displace oxygen in a confined space.

inhabited building – A building regularly occupied in whole or in part as a habitation for human beings, or any church, schoolhouse, railroad station, store, or other structure where people are accustomed to assemble, except any building or structure occupied in connection with the manufacture, transportation, storage, or use of explosives.

injury/illness – Any condition that is reported to supervision that causes damage, pain or discomfort to the physical wellbeing of an employee.

inorganic arsenic – Copper aceto-arsenite and all inorganic compounds containing arsenic except arsine, measured as arsenic (As).

input substitution – Replacing the raw materials of product to use nonhazardous or less hazardous substances.

ionizing – Capable of causing atoms or groups of atoms to become electrically charged through gain or loss of one or more electrons.

ionizing radiation – Alpha particles, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles capable of producing ions. The term ionizing radiation does not include sound or radio waves, microwaves, or visible, infrared or (nonactinic) ultraviolet light (>180nm). For purposes of this standard, the term radiation is equivalent to the term ionizing radiation.

ionizing radiation machine – Equipment designed to produce ionizing radiation such as accelerators and industrial X-ray machines as well as equipment that may produce
ionizing radiation secondary to another primary design purpose such as certain high voltage (>10 kV) radar or microwave tubes, electron microscopes, and ion implanters.

**JPSA (job planning and safety analysis)** – The process by which a work group reviews a work task, assesses the hazards, and formulates measures to minimize the hazards before the task begins.

**lanyard** – A flexible line of webbing, rope, or cable used to secure a harness to a lifeline or an anchorage point usually 2, 4, or 6 ft long.

**laser** – The acronym for light amplification by stimulated emission of radiation. A device that produces an intense, coherent, directional beam of light by stimulating electronic or molecular transitions to lower energy levels.

**lead** – Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

**life jackets, U.S. Coast Guard-approved or equivalent** – Will keep an unconscious person’s face out of the water.

**lifeline** – A vertical line from a fixed anchorage or between two horizontal anchorage points, independent of walking or working surfaces, to which a lanyard or device is secured. Lifeline as referred to in this text is one that is part of a fall protection system used as backup for an elevated worker.

**liquefied petroleum gases (LPG and LP gas)** – Material composed predominately of any of the following hydrocarbons, or mixtures of them such as propane, propylene, butane (normal butane or isobutane), and butylenes.

**local exhaust ventilation** – A ventilation system that captures or contains contaminants at their source before they escape into the work area then exhausts them away from the work area. A typical system for welding operations consists of freely movable hoods placed as close to the welder or burner as practical to remove fumes and smoke at the source without having them pass through the worker’s breathing zone.

**lost workday case (LWDC)** – An injury/illness requiring an employee to miss the next scheduled or subsequently scheduled full workdays following exposure to a job-related incident. The emphasis is to be placed on the employee’s ability to work.

**low velocity, high inertia guns** – Stud or fastener velocity does not exceed 300 FPS at 6.5 ft from muzzle.

**lower explosion limit (LEL)** – The lowest percentage of a flammable gas or vapor in the air required for ignition of the mixture. Also known as lower flammable limit (LFL).

**magazine** – Any building or structure, other than explosives manufacturing building, used for the storage of explosives.
**Maintenance** – The performance of adjustments or procedures specified by the manufacturer and performed by a qualified employee.

**Makeup Air** – Clean, tempered outdoor air supplied to a workspace to replace air removed by exhaust ventilation or by some industrial process.

**Maximum Use Concentration (MUC) of Filter, Cartridge, or Canister** – The maximum concentration of a contaminant for which an air-purifying filter, cartridge, or canister is approved for use.

**Mechanical Ventilation** – Ventilation that consists of either general mechanical ventilation systems or local exhaust systems.

**Medical Pathology** – A disorder or disease.

**Medical Surveillance** – The examination of a worker’s health relating to the potential hazards associated with chemicals and contaminants.

**Medical Treatment** – Any treatment, other than first aid treatment, administered to injured or ill employees for a job-related condition. Essentially, medical treatment involves the provision of medical or surgical care for injuries or illnesses that are not minor in nature.

**Metal Fume Fever** – A flu-like condition caused by inhaling heated metal fumes such as zinc from galvanized parts.

**Misfire** – An explosive charge that failed to detonate.

**Motor Vehicle** – Any self-propelled vehicle, truck, tractor, semitrailer, or full-trailer truck used for the transportation of freight over public highways.

**MSDS (Material Safety Data Sheet)** – see SDS (Safety Data Sheet)

**National Electrical Code (NEC)** – Incorporated by reference into the OSHA standards to govern both permanent and temporary electrical installation.

**Negative Pressure Respirator** – A respirator in which the air pressure inside the respirator inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

**Near Miss (or Hit)** – An unintended occurrence that may have caused personal injury, property damage, and/or interference with the execution of the project. The lessons learned from the investigation of a near miss (or hit) are just as invaluable as those from actual injury and their reporting by personnel is highly encouraged.

**NFPA (National Fire Protection Association)** – Publishes the national Fire Codes aimed to promote and improve fire protection and prevention.
NIOSH (National Institute for Occupational Safety and Health) – A Federal agency that conducts research on health and safety concerns, tests and certifies respirators, and trains occupational health and safety professionals.

NOI (Notice of Intent for Storm Water Discharges) – Associated with industrial activity under the NPDES General Permit.

noise dose – The ratio, expressed as a percentage, of (1) the time integral, over a stated time or event, of the 0.6 power of the measured SLOW exponential time-averaged, squared A-weighted sound pressure and (2) the product of the criterion duration (8 hr) and the 0.6 power of the squared sound pressure corresponding to the criterion sound level (90 dB).

noise dosimeter – An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

nonelectric delay blasting cap – A blasting cap with an integral delay element in conjunction with and capable of being detonated by an impulse or signal from miniaturized detonating cord.

NOT – Notice of termination of coverage under the NPDES: General Permit for Storm Water Discharges Associated with Industrial Activity.

nozzle – A device with one or more orifices through which media discharges from the system. The nozzle restricts the area of flow of the media, accelerating it to the required velocity and shaping it to the required flow pattern. Nozzles are commonly referred to as bits, tips, or orifices.

NPDES – National Pollutant Discharge Elimination System.

occupational injury – Any injury such as a cut, fracture, sprain, amputation, etc., that results from a work incident or from an exposure involving a single incident, or one time exposure, in the work environment.

occupational illness – Any abnormal condition or disorder other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases that may be caused by inhalation, absorption, ingestion, or direct contact. Some examples are cramps, dermatitis, and nausea.

odor threshold limit – The lowest concentration of a contaminant in air that can be detected by the olfactory sense (sense of smell).

office/facilities – Office space, trailers, or structures, both permanent and temporary used to conduct or deliver business and services.

office management – Persons responsible for office safety performance at the site. Office management includes but is not limited to the office manager, site manager, safety representative, and facilities manager.
**office occupancy** – The use of a building or structure or any portion thereof for the transaction of business or professional services.

**operator** – A person who has been trained and has demonstrated the knowledge, skill, and experience to assemble, operate, and/or maintain equipment, cranes, and/or motorized machines.

**operator trainee** – A person not qualified, because of lack of knowledge, skill, and/or experience, to perform as an operator without supervision (often referred to as an apprentice or an oiler).

**OSHA (Occupational Safety and Health Administration)** – A division within the U.S. Department of Labor charged with implementing the provisions of the Occupational Safety and Health Act of 1970.

**OSHA 300 log** – A log of specific injuries and/or illnesses that OSHA requires T&PS and contractors to maintain for their respective employees.

**otolaryngologist (ENT)** – A physician specializing in diagnosis and treatment of disorders of the ear, nose, and throat.

**oxygen** – Oxygen itself is not flammable, but the presence of pure oxygen accelerates the combustion reaction. Oil and grease, in the presence of oxygen, become highly explosive. Oxygen must not be allowed to contact petroleum-based substances.

**oxygen deficiency** – The concentration of oxygen, by volume, below which atmosphere supplying respiratory protection must be provided. It exists in atmospheres where the percentage of oxygen, by volume, is less than 19.5 percent.

**PACM** – Presumed asbestos-containing material.

**particle** – A small discrete mass of solid or liquid matter.

**particulate** – A particle of solid or liquid matter.

**PEL (permissible exposure limit)** – Limit established by OSHA concerning the airborne concentration of a contaminant to which an employee may be exposed legally during the work shift or some portion of that shift.

**permanent barricades** – Fixed, painted structures or barriers such as gates, chains, concrete firewalls, or toe-walls. They are intended to convey a permanent warning or caution regarding entering the area. They shall indicate if specific authorization, control measures, and/or protective equipment are required.

**permissible exposure limit (PEL)** – (a) The limit set by OSHA that triggers certain requirements in addition to those required by exceeding the action level; (b) OSHA’s legally established time-weighted average (TWA) concentration of a contaminant that shall not be exceeded.

**pneumatic testing** – The use of pressurized air to test the function and/or integrity of mechanical systems such as pipes, tanks, and vessels.
pollution – Any hazardous substance emitted, discharged, or placed into the environment that adversely impacts human health or the environment and originates from operational processes.

pollution prevention – Any practice that reduces pollution. It stresses source reduction, (for example input substitution, process modernization, product reformulation, and improved operation and maintenance), but also includes reuse, recycling, and treatment.

potable water – Water that meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published in 42 CFR Part 72, or water that is approved for drinking purposes by the state or local authority having jurisdiction.

PPE – Personal protective equipment.

ppm – Parts per million.

pressure gauge – Devices designed to provide either internal or discharge pressures of systems and or operating equipment.

pressure relief valve – Valve that is normally held in the closed position by a mechanical device, such as a spring. It is designed to open when the pressure in the system exceeds a set value.

presumed asbestos-containing material – Thermal system insulation and surfacing material found in buildings constructed no later than 1980.

primary blasting – The blasting operation by which the original rock formation is dislodged from its natural location.

primer – A cartridge or container of explosives into which a detonator or detonating cord is inserted or attached.

qualified worker – Has training and experience in recognition and avoidance of workplace hazards and the skills to perform task for which they are hired and assigned.

qualified person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work, or the project.

radioactive materials – Materials of natural or synthetic origin that spontaneously emit ionizing radiation. This definition includes such materials in all forms, concentrations, and quantities above natural background level whether or not the materials are subject to licensing, registration or other permitting, are exempt or excepted under statutory codes, and whether or not the material is contained, diluted, sealed, enriched or depleted.

railway – Any steam, electric, diesel, diesel-electric, or other railroad or railway, that carries passengers or freight, for hire.
recycling – The series of activities, including collection, separation, and processing, by which products or their materials are recovered from the solid waste stream. These materials are for use in the form of raw materials in the manufacture of products.

representative exposure – Measurements of an employee’s noise dose or 8-hr time-weighted average sound level that the employers deem to be representative of the exposures of other employees in the workplace.

reportable incidents – Catastrophes, OSHA-recordable injuries of all levels, property loss exceeding $10,000.00, and reportable quantity spills of chemicals.

resistance – Opposition to the flow of air, as through a canister, cartridge, particulate filter, orifice, valve, or hose.

respirator – A device worn over the mouth or nose for protecting the respiratory tract.

restraint line – A line from a fixed anchorage or between two anchorage points to which an employee is secured in such a way as to prevent the worker from falling.

restricted workday case (RWDC) – An employee, as a result of a job-related injury and/or illness, is physically or mentally unable to perform all or any part of his or her normal assignment during all or part of the work day or shift. The emphasis is to be placed on the employee’s ability to work.


roll-out – Unintentional disengagement of a snap hook caused by the gate being depressed under torque or contact while twisting or turning.

rope grab – A fall-arresting device designed to move up or down a lifeline suspended from a fixed overhead or horizontal anchorage point, or lifeline, to which the harness is attached. In the event of a fall, the rope grab locks onto the lifeline rope through compression to arrest the fall. The use of a rope grab device is restricted for fall restraint applications.

RQ – Reportable quantity.

safety can – An approved closed container, of not more than 5 gallons capacity, having a flash-arresting screen, spring-closing lid and spout cover and designed to safely relieve internal pressure when subjected to fire exposure.

SDS (safety data sheet) – Formerly known as material safety data sheet. A document required by the Hazard Communication Standard by which information concerning the hazards of materials and chemicals is supplied to employees who may come into contact with those materials. safety fuse – A flexible cord containing an internal burning medium by which fire is conveyed at a continuous and uniform rate for the purpose of firing blasting caps.

safety monitor system – A system of fall restraint used in conjunction with a warning line system only, where a competent person (which see), having no additional duties,
monitors the proximity of workers to the fall hazard when working between the warning line and the unprotected sides and edges, including the leading edge of a low-pitched roof or walking/working surface.

salamander – A portable, open-kettle type of heating device commonly used to cure concrete and masonry work.

satellite accumulation area (SAA) – An area at or near the point of generation that is under the control of the operator of the process generating the waste. No more than 55 gallons of hazardous waste or 1 quart of acutely hazardous waste can be accumulated at a SAA.

SCS – Southern Company Services.

secondary blasting – The reduction of oversize material by the use of explosives to the dimension required for handling, including mud capping and blockholing.

self-retracting lifeline – A deceleration device that contains a drum-wound line that may be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and that after onset of a fall, automatically locks the drum and arrests the fall.

service life – The period of time that a respirator provides adequate protection to the wearer; for example, the period of time that an air-purifying device is effective for removing a harmful substance from inspired air.

shall – Means the specified action is mandatory.

shock-absorbing lanyard – A flexible line of webbing, cable, or rope used to secure a body belt or harness to a lifeline or anchorage point that has an integral shock absorber or deceleration device.

short-term exposure limit (STEL) – The limit set by OSHA where an employee can be exposed above the PEL for a short time, usually 15 minutes.

should – Means the specified action is highly recommended. Under regulatory standards, failure to follow should recommendations may lead to a citation issued under general duty clauses.

side shield – A rigid device attached to the side of safety glasses to afford protection from objects entering the wearer’s eyes from the sides.

site/facility manager – Individual with overall responsibility for all aspects of the safe execution of the project.

silicosis – A disease of the lungs caused by the inhalation of silica dust.

site – Everything within company-owned or company-occupied property boundaries including building, building grounds, and parking lots.
sorbent – A material that is contained in a cartridge or canister and that removes toxic gases and vapors from inspired air.

sound level – Ten times the common logarithm of the ratio of the square of the measured A-weighted sound pressure to the square of the standard reference pressure of 20 micropascals. Unit: decibels (dB). For use with this instruction, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

sound-level meter – An instrument for the measurement of sound level.

source reduction – Any practice that reduces the amount of toxic chemical usage or pollution prior to recycling, treatment, and disposal. Source reduction is a front-end technique that prevents toxic chemical use and the creation of pollutants in the first place. It eliminates the need for end-of-pipe treatment. Source reduction techniques include input substitution, product reformulation, process modification, in-process recovery and/or recycling, improved operations and maintenance of equipment and chemicals, and increased control of the purchasing, storage, management, and use of chemicals.

sources of ionizing radiation – Sources include x-ray apparatus, radioactive materials or devices, and incidental sources such as ion implanters, electron microscopes, electron probes, or E-beam pattern generators.

spill prevention, control, and countermeasures plan (SPCC) – A written site plan to prevent the discharge of oil, fuel, or chemicals into navigable waters or adjoining shorelines.

span check – SA portion of the calibration procedure during which a gas mixture of known composition is passed over the sensors of the instrument and the instrument readings are verified. This is a distinct function within the calibration mode of most atmospheric monitoring instruments.

storm-water pollution prevention plan (the plan) – A written document that describes both:

- The sources of the pollution to storm water.
- The measures that will be implemented to reduce pollutants in storm water.

surfacing material – Material that is sprayed, troweled on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

suspended scaffolds – Includes the following: two-point suspended scaffolds, multilevel suspended scaffolds, floats, needle-beam scaffolds, boatswain’s chair, and electric hoist platforms.

T&PS – Technology and Project Solutions.

tarpaulin – Material, usually waterproof canvas or other materials, used to isolate equipment, processes, and combustible materials from spark and fire damage.
thermal system insulation (TSI) – ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

thermal system insulation ACM – Thermal system insulation that contains more than 1 percent asbestos.

time-weighted average – The average concentration of a contaminant in air during a specific time period.

TLV – Threshold limit values (and Biological Exposure Indices) are guidelines developed by the ACGIH to assist in the control of health hazards. The TLVs refer to airborne concentrations of substances and, it is believed, represent conditions under which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

temporary barricades – Are generally erected for a specific purpose and intended for quick and easy removal. Examples are colored tape, a sign, sawhorses, and safety cones.

threshold limit value (TLV) – A value designated by the American Conference of Governmental Industrial Hygienists to serve as a guideline to assist in the control of health hazards.

time-weighted average sound level – That sound level, which if constant over an 8-hr exposure, would result in the same noise dose as is measured.

toxic chemical – All hazardous substances covered under the federal Comprehensive Environmental Response and Compensation Liability Act (the Superfund law). In most instances, hazardous substances that are on the federal Toxic Release Inventory (under Section 313 of the federal Emergency Planning and Community Right to Know Act) should be targeted first, unless risks or other circumstances dictate otherwise.

toxic-use reduction – In-plant changes in production processes or raw materials that reduce, avoid, or eliminate the use of toxic or hazardous substances, so as to reduce risks to the health of workers, consumers, or the environment without shifting risks between workers, consumers, or parts of the environment.

tower crane – A crane configured with a vertical tower section designed to maximize reach.

type A fire extinguisher – Used for extinguishing combustible solids, such as paper or wood.

type B fire extinguisher – Used for extinguishing flammable and combustible liquids.

type C fire extinguisher – Used for extinguishing electrical fires.

type D fire extinguisher – Used for extinguishing combustible metals.

ultraviolet flash burn – An ultraviolet burn to the eyes caused by exposure to electric welding and burning.

UST – Underground storage tank.
universal precaution – A theory in Bloodborne Pathogen Protocols whereby caregivers assume and use safe practices as if all persons have potential to transmit infection disease through bodily fluid sources.

vapor density – The weight of vapor or gas compared to an equal volume of air.

vapor pressure – The pressure, measured in pounds per square inch (absolute), exerted by volatile liquid.

vapors – The gaseous form of substances that are normally in the solid or liquid state (at room temperature).

vertical lifeline – An independent lifeline secured to an upper anchorage for the purpose of attaching a lanyard or a fall protection device. This line must be at least a ¾-in. manila rope or a ½-in. nylon rope.

vulcanization – The process of combining rubber (natural, synthetic, or latex) with sulfur and accelerators in the presence of zinc oxide under heat and usually pressure in order to change the material permanently, from a thermoplastic to a thermosetting composition, or from a plastic to an elastic condition. Strength, elasticity, and abrasion resistance also are improved. Proper method for splicing electrical cables.

waste minimization – Preventing or decreasing the amount of waste being generated through waste prevention, recycling, or purchasing recycled and environmentally preferable products.

waste oil – Waste oil (natural oil fractions including lubricating oil, hydraulic oil, diesel fuel, etc.) that is not contaminated with cutting oil, PCBs, CFCs, or halogenated solvents at any detectable level.

waste-oil solid wastes – Materials that contained or have become contaminated with waste oil from which the oil has been properly drained or removed to the greatest extent possible so that no visible signs of free-flowing oil remain. These materials include contaminated drying agent, discarded containers (55-gallon drums, 1-qt bottles), oil filters, and hydraulic hoses.

waste stream – A waste that originates from one or more sources (for example, from a production process, service activity, or equipment decommissioning). A stream is comprised of compatible materials that may be commingled for treatment, storage, or disposal purposes.

whip lock – A short length of wire or cable looped over each end of two hoses that are connected by a coupling. A whip lock or whip check is designed to stop the ends of the hose from whipping around if the coupling becomes accidentally disconnected.

working area – The area within the barriers set up to provide warning and restrict access.

welding curtain – A screen used for welding grinding operations to protect personnel and property from flash burns and sparks.
**zero calibration** – A portion of the calibration procedure during which the meter response is observed in clean room air or while administering bottled zero grade air.
## Attachment A – Historical Summary of Changes

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<th>Date</th>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-01

Housekeeping

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| Approved By          | Project Services  Bill Boyd  
|                      | Project Support  Bruce Long |

UNCONTROLLED COPY
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
   1.1 Purpose ........................................................................................................... 3
   1.2 Scope ............................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
   2.1 Definitions ..................................................................................................... 3
   2.2 References ..................................................................................................... 3

3.0 RESPONSIBILITY ....................................................................................................... 3
   3.1 Construction Site Manager ............................................................................. 3
   3.2 Startup Manager ............................................................................................ 4
   3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) ........................................ 4
   3.4 Contractors ................................................................................................... 4

4.0 STANDARD ............................................................................................................. 4
   4.1 General .......................................................................................................... 4
   4.2 Requirements ................................................................................................. 4

5.0 KEY CONTACT ....................................................................................................... 6

6.0 QUALITY RECORDS ............................................................................................. 6

7.0 ATTACHMENTS .................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides established requirements for housekeeping on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.25, Housekeeping.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

The site manager for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **General**

Housekeeping is a fundamental and necessary activity on all projects and is the responsibility of every individual working on the project. Contractors shall keep all work areas neat and orderly.

4.2 **Requirements**

- Work areas, passageways and stairways, and other areas shall be kept free of debris and materials.
- Unobstructed access to areas such as electrical panels, safety disconnect switches, fire extinguishers, and emergency exits shall be maintained at all times.
- Contractors shall make provisions for timely and frequent removal of debris, scrap, and waste materials from the work areas and the project site.
- Suitable containers shall be provided for waste disposal. Containers shall be provided for the collection and separation of waste, trash, oily and used rags, and
other refuse. Containers used for garbage and other oily, flammable, or hazardous waste, such as caustics, acids, and harmful dusts, shall be equipped with covers. All containers shall be labeled to indicate the permissible contents. Outside waste and trash disposal receptacles must have lids.

- Trash that does not contain any hazardous waste shall not be stored or disposed in bags or containers marked for hazardous waste.

- Food and beverages shall be consumed in designated areas only. Where water kegs are provided, there shall be a proper paper cup waste receptacle that must be used and they shall be emptied daily.

- Lunchroom area trash disposal cans shall be provided with covers, their use shall be enforced, and they shall be emptied daily.

- Lunch and break areas shall be kept clean and free of all food scraps, wrappers, cups, and other disposable items. Where refrigerators are provided, they will be periodically cleaned to maintain sanitary conditions.

- The use of glass bottles will be allowed only in designated lunch and break areas.

- Work areas shall be cleaned as often as necessary to eliminate tripping and fire hazards. Particular attention shall be focused on the area around scaffolds, ladders, ramps, stairs, and electrical and mechanical equipment. Tools and loose materials shall also be removed if a hazard is created.

- Extension cords, wires, and electrical cables shall be kept in an elevated position where they pose no potential danger to personnel and are not likely to be damaged by activities or equipment.

- Timely response to spills such as oil, grease, or other liquid shall be according to T&PS site-specific plans.

- Protruding nails shall either be removed or bent over in such a way that they no longer present a risk. This action shall be done as the hazard is created and not at a later time.

- Cleaned lumber shall be stacked in orderly piles.

- When nails are removed from lumber, the nails shall be collected and disposed of properly to eliminate puncture hazards.

- Storage and laydown areas shall be kept clean and materials neatly stacked or placed.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-01, Housekeeping.

Rev. 1
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-02

Sanitation

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</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
1.1 Purpose................................................................................................................... 3
1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
2.1 Definitions................................................................................................................ 3
2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 3
3.1 Construction Site Manager ...................................................................................... 3
3.2 Startup Manager ...................................................................................................... 3
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 4
4.1 Potable Water .......................................................................................................... 4
4.2 Nonpotable Water ................................................................................................... 6
4.3 Toilets at Construction Jobsites .............................................................................. 6
4.4 Washing Facilities .................................................................................................. 7
4.5 Eating and Drinking Areas ..................................................................................... 7
4.6 Vermin Control ....................................................................................................... 8
4.7 Change Rooms ....................................................................................................... 8

5.0 KEY CONTACT ........................................................................................................... 8

6.0 QUALITY RECORDS .............................................................................................. 8

7.0 ATTACHMENTS ....................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for providing adequate sanitary facilities and potable water on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.51, Sanitation.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Potable Water

- An adequate supply of potable water shall be provided in all places of employment.
- Portable containers used to dispense drinking water shall be capable of being tightly closed, sealed, and equipped with a tap. Water shall not be dipped from containers.
- Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and shall not be used for any other purpose.
- The common drinking cup is prohibited.
- Where single-service (disposable) cups are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

4.1.1 Handling of Drinking Water

Projects shall follow these guidelines when supplying and maintaining a sanitary system of drinking water for employees:

- A drinking water container shall be impervious, heavy gauge, corrosion resistant, fully enclosed, and have a spigot at the bottom. The container shall also be labeled DRINKING WATER ONLY.
- The container shall be kept off the ground or floor, preferably on a stand or rack designed for that purpose.
• Containers shall be cleaned and sanitized on a daily basis during use. They shall be scrubbed inside and outside with a long-handled brush or similar object. Chlorine or bicarbonate cleaner shall be used daily. Water containers shall be disinfected with a 50-ppm chlorine and water solution monthly.

• Unauthorized employees shall not be allowed to remove the lid of the drinking water container.

• After cleaning, the containers shall be filled with ice and water maintaining sanitary conditions at all times. Ice must not be allowed to touch the ground at any time.

• After the containers are filled with ice and water, they shall be sealed with duct tape, dated, and signed by the responsible employee who filled the containers.

• No employee, except water handling personnel and safety department personnel, shall remove the lids from drinking water containers.

  EXCEPTION
  Personnel assigned to remove containers from work areas at the end of the work shift are allowed to empty contents to reduce carrying load.

• Employees shall not be allowed to wash hands from drinking water containers.

  EXCEPTION
  Emergency eye or skin wash shall be permitted.

• A supply of disposable drinking cups, a dispenser, and a trash receptacle shall be provided with all drinking water containers.

• All employees working on the water supply delivery shall be instructed in handling drinking water and associated equipment and instructed in personal hygiene.

• Water-handling employees shall have a supervisor assigned to monitor the performance of their duties.

• The supervisor shall inspect assigned employees daily for open skin wounds, colds, or other medical conditions that may result in the contamination of drinking water.

• Two employees shall be assigned to deliver drinking water cans. These containers have a weight of approximately 80 lb, and the improper handling of this amount of weight may cause injuries.

• Water handling personnel shall maintain delivery trucks and filling points in a clean condition at all times. Trash and water shall not be carried at the same time on a delivery truck.
4.1.2 Employee Instructions for Handling Drinking Water

While cleaning, filling, and distributing drinking water, water handling personnel shall follow these requirements:

- When an employee is assigned the task of cleaning drinking water cans, he or she shall wash his or her hands thoroughly before beginning the task. The employee shall then put on latex rubber gloves to prevent contamination.

- The water can and its lid shall be rinsed and scrubbed inside and outside with a long-handled brush or similar object. Chlorine or bicarbonate cleaner shall be used daily. Water containers shall be disinfected with a 50-ppm chlorine and water solution monthly. When scrubbing is complete, the can and lid shall be thoroughly rinsed.

- When placing ice in the can, the employee shall transfer the ice straight from the freezer to the can, without making contact with the ice. Before filling the can with water, the employee shall allow water to flow from the hose or nozzle for a few seconds to clear the line. After filling the cans, the employee shall place the hose back on the hose rack so the hose does not lie on the ground. If the hose is on the ground when the employee begins the process, he or she shall wash it first.

- The employee shall place the lid on top of can, seal it with duct tape, and date and sign the tape. The lid shall be sealed to prevent any contamination from entering the can and prevent opening by other workers.

- When distribution to sites is made, two employees shall carry cans to prevent possible injury. The can shall never be set on the ground. The can shall be set so that no contamination may occur to the spigot dispenser.

4.2 Nonpotable Water

Outlets for nonpotable water, such as water for industrial or firefighting purposes only, shall be identified by signs to indicate clearly that the water is unsafe and is not to be used for drinking, washing, or cooking purposes.

There shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing nonpotable water.

4.3 Toilets at Construction Jobsites

- Toilets shall be provided for employees according to the following table:
<table>
<thead>
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<th>Number of Employees</th>
<th>Minimum Number of Facilities</th>
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<tr>
<td>20 or fewer</td>
<td>1</td>
</tr>
<tr>
<td>20 or more</td>
<td>1 toilet seat and 1 urinal per 40 workers</td>
</tr>
<tr>
<td>200 or more</td>
<td>1 toilet seat and 1 urinal per 50 workers</td>
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</table>

- Temporary toilets shall be maintained in accordance with applicable regulations.
- Toilets shall be constructed so as to shield the occupants from view and protect against weather and falling objects.
- Toilets shall be ventilated and all windows and vents screened.
- Adequate tissue shall be provided.
- All toilet facilities shall be cleaned and emptied when necessary.

4.4 Washing Facilities

- Washing facilities shall be made available in all places of employment.
- The washing facilities shall be maintained in a sanitary condition.
- Each washing facility shall be provided with hot and cold running water or tepid (lukewarm) running water or equivalent.
- Hand soap or similar cleansing agents shall be provided.
- Individual hand towels or sections thereof of cloth or paper, warm air blowers, or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.
- When showers are required by a particular standard, the showers shall meet the following requirements:
  - One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.
  - Body soap or other appropriate cleansing agents shall be provided.
  - Showers shall be provided with hot and cold water feeding a common discharge line.
  - Employees who use showers shall be provided with individual clean towels.

4.5 Eating and Drinking Areas

No employees shall be allowed to consume food or beverages in a toilet room or in any area exposed to a toxic material.
4.6 Vermin Control

Every enclosed workplace shall be constructed, equipped, and maintained so far as reasonable to prevent the entrance or harboring of rodents, insects, and other vermin. A continuous, effective extermination program shall be instituted where their presence is detected. Extermination service contractors shall be properly licensed from the appropriate regulatory agency. Safety Data Sheets shall be available at the site for all pesticides applied by in-house or by outsourcers.

4.7 Change Rooms

Whenever employees are required by a particular standard to wear protective clothing because of the possibility of contamination with toxic materials, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-02, Sanitation.

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05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-03

Illumination

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Contents

1.0 PURPOSE AND SCOPE .......................................................................................................................... 3
  1.1 Purpose.............................................................................................................................................. 3
  1.2 Scope.............................................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ...................................................................................................... 3
  2.1 Definitions........................................................................................................................................ 3
  2.2 References...................................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................................... 3
  3.1 Construction Site Manager.................................................................................................................. 3
  3.2 Startup Manager................................................................................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .......................................................................................... 4
  3.4 Contractors.................................................................................................................................... 4

4.0 STANDARD ......................................................................................................................................... 4
  4.1 Illumination Requirements.................................................................................................................. 4

5.0 KEY CONTACT .................................................................................................................................... 5

6.0 QUALITY RECORDS ............................................................................................................................ 5

7.0 ATTACHMENTS .................................................................................................................................. 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides established requirements for illumination of work areas on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.56, Illumination.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 **STANDARD**

4.1 **Illumination Requirements**

Construction areas, ramps, runways, corridors, offices, shops, and storage areas shall be lighted to not less than the minimum illumination intensities listed below while any work is in progress.

<table>
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<tr>
<td>5</td>
<td>General construction area lighting.</td>
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<tr>
<td>3</td>
<td>General construction areas, concrete placement, excavation and waste areas, accesses, active storage areas, loading platforms, refueling, and field maintenance areas.</td>
</tr>
<tr>
<td>5</td>
<td>Indoors: warehouses, corridors, hallways, and exits.</td>
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</table>
5  Tunnels, shafts, and general underground work areas.  
(Except: a minimum of 10 foot-candles is required at tunnel and shaft heading during drilling, mucking, and scaling.  U.S. Department of Labor, Mine Safety, and Health Administration-approved cap lights shall be acceptable for use in tunnel heading.)

10  General construction plant and shops (for example, batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, messhalls, and indoor toilets and workrooms).

30  First-aid stations, infirmaries, and offices.


During operations beyond normal daylight periods, sufficient artificial-light sources such as plug-in light systems, stadium-type light poles, or portable power light systems shall be provided to illuminate work and travel areas.

5.0  KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0  QUALITY RECORDS

None.

7.0  ATTACHMENTS

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<td>Bill Batts</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-04

Materials Storage and Handling

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</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager ..................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 4
  4.1 General.................................................................................................................... 4
  4.2 Lumber .................................................................................................................... 5
  4.3 Steel ........................................................................................................................ 5
  4.4 Pipe ......................................................................................................................... 5
  4.5 Petroleum Product Storage ..................................................................................... 5
  4.6 Flammable Liquid and Gas Storage ........................................................................ 6
  4.7 Manual Material Handling ..................................................................................... 6

5.0 KEY CONTACT ........................................................................................................... 7

6.0 QUALITY RECORDS .................................................................................................. 7

7.0 ATTACHMENTS ......................................................................................................... 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe handling and storage of materials on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- EH&S Procedures, Standards, and Guidelines library in Playbook 2.0

NOTE


- 29 CFR 1926.250, General Requirements for Storage
- 29 CFR 1926.251, Rigging Equipment for Material Handling
- 29 CFR 1926.953, Material Handling
- Environmental, Health, and Safety standard SH-S-3, Fire Protection and Prevention
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Both temporary and permanent storage shall be neat and orderly. When planning material storage, a minimum of 36 in. of clearance shall be allowed under sprinkler heads. Automatic sprinkler controls and electrical panel boxes shall be kept free and unobstructed.
- There shall be a 3-ft unobstructed access way to fire hoses and extinguishers. Clear access to emergency exits and aisles shall be maintained. Areas immediately outside emergency exits shall be left clear for egress.

- All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse.

- Manufactured storage bins and racks shall be used in accordance with manufacture’s recommendations. Damaged racks shall not be used for storage. Employees shall not be allowed to climb racks. Racks’ and bins’ weight limits shall be labeled accordingly.

- Maximum safe load limits of elevated floors within buildings and structures shall be conspicuously posted in all storage areas. Maximum safe loads shall not be exceeded.

4.2 Lumber

Lumber shall be stacked on level and solidly supported sills. Cross strips or cross pilings should be used where the pile is more than 4 ft. Lumber shall be stacked so it is stable and self-supporting. The top of each pile should be kept as level as possible when lumber is being removed. Used lumber shall have nails removed before stacking. As a rule of thumb, two workers should carry long boards for more control. While carrying boards, workers should exercise care at corners and crosswalks. Employees shall wear gloves when handling lumber.

4.3 Steel

Reinforcing steel shall be stored in a neat and orderly fashion on dunnage. Corrugated and sheet steel shall be stacked in flat piles. Spacing strips should be placed between each bundle. Employees shall wear gloves while handling steel.

4.4 Pipe

Pipe shall be stored on pipe sills or racks and shall be blocked to prevent rolling. When removing pipe, employees shall work from the end of the pile as much as possible. Pipe larger than 2 ft in diameter should be handled using mechanical equipment. As a rule of thumb, two workers should carry long lengths of small-diameter pipe for more control exercise care at corners and crosswalks. Employees shall wear gloves while handling pipe.

4.5 Petroleum Product Storage

Refer to EH&S standard SH-S-3, Fire Protection and Prevention.
4.6 Flammable Liquid and Gas Storage

Refer to SH-S-3, Fire Protection and Prevention.

4.7 Manual Material Handling

- Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.

- When a difference in road or working levels exist, means such as ramps, blocking, or grading shall be used to ensure the safe movement of vehicles between the two levels.

- Supervisors shall give advance consideration to the size, shape, and weight of materials to be handled and plan the most efficient and safest method to accomplish the task.

- Supervisors shall ensure the work fits the employee in terms of knowledge and physical abilities. Prior to performing unusual or hazardous operations, personnel shall be warned about possible hazards and given specific safety instructions by his or her immediate supervisor.

- One person shall not be allowed to manually lift more than 50 lb of material at one time. If a load exceeds 50 lb, either mechanical help or help from other employees is required.

- Best practices for handling materials are as follows:
  - Begin by examining the object you are going to lift to find out if it has cutting edges, rough or slippery surfaces, or is too heavy.
  - When you lift, place your feet apart, bend your knees, keep your back straight, and get a secure grip on the object. Lift gradually by straightening your legs to put the weight on your strong leg muscles. Never overreach.
  - If you have to lift a load shoulder high or above your head, first lift it waist high, rest it on a support if possible, and change your grip. Then bend your knees to get added power for the big upward push.
  - When moving a load, be sure you can see where you are going. Never try to change the position of a load while you are carrying it. Rest it upon some object and then readjust your grip.
  - You set a load down the way you picked it up – by bending your knees – but do not set it down on your hands. Put down one corner of the load first, and slide your hands away.
  - Best practice is for all personnel who work in material storage and handling operations where the potential for foot injury exists to wear steel-toed safety shoes. Examples are those working in pipe storage, structural steel storage, rebar, lumber yards, concrete block, and brick storage areas.
5.0  KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0  QUALITY RECORDS

None.

7.0  ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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**Remarks:**
Issued. This standard supersedes E&CS procedure SH-2A-04, Materials Storage and Handling.

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**Remarks:**
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-05

Signs and Barricades

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ........................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions .................................................................................................................... 3
  2.2 References ................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................ 3
  3.1 Construction Site Manager .......................................................................................... 3
  3.2 Startup Manager .......................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ................................................................................. 4
  3.4 Contractors .................................................................................................................. 4
  3.5 Contractor Supervisors ............................................................................................... 4

4.0 STANDARD ..................................................................................................................... 4
  4.1 Barricades ...................................................................................................................... 4
  4.2 Signs ............................................................................................................................ 5

5.0 KEY CONTACT ............................................................................................................... 5

6.0 QUALITY RECORDS ....................................................................................................... 5

7.0 ATTACHMENTS .............................................................................................................. 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the use of signs and barricades to restrict access to areas on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.200, Accident Prevention Signs and Tags.
- Operations Safety and Health procedure SCO-SH-0900, Barricades.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and
monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

3.5 Contractor Supervisors

Contractor supervisors are responsible for erecting and maintaining signs required for employee warning and information and ensuring adherence to this standard.

4.0 STANDARD

4.1 Barricades

For information on barricades, see Operations Safety and Health procedure SCO-SH-0900, Barricades.
4.2 Signs

- Accident prevention signs and tags shall comply with the specifications contained in 29 CFR 1926.200, Accident Prevention Signs and Tags.

- Signs designating hazard or giving instructions shall be placed on barricade stands, posts, or other suitable supports.

- Signs shall be placed in visible locations before work starts and shall be removed to proper storage areas when they are no longer needed.

- Signs shall be legible and maintained in a usable condition.

- Employees shall obey posted signs.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

| Rev. 0 | Approved by Bruce Long and Bill Boyd |
| 09/13/2016 | Reviewed by Project Safety Leadership Team |
|          | Revised by Bill Batts |

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-05, Signs and Barricades.

| Rev. 1 | Approved by Bruce Long and Bill Boyd |
| 01/01/2018 | Reviewed by Project Safety Leadership Team |
|          | Revised by Bill Batts |

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Deleted information on barricades, which was taken over by SCO-SH-0900, Barricades. Corrected position title (5.0).
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</table>
## Contents

1.0 PURPOSE AND SCOPE .................................................................................................................. 3
  1.1 Purpose ........................................................................................................................................ 3
  1.2 Scope ........................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ............................................................................................... 3
  2.1 Definitions ..................................................................................................................................... 3
  2.2 References ................................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................................ 3
  3.1 Construction Site Manager ........................................................................................................... 3
  3.2 Startup Manager .......................................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................................................. 4
  3.4 Contractors .................................................................................................................................. 4

4.0 STANDARD ..................................................................................................................................... 4
  4.1 Ladder Selection ........................................................................................................................... 4
  4.2 Straight Ladders/Extension Ladders .............................................................................................. 4
  4.3 Stepladders .................................................................................................................................. 5
  4.4 Ladder Usage ............................................................................................................................... 5
  4.5 Job-Built Ladders ........................................................................................................................ 6
  4.6 Ladder Inspection ......................................................................................................................... 6
  4.7 Ladder Maintenance ..................................................................................................................... 7
  4.8 Temporary Stairways .................................................................................................................... 7
  4.9 Permanent Stairways .................................................................................................................... 8

5.0 KEY CONTACT ............................................................................................................................... 8

6.0 QUALITY RECORDS ......................................................................................................................... 8

7.0 ATTACHMENTS ............................................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for selecting, constructing, maintaining, inspecting, and using ladders on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.1052, Stairways.
- 29 CFR 1926.1053, Ladders.
- Form 2A-06.1, Ladder Inspection Form.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Ladder Selection

Great care should be taken in selecting the proper size and design of the ladder for the use intended.

- Ladders shall have nonskid surfaces on each cleat.
- Ladders shall be capable of supporting four times their intended load.
- Portable metal ladders shall not be used on T&PS projects.
- All manufactured ladders shall be extra-heavy-duty type 1A.

4.2 Straight Ladders/Extension Ladders

- All portable straight ladders shall be equipped with approved safety feet.
• A rope should be spliced onto the ladder at a level approximately 36 in. from the top to provide a ready method of securing the ladder.

4.3 Stepladders

• Stepladders (sometimes referred to as A-frame ladders) shall have positive locking spreaders that will be fully spread and locked when the ladder is in use.

• Stepladders shall not be used as straight ladders. Workers shall not be allowed to work from the rung next to the top or the top of a stepladder.

• Stepladders shall be firm and well constructed. Care shall be taken when setting a ladder on grating. Often the feet of a stepladder will slip through the grating causing the ladder to fall. Use of plywood under the feet when on grating is recommended.

• Stepladders shall be tied off, or a worker shall hold the ladder, when the user is 4 ft or more above the floor.

• Stepladders shall not exceed 12 ft in height.

4.4 Ladder Usage

• The feet of straight and extension ladders shall be placed approximately one quarter of their supported length away from the vertical plane of their top support (that is, set the ladder at a 4:1 slope.)

• Only light, temporary work should be performed from ladders.

• Ladders shall not be placed in front of doors that open toward the ladder unless the door is locked or otherwise guarded.

• Ladder feet shall be placed on a firm base, and the area at the top and bottom of the ladder shall be kept clear.

• When using straight or extension ladders, the top of the ladder shall be secured to prevent displacement. When possible, the bottom of the ladder should be secured. Use ladder shoes, stakes, or other means to secure the ladder.

• Ladders leading to landings, walkways, platforms, and so forth shall extend 36 in. above this point (that is, the point of contact) and shall be securely fastened to prevent moving. If the ladder is not long enough to extend 36 in. above the landing, suitable grabrails shall be installed. Long ladders shall be braced at intermediate points as necessary to prevent springing.

• On two-section straight/extension ladders, the minimum overlap for two sections in use shall be as follows:
### Size of ladder (ft) vs Overlap (ft)

<table>
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<td>Over 48 ft up to and including 60 ft</td>
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- When ascending or descending ladders, workers are to face the ladder and use both hands to hold onto the ladder. Employees shall maintain a three-point contact at all times while ascending or descending a ladder. If material shall be moved from one level to another, a rope, block and tackle, or other means shall be used. Materials are not to be hand-carried on ladders.

- Ladders shall not be used horizontally as runways or scaffolds.

#### 4.5 Job-Built Ladders

When it is necessary to build a ladder at the jobsite, the ladder shall comply with the following requirements:

- OSHA and ANSI requirements regarding job-made ladders.
- All lumber shall be thoroughly seasoned, straight grained, and free from large or loose knots, decay, and other defects. All surfaces shall be planed and free of splinters, and edges where handrails are used should be beveled.
- Rung spacing shall be uniform and not over 14 in. or less than 10 in. on centers. The wood for the rungs shall be clear, straight grained, and entirely free of knots. The slope of the grain in the cleats shall not be less than 1 in 15. The cleats should preferably be straight grained. Single cleat ladders shall not exceed 30 ft in length.
- Rungs or cleats should be recessed ½ in. into the rails or filler strips of the same thickness as the cleats shall be inserted between the cleats and nailed to the side rails.
- Portable ladders shall support four times the intended load.
- Ladders shall be at least 16 in. wide at the base.

#### 4.6 Ladder Inspection

- Ladders shall be inspected before each use and quarterly for deterioration and damage.
• No employee shall be allowed to use (for any reason) any ladder that has broken, loose, or cracked rungs, side rails, or braces. Any ladder found in this condition shall be removed from service immediately.

• All quarterly inspections shall be documented. See form 2A-06, Ladder Inspection Form, as an example.

4.7 Ladder Maintenance

• Wooden ladders may be periodically treated with a clear preservative such as varnish, shellac, or linseed oil. Ladders shall not be painted because painting covers up structural defects.

• All ladders should have the rungs cleaned to prevent accumulation of materials that might destroy their nonslipping properties, and all metal fittings should be carefully checked for rust and corrosion.

• When not in use, ladders shall be protected from the weather. Ladders stored horizontally shall be supported at both ends and at intermediate points to prevent sagging of the middle section, which tends to loosen the rungs and warp the rails.

4.8 Temporary Stairways

• Temporary stairways shall be installed between 30 and 50 degrees from horizontal.

• Landings shall be installed at every 12 ft or less of vertical rise. Landings shall be not less than 30 in. in the direction of travel by 22 in. in width.

• Riser height and tread depth shall be uniform within each flight of stairs to within 1/4 in.

• Where doors or gates open directly onto a stairway, platforms shall be provided so that the swing of the door or gate will not reduce the width of the platform to less than 20 in.

• Stairways having four or more risers or rising over 30 in. shall have at least one handrail and one stair-rail system along each unprotected side or edge.

• Stair rails shall be installed at a height where the distance from the top of the rail to the face of the tread at its forward edge is 36 in.

• Midrails shall be installed at a height half way between the stair rail and the tread.

• Handrails shall be installed at a height where the distance from the top of the rail to the face of the tread at its forward edge is not more than 37 in. or less than 30 in.
- Stair rails and handrails shall be surfaced in such a way to prevent injury to employees caused from punctures or lacerations and to prevent snagging of clothing.

- The ends of stair rails and handrails shall be constructed in such a way as to prevent projection hazards.

### 4.9 Permanent Stairways

- Except during stairway construction, foot traffic is prohibited on stairways with pan stairs where the treads and/or landings are to be filled in with concrete or other material at a later date, unless they are temporarily fitted with wood or other solid filler material installed the full width and depth of the stair.

- Except during actual construction of a stairway, foot traffic is prohibited on skeleton metal stairs where permanent treads and/or landings are to be installed at a later date, unless the stairs are fitted with secured temporary treads made of wood or other solid material long enough to cover the entire tread and/or landing area.

### 5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

### 6.0 QUALITY RECORDS

None.

### 7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-06, Ladders and Stairways.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Deleted 4.1, Compliance, as redundant (repeated the requirements in 3.4, Contractors). Corrected position title (5.0).

Rev. 2
03/05/2019
Approved by Robin Hurst and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (4.3).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions
Environmental, Health, and Safety Procedures

SH-2A-07

Scaffold Safety

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<td>Robin Hurst</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions................................................................................................................ 3
  2.2 References .............................................................................................................. 4

3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 5
  3.5 Scaffold Requester .................................................................................................. 5
  3.6 Professional Engineer ............................................................................................. 5
  3.7 Scaffold Competent Person .................................................................................... 5
  3.8 Scaffold Erection Crews .......................................................................................... 6
  3.9 Southern Company Designated Representative ..................................................... 6

4.0 PROCEDURE ............................................................................................................. 6
  4.1 General Requirements/Best Practices .................................................................... 6
  4.2 Engineered Scaffolding Requirements .................................................................... 8
  4.3 Scaffold Erection and Dismantling ......................................................................... 9
  4.4 Mounting and Dismounting Scaffolds .................................................................... 9
  4.5 Scaffold Tagging ..................................................................................................... 10
  4.6 Inspection and Testing - Scaffold Planks .............................................................. 11
  4.7 Training .................................................................................................................. 11
  4.8 Storage of Scaffold Materials ................................................................................ 12

5.0 KEY CONTACT ......................................................................................................... 12

6.0 QUALITY RECORDS ............................................................................................... 12

7.0 ATTACHMENTS ....................................................................................................... 12
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements, in addition to OSHA regulations, for training on, erecting, using, inspecting, and dismantling scaffolds on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

**contractor** – Any company that performs services on T&PS sites; also included in that service may be the provision of materials. Services, for example, can include the furnishing and placement of concrete, the erection of structural steel, or the design of a process area. Materials, for example, can include mechanical equipment or field indirect materials.

**engineered scaffold system** – A scaffold designed by a registered professional engineer (PE).

**founding system** – Scaffold base built up from the ash pit or coutant bottom to the vertical wall of the boiler. Named for the founding beams that span the gap above the ash pit, it provides support for the scaffold. This system includes all the hardware used to build the base of a boiler scaffold.

**Project Information Management System (PIMS)** – A collaborative online project management tool built in the Microsoft SharePoint environment that provides a common place to share documents, and drawings, as well as other pertinent project information. It also performs electronic routing, approval, and retention of key business forms and historical data.

**scaffold** – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting workers or materials or both.
tagging system – A process for tagging scaffolds to indicate completion and inspection. See 4.5, Scaffold Tagging.

2.2 References

- 29 CFR 1926.450, Scope, Application and Definitions Applicable to Subpart L, Scaffolds.
- 29 CFR 1926.452, Additional Requirements Applicable to Specific Types of Scaffolds.
- SH-2A-08, Fall Protection.
- Forms:
  - 2A-07.1-.3, Scaffold Inspection Tags.
  - 2A-07.4, Scaffold Inspection Checklist.
  - 2A-07.5, Engineered Scaffold System Inspection Form.
  - 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.
3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

3.5 Scaffold Requester

The scaffold requester is responsible for the following:

- Evaluating options for providing temporary access to the work area.
- Working with the scaffold erection crew to identify potential hazards created for scaffold users and other persons in the area.
- Initiating form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit, when the scaffold will obstruct access or egress for project and plant personnel to critical equipment, emergency equipment, walkways, ladders, or stairs. See Scaffold Overhead and Access Restrictions (OAR) Permit and attachment B, Scaffold Overhead and Access Restrictions Permit Flowchart.
- Providing a copy of the completed OAR permit to the scaffold competent person and maintaining the completed copy of the permit in PIMS. See 6.0, Quality Records.

3.6 Professional Engineer

A registered professional engineer (PE), who holds an active PE license in the state in which the work is being performed, is responsible for designing any scaffold system that exceeds 125 ft in height, or any uncommon or high-risk scaffold.

For an engineered scaffold system, the PE is responsible for approving:

- The intermingling of scaffold components manufactured by different manufacturers.
- Any modifications to structural components of engineered scaffold system.

3.7 Scaffold Competent Person

The scaffold competent person, designated in writing and employed by the contractor, is responsible for supervising all scaffolds and scaffolding systems constructed and used on T&PS project sites, including the construction, modification, use, and dismantling of scaffolds and scaffolding systems. Southern Company requires the scaffold competent person to have accredited training\(^1\) and experience in the use, inspection, erection, and dismantling of scaffolds. Specific responsibilities include:

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\(^1\) An example of an accredited training program is the Scaffold Industry Association (SIA) or Scaffold Training Institute. Other training programs are available.
• Performing scaffold inspections after erection or modification and at the beginning of each shift prior to use.

• Immediately correcting defects noted during inspection. If defects cannot be corrected immediately, the scaffold competent person shall attach a red tag to the scaffold.

• Determining the appropriate tag to be applied to scaffold, completing all tag information, and affixing the tag to the scaffold at all access locations.

• Ensuring hazards and control methods identified are addressed when an OAR permit has been issued.

• Inspecting a scaffold after any repairs are made and retagging it appropriately.

• Inspecting scaffold planks upon receipt and prior to use.

3.8 Scaffold Erection Crews

Scaffold erection crews are responsible for ensuring the integrity of the scaffold and must follow the requirements listed in this procedure. Specific responsibilities include:

• Using tool tethers during assembly and disassembly of scaffolding.

• Using an acceptable fall-protection method at all times when working more than 4 ft above ground.

• Inspecting all scaffold components for defects as erection proceeds, and setting aside and retagging any components found to be defective.

3.9 Southern Company Designated Representative

Southern Company is responsible for providing a designated representative when a contractor is erecting engineered scaffolding. See 4.2, Engineered Scaffolding Requirements.

4.0 PROCEDURE

Contractors working on T&PS projects shall adhere to all OSHA regulations regarding the safe training on, use, erection, and dismantling of scaffolds, and the handling and storage of scaffold components.

4.1 General Requirements/Best Practices

Southern Company requires the following general requirements to be followed on all T&PS projects. These requirements go above and beyond the OSHA regulations set forth in 29 CFR 1926:
• Southern Company employees accessing scaffolding shall have participated in Southern Company Scaffold User training (SHIPS code 017343).

• All working platforms shall be capable of sustaining a minimum working load of 75 psf. If lighter scaffolding or platforms are needed, the contractor shall follow procedure SH-1K, Procedure Deviation Approval Process, to request a deviation.

• If lighter scaffolding or platforms are approved, all working platforms shall be designed and constructed to the following criteria, as needed:
  – Light duty – working loads of 25 psf.
  – Medium duty – working loads of 50 psf.
  – Heavy duty – working loads of 75 psf.

• All ladders and scaffolds shall be capable of supporting at least four times the design working load.

• Regardless of scaffold height, the handrail, midrail, netting, and toeboards shall meet the requirements of procedure SH-2A-08, Fall Protection.

• Personal fall arrest, in the form of a self-retracting lifeline (SRL), shall be provided to and employed by scaffold users while accessing scaffolds from vertical ladders where a fall exposure exceeds 15 ft to a lower elevation.

• A stationary scaffold shall be secured to the building or a fixed structure as outlined in attachment A, Requirements for Specific Scaffold Types, paragraph A.1.1, All Supported Scaffolds, item 3. This rule shall also apply to mobile scaffolds at their working stations. Outriggers may be used in lieu of tying off, or scaffolds may be clamped together so the height does not exceed three times the smallest base dimension without additional stabilization.

• Screens shall be installed on scaffolds or elevated work platforms over walkways or work areas that expose personnel below to dropped objects (see standard SH-S-2A-32, Falling Objects). At a minimum, the screens shall extend from the toeboards to the midrail.

• Tool tethers shall be used during assembly and disassembly of all scaffolds.

• Welding leads, extension cords, hoses, and so forth shall not be suspended from scaffold components.

• When scaffolding is yellow tagged because it could not be completed, such as a missing or incomplete handrail, or when openings larger than 12 in. in the working platform exist, all scaffold users shall tie off to an acceptable anchorage point using best compatible means available.

• When working from a suspended scaffold or platform, workers shall be secured to an independent lifeline.

• Prior to beginning the shift’s activities, the scaffold competent person shall inspect the scaffolds to be used.

• Where possible, gates shall be installed on scaffolding for safe access and egress.

• When scaffolds obstruct access or egress for project and plant personnel to critical equipment, emergency equipment, walkways, ladders, or stairs, the scaffold
requestor shall obtain form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit, from the site manager or his or her designee. The scaffold requestor shall take appropriate measures to mitigate the hazards of the obstruction or provide alternate access.

- When accessible levels of the scaffold cannot be built without obstructions to an overhead height of 80 in. or width of 18 in., the obstructions shall be identified by signage at the access point(s) and appropriate safeguards such as flagging, barricading, and/or padding put in place to prevent injury to personnel.

4.2 Engineered Scaffolding Requirements

- Supply Chain Management’s approval is required for any contractor bidding or erecting an engineered scaffold system.

- Any scaffolding system that meets the following criteria shall be designed by a PE:
  - Any scaffold system in excess of 125 ft in height.
  - Any scaffold built on a sloped founding system (base) installed to the vertical wall of a boiler, regardless of height.
  - Any uncommon or high-risk scaffold such as a suspended scaffold or a scaffold built on a sloped founding system in the coutant bottom of a boiler.

- No changes may be made to any structural members of an engineered scaffold system without prior approval in writing from the PE of record who designed, approved, and signed the scaffold design drawing. Changes shall be inspected by the engineer of record or his or her designee.

- Intermingling of scaffold components from different manufacturers is discouraged, but if necessary, shall be approved by the engineer of record.

- The scaffold competent person shall request engineered scaffold systems in advance. The civil discipline lead or designee shall review the design drawings to determine that the design meets the requirements of the planned work.

- A minimum of 2 weeks prior to the installation of an engineered scaffold system, the contractor shall provide the Southern Company-designated representative a PE-stamped engineering design drawing released for construction and the qualifications for the erection contractor’s scaffold qualified and scaffold competent persons.

- The scaffold competent person shall provide the contractor with a copy of the engineered scaffold inspection form (see form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist). The engineer of record and the scaffold competent person in consultation shall determine the scaffold inspection points.

- The contractor and the PE of record shall inspect and attest that the installation of the scaffold meets the requirements of the engineering drawing by signing and dating form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist.
• The contractor representative shall sign the engineered scaffold inspection form and present the inspection form to the Southern Company-designated representative before any Southern Company employee uses the scaffold. (See form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist.)

• After the scaffold competent person has received the signed inspection documents from the contractor, the scaffold will be evaluated by scaffold competent persons representing Southern Company Generation, the contractor, and the company contracted to erect the scaffold. Any deficiencies shall be identified and corrected by the contractor before any Southern Company Generation employee uses the scaffold. The appropriate scaffold inspection tag shall then be signed, dated, and placed at all points of scaffold access.

• The Southern Company-designated representative shall maintain copies of the engineered scaffold inspection forms. See 6.0, Quality Records.

4.3 Scaffold Erection and Dismantling

Scaffold erection and dismantling crews shall adhere to the following requirements:

• Pockets, pouches, and tool belts shall be used to carry the necessary tools for the work. (See standard SH-S-2A-32, Falling Objects.)

• Scaffold components shall be hoisted or lowered with a handline or passed from hand to hand. Throwing or dropping items to coworkers is not permitted.

• The contractor's scaffold competent person shall thoroughly evaluate each scaffold erection and/or dismantling and determine the use of fall prevention measures. Provisions shall be established for using a safety harness and acceptable anchorage points, including self-retracting lifelines and working on firm scaffold decks.

• Supported scaffold poles, legs, posts, frames, and uprights shall bear on base plates and mudsills or an adequate firm foundation.

• Footings shall be level, sound, rigid, and capable of supporting the loaded scaffold without settling or displacement.

• When scaffolding will be secured to a fixed structure or outriggers are to be used, braces shall be installed as soon as possible. When dismantling a scaffold, braces shall be left on as long as practical.

• Scaffold erection and dismantling crews shall preplan the erection and/or dismantling of scaffolds with consideration to surrounding operations and other activities.

4.4 Mounting and Dismounting Scaffolds

All persons mounting and dismounting a scaffold shall adhere to the following requirements:
• Do not carry objects in hands. Keep both hands free for climbing handholds.
• Step only on secured ladder or access rungs.
• Give full attention to stability while getting on and off the working platform. Do not use the toeboard as a handhold or foothold.
• Pay attention to each step and handhold; most falls occur near the top or the bottom of the ladder.

4.5 Scaffold Tagging

WARNING
Yellow tags identify hazards (such as an incomplete handrail or incomplete decking) associated with the structural components of the scaffold system. When these hazards are present, 100-percent fall protection is required for scaffold users.

Hazards not associated with components of the scaffold system, such as low overhead or limited climbing clearance, shall be controlled by SH-2A-05, Signs and Barricades.

Tags on scaffolds shall be applied appropriately and easily identifiable. The scaffold competent person shall tag each scaffold with one of following three colors:

<table>
<thead>
<tr>
<th>TAG COLOR</th>
<th>INDICATES…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>The scaffold is complete, as defined by the manufacturer and/or 29 CFR 1926, subpart L, and safe to use. A green tagged scaffold has a complete deck, proper access, and handrails installed.</td>
</tr>
<tr>
<td>Yellow</td>
<td>The scaffold can be used with caution but could not be completed because of the scope of work to be performed. This designation usually indicates an incomplete deck, handrail, or ladder. A fall arrest system is required by scaffold users when these hazards are present. Yellow tags may not be used as a substitute for scaffolds that are or can be completed and green tagged.</td>
</tr>
<tr>
<td>Red</td>
<td>The scaffold is unsafe for use because it is in the process of being erected, changed, dismantled, or has been damaged. A red tag shall be placed on the scaffold until deficiencies are corrected and the scaffold is inspected by the scaffold foreman or scaffold competent person and retagged.</td>
</tr>
</tbody>
</table>
4.5.1 Applying and Removing Scaffold Tags

**WARNING**

A scaffold that has been erected but not tagged shall be considered to be red tagged. Contact the scaffold foreman or scaffold competent person to inspect and tag the scaffold before work begins.

- Only a scaffold competent person may inspect and determine appropriate tagging. The scaffold competent person shall be responsible for completing all required information on the tag and affixing it to the scaffold at all access points.
- The scaffold tag shall be affixed to each scaffold access point, where it will not interfere with normal access and is readily visible.
- Any scaffold user may remove a green or yellow scaffold tag if the scaffold does not meet the safety requirements (for example, if the scaffold has been damaged, improperly modified, is missing components, or is deficient in any safety aspect). A scaffold competent person shall place a red tag on the scaffold until the deficiencies are corrected.
- After the scaffold crew repairs a damaged scaffold, a scaffold competent person shall inspect it and retag it accordingly.
- At the beginning of each shift, a scaffold competent person shall inspect all scaffolds to be used, and sign and date the scaffold tags.

4.6 Inspection and Testing - Scaffold Planks

- All scaffold planks shall be scaffold grade or equivalent as recognized by approved grading rules.
- Scaffold planks shall be inspected by a designated scaffold competent person upon receipt and prior to use as a platform. The scaffold competent person shall examine planks for knots, excessive grain slope, shakes, decay, dry rot, burns, cracks, and other defects. The scaffold crew shall immediately remove from service planks with noted defects.
- Scaffold planks are to be used for designated purposes only.

4.7 Training

Training for scaffold users, inspectors, scaffold erection crews, and scaffold dismantler crews shall comply with the current version of OSHA’s scaffold standards, 29 CFR 1926.454, subpart L, Scaffolds – Training requirements.
4.8 Storage of Scaffold Materials

**WARNING**

Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards.

Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. When possible, scaffold materials, particularly wood scaffold planks, shall be stored under a protective roof.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

The completed Engineered Scaffold System Inspection Form and Checklist (form 2A-07.5) is a quality record and shall be maintained in accordance with the Southern Company records retention schedule.

The completed Scaffold Overhead and Access Restrictions (OAR) Permit (form 2A-07.6) is a quality record and shall be maintained in PIMS.

7.0 ATTACHMENTS

Attachment A – Requirements for Specific Scaffold Types

Attachment B – Scaffold Overhead and Access Restrictions Permit Flowchart

Attachment C – Historical Summary of Changes
Attachment A – Requirements for Specific Scaffold Types

A.1 COMMONLY USED SCAFFOLDS

A.1.1 All Supported Scaffolds

1. The poles, legs, posts, frames, or uprights of supported scaffolds shall bear the maximum intended load on base plates and mud sills or other adequate stable and firm foundations capable of supporting without settling or displacement. The supports shall be plumb and braced to prevent swaying and displacement. Screw jacks may be used to level and plumb scaffolding, but may not be used to increase the height.

2. Supported scaffolds with a height-to-base width ratio of more than 4:1 shall be restrained from tipping by guying, tying, bracing, or equivalent means. Restraints shall be installed according to manufacturers’ recommendations or at the closest horizontal member to the 4:1 height.

3. For scaffolds 3 ft wide or less, restraints shall be repeated vertically every 20 ft and for scaffolds greater than 3 ft wide, every 26 ft. Restraints shall be installed at locations where horizontal members support both inner and outer legs. They shall be installed at each end of the scaffold and repeated at horizontal intervals of 30 ft or less measured from one end toward the other.

4. Supported scaffolds with an eccentric load, such as a cantilevered work platform, shall be restrained from tipping by guying, tying, bracing, or outriggers, regardless of the height-to-base-width ratio.

A.1.2 Tube and Coupler Scaffolds

1. Posts shall be erected on required bases and maintained plumb.

2. Diagonal cross bracing shall be provided in accordance with 29 CFR 1926.452(b)(2).

3. Runners shall be erected along the length of the scaffold located on both the inside and outside posts at level heights. (When tube and coupler guardrails and midrails are used on outside posts, they may be used in lieu of outside runners.)

4. Bearers and braces shall extend beyond the posts and runners and shall provide full contact with the coupler.

5. Tube and coupler scaffold taller than 125 ft shall be designed by a registered professional engineer, and shall be constructed and loaded according to the design.

A.1.3 Floats

1. The platform shall be supported by a minimum of two bearers, each of which shall project a minimum of 6 in. beyond the platform on both sides. Each bearer shall be securely fastened to the platform.

2. Rope connections shall be such that the platform cannot shift or slip.
3. When only two ropes are used with each float, they shall be arranged so as to provide four ends that are securely fastened to overhead supports.

4. Each supporting rope shall be hitched around one end of the bearer and pass under the platform to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

5. Before getting on a float, workers shall tie off to an independent lifeline and shall not untie until after getting off a float.

A.2 INFREQUENTLY USED SCAFFOLDS (REQUIRES SPECIAL CIRCUMSTANCES)

A.2.1 Fabricated Frame Scaffolds

1. Frames shall be placed one on top of the other with coupling or stacking pins to provide proper alignment of legs and shall be locked together vertically by pins or other equivalent suitable means to ensure against displacement.

2. Frames shall be braced by cross, horizontal, or diagonal braces, or combination thereof, that secure vertical members together laterally. The cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, level, square, and rigid. All brace connections shall be secured.

3. When moving platforms to the next level, the existing platform shall be left undisturbed until the new end frames have been set in place and braced.

4. Cantilevered sections may be used only to support personnel. Brackets used to support cantilevered sections shall be seated with side-brackets parallel to the frames and end-brackets at 90 degrees to the frames and shall not be bent or twisted from these positions.

A.2.2 Suspended Scaffolds

1. The use of multilevel suspended scaffolds is prohibited on T&PS projects.

2. Two-point suspended scaffolds shall have standard toeboards, midrails, and handrails.

3. Platforms shall not be more than 36 in. (0.9 m) wide unless designed by a qualified person to prevent unstable conditions.

4. The platform shall be securely fastened to hangers (stirrups) by U-bolts or by other means that satisfy the requirements of 29 CFR 1926.451A.

5. The platforms shall be of ladder-type, plank-type, beam-type, or light-metal-type. Light-metal-type platforms having a rated capacity of 750 lb or less and platforms 40 ft or less in length shall be tested and listed by a nationally recognized laboratory.

6. The blocks for fiber or synthetic ropes shall consist of at least one double and one single block. The sheaves of all blocks shall fit the size of the rope used.
7. Two-point scaffolds shall not be bridged or otherwise connected one to another during raising and lowering operations unless the bridge connections are articulated (attached), and the hoists properly sized.

8. Passage may be made from one platform to another only when the platforms are the same height, are abutting, and walk-through stirrups specifically designed for this purpose are used.

9. All suspension scaffold support devices such as outrigger beams, cornice hooks, parapet clamps, and similar devices, shall rest on surfaces capable of supporting at least 4 times the load imposed on them by the scaffold operating at the rated load of the hoist (or at least 1.5 times the load imposed on them by the scaffold at the stall capacity of the hoist, whichever is greater).

10. When outrigger beams are used to support suspended scaffolds, they shall be:

   • Made of structural steel I-beams (or channel iron that is securely fastened together with the flanges turned out).

   • Installed with the web in a vertical position and all bearing supports perpendicular to the beam center line.

   • Restrained from movement and stabilized by bolts or other direct connections to the floor or roof deck at the inboard end.

   • Placed perpendicular to the bearing supports when possible or placed as close to perpendicular as possible when obstructions are present and stabilized with opposing angle tiebacks that are secured to structurally sound anchorage points.

   • Provided with stop bolts or shackles at both ends.

   • Designed and installed so the shackle or clevis with which the rope is attached is directly over the center line of the stirrup.

   

   **WARNING**

   Counterbalanced outrigger beams cannot be used.

11. When cornice hooks, roof hooks, roof irons, parapet clamps, or similar devices are used to support suspended scaffolds, they shall be:

   • Made of steel, wrought iron, or materials of equivalent strength.

   • Supported by bearing blocks.

   • Secured against movement with tiebacks (that are equivalent in strength to the hoisting rope) installed at right angles to the face of the structure and secured to a structurally sound point of anchorage.
12. Suspension scaffold hoists shall be either electric or pneumatic and shall be approved by a qualified testing laboratory. Gasoline-powered hoists shall not be used.

13. Gears and brakes on all hoists shall be enclosed. In addition to the normal operating brake, all hoists shall be equipped with a braking device or locking pawl that engages automatically when the hoist makes either of the following uncontrolled movements:
   - An instantaneous change in momentum.
   - An accelerated overspeed.

14. When winding drum hoists are used on suspended scaffolds, they shall contain not less than four wraps of the suspension rope at the lowest point of scaffold travel. When other types of hoists are used, the suspension rope shall be long enough to allow the scaffold to be lowered to the level below without the rope end passing through the hoist, or the rope end shall be configured or provided with means to prevent the end from passing through the hoist.

15. Wire suspension ropes, including connecting hardware, shall be capable of supporting, without failure, at least six times the maximum intended load with the scaffold operating at either the rated load of the hoist or two times the stall load of the hoist, whichever is greater.

16. The load-end of wire suspension ropes shall be equipped with proper size thimbles and secured by eye splicing. There shall be a minimum of three wire rope clips installed according to the manufacturer's recommendations with spacing of six rope diameters apart. Clips shall be:
   - Retightened to the manufacturer's recommendations after the initial loading.
   - Inspected and retightened as needed at the start of each shift thereafter.

17. Wire suspension ropes shall be inspected by the scaffold competent person prior to each shift and after every occurrence that could affect the rope's integrity. Ropes shall be replaced if any of the following conditions exist:
   - Any physical damage that impairs the function and strength of the rope.
   - Kinks that might impair the tracking or wrapping of rope around the drum or sheave.
   - Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
   - Abrasion, corrosion, scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
   - Heat damage caused by a torch or any damage caused by electrical contact.
   - Evidence the secondary brake has been activated during an overspeed condition and has engaged the rope.
18. Suspension scaffolds shall be secured to prevent them from swaying as determined by the scaffold competent person.

19. Suspension ropes shall be adequately shielded from heat-producing processes and corrosive substances when needed.

20. When electric welding is performed from suspended scaffolds, the following precautions shall be taken to prevent current from arcing through the suspension wire rope:
   - An insulated thimble shall be used to attach each suspension rope to its support (such as cornice hook or outrigger beam).
   - The suspension wire rope shall be insulated for a distance of 4 ft above the hoist and any tail line below the hoist shall be insulated to prevent contact with the platform.
   - Each hoist shall be covered with insulated protective covers.
   - A separate grounding conductor, at least the size of the welding lead, shall be connected from the scaffold to the structure at all times while the welding machine is operating; this grounding conductor is in addition to the grounding conductor required by the welding process.

21. In addition to the standard guardrail system, all workers on suspended scaffolds shall be protected from falling by a personal fall arrest system consisting of a full body harness, shock-absorbing lanyard with locking hook, and an appropriately sized rope grab attached to a vertical lifeline. Each worker shall be attached to separate vertical lifelines that are securely and independently attached to substantial members of the structure, not the scaffold.

A.2.3 Needle-Beam Scaffolds

1. Needle beams shall be installed on the edge of the scaffold.

2. Ropes and hangers shall be used for supports, except that one end of the needle beam may be supported by a permanent structural member.

3. Ropes shall be securely attached to the needle beams.

4. The support connections shall be arranged so as to prevent the needle beam from rolling or becoming displaced.

5. Platform units shall be securely attached to the needle beams by bolts or equivalent means. Cleats and overhang are not considered to be adequate means of attachment.

A.2.4 Boatswains’ Chairs

1. Boatswains’ chair tackle shall consist of correct size ball bearings or bushed blocks containing safety hooks and properly “eyed spliced” minimum 5/8-in.-diameter first-
grade manila rope, or other rope that will satisfy the criteria (for example, strength and durability) of manila rope.

2. **Boatswains’ chair seats slings** shall be reeved through four corner holes in the seat, shall cross each other on the underside of the seat, and shall be rigged so as to prevent slippage that could cause an out-of-level condition.

3. **Boatswains’ chair seats** shall be a minimum of 5/8-in.-diameter fiber, synthetic, or other rope that will satisfy the criteria (for example, strength, slip resistance, durability) of first-grade manila rope.

4. When a heat-producing process such as gas or arc welding is being conducted, boatswains’ chair seat slings shall be a minimum of 3/8-in. wire rope.

5. **Noncross-laminated wood boatswains’ chairs** shall be reinforced by securely fastened cleats on their underside to prevent the board from splitting.

6. The worker shall be tied off to an independent lifeline with a safety harness.

**A.2.5 Electric Hoist Platforms**

1. When working platforms are suspended from electric hoist mechanisms and used to raise and lower workers, each worker shall wear a safety harness and shall be attached to an independently secured lifeline.

2. Such platforms shall have guardrails 42 in. in height above the platform.

3. Prior to each use, the hoist mechanism and support attachment shall be visually inspected and the load support checked at 1 ft off the ground.

4. The cable and the lay of the cable on the spool shall be checked constantly.

5. All wire rope associated with the support of an electric hoist platform shall be protected from abrasive sharp object contact by the use of softeners.

**A.2.6 Mobile Scaffolds**

1. Scaffolds shall be braced by cross, horizontal, or diagonal braces, or combination thereof, to prevent racking or collapse of the scaffold and to secure vertical members together laterally so as to automatically square and align the vertical members. Scaffolds shall be plumb, level, and squared. All brace connections shall be secured.

2. Scaffold casters and wheels shall be locked with positive wheel and/or wheel and swivel locks, or equivalent means, to prevent movement of the scaffold while the scaffold is being used in a stationary manner.

3. Manual force to move the scaffold shall be applied as close to the base as practicable, but not more than 5 ft above the supporting surface.

4. Power systems used to propel mobile scaffolds shall be designed for such use. Forklifts, trucks, similar motor vehicles, or add-on motors shall not be used to propel scaffolds unless the scaffold is designed for such propulsion systems.

5. Scaffolds shall be stabilized to prevent tipping during movement.
6. Employees shall not ride on scaffolds during movement.

7. The height of freestanding mobile scaffolds shall not exceed four times the minimum base dimension.

8. Ladders used to access mobile scaffolds shall be affixed and located in such a manner to eliminate any tendency for the scaffold to tip.

9. Where leveling of the scaffold is necessary, screw jacks or equivalent means shall be used.
Attachment B – Scaffold Overhead and Access Restrictions Permit Flowchart

Use this flowchart with form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit.

- Is scaffold required for task? Have all alternative means of access have been explored, such as use of a man lift?
- Explore other options

- Does scaffold cause an obstruction to access or egress?
- ASM signature required

- Can the scaffold be built or designed to avoid obstructions?
- Provide detailed directions, such as barricaded walkway

- Do all accessible working levels meet height/width requirements?
- Coordinator signature required

- Provide protection from all identified hazards
- No Scaffold Permit required
- Yes

- No

- No scaffold required for task
Attachment C - Historical Summary of Changes

Rev. 0
12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Issued

Rev. 1
3/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
General revision.

Rev. 2
5/1/2011
Approved by PCT chair
Reviewed by Project Safety Leadership Team
Revised by Bob Fitzgerald
Remarks:
Added information for training and inspecting scaffolding; pulled definitions from the body of the procedure into Definitions; added references to appropriate Generation and E&CS procedures; removed direct quotations from the OSHA regulations (to eliminate redundancy and outdated information); identified a quality record generated from following this procedure; moved requirements for specific scaffold types from the body of the procedure to attachment A. Added attachment B, Engineered Scaffold Inspection Forms, and attachment C, Historical Summary of Changes.

Rev. 3
08/30/2012
Approved by PCT chair
Reviewed by Project Safety Leadership Team
Revised by Bob Fitzgerald
Remarks:
General revision of grammar and punctuation.

Rev. 4
09/22/2015
Approved by Bob Fitzgerald, Chad Kendrick, and Bill Boyd
Reviewed by Project Safety Leadership Team and Procedure Consolidation Team
Revised by Bob Fitzgerald
Remarks:
General revision for grammar, clarity, and punctuation. Changed phrase “elevated work platforms” to word “scaffolds” (1.1). Edited scope statement (1.2). Linked terms “competent person,” “contractor,” and “PIMS” to E&CS glossary (2.1). Added references and links for two forms (form 2A-07.5, Engineered Scaffold System Inspection Form and Checklist (formerly attachment B), and new form 2A-07.6, Scaffold Overhead and Access Restrictions Permit) (2.2). Added responsibilities for scaffold requester (3.3). Moved general statement on scaffold competent person’s responsibility from 3.2, Contractors, to 3.5, Scaffold Competent Person. Moved examples of high-risk scaffolds from 3.4, Professional Engineer, to 4.2, Engineered Scaffolding Requirements. Added bullet points reflecting OAR-permit responsibilities for scaffold competent person (3.5). Added two bullets concerning new OAR permit (4.1). Edited wording of warning statements (4.5 and 4.5.1). Moved training requirements to new section 4.7, Training. Replaced Engineered Scaffold System Inspection Form and Checklist (now separate form 2A-07.5) with Scaffold Overhead and Access Restrictions Permit Flowchart (attachment B). Updated attachment C, Historical Summary of Changes.
Rev. 5
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team and Process Coordination Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

Rev. 6
03/05/2019
Approved by Robin Hurst and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (3.8 and attachment A, A.2.2).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2A-08

Fall Protection

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</table>
## Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
1.1 Purpose ....................................................................................... 3
1.2 Scope .......................................................................................... 3
2.0 DEFINITIONS AND REFERENCES .................................................. 3
2.1 Definitions .................................................................................... 3
2.2 References .................................................................................... 3
3.0 RESPONSIBILITY ............................................................................ 4
3.1 Construction Site Manager ........................................................... 4
3.2 Startup Manager ........................................................................... 4
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ........................................... 4
3.4 Contractors .................................................................................. 4
3.5 Fall Protection Competent Person ................................................... 4
4.0 PROCEDURE ................................................................................... 5
4.1 Fall Prevention .............................................................................. 5
4.2 Fall Prevention Program ............................................................... 6
4.3 Guardrails General ........................................................................ 6
4.4 Floor Hole Covers and Wall Opening Barricades ................................ 7
4.5 Fall Protection/Personal Fall Arrest Systems ................................... 8
4.6 Safety Net Systems ....................................................................... 10
4.7 Controlled Access Zones ............................................................... 10
4.8 Warning Line System and Safety Monitoring System ...................... 10
4.9 Competent Person ....................................................................... 11
4.10 Inspection .................................................................................... 11
4.11 Rescue ........................................................................................ 11
4.12 Care, Use, and Maintenance of Equipment .................................... 11
4.13 Training Content and Requirements ............................................ 12
5.0 KEY CONTACT ............................................................................... 12
6.0 QUALITY RECORDS ................................................................. 12
7.0 ATTACHMENTS ........................................................................... 12
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides fall prevention and fall protection system requirements on Technical and Project Solutions (T&PS) projects to ensure personnel are protected when work activities place them in an elevated position or in a position where a fall to a lower level is possible.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- 29 CFR 1926.500 through.503 with appendices, subpart M, Fall protection.
- ANSI Z359.1, Safety Requirements for Personal Fall Arrest Systems and Components.
- Sample Fall Protection Program.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of their site-specific safety plans.

3.5 Fall Protection Competent Person

The fall protection competent person is responsible for the following:

- Overseeing the fall protection program.
- Ensuring the compatibility of fall protection components.
- Training and retraining as needed of site personnel on all aspects of fall protection and prevention.
4.0 PROCEDURE

4.1 Fall Prevention

T&PS has a 100-percent fall protection policy. Fall prevention measures shall be implemented when the potential for a fall of 4 ft or more or into hazardous machinery or equipment exists. Specific operations excepted from this requirement that do not require a documented deviation under SH-1K, Procedure and Standard Deviation Process, include:

- Regular service, inspection, maintenance of mobile construction equipment where the manufacturer designates personnel access and provides steps, handholds, ladders, and guardrails/railings/grabrails meeting the criteria of ISO 11660:2008(E), ISO 2867:2011(E), or SAE J185, and walking/stepping surfaces with slip-resistant properties; or, on cranes, where the employee is at or near the draw-works when the equipment is running, in the cab, or on the deck.
- Loading/offloading of flatbed trailers while standing directly on the trailer bed surface.

One-hundred-percent fall protection may be accomplished through the use of a guardrail system (as specified in 29 CFR 1926.502(b)), approved safety net systems, covers, or personal fall arrest systems.

Prior to beginning a project, T&PS and contractor management who have personnel who are exposed to falls shall perform an initial survey carefully evaluating the potential fall hazards and develop a written program for fall protection for those specific hazards. The program must include an evaluation of the specific exceptions listed in this section and detail alternate means of ensuring the safety of personnel performing these operations.

- The program shall meet the requirements of 29 CFR 1926, subpart M, Fall protection, and must address the elements described in T&PS procedure SH-2A-08, Fall Protection. The fall protection program shall first address methods to engineer fall hazards from work activities.
- An engineered solution is to design the work to prevent (or minimize) personnel exposure to falls. An example of an engineered fall protection solution is a guardrail system including handrails, midrails, and toeboards. Assembling steel on the ground and then erecting the assembled sections is an example of minimizing the exposure to a fall hazard.
- When engineered solutions are not feasible, the fall protection program shall address such methods as the use of full body harnesses, lanyards, lifelines, and safety nets.
4.2 Fall Prevention Program

Before starting any work at an elevated position, the contractor shall submit a written fall protection and fall prevention program to the T&PS site manager. Elevated work includes, but is not limited to, scaffold erection, steel erection, work in pipe bridges, roof work, Q-decking, grating installation and removal, formwork and reinforcing steel, and any other potential for a fall of 4 ft or greater, except work performed from a ladder. The program must include:

- A list of work tasks to be performed at an elevated position.
- The proposed method(s) of fall protection for each task.
- Suitable anchor points, if a personal fall arrest system is to be used.
- Rescue provisions.
- Means of access and egress to elevated work locations.
- Name(s) and qualifications of the contractor’s competent person(s).
- Description of the fall protection training program.

See Sample Fall Protection Program.

4.3 Guardrails General

A guardrail system designed to support 200 lb of force in either the downward or outward direction is required if the walking or working surface is 4 ft or more above a lower level. Handrails shall be 42 in. (plus or minus 3 in.) above the walking surface. Midrails shall be positioned halfway between the handrail and the floor but cannot have more than 19-in. opening between the midrail and either the walking surface or handrail. The guardrail system shall have toeboards and/or screens. Screens are required on scaffolds or elevated work platforms over walkways or work areas that expose personnel below to dropped objects. The screens shall extend from the toeboards to the handrails. The screen shall be of #18, ½-in. wire mesh or equivalent material.

Where access openings for ladders are provided through guardrails systems, either a swing gate or an offset shall be provided so personnel cannot back into the opening. Access openings for stairs do not require a gate or offset.

- Wooden guardrails shall be constructed of a minimum of a 2-in.x4-in. handrail with a 1-in.x4-in. midrail with 2-in.x4-in. posts spaced no more than 8 ft on centers. Material shall have no loose or large knots and shall be free of splinters or protruding nailheads.
- Pipe guardrails (posts, top rails, and midrails) shall be made of schedule 40 pipe that is at least 1½-in. inside diameter (I.D.). The post shall be placed a maximum of 8 ft apart on centers.

- Structural steel guardrails (posts, rails, and midrails) shall be of at least 2-in.x2-in.x⅜-in. angle iron with posts spaced not more than 8 ft apart on center.

- Wire rope guardrails shall be made of at least ⅜-in. wire rope. Wire rope midrails shall be at least ¼-in. wire rope. The posts shall be on 8-ft centers or less and the wire rope stretched tight to keep the deflection to less than 3 in. Wire rope handrails shall not deflect to a height less than 39 in. above the floor. The wire rope shall be flagged every 6 ft with a highly visible material.

  For ¼-in. wire rope, a minimum of 2 clips shall be used and shall be spaced no more than 1½ in. apart and torqued to 15 fp. For ⅜-in. wire rope, a minimum of 2 clips shall be used and shall be spaced 2¾ in. apart and torqued to 45 fp. For ½-in. wire rope, a minimum of 3 clips shall be used and shall be spaced 3 in. part and torqued to 65 fp.

Openings between the handrail and midrail shall not exceed 19 in. Often this restriction requires the use of two midrails spaced evenly between the handrail and the platform. Wire rope handrail shall be spliced only by using an eye-to-eye method.

- Toeboards are required on platforms with guardrails and on scaffolds that are above the ground or floor as falling object protection and fall protection. Toeboards shall be 3½ in. (4 in. nominal for scaffolds) or more in height. They shall be made of wood, metal, or ½-in. wire mesh. There shall be no more than ¼-in. clearance between the top of the platform and the bottom of the toeboard. The toeboard shall be capable of withstanding 50 lb of force.

- Rebar is prohibited for use as handrail material.

### 4.4 Floor Hole Covers and Wall Opening Barricades

- Any hole larger than 2 in. in its least dimension shall have either floor hole covers or guardrails. Hole covers shall be used to protect personnel from falling through holes, tripping into holes, and from material falling through holes. Covers shall be designed to support at least twice the intended weight of personnel, material, or maximum axle load of the largest piece of equipment expected to pass over the cover.

- Floor hole covers shall be made of ¾-in. plywood or equivalent if one dimension of the opening is 18 in. or less, otherwise 2-in. lumber or doubled ¾-in. plywood or equivalent is required. Additional support systems may be required for longer spans.
• If a floor hole cover is damaged due to equipment traffic, it shall be replaced by a cover designed to be substantially stronger.

• Floor hole covers shall be secured to prevent accidental displacement. Securing can be achieved by wiring or nailing the covers down. If such action is not feasible, the bottom of the cover shall be cleated by nailing 2-in.x 4-in. boards (or similar material) the size of the hole. The covers shall be placed over the hole with the 2-in.x 4-in. boards firmly in the hole to keep the covers from being accidentally displaced.

• Covers shall be marked with the words HOLE COVER legible and clearly visible.

• When not in use, the covers shall be neatly stacked out of the way. In the job safety briefing, personnel shall be cautioned about removing covers and stepping into the hole. Fall protection devices may be needed when working around the open hole. Work groups shall replace hole covers when the task is completed but a hazard still exists. Personnel shall not leave an open hole unattended.

• Wall openings where the potential for a fall of 4 ft or greater exists shall be protected by a standard guardrail system.

4.5 Fall Protection/Personal Fall Arrest Systems

• Only full-body harnesses are to be used for fall arrest. The harness must be of the proper size and adjusted to fit in order to provide the proper protection.

• The use of personnel-owned fall-arrest equipment is strictly prohibited.

• Lanyards shall be of the shock-absorbing-type. Two lanyards (or twin lanyards) shall be worn at all times to facilitate tie off while moving.

• Shock-absorbing lanyards allow for no more than a 6-ft free fall and 3.5 ft of deceleration distance. This distance totals 9.5 ft plus the suspended distance of the torso and the legs. Personnel need an anchor point that will not allow them to hit any objects below them. Falling 9.5 ft to a floor that is 10 ft below will involve a severe impact for the person. Employers and personnel shall ensure the fall zone is adequate for the height of the person and the length of the lanyard, or the lanyard shall be secured high enough above the person's head to prevent the person from contacting any lower object in the event of a fall.

• One end of the lanyard shall be attached to the D-ring between the person's shoulder blades. The other end shall be attached to an anchorage that is high enough so that a fall of more than 4 ft cannot occur (usually at least the same height as the D-ring). The lanyard shall restrict the free fall to no more than 6 ft and the deceleration distance to 3.5 ft.
NOTE

Some foreign-made lanyards do not always meet this requirement.

- Snapping the lanyard back onto itself is prohibited unless approved by the manufacturer.

- Anchor points shall be selected to avoid sharp edges that can damage the lanyard. Softeners and other devices should be used if sharp edges are unavoidable.

- Snap hooks and/or carabineers shall be of the double action, self-locking type at a minimum. Snap hooks and/or carabineers with a throat opening greater than 25/32 in. can be used on Southern Company Generation T&PS projects for scaffold erection and dismantling operations only with an approved site-specific fall protection program that includes, at a minimum:
  - Specific training about connection compatibility.
  - Allowable connections.
  - Methods of distribution and control.
  - Inspection requirements.

Acceptable compatible connections must be structural members exceeding 1¼-in. diameter and cannot include D-rings, thimble eyes, “cheaters,” or other small diameter anchors regardless of orientation.

- Anchor points and anchor connectors (tie-off points) shall be capable of supporting 5,000 lb per person or engineered with a 2-to-1 safety factor. This restriction eliminates items such as small-bore pipe (less than 2 in.), conduit, handrails, most all-thread systems, and most scaffolding components. The best anchorages are manufactured anchorages; for example, girder grips, beamers, beam straps, lifelines (horizontal and vertical), retractable lifelines, and rope grabs.

- Horizontal lifelines shall be erected above the person’s shoulders when possible. The lifelines shall be protected from sharp edges and abrasion. Lifelines shall be independent of scaffold systems and capable of supporting 5,000 lb per person attached.

- Horizontal lifelines shall be designed and erected with a 30-degree sag angle.

- Wire rope guardrail systems shall not be used as horizontal lifelines unless it is designed and engineered by a competent person to the specifications for horizontal lifeline requirements.
4.6 Safety Net Systems

- When used for fall protection, safety nets shall be installed as close as practical under the walking/working surface, but in no case more than 30 ft below such level and shall have sufficient clearance under them to prevent contact with the surface or structures below.

- Safety nets shall extend outward from the outermost projection of the work surface as follows:
  - 8 ft for a vertical distance up to 5 ft.
  - 10 ft for a vertical distance of 5 ft to 10 ft.
  - 13 ft for a vertical distance greater than 10 ft.

- Safety nets shall have a maximum mesh opening of 6 in. x 6 in.

- Each safety net shall have a border rope for webbing with a minimum breaking strength of 5,000 lb.

- Connections between safety-net panels shall be as strong as integral net components and shall be spaced not more than 6 in. apart.

- Each safety-net system shall be drop-tested after initial installation, if relocated, after major repairs, and at 6-month intervals if left in one place. This drop test shall be conducted using a 400-lb bag of sand, 30 in. (+/-2 in.) in diameter dropped into the net from the highest surface, at which personnel are exposed to fall hazards, but not less than 42 in. above the net.

- Safety nets shall be cleared of any materials, scrap, equipment, tools, and similar objects that may have fallen into the net as soon as possible, and at least prior to the next work shift.

- Safety nets shall be inspected at least once per week and after any occurrence that could affect the integrity of the system. Damaged or defective nets shall be removed from service.

4.7 Controlled Access Zones

Controlled access zones for fall protection are prohibited on T&PS projects.

4.8 Warning Line System and Safety Monitoring System

The warning line system and safety monitoring system are prohibited on T&PS projects.
4.9 Competent Person

The fall protection program shall address the responsibilities and authority of the fall protection competent person(s) and designate who they are for T&PS and each site contractor. The fall protection competent person(s) shall oversee all aspects of the fall protection program. The fall protection competent person(s) shall ensure component compatibility to help reduce the risk of equipment failure or rollout.

4.10 Inspection

Prior to each use, the user shall inspect all components of fall protection systems for mildew, wear, damage, and other deterioration. At a minimum, the fall protection competent person shall inspect fall protection systems on a monthly basis for mildew, wear, damage, and other deterioration. The monthly inspection shall be documented. See Sample Fall Protection Program, appendixes A through D. Defective components shall be removed from service if their function or strength has been adversely affected. The body-harness system or components subject to impact loading shall be immediately removed from service and shall not be used again for worker protection unless inspected and determined by a fall protection competent person (as defined by 29 CFR 1926, subpart M) to be undamaged and suitable for reuse.

4.11 Rescue

- Rescue plans for suspended workers shall be included in the fall protection plan. Prompt rescue shall be readily available for workers who are not able to self-rescue.

- Rescue equipment shall be identified in the project fall protection program. All rescue equipment shall be routinely inspected and immediately available.

4.12 Care, Use, and Maintenance of Equipment

All lifelines and lanyards shall be protected against cuts or abrasion. For example, independent lifelines used on rock-scaling operations or in areas where the lifeline may be subjected to cutting or abrasion shall be protected from such hazards and shall have a minimum breaking strength of 5,000 lb or twice the anticipated arresting force; whichever is greater.
4.13 Training Content and Requirements

- All site personnel shall be trained by a qualified or competent person on:
  - The nature of site fall hazards.
  - Procedures for erecting, using, inspecting, and dismantling fall protection systems.
  - Limitations of fall protection equipment.
  - Selection of anchor points
  - How to don and doff a safety harness.

- Additional training shall include the elements of the site- or facility-specific fall protection program and the requirements of applicable standards.

- Retraining shall be conducted annually, when the fall protection program changes, a new hazard is introduced into the work place, new fall protection equipment is introduced, or when personnel performance indicates the need for retraining to restore the desired level of competency.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A – Historical Summary of Changes

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<td>Globally revised the fall exposure from 6 ft to 4 ft. Added specific operations exempted from requirement (4.1).</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-09

Steel Erection

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## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ............................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions ....................................................................................................................... 3
  2.2 References ..................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................. 4
  3.1 Construction Site Manager ............................................................................................ 4
  3.2 Startup Manager ............................................................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ............................................. 4
  3.4 Contractors .................................................................................................................. 4

4.0 STANDARD .................................................................................................................. 4
  4.1 Special Roles and Responsibilities ................................................................................ 5
  4.2 General .......................................................................................................................... 6
  4.3 Flooring Requirements, Permanent ............................................................................. 8
  4.4 Flooring Requirements, Temporary .......................................................................... 8
  4.5 Specifications .............................................................................................................. 9
  4.6 Fall Protection .............................................................................................................. 10
  4.7 Protection From Falling Objects ................................................................................. 11
  4.8 Rigging .......................................................................................................................... 11
  4.9 Landing Loads During Construction Period ............................................................... 12
  4.10 Accessing the Structural Steel .................................................................................. 12
  4.11 Training ...................................................................................................................... 13

5.0 KEY CONTACT .............................................................................................................. 13

6.0 QUALITY RECORDS ..................................................................................................... 13

7.0 ATTACHMENTS ............................................................................................................. 13
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the safe erection of structural steel on Technical and Project Solutions (T&PS) projects. This standard does not cover erection of electrical transmission towers, communication towers, or tanks.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedures:
  - SH-2A-08, Fall Protection.
  - SH-2A-10, Rigging and Lift Plans.
- Sample Steel Erection Plan.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

Each contractor erecting and installing structural steel or support components shall establish a site/facility-specific plan to assess and address specific and foreseeable hazards associated with structural steel erection. Work methods shall be established to ensure the safety of the employees performing steel erection as well as others adjacent to the affected area. As a minimum, the site erection plan shall detail provisions necessary to accomplish the following objectives:

- Assess and secure the surrounding affected area, structures, process equipment, and so forth, prior to swinging suspended loads over the area.
• Locate both overhead and underground piping or utilities that could be contacted or affected by the steel erection activity. Provisions shall be established to ensure utilities, pipelines, or process equipment is not affected.

• Routing of personnel, equipment, and vehicular traffic around the affected area.

• Pre-job planning, including rigging and lifting plans.

• Personal protective equipment including fall-protection systems that will be used.

• Refer to Sample Steel Erection Plan.

4.1 Special Roles and Responsibilities

T&PS shall act as the controlling contractor for steel erection activities on the project. The controlling contractor means the prime contractor, general contractor, construction manager, or any other legal entity which has overall responsibility for the construction of the project, its planning, quality, and completion.

• The controlling contractor shall be responsible for the following actions:
  – Certify in writing that concrete used for support of structural steel has reached 75 percent of minimum compression strength.
  – Provide written notification to the steel erector of any anchor rod (bolt) modifications or repair and certify that they are adequate. This notification includes approval from the project structural engineer of record for any repairs, replacement, or field modifications to any anchor rod (bolt).
  – Provide adequate access roads for movement of steel and cranes.
  – Provide adequate laydown yards that are firm, properly graded, and drained.
  – Control work to ensure that other contractors or craft do not work under steel erection activities without proper overhead protection systems in place.
  – Assume the control of fall protection systems when the erection contractor is directed to leave them in place after they have completed erection activities.

• The steel erection contractor shall submit written installation plans for floor grating and Q-decking to the T&PS construction site manager for approval. The plan shall include details such as, but not limited to, sequencing and fall protection practices.

• The steel erection contractor shall not erect steel unless he or she has received written notification that the concrete in the footings, piers, and walls or the mortar in the masonry piers and walls has attained, on the basis of an appropriate ASTM standard test method, either 75 percent of the intended minimum compressive design strength or sufficient strength to support the loads imposed during steel erection.

• The steel erection contractor shall provide the T&PS construction site manager written notification of the individual(s) assigned as the steel erection competent person and qualified rigger.
4.2 General

Structural stability and the safety of all personnel shall be maintained at all times during the structural steel erection process.

- Temporary periphery guardrails shall be used for the smallest possible duration. Proper planning shall include the timely delivery and installation of the permanent guardrail system.

- The T&PS site/facility manager and the Construction Safety and Health professional shall examine the need for wire rope guardrails and approve the design of the system. The use of wire rope guardrails shall meet the following requirements:
  - Wire rope guardrails shall be made of at least 3/8-in. wire rope. Wire rope midrails shall be at least 1/4-in. wire rope. The posts shall be on 8 ft centers or less and the wire rope stretched tight to keep the deflection to less than 3 in. Wire rope handrails shall not deflect to a height less than 39 in. above the floor. The wire rope shall be flagged every 6 ft with a highly visible material. For 1/4-in. wire rope, a minimum of two clips shall be used and shall be spaced no more than 1½ in. apart and torqued to 15 fp. For 3/8-in. wire rope, a minimum of two clips shall be used and shall be spaced 2¼ in. apart and torqued to 45 fp. For 1/2-in. wire rope, a minimum of three clips shall be used and shall be spaced 3 in. apart and torqued to 65 fp. Openings between the handrail and midrail shall not exceed 19 in. Often, this spacing requires the use of two midrails spaced evenly between the handrail and the platform. Wire rope handrail shall be spliced only by utilizing an eye-to-eye method.
  - Wire rope shall be routed through prefabricated holes in perimeter columns and properly secured. Additional uprights shall be spaced no more than 8 ft apart.
  - A toeboard shall be installed. The toeboard shall not be more than ½ in. above the platform and shall be a minimum of 1 in.x4 in. nominal lumber.
  - The guardrail system shall support without failure a force of 200 lb in either a downward or outward direction. The force shall be placed 3 in. below the top of the uprights.

- A tag line of proper length shall be used on all crane loads.

- Personnel shall not be allowed to ride the headache ball, hook, or load.

- Personnel shall maintain 100-percent fall protection at all times when exposed to falls of 4 ft or greater. Personnel shall straddle (coon) the beams when moving. If the beam is too large to straddle, the employee may walk the flange while using 100-percent fall protection as part of the fall protection plan.

- Before unhooking the column from the lifting device, all columns shall be set by a minimum of four anchor rods, the nuts on the anchor bolts shall be drawn down tight or temporary guy lines shall be secured. Each anchor rod assembly, including the column-to-base plate weld and column foundation, shall be designed to resist a minimum eccentric gravity load of 300 lb located 18 in. from the extreme outer edge
of the column face in each direction at the top of the column shaft. This 300 lb of force requirement shall also apply to column splices.

- During final placement of solid web structural members, at least two bolts per connection, of the same size and strength as specified in the erection drawings, shall be installed at least wrench tight before load is released from the hoisting line. The diagonal bracing for solid web structural members may be drawn up wrench tight by a minimum of one bolt per connection.

- Systems engineered (metal) buildings erection procedure requirements include the following:
  - Columns shall have a minimum of four anchor bolts.
  - Hoisting lines shall not be released from rigid frames until 50 percent of their bolts are installed and tightened both sides of the web adjacent to each flange.
  - Construction loads shall not be placed on any structural steel framework until adequately secured.
  - Shared common connection hole shall have at least one bolt wrench tight or a seat-type connection device present in the first member of girt and eave installation to prevent displacement.
  - Both ends of all steel or cold-formed joists shall be fully bolted and/or welded to support the structure before releasing the hoist line, allowing personnel on the joists, or allowing any construction loads on the joists.
  - Purlins and girts shall not be used as anchorage points for a fall arrest system.

- Open web steel joists requirements are as follows:
  - Steel joists or girders shall be field bolted at or near columns to provide stability.
  - Joist spans < 60 ft shall be designed to allow one employee to release hoisting line without bridging.
  - Joists with spans > 60 ft shall be set in tandem with all bridging installed unless a qualified person approves an alternate method.
  - Joists stability shall be maintained through the use of stabilizer plates on columns, preventing rotation of the bottom chords of steel joists and girders, and by not placing joists on any support structure that is not stable.
  - At least one end of each steel joist shall be attached to the support structure before additional joists are placed and before the hoist line is released from the joist.
  - All erection bridging shall be in accordance with OSHA 1926,757 (d).

- Double connections at columns and/or beams require at least one wrench tight bolt remain connected or a seat/equivalent device be in place at the shared common connection hole to the first member to prevent column displacement.

- Areas below structural steel erection shall be barricaded and signs indicating overhead work shall be posted.
• Christmas treeing (the hoisting of multiple loads suspended below the hook) of structural steel is permitted. The contractor shall comply with the following requirements as a minimum:
  – A multiple lift rigging assembly designed for this purpose must be used.
  – A maximum of five pieces per multilift is allowed.
  – All employees involved in the multilift must receive special training for this activity.
  – Only beams and similar structural members may be lifted in a multilift.
  – The crane manufacturer specifications for multipart lifting requirements must be met.
  – The rigging assembly must be designed for the lift with a $5:1$ safety factor.
  – The load cannot exceed at rated capacities.
  – Rigging shall be at the center of gravity, rigged from the top down, separated by 7 ft, set from the bottom up, and controlled lowering used.

• Containers shall be provided to ensure proper storage for bolts, drift pins, and other loose objects. These containers shall be secured against accidental movement and shall be removed to a permanent level at the end of the shift.

• Two employees shall operate drilling and reaming machines, unless the handle is firmly secured to resist the torque reaction of the machine if the bit would stick.

• Magnetic drills shall be secured to the structure to prevent dropping in the case of a power failure.

• Shear connectors shall not be installed on beams or joists until after decking is installed to prevent tripping hazards.

4.3 Flooring Requirements, Permanent

• Permanent flooring shall be installed as the erection of structural members progresses, and there shall be no more than eight stories between erection floor and the uppermost permanent floor, except where the structural integrity is maintained as a result of the design.

• At no time shall there be more than four floors or 48 ft of unfinished bolting or welding above the foundation or uppermost permanent secured floor.

4.4 Flooring Requirements, Temporary

• Temporary flooring such as the derrick or erection floor of every building shall be solidly planked or decked over its entire surface except for access openings. Planking, or decking of equivalent strength, shall be thick enough to carry the working load. Planking shall be no less than 2-in. thick, full-sized undressed, and shall be laid tightly and secured to prevent movement.
- On buildings or structures not adaptable to temporary floors and where scaffolds are not used, safety nets shall be installed and maintained whenever the potential fall distance exceeds 30 ft. Nets shall be hung with sufficient clearance to prevent falling objects from contacting structural surface below.

- Temporary planked or temporary metal decked floor periphery (including all floor openings) of tier buildings and other multifloored structures shall be protected by a standard guardrail system during structural steel assembly. A standard guardrail system including top rail, midrail, and toe boards shall be installed. The top rail shall be 42 in. high and the midrail shall be approximately 21 in. high.

- Where skeleton steel erection is in progress, a substantial tightly planked floor or nets shall be maintained within two stories or 30 ft, whichever is less, below and directly under any erection work being performed. Because T&PS requires 100-percent fall protection, debris nets or temporary flooring is to be used at the 30-ft requirement to prevent falling objects during the erection process. The use of barricades below the erection area will not prevent falling objects.

- When gathering and stacking temporary floor planks, the planks shall be removed successively, working towards the last panel of the temporary floor so that work is always done from the planked floor.

- In erecting a building having double-wood-floor construction, the rough flooring shall be completed as the building progresses, including the tier below the one on which floor joist are being installed.

- For single-wood-floor or other flooring systems, the floor immediately below the story where the floor joist is being installed shall be kept planked or decked over.

### 4.5 Specifications

Specifications for the size, dimensions, and placement of the structural steel and flooring requirements shall be provided by the contractor, steel fabricator, contracted structural steel firm, or a registered professional engineer in accordance with both federal and local standards. These specifications along with the availability of storage and laydown facilities will dictate the delivery and site erection sequence of the structural steel members. Modification to any portion of the structural steel system requires the written approval of the project structural engineer of record. Particular attention shall be afforded to potential modularization and opportunities where components can be joined at ground level to eliminate work done from heights.
4.6 Fall Protection

The contractor shall develop a written fall protection plan that at a minimum shall meet T&PS fall protection policies found in procedure SH-2A-08, Fall Protection. Additional elements of the plan shall include the following:

- **General requirements:**
  
  Guardrail systems, safety net systems, personal fall-arrest systems, position device systems, or fall restraint systems shall be used during steel erection at any time there is exposure to a fall of 4 ft or greater.
  
  - Perimeter guardrail systems shall be installed as soon as the metal deck has been installed.
  - Connectors shall be issued and used as fall protection when exposed to a fall of 4 ft or greater.

- **Controlled decking zone (CDZ) requirements:**
  
  - Fall-arrest protection to be issued and used when decking operations expose workers to a fall of 4 ft or greater.
  - Access to the CDZ shall be restricted to trained and authorized personnel only.
  - The maximum boundary is 90 ft x 90 ft (8,100 ft²) from any leading edge and shall be clearly demarcated.
  - Unsecured decking shall not exceed 3,000 ft².
  - Shear connectors shall not be installed from within a CDZ.

- **Fall protection systems criteria and practices:**
  
  - Guardrail systems shall be installed to meet T&PS procedure SH-2A-08.
    
    o Top rails- height = 42 in. plus or minus 3 in.
    o Midrails- height = 21 in. or half way between top rail and toeboard.
    o Designed and installed to withstand 200 lb of force at the top rail.
    o Shall have no more than 3 in. of deflection.
    o Designed and installed to withstand 150 lb of force at the midrail.
  
  - Personal fall arrest systems selection, design, and use shall comply with procedure SH-2A-08.
  
  - Steel joists and steel girders shall not be used as anchorage points for a fall arrest system unless permission is granted by the competent person in the steel erection and fall protection plans.
  
  - All personnel using fall arrest protective equipment shall have documented training for the hazards for which it is issued and its proper use.
– Walking/working surfaces shall be kept clear of trip hazards (bolts, bars, deformed anchors, and so forth), shear connectors, attachments to top flanges of beams or joists until after metal decking or other suitable clear walking/working surface has been installed.

– Other alternative fall protection systems such as safety nets and positioning devices shall be installed and used under the direction of a competent person. Alternative methods shall not be used as primary means of protection from falls.

4.7 Protection From Falling Objects

The controlling contractor shall prohibit other construction activities below steel erection unless overhead protection is provided. This protection shall ensure that all materials, equipment, and tools not in use are secure from falling. In addition, all potential openings through which objects can fall shall be adequately closed, covered, meshed, or have protective nets below. Areas of particular concern are as follows:

• Metal decking operations.
  – Secure all loose bundles and installed deck at end of shift.
  – Land deck bundles on adequate support.
  – Do not lift bundles with any loose debris or objects.
  – Provide adequate space around bundles to be unbanded.
  – Metal decking holes shall not be cut until immediately prior to being needed, or they shall be immediately covered with an adequately designed hole cover.
  – Cover roof and floor holes immediately as they are created in the erection process with a properly designed cover.

• decking gaps around columns, including webbing openings, shall have wire mesh, exterior plywood, or equivalent installed where planks or metal decking does not fit tight. The materials must be of sufficient strength to provide fall protection for personnel and prevent objects from falling through.

• Roof, floor openings, skylights, or smoke domes not covered or where covered but not sufficient to meet this standard shall have additional covers installed. The covers shall be capable of supporting, without failure, twice the weight of employees, equipment, and materials that may imposed on the cover. The cover shall be secured against displacement and be marked or painted with high-visibility wording HOLE or COVER to warn of the hazard.

4.8 Rigging

4.9 Landing Loads During Construction Period

- Loads shall be distributed so as not to exceed the carrying capacity of any steel joist.

- The weight of a bundle of joist bridging shall not exceed 1,000 lb. The bundle shall be placed on a minimum of three steel joists secured at one end and the bundle edge shall be within one foot of the secured end.

- No bundle of decking may be landed until all bridging has been installed and all joists ends are attached unless all of the following conditions are met:
  - A qualified person has determined and documented in the erection plan that the structure (or portion) can support the load.
  - The bundle of decking can be placed on a minimum of three joists.
  - The joists supporting the bundle are secured at both ends.
  - At least one row of bridging is installed and anchored.
  - The total weight of the bundle does not exceed 4,000 lb.
  - The edge of the load shall be placed within 1 ft of the bearing surface of the joist end.

4.10 Accessing the Structural Steel

- Access to the steel shall be part of the steel erection plan. The permanent access stairs shall be placed, with a guardrail system, as the structural steel is placed. In areas that do not have permanent stairs, temporary stairs may be used; for example, scaffold stair towers. The temporary stairs shall have a guardrail system installed. If stairs are not possible, ladders with self-retracting lifelines or articulating boom lifts (JLGs, snorkel lifts, and so forth) may be used for employees to access the structural steel.

- Employees are not allowed to climb the columns of structural steel.

- Employees are not allowed to cross the load line during the erection process. Proper planning and other mechanical means are to be used to accomplish this task. While crossing the load line is a common practice in the steel erection industry, it is not permitted on T&PS projects. In the unlikely event the load line must be crossed, procedure SH-1K, Procedure Deviation Approval Process, must be used to request a deviation.
4.11 Training

Each contractor shall train personnel involved in structural steel erection to the requirements of this standard, OSHA subpart R, and OSHA subpart M. All training shall be conducted by a qualified person, documented, and made available upon request to T&PS for review. Topics of training shall include, but are not limited to:

- Fall protection training on hazard recognition, guardrail systems, fall protection systems, and fall prevention.
- Multilift rigging procedures and precautions.
- Connection requirements and safe work practices while connecting.
- Controlled decking zone requirements.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

| Rev. 0  | Approved by Bruce Long and Bill Boyd  
| 09/13/2016  | Reviewed by Project Safety Leadership Team  
|  | Revised by Bill Batts  
| Remarks:  
| Issued. This standard supersedes E&CS procedure SH-2A-09, Steel Erection.  |

| Rev. 1  | Approved by Bruce Long and Bill Boyd  
| 05/09/2017  | Reviewed by Project Safety Leadership Team  
|  | Revised by Bill Batts  
| Remarks:  
| Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position titles and organization names throughout.  |

| Rev. 2  | Approved by Robin Hurst and Bill Boyd  
| 03/05/2019  | Reviewed by Project Safety Leadership Team  
|  | Revised by Bill Batts  
| Remarks:  
| Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (4.2 and 4.6).  |
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2A-10

Rigging and Lift Plans

<table>
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<tr>
<th>Date</th>
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<tr>
<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
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<td>Reviewed By Process Coordination Team</td>
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<td>Approved By</td>
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<tr>
<td>Project Services</td>
<td>Bill Boyd</td>
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<tr>
<td>Projects and Construction</td>
<td>Robin Hurst</td>
</tr>
</tbody>
</table>
**Contents**

1.0 PURPOSE AND SCOPE .................................................................................................. 3  
1.1 Purpose ......................................................................................................................... 3  
1.2 Scope ............................................................................................................................ 3  

2.0 DEFINITIONS AND REFERENCES ................................................................................. 3  
2.1 Definitions ...................................................................................................................... 3  
2.2 References .................................................................................................................... 4  

3.0 RESPONSIBILITY ............................................................................................................. 5  
3.1 Contractors .................................................................................................................... 5  
3.2 Contractor’s Site Manager ............................................................................................. 5  
3.3 Crane Operator ............................................................................................................. 5  
3.4 T&PS Construction Site Manager ................................................................................. 5  
3.5 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................... 6  
3.6 Startup Manager............................................................................................................ 6  
3.7 Rigging and Lift Site Supervisor .................................................................................... 6  
3.8 Lift Director .................................................................................................................... 7  

4.0 PROCEDURE ................................................................................................................... 8  
4.1 Lift Classification ........................................................................................................... 8  
4.2 Requirements ................................................................................................................ 8  
4.3 Lift Categories, Criteria, and Requirements .................................................................. 9  
4.4 Planning (Noncritical Lift) .......................................................................................... 10  
4.5 Prelift Meeting (Noncritical Lift) ................................................................................ 11  
4.6 Execution (Noncritical Lift) ....................................................................................... 12  
4.7 Post-Lift Actions (Noncritical Lift) .............................................................................. 12  
4.8 Critical Lifts ................................................................................................................ 13  
4.9 Planning (Critical Lift) ................................................................................................ 13  
4.10 Prelift Meeting (Critical Lift) ..................................................................................... 14  
4.11 Execution (Critical Lift) ............................................................................................. 15  
4.12 Post-Lift Actions (Critical Lift) .................................................................................. 16  

5.0 KEY CONTACT ............................................................................................................... 16  

6.0 QUALITY RECORDS ...................................................................................................... 16  

7.0 ATTACHMENTS ............................................................................................................. 16
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements for rigging and lift plans on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**compotent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

**critical lift** – A lift of 25 tons or more, 75 percent or greater of the crane’s rated capacity at its current configuration, or a lift involving two or more lifting devices, at least one of which is a crane. Additional site-specific criteria may apply such as, but not limited to, the value of the load or lifting over process equipment where a loss of the load could cause a plant shutdown.

**engineered lift** – Any lift that requires or has been planned by a professional engineer and stamped accordingly. All lifts that meet the requirements of a critical lift must be engineered.

**lift director** – A qualified person(s) that has been designated by the contractor’s management as having responsibility for planning and execution of lifts on a project.

**qualified person** – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

**qualified rigger** – A rigger who meets the criteria for a qualified person. Employers must determine whether a person is qualified to perform specific rigging tasks.
Each qualified rigger may have different credentials or experience. A qualified rigger is a person who:

- Possesses a recognized degree, certificate, or professional standing, or
- Has extensive knowledge, training, and experience, and
- Can successfully demonstrate the ability to solve problems related to rigging loads.

A qualified rigger may also serve as lift director.

**Rigging and Lift Site Supervisor** – A qualified person that has overall responsibility for all lifting and rigging activities performed on site by their employer. In some situations, the rigging and lift site supervisor and lift director may be the same person.

**Rigging and Lift Supervisor** – A qualified person that supervises a single or multiple rigging crews. The rigging and lift supervisor may also serve as a lift director.

### 2.2 References

- [Frequently Asked Questions (FAQ), SH-2A-10, Rigging and Lift Plans](#)
- 29 CFR 1926.251, Rigging Equipment for Material Handling
- 29 CFR 1926.554 (a)(2), Overhead Hoists; General requirements
- 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction
- 29 CFR 1926, Subpart R, Steel Erection
- 29 CFR 1926.1432, Multiple-crane derrick lifts – supplemental requirements
- 29 CFR 1926.1400, Subpart CC
- ASME B30.5, Current
- ASME B30.26, Rigging Hardware
- ASME B30.9, Slings
- SAE J959 (1966)
- T&PS procedures:
3.0 RESPONSIBILITY

3.1 Contractors

 Contractors working on T&PS projects are responsible for the following:

- Complying with the requirements established by this procedure.
- Planning all lifts involving cranes and/or other hoisting equipment.
- Developing an engineered rigging and lift plan for all critical lifts.

3.2 Contractor’s Site Manager

 The contractor’s site manager is responsible for approving the written critical lift plan and submitting the plan to the T&PS construction site manager for review.

3.3 Crane Operator

 The crane operator is responsible for ensuring the critical lift plan is available prior to critical lift operations and posted in the cab of the crane until the lift is complete.

3.4 T&PS Construction Site Manager

 The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities that fall under his or her scope and monitoring contractor compliance with the requirements of this procedure.
3.5 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.6 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in startup activities that fall under his or her scope and monitoring contractor compliance with the requirements of this procedure when performing startup functions that fall under his or her scope.

3.7 Rigging and Lift Site Supervisor

The rigging and lift site supervisor is responsible for the following:

- Ensuring cranes meet all requirements prior to initial site usage.
- Determining if additional regulations are applicable to crane operations.
- Ensuring a qualified person is designated as lift director(s).
- Planning or assisting in planning of lifts as specified in 4.3, Lift Categories, Criteria, and Requirements.
- Ensuring crane operations are coordinated with other jobsite activities that will be affected by or will affect lift operations.
- Ensuring the area for the crane is adequately prepared. The preparation includes, but is not limited to, the following:
  - Access roads for the crane and associated equipment.
  - Sufficient room to assemble or disassemble the crane.
  - An operating area that is suitable for the crane with respect to levelness, surface conditions, ground-bearing ability, proximity to power lines, excavations, slopes, underground utilities, subsurface construction, and obstructions to crane operations.
  - Traffic control as necessary to restrict unauthorized access to the crane’s working area.
- Ensuring work involving the assembly and disassembly of a crane is supervised by a qualified person.
- Ensuring crane operators meet the requirements of SH-2C-01, Qualifying Equipment Operators.
- Ensuring conditions that may adversely affect crane operations are addressed. Such conditions include, but are not limited to, the following:
- Poor soil conditions.
- Wind velocity or gusting winds.
- Heavy rain.
- Fog.
- Extreme cold.
- Artificial lighting.

- Permitting special lifting operations only when equipment and procedures required by this procedure, the crane manufacturer, or a qualified person are employed. Such operations include, but are not limited to, the following:
  - Multiple crane lifts.
  - Lifting personnel.
  - Pick and carry operations.
  - Multiple load line use.

- Ensuring work performed by the rigging crew is supervised by a qualified person.

- Ensuring crane maintenance is performed by personnel that are qualified and meet the competency requirements found in ASME B30.5, 29 CFR 1926.1400, and SH-2C-01, Qualifying Equipment Operators, if a crane will be operated by maintenance personnel.

### 3.8 Lift Director

The lift director is responsible for the following:

- Being present at the jobsite during lifting operations.
- Stopping crane operations if alerted to an unsafe condition affecting those operations.
- Ensuring that the preparation of the area needed to support crane operations has been completed before crane operations commence.
- Ensuring necessary traffic controls are in place to restrict unauthorized access to the crane’s work area.
- Ensuring personnel involved in crane operations understand their responsibilities, assigned duties, and the associated hazards.
- Appointing the signal person(s) and conveying that information to the crane operator.
- Ensuring the signal person(s) appointed meets the training requirements.
- Allowing crane operations near electric power lines only when all regulatory requirements have been met and approved by the purchaser.
- Planning or assisting in planning of lifts as specified in 4.3, Lift Categories, Criteria, and Requirements.
4.0 PROCEDURE

4.1 Lift Classification

Lifts are classified as follows:

- Critical.
- Noncritical.

See 4.3, Lift Categories, Criteria, and Requirements, for an explanation of lift classifications.

4.2 Requirements

Each contractor shall plan all lifts involving cranes, rigging, and hoisting equipment of all types.

Contractors shall submit plans for critical lifts for review by the T&PS construction site manager or his or her designee. The purchaser or its agent reserves the right to review and reject plans for cause. See 4.8, Critical Lifts, for specific requirements for critical lifts.

Noncritical lifts do not require a submitted engineered lift plan. However, noncritical lifts must be planned and documented. See 4.4, Planning (Noncritical Lifts), for planning requirements for noncritical lifts.

Each contractor’s rigging and lift site supervisor shall designate a lift director(s) as needed. The lift director shall meet the requirements of a qualified person/qualified rigger and shall be present for all lifting operations.

NOTE

The contractor may appoint more than one lift director.

Any special or custom-designed grabs, hooks, clamps, or lifting accessories for units such as modular panels and prefabricated structures shall meet the requirements of 29 CFR 1926.251 (a)(iv), be marked with safe working loads and shall be proof-tested prior to use for 125 percent of the rated load. Such tests shall be documented.

All personnel involved in a lift shall be trained in the safe operation and inspection of all applicable lifting and rigging equipment.

Tag lines shall be used to control loads.

All pad-eyes and lifting lugs shall be engineered to include application requirements such as weld amount, base metal requirements, and so forth.
All pin holes for lifting hardware shall be drilled. No other method of creating pin holes is acceptable.

If radios are used for communication during a lift, a dedicated frequency with no other radio traffic shall be used. A dedicated radio frequency shall be set up for each crane activity, incorporating a method in which the safe execution of a lift can be performed without radio interruption from other work not associated with a specific lift task.

All work performed using this procedure shall meet the requirements all applicable OSHA standards including 29 CFR 1926 Subpart N and 29 CFR 1926 Subpart CC, and shall be in compliance with ASME P30.1-2014.

Beam clamps as a below-the-hook rigging point shall be restricted by Southern Company Generation Projects and Construction except in rare cases when a Deviation Form has been properly completed and approved BEFORE the lifting operation. Contractors shall have a documented deviation process and deviation request forms developed and approved by Southern Company prior to implementation. See SH-1K, Procedure and Standard Deviation Approval Process, and form 1K.1, Procedure and Standard Deviation Request, for guidance. The use of beam clamps as a below-the-hook rigging point on a load is prohibited unless specifically designed by the manufacturer and approved by Southern Company. See SH-S-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories, section 4.3.1, Beam Clamps.

4.3 Lift Categories, Criteria, and Requirements

For lift categories, criteria, and requirements, see table below.

<table>
<thead>
<tr>
<th>Lift Category</th>
<th>Lift Criteria</th>
<th>Requirements</th>
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<tr>
<td>Noncritical</td>
<td>Any one or more of the following characteristics:</td>
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<td></td>
<td>• Load weights up to 4,999 lb.</td>
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<td>• Multiple hoisting (noncrane) equipment is to be used for a common load.</td>
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<td>• Repetitive lifts.</td>
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<td>Lift planning may be performed by rigging and lift supervisor and/or qualified rigger. See 4.4, Planning (Noncritical Lift).</td>
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<td>Prelift review meeting must be conducted by the qualified rigger, rigging and lift supervisor, or lift director. See 4.5, Prelift Meeting (Noncritical Lift).</td>
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<td>Execution of lift must be supervised and or directed by the rigging and lift supervisor or qualified rigger that has been designated by their employer as a lift director. See 4.6, Execution (Noncritical Lift).</td>
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<td>A post-lift meeting must be performed as prescribed. See 4.7, Post-Lift Actions (Noncritical Lift).</td>
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| Noncritical   | Any one or more of the following characteristics:  
• Load weights of 5,000 lb up to 49,999 lb.  
• Multiple hoisting equipment is to be used for a common load.  
• Two independent loads are lifted separately and are to be joined together while suspended from hoisting equipment. | • Lift planning to be performed by lift director. See 4.4, Planning (Noncritical Lift).  
• A prelift meeting must be conducted by the lift director. See 4.5, Prelift Meeting (Noncritical Lift).  
• Supervision of the lift must be performed by the lift director, who shall have no other duties that may distract from the lift. See 4.6, Execution (Noncritical Lift).  
• A post-lift meeting must be conducted as prescribed. See 4.7, Post-Lift Actions (Noncritical Lift). |
| Critical      | • Load weights of 50,000 lb and above.  
• A lift of 75 percent or greater of the crane’s rated capacity in its current configuration.  
• A lift that involves two or more lifting devices of which at least one is a crane.  
• Additional site-specific criteria may apply such as but not limited to:  
  – Value of the load.  
  – Lifting over process equipment where a loss of load could result in a plant shutdown. | • Lift planning shall be performed by a registered P.E. in the state where the lift is to take place. See 4.9, Planning (Critical Lift).  
• The lift plan shall be submitted to the T&PS construction site manager for review. See 4.9, Planning (Critical Lift).  
• A prelift meeting shall be conducted by the lift director. See 4.10, Prelift Meeting (Critical Lift).  
• Supervision of the lift must be performed by the lift director, who shall have no other duties that may distract from the lift. See 4.11, Execution (Critical Lift).  
• A post-lift meeting must be conducted as prescribed. See 4.12, Post-Lift Actions (Critical Lift). |

### 4.4 Planning (Noncritical Lift)

In planning for noncritical lifts, the lift director, the rigging and lift supervisor, and/or the qualified rigger, as specified in 4.3, Lift Categories, Criteria, and Requirements, shall:

- Complete form 2A-10.2, Noncritical Lift – Prelift Worksheet, for all lifts involving a crane and for noncritical lifts greater than 500 lb when using a drum hoist, chain hoist, lever hoist, or grip hoist, unless the lift involves the use of a beam clamp or plate clamp (plate dog) regardless of the weight involved.

**NOTE**

Repetitive lifts made with the same rigging configuration, the same or lesser weights, and from the same or similar locations may use the same worksheet. For example, working in a pipe bridge, the work moves to an adjacent bay that is configured identically to the original location. In such case, the same worksheet may be used as long as the new location does not result in an increase in crane working radius, change to sling angles, or require a change to the rigging components used.
- Verify load weight by vendor drawings, bill of lading documents, or other reliable resource recognized as trustworthy by the site management team.

- Identify the lift classification and determine the scope of work and how the lift shall be performed.

- Assess the risks associated with the scope of work and document each risk.

- Document the steps taken to minimize or alleviate the risks associated.

- Identify all required equipment to safely execute the plan.

- As applicable, include an engineer for technical assistance.

NOTE

All existing structural components or objects used to attach/support rigging or hoisting equipment must be verified by a qualified person as having sufficient strength to support the safe working load equal to that of the hoist(s), as required by 29 CFR 1926.554 (a)(2). In some cases, due to size, complexity, or location, this calculation may require engineering support.

- At the lift site, review the completed form 2A-10.2, Noncritical Lift – Prelift Worksheet, with the lift crew immediately prior to the lift being performed.

- Fully inspect and document all equipment involved in the lift.

- Ensure instructions are given to the lift team (crew) on the plan and how rigging arrangements are to be installed and configured.

The designated person (see 4.3) shall verify all rigging and arrangements are as specified in the plan.

Completed noncritical lift forms shall be available for review upon request. If used, contractor-provided forms must be equal to or of greater content, reviewed by the T&PS rigging subject-matter expert (SME), and approved by the T&PS construction site manager.

4.5 Prelift Meeting (Noncritical Lift)

Immediately prior to the lift, the lift director shall conduct a prelift meeting. All personnel involved with the lift shall attend and have full understanding of all aspects of the lift. Collective discussions should be used to verify the personnel involved understand the plan and their responsibilities.

At the prelift meeting, the lift director shall:
• Discuss in detail all hazards associated with the plan from the risk assessment and address hazards accordingly. The hazards associated with the lift shall be documented as required on the appropriate prejob safety document (JSA, JSB, or equivalent).

• Assign roles and responsibilities to all lift personnel and make them aware of their roles and responsibilities in the lift plan.

• Ensure form 2A-10.2, Noncritical Lift – Prelift Worksheet, has been completed as appropriate for review and discussion with all personnel involved in the plan at this point.

• Document all hazards and safe work practices on the appropriate prejob safety document (JSA, JSB, or equivalent).

4.6 Execution (Noncritical Lift)

The execution of noncritical lifts shall meet the following requirements:

• Constant supervision shall be maintained. If for any reason the lift director must leave the area, the lift will stop and the load made safe until the lift director returns.

• During the lift, the lift director shall have no other duties that distract his or her attention from the lift activities, the lift's progress, or the personnel involved in the lift.

• If for any reason the lift plan must change, all work must stop. Notify the designated person (see 4.3) responsible for planning the lift for his or her review of the revision to the plan and document the change(s) on the prelift worksheet and the appropriate prejob safety document (JSA, JSB, or equivalent) prior to continuing.

• Any person involved in the lift has the obligation to use Stop Work Authority to stop the lift at any point if he or she believes an unsafe condition exists or potentially may occur.

4.7 Post-Lift Actions (Noncritical Lift)

After the completion of a noncritical lift, the lift director shall:

• Conduct a post-lift debriefing, documenting lessons learned, risk assessments, and any noteworthy items applicable on the JSA, JSB, or equivalent.

• Maintain lift plans and all other documents for future reference and as required by document retention schedules. See 6.0, Quality Records.

NOTE

The post-lift debriefing is intended to be an informal review of the lift and may be conducted verbally.
4.8 Critical Lifts

The contractor shall develop an engineered rigging and lift plan for all critical lifts. The following criteria shall be used to determine when a lift is deemed critical:

- Any lift involving more than one piece of equipment attached by hoist or crane, or any combination thereof. All multiple crane lifts shall meet the requirements of 29 CFR 1926.1432, Multiple-Crane Derrick Lifts – Supplemental Requirements.
- Any lift greater than 25 tons.
- Any lift that is equal to or greater than 75 percent of the manufacturer’s written chart for the specific crane in its present configuration.
- Site-specific criteria may also apply.

4.9 Planning (Critical Lift)

Each critical lift plan shall include, at a minimum, the elements identified in form 2A-10.1, Rigging and Lifting Plan, including the following:

- Manufacture, model, and capacity of the crane(s).
- Manufacturer-provided capacity charts of the crane(s).
- Working radius of the crane(s).
- Boom length(s), counterweight amounts, and specific boom angle(s).
- Weight of the load, including rigging, load block, headache ball, and cable.
- The method used to determine the weight of the load.
- Size and capacity of all rigging hardware. (All rigging and rigging accessories shall undergo a thorough documented inspection prior to use in a critical lift. The manufacturer’s specification sheets and certificates of inspection and testing, if required, shall be provided.)
- A rigging arrangement illustration indicating rigging arrangement and attachment points to hoisting equipment and loads.
- A plot plan showing crane(s) location with pick, swing, and set points.
- Documentation that ground-bearing pressure is sufficient to support the weight of the load and equipment. The documentation shall include calculations, if any, for matting design to achieve sufficient support.
- Plan approval signatures.

The contractor shall submit the resumes and qualifications of the following personnel involved in critical lift planning or execution for review:

- Rigging and lift site supervisor.
- Rigging and lift supervisor(s).
• Lift director(s).
• Rigging and lift professional engineer (P.E.).

Contractors that do not self-perform any or all aspects of critical lift planning or execution shall submit the equivalent resumes and qualifications of their subcontractor for review.

Reviews of resumes and qualifications shall be conducted by the T&PS construction site manager, T&PS rigging and lift subject matter expert (SME), and the manager–Construction Safety and Health or his or her designee. The purchaser or its agent reserves the right to reject any individual or party for cause.

The contractor’s critical lift plan shall be stamped by a professional engineer (P.E.) registered in the state in which the work is performed. The contractor’s site manager shall approve the written critical lift plan and submit the plan for review to the T&PS construction site manager or his or her designee 15 calendar days, or as otherwise approved by the T&PS construction site manager prior to the lift. This review should include the T&PS rigging SME, as appropriate. The purchaser or its agent reserves the right to review all rigging and lift plans and may reject for cause.

The crane operator shall ensure the critical lift plan is available prior to critical lift operations and posted in the cab of the crane until the lift is complete. The crane(s) involved in the critical lift plan shall also have a copy of the daily inspection by a qualified person per procedure SH-2C-03, Cranes and Derricks.

The crane operator shall not override load cell readings, alarms, or any other safety systems unless authorized by the rigging and lift site supervisor and then, only if it is within the manufacturers specifications.

4.10 Prelift Meeting (Critical Lift)

Immediately prior to a critical lift, the lift director shall conduct a prelift meeting with all personnel involved with the lift to ensure all personnel have a full understanding of all aspects of the lift. All personnel involved in the lift shall attend. The lift crew shall engage in collective discussions to verify that all personnel involved understand the lift process.

At the prelift meeting, the lift director shall:

• Discuss in detail all hazards associated with the plan from the risk assessment and address accordingly (also is to be documented as required on the prejob analysis, (JSA, JSB, or equivalent).

• Assign the roles and responsibilities to all lift personnel as detailed in the lift plan.

• Complete form 2A-10.1, Rigging and Lifting Plan (Critical Lift), and review and discuss with all personnel involved in the plan.

• Document all hazards and safe work practices on the appropriate prejob safety document such as JSA, JSB, or equivalent.
- Review the engineered lift plan with all personnel to ensure understanding.
- Ensure all rigging components are verified with the requirements found on the engineered lift plan.
- Ensure a copy of the engineered lift plan and critical lift permit is in the crane cab and is kept there until the lift is completed.

4.11 Execution (Critical Lift)

The execution of a critical lift shall meet the following requirements:

- Critical lifts shall be executed following the requirements of the engineered lift plan.
- The lift director shall be present at all times during a critical lift.
- Ensure the competent person for rigging has performed a documented inspection on all rigging hardware.
- Once the lift has commenced, the crane operators shall communicate with the lift director regarding the load cell weight readings on both the primary lifting crane(s) and the tailing crane (if present). If the load is greater than anticipated in the lift plan, the lift director must stop the lift and consult the approval engineer.
- The crane operator shall not override load cell readings, alarms, or any other safety systems unless authorized by the rigging and lift site supervisor and then, only if it is within the manufacturers specifications.
- After the lift begins, the lift director shall maintain constant supervision at all times. If for any reason the lift director must leave, the lift shall be stopped and made safe by returning the load to the ground or landing the load in place, whichever is safer.
- During the lift, the lift director shall have no other duties that distract his or her focus from the lift's activities/progress or involved personnel.
- If for any reason the plan must change, all must stop, and notify the lift director. If the lift cannot proceed per the requirements of the engineered lift plan, the lift must be returned to the ground until it can be performed per the requirements of the plan or a revised engineered lift plan can be obtained and approved.
- Radios are the preferred method of signaling during a critical lift. If radios are used for communication, a dedicated channel with no other radio traffic will be used during critical lifts.
- Any person involved in the lift has the obligation to use Stop Work Authority to stop the lift at any point if he or she believes an unsafe condition exists or potentially may occur.
4.12 Post-Lift Actions (Critical Lift)

After a critical lift, the lift director:

- Conduct a post-lift debriefing, documenting lessons learned, risk assessments, and any noteworthy items applicable.

- Maintain lift plans and all other documents for future reference and as required by document retention schedules. See 6.0, Quality Records.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

Each contractor shall retain rigging plans and prelift worksheets as required by the Southern Company Record Retention Schedule.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
### Attachment A – Historical Summary of Changes

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Edited 4.8, Critical Lifts (was 4.2). Corrected position title (5.0). Edited 6.0, Quality Records. Updated attachment A, Historical Summary of Changes.

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**Rev. 6**
06/25/2018

Approved by Robin Hurst and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

**Remarks:**
Renamed form 2A-10.2; deleted forms 2A-10.3 and 2A-10.4 (2.2). Deleted old form numbers and titles, edited weight restrictions, and added information on similar or identical situations (4.2). Edited weight restrictions (4.3). Changed structural component analysis and verification from an engineer to a qualified person; added a review of completed form 2A-10.2 prior to lift (4.4). Deleted old form numbers and titles (4.5). Clarified purpose of post-lift debriefing (4.7).

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**Rev. 7**
02/21/2019

Approved by Robin Hurst and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

**Remarks:**
Added references and links to SH-1K, SH-S-2A-12, and form 1K.1 (2.2). Strengthened requirements for use of beam clamps (4.2). Added a restriction for lift involving a beam clamp or plate clamp (4.4).

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05/15/2019
Organization name updated.
NOTE
This Frequently Asked Questions (FAQ) document is not a substitute for training to Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) procedure SH-2A-10, Rigging and Lift Plans, and having a thorough understanding of that procedure. If a conflict arises between this FAQ and SH-2A-10, the text of the procedure governs.

Q1. What is the purpose of having a lift director?

   A1. The lift director is the person who has direct oversight responsibility for a lift. The lift director ensures the lift planning has been completed, weights have been verified, rigging is correct and inspections completed, holds the prelift and post-lift meetings, and provides direction for the craft personnel involved in a lift.

Q2. Who can be a lift director?

   A2. ASME B30.5 states that the lift director must be qualified. Therefore, any qualified person can fulfill the function. Small contractors may have the rigging and lift site supervisor fill the role. Larger contractors with multiple cranes or lifting activities may use rigging and lift supervisors to fill the role and may have multiple lift directors.

Q3. Can the foreman of a crew be a lift director?

   A3. Yes, if the foreman meets the requirements of a qualified person, usually those of a qualified rigger.

Q4. ASME B30.5 only requires the lift director be present on site. Does SH-2A-10 mean that the lift director must be present at the lift?

   A4. Yes. Over the years, we have found lifting incidents most often occur with noncritical, routine lifts. With the addition of a lift director to oversee the rigging and lift activities, we expect to see a marked decrease in these types of incidents.

Q5. For noncritical lifts, do I have to have one of the prelift checklists for each lift?

   A5. Yes, unless you have a repetitive lift where the locations, weights, materials, personnel, etc., do not change. In that case, one checklist can be used to cover all the lifts. If anything changes, you must complete a new checklist.
FAQ, SH-2A-10, Rigging and Lift Plans

Q6. Does 2A-10 apply to steel erection or crane operations only?

A6. No. The requirements of 2A-10 are for all rigging and lifting activities. These activities may include the use of hoists inside a boiler house, or “bull rigging” pipe in a pipe rack among others. It may also involve crafts such as ironworkers, boilermakers, pipefitters, or millwrights.

Q7. What is considered load-handling equipment, and do we have to complete a prelift checklist when using load-handling equipment?

A7. ASME P30.1 defines load-handling equipment as “any equipment used to move suspended loads vertically or horizontally.” Two common examples of such equipment include:

- Telehandler or forklift with manufacturers approved under-fork lifting device.
- Backhoe or trackhoe with manufacturers approved lifting attachment such as a lug or hook mounted to the bucket.

When using this type of equipment to move suspended loads vertically or horizontally, the use of the prelift worksheet is required. However, if multiple picks are being made in the same area with the same rigging, one prelift worksheet may be filled out using the heaviest load. If the location or the rigging changes, a new prelift worksheet will need to be filled out.

The purpose of using a prelift worksheet is to ensure that the weight of the loads is within the capabilities of the equipment, the rigging is sufficient, and that qualified personnel are performing the lifting activities.

Q8. Is the lift director the person responsible for doing all the planning?

A8. While the lift director will be involved in lift planning, he or she may or may not be the person who develops the actual plan. For noncritical lifts (less than 5000 lb), the rigging and lift supervisor can do the planning (if that person is different from the lift director), or if the weights are less than 1000 lb, a qualified rigger can perform the planning. The lift director’s responsibility is to ensure the planning has been performed and to review the plans by others for accuracy.

Q9. Does all rigging have to be performed by an ironworker rigger?

A9. All rigging will be overseen by a qualified rigger. A qualified rigger may be from any craft if the rigger meets the requirements and has the appropriate documentation.

Q10. What is the relationship between the rigging and lift site supervisor, rigging and lift supervisor, and lift director?

A10. The rigging and lift site supervisor has overall responsibility for a contractor’s rigging and lift activities for a site. Typically, this position is held by a superintendent.
The rigging and lift supervisor is typically a general foreman or foreman who has responsibility for one or more crews involved with rigging and lifting activities.

The lift director is responsible for supervising a specific lift. The lift director(s) can come from either of the above-mentioned positions or any other qualified person that the contractor’s rigging and lift site manager appoints.

Q11. My company is planning a critical lift. Our home office is in another state and our P.E. is also out of state. Can our P.E. stamp the critical lift plan?

A11. Critical lift plans must be stamped by a P.E. from the state in which the lift is taking place. See SH-2A-10, section 4.9, Planning (Critical Lift).

Q12. Why do critical lift plans have to be submitted 15 days prior to the lift?

A12. The 15-day requirement is to provide sufficient time for Southern Company to review the plan. This review often involves the rigging and lift subject matter expert or others, such as plant personnel that have a vested interest in the lift.

Q13. The engineered lift plan calls for a specific size shackle. We don’t have them, but we do have larger. Can we substitute?

A13. Weights are calculated for everything below the hook. If there is a piece of lifting hardware that has a substantial weight difference, the difference must be taken into account and reviewed by the engineer of record, the rigging and lift site supervisor, and the lift director to ensure the weight does not exceed the crane or hoist’s capacity in its current configuration.
Southern Company Operations
Technical and Project Solutions
Environmental, Health, and Safety Procedures

SH-2A-11

Crane-Suspended Personnel Platforms

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements for the safe lifting of personnel with a crane-
suspended personnel platform on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all personnel on T&PS projects and contractors whose
contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

29 CFR 1926.500, Subpart M, Fall Protection
29 CFR 1926, Subpart CC, Cranes and Derricks in Construction
ANSI A10.4, Current Safety Requirements for Workman’s Hoist
ASME B30.23 Personnel Lifting Systems

Environmental, Health and Safety procedures:

- SH-2C-01, Qualifying Equipment Operators
- SH-2C-03, Cranes, Derricks, and Powered Hoists

Forms:

- 2A-10.1, Rigging and Lifting Plan
- 2A-11.1, Authorization for the Use of a Suspended Personnel Hoisting Platform
- 2A-11.2, Evaluation of Alternate Lifting Methods
- 2A-11.3, Suspended Personnel Platform Checklist
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

3.5 Contractor’s Site Manager

The contractor’s site manager, along with the environmental, health, and safety (EH&S) resource, is responsible for determining that there is not a safe alternative method to crane-suspended personnel platforms and completing form 2A-11.2, Evaluation of Alternate Lifting Methods.

3.6 EH&S Resource

The EH&S resource is responsible for the following:

- Along with the contractor’s site manager, determining that there is not a safe alternative method to crane-suspended personnel platforms.
- Attending the prelift meeting.
3.7 Hoisting Equipment Operator

The hoisting equipment operator is responsible for the following:

- Attending the prelift meeting.
- Remaining at the controls and maintaining visual and voice contact with the signal person at all times while the personnel platform is occupied.
- Ensuring there is no slack in the cable between the personnel platform and load drum before lifting.

3.8 Personnel to be Lifted

The personnel to be lifted are responsible for the following:

- Attending the prelift meeting.
- Keeping hands, feet, and arms inside the perimeter of the platform.

3.9 Platform Manufacturer

The platform manufacturer shall certify the platform and suspension system meet the design, construction, and testing requirements of ASME B30.23, Personnel Lifting Systems.

3.10 Signal Person

The signal person is responsible for attending the prelift meeting.

3.11 Supervisor

The supervisor is responsible for attending the prelift meeting.

4.0 PROCEDURE

4.1 Requirements

All aspects of work performed using crane-suspended platforms shall comply with 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction. All lifts shall also be made in accordance with the hoisting equipment manufacturer’s lifting recommendations.

The use of a crane or other similar hoisting equipment to hoist personnel is prohibited except during steel erection or if using other means would be more hazardous or is not possible because of structural design or worksite conditions. Crane-suspended personnel platforms shall not be used when winds exceed 20 mph, or during electrical storms, snow, dense fog, or other adverse weather conditions that could endanger personnel on the hoisting platform.
The contractor’s site manager and EH&S resource shall determine that there is not a safe alternative method to crane-suspended personnel platforms such as ladders, scaffolds, and aerial lifts to perform the needed work. The contractor’s site manager or EH&S resource shall complete form 2A-11.2, Evaluation of Alternate Lifting Methods.

After determining a crane-suspended personnel platform is required, the contractor shall obtain authorization as required in 2A-11.1, Authorization for the Use of a Suspended Personnel Hoisting Platform. The contractor shall submit the following forms to the T&PS site manager for review and concurrence before conducting any work from a platform suspended from a crane:

- Form 2A-10.1, Rigging and Lift Plan.

The contractor shall ensure all documents include a clear justification for using a crane-suspended personnel platform rather than another method.

Before a lift, the contractor shall also comply with the daily crane inspection requirement as outlined in SH-2C-03, Cranes, Derricks, and Powered Hoists.

4.2 Prelift Meeting

The contractor shall schedule a meeting before the lift for planning the lift and work activities. It shall be attended by the supervisor responsible for the work, hoisting equipment operator, signal person, personnel to be lifted, the contractor’s EH&S resource, and the contractor’s site manager. The step-by-step work procedure shall be discussed, along with the appropriate requirements from 29 CFR 1926, Subpart CC, including the following:

- The number of employees to be lifted shall not exceed the number specified by the platform manufacturer. The personnel to be lifted shall be considered to weigh a minimum of 250 lb each.
- Prior to lifting any personnel, the hoisting device and personnel platform shall be inspected and maintained in accordance with the requirements for that particular piece of equipment.
- The equipment operator and signal person shall stay in plain sight of each other at all times. When using two-way radios, an isolated frequency shall be maintained.
- The hoisting equipment operator shall remain at the controls and maintain visual and voice contact with the signal person at all times while the personnel platform is occupied.
- The personnel to be lifted shall keep hands, feet, and arms inside the perimeter of the platform.
- Tools, equipment, and materials needed for the job shall be secured and shall be distributed to balance the platform while in motion.
4.3 Personnel Platform

The platform manufacturer shall certify the platform and suspension system meet the design, construction, and testing requirements of ASME B30.23, Personnel Lifting Systems, including the following:

- The personnel platform shall be designed with a safety factor of five by a qualified engineer who is competent in structural design.
- The suspension shall be designed to minimize tipping of the platform due to movement of personnel occupying the platform.
- The basket shall be marked with a unique identifier that is referenced on the design documents.
- Each personnel platform shall be provided with a standard guardrail system that is encased from the toe board to the midrail to keep tools, material, and equipment from falling out of the basket.
- The platform shall have a grab rail, overhead protection, adequate headroom for employees, and a plate or other permanent marking that clearly indicates the platform’s weight and rated-load capacity or maximum intended load. The rated-load capacity of the platform shall not be exceeded.
- Access gates shall only swing inward.
- Employees shall not be exposed to any rough edges on the platform.
- Personnel platforms shall be easily identifiable by color markings. The personnel platform shall be clearly and permanently marked for personnel hoisting only.

On request, contractors shall provide documentation of design to T&PS personnel.

4.4 Rigging

The following rigging requirements shall be adhered to for all lifts:

- Hooks on attachment assemblies such as ball or load block shall be a type that can be closed and locked, eliminating the open throat hook.
- When a wire rope bridle is used to connect the platform to the load line, the bridle legs shall be connected to a master link or shackle so the load is evenly positioned between legs. Bridle ends shall be fabricated with thimbles in both ends. Bridles shall be a matched set and used only to hoist the personnel platform.
- A separate wire rope sling shall be connected to a shackle on the load line directly above the headache ball to the padeye or shackle to the hoisting platform.
- Rigging used to suspend the platform from the crane hook shall not be used for any other purpose or hoisting activities.
4.5 Crane Components and Safe Operational Specifications

The following requirements for crane components and safe operational specifications shall be adhered to for all lifts:

- The load-line hoist drum shall have a system or device on the power train, other than the load hoist brake, that regulates the lowering rate of speed of the hoist mechanism. Free-falling is prohibited.

- Crane-suspended personnel platforms shall not be used on cranes with live booms (booms in which lowering is controlled by a brake without aid from other devices that slow the lowering speeds). Such use is prohibited.

- Load and hoist drum brakes, swing brakes, and locking devices such as pawls or dogs, shall be engaged when the occupied personnel platform is in a stationary working position.

- Hoisting or lowering of employees while the crane is traveling is prohibited, except for tower and locomotive cranes.

- There shall be no slack in the cable between the personnel platform and load drum before lifting. If any slack is present, then before lifting the hoisting equipment operator shall ensure the cable is straight on the hoist drum, and then tighten up the hoist until the slack is no longer present.

- The crane shall be uniformly level within 1 percent and located on firm footing. Outriggers shall be fully deployed.

- Hoisting or lowering shall not exceed 100 ft per minute.

- The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane.

4.6 Testing and Documentation

The following testing and documentation requirements shall be adhered to for all lifts:

- The crane operator shall meet requirements in procedure SH-2C-01, Qualifying Equipment Operators.

- For each new setup and at the start of each shift, a full-cycle operational test lift shall be made prior to hoisting of personnel. The lift test shall be conducted at 125 percent of the intended load of the unoccupied personnel platform, holding it in a suspended position for 5 minutes. If the crane is changed or moved, personnel changed, work locations changed, or any part of the permit system changed, a new test lift is required. (The test lift shall be conducted at the furthest distance personnel are to be lifted.)

- The crane lifting the personnel platform shall be downgraded to 50 percent of the load chart capacity at the maximum anticipated radius and boom angle to ensure a safe lifting operation.

- After the test lift, a competent person shall inspect the personnel platform and rigging to check for any damage. Damage shall be repaired and re-inspected before use.
After forms and permits have been completed, appropriate signatures affixed, test lifts conducted, and inspections completed, authorization to lift employees in a personnel platform shall require final approval and signature by the contractor's site manager.

All forms and permits to lift the personnel platform shall be located in the crane while the lift is in progress. The contractor shall make provisions to retain permits for the duration of the project.

4.7 Welding

Contractors shall comply with the following requirements when performing welding from a crane-suspended personnel platform:

- All welding shall be performed by a qualified welder who has been tested and certified for the weld grades, types, and material specified in the design.
- While welding or cutting torch activities are being performed from a crane-suspended personnel platform, an ABC 20-lb fire extinguisher shall be kept on the platform. All welding leads and torch hoses shall be secured. All 110-V service used on the platform shall be protected by ground fault circuit interrupters.
- Welding leads, cords, hoses, or similar items shall not be tied to the personnel platform and suspended during the lift. Items such as these shall be lowered from the platform for connection after the basket is positioned for use. The weight of these items shall be included in the total weight of the lift.
- Precautions shall be taken to ensure torch flame tails and welding electrodes do not come into contact with personnel platform rigging.
- When electric welding is performed from crane-suspended platforms, the following precautions shall be taken to prevent electrical current from arcing through the hoisting wire rope:
  - Only nonconductive polyester round slings or insulating links shall be used to make the final attachment from the platform rigging to the hoisting block. The same requirement shall be met for the secondary safety line from the basket to its final attachment point.
  - A separate grounding conductor that is at least the size of the welding lead shall be connected from the crane-suspended platform to the structure at all times while the welding machine is operating. The platform-to-structure grounding is in addition to the grounding conductor required by the welding process. The ground attachment shall be a spring-loaded clamp or magnetic ground.
  - This configuration is not intended for use in or around power lines.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0  12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Issued

Rev. 1  03/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
General revision.

Rev. 2  07/30/2012
Approved by PCT Chair
Revised by Bob Fitzgerald
Remarks:
Nonsubstantive changes.

Rev. 3  4/18/2013
Approved by Bob Fitzgerald
Reviewed by Project Safety Leadership Team and E&CS Procedure Consolidation Team
Revised by Bob Fitzgerald
Remarks:
- Modified the name of the procedure from Crane-Suspended Work Platforms to Crane-Suspended Personnel Platforms.
- Added clarifications on requirements to meet 29 CFR 1926.1400 subpart CC, specified requirement to adhere to manufacturer’s specifications, precautions for electric welding on platforms;
- Consolidated requirements scattered throughout procedure into 4.1, Requirements.
- Moved Welding from 4.3 to 4.7.
- Removed some verbiage from 4.5, Crane Components and Safe Operational Specifications to be included in SH-2C-03.
- Clarified 4.6, Testing and Documentation to require the crane operator to meet requirements of SH-2C-01.
- Revision table change due to E&CS reorganization.

Rev. 4  05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-12

Chains, Slings, and Miscellaneous Rigging Accessories

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<tr>
<td>Revised By</td>
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<td>Reviewed By</td>
<td>Project Safety Leadership Team</td>
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<td>Project Services</td>
<td>Bill Boyd</td>
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<td>Project Support</td>
<td>Robin Hurst</td>
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</tbody>
</table>
# Contents

1.0 PURPOSE AND SCOPE .................................................................................................. 3
  1.1 Purpose ......................................................................................................................... 3
  1.2 Scope ............................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES ................................................................................. 3
  2.1 Definitions...................................................................................................................... 3
  2.2 References .................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................. 4
  3.1 Construction Site Manager .......................................................................................... 4
  3.2 Startup Manager .......................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................... 4
  3.4 Contractors .................................................................................................................... 4
  3.5 Qualified Person ............................................................................................................ 4

4.0 STANDARD ...................................................................................................................... 4
  4.1 Rigging Requirements – General .................................................................................. 4
  4.2 Rigging Requirements – Chains, Shackles, and Hooks (Noncrane) ......................... 5
  4.3 Rigging Requirements – Miscellaneous Rigging Accessories ..................................... 6
  4.4 Rigging Requirements – Slings .................................................................................... 8
  4.5 Rigging Requirements – Manila and Synthetic Fiber Rope ......................................... 8
  4.6 Rigging Requirements – Wire Rope .............................................................................. 9
  4.7 Inspections ................................................................................................................... 10

5.0 KEY CONTACT ............................................................................................................... 15

6.0 QUALITY RECORDS ...................................................................................................... 16

7.0 ATTACHMENTS ............................................................................................................. 16
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for the use, care, and inspection of rigging equipment on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference. Requirements regarding crane hooks are included in T&PS procedure SH-2C-03, Cranes and Derricks.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

29 CFR 1910.184, Slings
29 CFR 1926.251, Rigging Equipment for Material Handling
29 CFR 1926, Subpart CC, Cranes and Derricks in Construction
ANSI/ASME B30.9 – Slings
ANSI/ASME B30.10 – Hooks
ASME B30.20 Below-the-Hook Lifting Devices (current revision)
T&PS procedures:
- SH-1K, Procedure and Standard Deviation Approval Process
- SH-2C-03, Cranes, Derricks, and Powered Hoists
Forms:
- 1K.1, Procedure and Standard Deviation Request
- 2A-12.1, Monthly Sling/Choker Inspection Form
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

3.5 Qualified Person

A qualified person is responsible for performing all rigging operations under direction of a competent person.

4.0 STANDARD

4.1 Rigging Requirements – General

The following requirements shall be adhered to:

- T&PS site management shall determine the color code scheme used throughout the project.
- All rigging operations shall be performed by qualified personnel under the direction of a competent person. All rigging personnel, materials, and equipment shall comply with the requirements of 29 CFR 1926, Subpart CC.
• Rigging equipment shall be inspected prior to each use to ensure it is safe. Defective rigging equipment shall be removed immediately from service for repair or replacement.

• Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment shall have a 5:1 safety factor.

• Rigging equipment not in use shall be removed from the immediate work area to avoid a tripping hazard and shall be properly stored to prevent damage.

• Any special or custom designed grabs, hooks, clamps, or lifting accessories for units such as modular panels and prefabricated structures shall be marked with safe working loads and shall be proof-tested prior to use for 125 percent of the rated load. Such tests shall be documented.

• Rigging equipment shall be appropriate for the environment where it is to be used. For example, nylon slings should not be used around torch cutting or certain chemicals such as caustics.

• During rigging operations, personnel shall avoid placing body parts in pinch points and under loads. In particular, hands shall not be placed on the rigging or the load during the lift.

• Blocks, heavy padding, softeners, or other means shall be used on the corners or edges of the load to protect slings or rigging devices from damage.

• See 4.3.1, Beam Clamps, for specific requirements on the use of beam clamps.

• Rigging equipment with missing or illegible identification shall be removed from service immediately.

NOTE
Since 2001, all slings, including wire rope, synthetics, metal mesh, and chain, shall be manufactured under American National Standards Institute (ANSI)/American Society of Mechanical Engineer (ASME) guidelines and shall have an identification tag.

4.2 Rigging Requirements – Chains, Shackles, and Hooks (Noncrane)

The following requirements shall be adhered to:

• The manufacturer’s recommended safe working loads for chains, shackles, and hooks shall not be exceeded.

• Job or shop hooks and links or fasteners, formed from bolts or rods, shall not be used unless they have been properly designed by a qualified engineer and load tested. The use of rebar to form hooks or other lift devices is prohibited.
- Shackles shall be used to secure more than one eye in a hook.
- Never place a load on the point of a hook.
- All hooks shall have a safety latch, or the rigging shall be moused on to the hook to prevent dislodgment.
- The pin of the shackle shall be placed in the hook with the eyes of slings bearing on the shank.

4.3 Rigging Requirements – Miscellaneous Rigging Accessories

4.3.1 Beam Clamps

The following requirements shall be adhered to:

- **Beam clamps as a below-the-hook rigging point shall be restricted by Southern Company Generation Projects and Construction except in rare cases when a Deviation Form has been properly completed and approved BEFORE the lifting operation.** Contractors shall have a documented deviation process and deviation request forms developed and approved by Southern Company prior to implementation. See SH-1K, Procedure and Standard Deviation Approval Process, and form 1K.1, Procedure and Standard Deviation Request, for guidance. **The use of beam clamps as a below-the-hook rigging point on a load shall be prohibited unless specifically designed by the manufacturer and approved by Southern Company.**

- Beam clamps shall be stored in a secure location that restricts ready availability.
- Manufacturer’s documentation shall be readily available for review prior to use.
- Contractors shall develop an inventory control method to include logging beam clamps in and out to authorized personnel for specific applications.
- Contractors shall ensure qualified workers have been trained to the manufacturer’s specific use requirements and maintain a roster of trained individuals.
- Worker training shall be verified prior to issuance.
- Only manufacturer-approved type beam clamps shall be used to lift loads.
- Beam clamps shall be attached to structural members that will support the intended load.
- The beam clamp shall fit securely on the structural member and attached per manufacturer specification.
- Beam clamps shall be used for straight lift/hoist only, unless specifically designed for angle lifts/hoist and used per manufacturer specifications.
- Attach rigging to beam clamps with shackles.
- Beam clamps shall be inspected prior to each use.
- Contractors shall develop a process to periodically confirm and document the proper use and control of beam clamps. Documentation shall be available upon request.

### 4.3.2 Plate Grips

The following requirements shall be adhered to:

- Only positively self-clamping and locking-type plate grips shall be used.
- Only plate grips with the proper capacity for the load shall be used.
- Plate grips must be positioned over the center of gravity (COG).
- Plate grips shall not be used to lift multiple plates simultaneously.
- When selecting a plate grip, the user shall consider the hardness and surface of the material to be lifted to ensure proper gripping and bite of the device. Plate grips shall not be used on polished plate.
- Vertical plate grips shall not be side loaded.
- Plate grips shall not be used for overhead attachment points.
- Plate grips designed for vertical and horizontal lifts shall be used according to the manufacturer’s instructions. Lowering from vertical to horizontal or vice versa shall be performed only by manufacturer specifications.
- While lifting with plate grips, tag lines shall be used at all times, and personnel shall strictly adhere to the restriction that there be absolutely no body parts under the load.
- Plate grips shall be inspected prior to use.

### 4.3.3 Eyebolts

The following requirements shall be adhered to:

- Spreaders or other devices shall be used in conjunction with eyebolts when lifting loads to maintain a vertical pull and avoid angular pulls, which could damage the eyebolt.
- Shouldered eyebolts are preferred at T&PS projects. The eyebolt shoulder and the mating part shall be firmly and squarely seated.
- Unshouldered eyebolts shall have a minimum of 90 percent of the threads firmly engaged in the hole.
4.3.4 Rollers

The following requirements shall be adhered to:

- Rollers shall be used on surfaces that are as smooth and level as practical.
- Skid-mounted materials or loads to be moved on rollers shall be securely fastened to the skid. The force to move the load shall be applied to the skid, not the load.
- To avoid pinch points, the work group shall keep body parts clear of the rollers during movement.
- Keep movement of the load along the rollers perpendicular to the centerline of the rollers. Changes of direction shall be carefully executed to avoid dragging the load over the rollers.
- Maintain a sufficient number of rollers under the load to keep the load level and stable.
- Avoid metal-to-metal contact of rollers by use of softeners.

4.4 Rigging Requirements – Slings

The following requirements shall be adhered to:

- Mechanical hoisting operations shall always include slings or other lifting devices, which shall be kept in good condition. Wrapping the load line around the load is prohibited.
- Wire rope slings shall be inspected and lubricated frequently and regularly. Slings shall be stored on racks and protected from moisture.
- Synthetic web slings shall have a sufficient number of eyes, formed by stitching designed to achieve full strength.

4.5 Rigging Requirements – Manila and Synthetic Fiber Rope

The following requirements shall be adhered to:

- Only number-1 grade or better manila rope shall be used for rigging purposes. Each size and kind of rope shall be used and maintained in strict accordance with 29 CFR 1926.251(d).
- Rope shall be stored on racks or platforms protected from moisture and extremes in temperature.
• Splices shall be made in accordance with the manufacturer’s recommendations. Knots or clamps shall not be used in place of splices.

4.6 Rigging Requirements – Wire Rope

The following requirements shall be adhered to:

• All wire ropes shall be inspected before being used.

• Kinking and untwisting of the wire rope shall be avoided. At no time shall a load be applied to a kinked rope.

• Wire ropes shall be lubricated with the lubricant recommended by the wire rope manufacturer.

• Wherever necessary, wire ropes shall be guarded to prevent persons or materials from coming in contact with them.

• Friction of wire ropes with other objects causing chaffing or breaking of wires shall be prevented.

• Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

• Eyes formed from wire rope shall have a protective thimble.

• The U-bolt of all wire rope clips shall be applied on the dead end of the rope with nuts torqued to the manufacturer’s specifications. (Remember: Never saddle a dead horse.)

• Fiber core wire rope slings of all grades will be permanently removed from service if they are exposed to temperatures in excess of 200 °F. When nonfiber core wire rope slings of any grade are used at temperatures above 400 °F or below minus 60 °F, recommendations of the sling manufacturer regarding use at that temperature will be followed.

• The recommended number and spacing of wire clips is illustrated in table 2A-12-1, Number and Spacing of U-Bolt Wire Rope Clips.
Table 2A-12-1

Number and Spacing of U-Bolt Wire Rope Clips

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4.7 Inspections

Each component of the chains, slings, and miscellaneous rigging accessories shall be inspected as follows:

- Initial Inspection – The sling and its hooks, rings, links, and attachments shall be inspected, load tested, and certified by the manufacturer or a recognized agency or company.

- Frequent Inspection – Frequent inspections shall be performed prior to each use of the equipment. The rigger shall also remove the periodic inspection identification and cause the sling and/or accessory to be inspected.

- Periodic Inspection – Contractors shall perform periodic inspections on a monthly basis. Periodic inspections document, at a minimum, the criteria on form 2A-12.1, Monthly Sling/Choker Inspection Form, and shall be submitted to T&PS site management. An inspection identification such as tag, tape, or tie wrap shall be attached to the chain, sling, or miscellaneous rigging accessory. T&PS site management shall determine the color code scheme used throughout the project.

Any component found to have a deficiency shall be removed from service and marked with a conspicuous tag with wording such as DANGER - OUT OF SERVICE printed on it. Removal of the warning tag shall be performed only by qualified inspection personnel.
4.7.1 Repair or Reconditioning

Repair or reconditioning of slings shall be performed only by qualified personnel. Repaired or reconditioned slings shall be proof-tested as stated in ANSI/ASME B30.9 prior to being placed back into service.

4.7.2 Inspection Criteria

4.7.2.1 Alloy Steel Chain Slings

**Frequent Inspections**

The following shall be inspected frequently:

- Wear, nicks, cracks, breaks, gouges, stretch bands, weld splatter, discoloration from excessive temperature, or evidence of opening of the hook throat.
- Free movement between chain links and attachments.
- Free movement and proper seating of hook latches.

**Periodic Inspections**

The following shall be inspected periodically:

- Each link and each attachment shall be individually visually examined.
- Worn links shall not exceed the following values or the manufacturer specifications:

<table>
<thead>
<tr>
<th>Nominal Chain or Coupling Link Size</th>
<th>Maximum Wear (Diameter in inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/32</td>
<td>3/32</td>
</tr>
<tr>
<td>3/8</td>
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<td>7/8</td>
<td>11/64</td>
</tr>
<tr>
<td>1</td>
<td>3/16</td>
</tr>
<tr>
<td>1-1/4</td>
<td>1/4</td>
</tr>
</tbody>
</table>
4.7.2.2 *Wire Rope Slings*

**Frequent Inspections**

The following shall be inspected frequently:

- Distortion of rope such as kinking, crushing, unstranding, bird caging, main-strand displacement, or core protrusion.

- Loss of rope diameter in short rope lengths or unevenness of outer strands.

- General corrosion.

- Rope shall be taken out of service if it shows excessive wear, corrosion, or rust, or when any of the following conditions exist:
  
  - In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.
  
  - Wear of 1/3 the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure.
  
  - Reductions from nominal diameter of more than:
    
    - 1/64 in. for diameters up to and including 5/16 in.
    - 1/32 in. for diameters from 3/8 in. up to and including 1/2 in.
    - 3/64 in. for diameters from 9/16 in. up to and including 3/4 in.
    - 1/16 in. for diameters from 7/8 in. up to including 1-1/8 in.
    - 3/32 in. for diameters from 1-1/4 up to and including 1-1/2 in.
  
  - Evidence of any heat damage from any cause.
  
  - In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

**Periodic Inspections**

The following shall be inspected periodically:

- The entire length of the sling and its splices, end attachments, and fittings shall be visually examined.

- Evaluation of the sling and determination of its suitability for continued use depends on the judgment of the qualified individual inspecting the sling.

- The following conditions shall be sufficient to remove the sling from service:
  
  - For strand laid and single part slings, 10 randomly distributed broken wires in 1 rope lay, or 5 broken wires in 1 strand in 1 rope lay.
  
  - Severe localized abrasion or scraping.
  
  - Kinking, crushing, bird caging, or any other damage.
- Evidence of heat damage.
- Cracked, deformed, or worn end attachments.
- Corrosion of the rope or end attachments.

- Criteria for cable laid and braided slings:

<table>
<thead>
<tr>
<th>Sling Body</th>
<th>Allowable Broken Wires Per Lay or One Braid</th>
<th>Allowable Broken Strands Per Sling Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 8 part braid</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>Cable laid</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>8 part or more</td>
<td>40</td>
<td>1</td>
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</tbody>
</table>

4.7.2.3 Natural and Synthetic Fiber Rope Slings

**Frequent Inspections**

The following shall be inspected frequently:

- Cuts, gouges, and abrasions.
- Worn fibers or yarns. Variations in size or roundness of strands.
- Broken filaments or fibers.
- Particles of debris (such as powder) or broken fibers between strands.
- Evidence of chemical agents or sunlight damage (such as discoloration, harshness, brittleness).
- Kinks or knots.
- Evidence of heat damage (such as melting or charring).
- Damaged fittings or attachments.

**Periodic Inspections**

The following shall be inspected periodically:

- The entire length of the sling and its splices, end attachments, and fittings shall be visually examined.
- Evaluation of the sling and the determination of its suitability for continued use depends on the judgment of the qualified individual inspecting the sling.
• Conditions such as the following shall be sufficient reason to remove the sling from service:
  − Cuts, gouges, and badly abraded spots.
  − Serious worn surface fibers or yarns.
  − Considerable filament or fiber breakage along the line where adjacent strands meet.
  − Particles of broken filament or fibers inside the rope between the strands (inspect inside the rope).
  − Discoloration or harshness that could indicate chemical damage or excessive exposure to sunlight. Inspect filaments or fibers for weakness or brittleness.
  − Kinks or brittleness.
  − Melting or charring on any part of the sling.
  − Excessive pitting or corrosion or cracked, distorted, or broken fittings.
  − Other visible damage that causes doubt as to the strength of the sling.

4.7.2.4 Synthetic Webbing Slings

Frequent Inspections
The following shall be inspected frequently:

• Acid or caustic burns.
• Evidence of heat damage (such as melting or charring).
• Holes, tears, cuts, or snags.
• Abrasive wear.
• Knots.
• Damaged fittings and/or attachments.

Periodic Inspections
The following shall be inspected periodically:

• The entire length of the sling and its stitching, end attachments, and fittings are to be visually examined.

• Evaluation of the sling and the determination of its suitability for continued use depend on the judgment of the qualified individual inspecting the sling.

• Conditions such as the following shall be sufficient reason to remove the sling from service:
  − Acid or caustic burns.
  − Melting or charring of any part of the sling.
  − Holes, tears, cuts, or snags.
− Broken or worn stitching in load-bearing splices.
− Excessive abrasive wear.
− Knots in any part of the sling.
− Excessive pitting or corrosion, or cracked, distorted, or broken fittings.
− Other visible damage that causes doubt as to the strength of the sling (for example, exposed colored threads).

4.7.2.5 Hook (Noncrane)

Frequent Inspections
The following shall be inspected frequently:

• Wear, nicks, cracks, breaks, gouges, stretch bands, weld splatter, discoloration from excessive temperature, or evidence of opening of the hook throat.

• Free movement and proper seating of hook latches.

Periodic Inspections
The following shall be inspected periodically:

• Perform in conjunction with the inspection of chains, slings, or miscellaneous rigging accessories.

• Hooks having any of the following deficiencies are to be removed from service unless a qualified person approves their continued use and initiates corrective action:
  
  − Wear exceeding 10 percent, or as recommended by the manufacturer of the original sectional dimension.
  
  − Any visible apparent bend or twist from the plane of the unbent hook.
  
  − An increase in throat opening exceeding 15 percent or as recommended by the manufacturer.
  
  − If a latch becomes inoperative because of wear or deformation and is required for the service involved, it shall be replaced or repaired before the hook is put back into service. If the latch fails to fully close the throat opening, the hook shall be removed from service or moused until repairs are made.

• If hooks are coated, visual inspection shall take this coating into consideration. Surface variations can disclose evidence of heavy or severe service enquiring more detailed analysis. This could call for stripping the coating or nondestructive testing.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

Rev. 2
02/21/2019
Approved by Robin Hurst and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Added references to SH-1K, form 1K.1, and ASME B30.20 (2.2). Strengthened requirements for use of beam clamps (4.3.1) and plate grips (4.3.2).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-13

Chain Hoists, Lever Hoists, and Jacks

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<td>Revised By</td>
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</tr>
<tr>
<td>Reviewed By</td>
<td>Project Safety Leadership Team</td>
</tr>
<tr>
<td>Approved By</td>
<td>Bill Boyd</td>
</tr>
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<td>Bruce Long</td>
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</table>
# Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3  
1.1 Purpose ................................................................................................................... 3  
1.2 Scope ...................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3  
2.1 Definitions................................................................................................................ 3  
2.2 References .............................................................................................................. 3  

3.0 RESPONSIBILITY ....................................................................................................... 3  
3.1 Construction Site Manager ...................................................................................... 3  
3.2 Startup Manager ...................................................................................................... 4  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4  
3.4 Contractors .............................................................................................................. 4  

4.0 STANDARD ................................................................................................................ 4  
4.1 Chain Hoist and Lever Hoist .................................................................................... 4  
4.2 Testing and Inspection: Chain Hoist, Lever Hoist ................................................... 4  
4.3 Visual Inspection: Chain Hoist and Lever Hoist ...................................................... 5  
4.4 General Precautions: Chain Hoist and Lever Hoist ................................................ 5  
4.5 Testing and Inspection: Jacks ................................................................................. 6  
4.6 General Precautions: Jacks .................................................................................... 7  
4.7 Record Retention .................................................................................................... 8  

5.0 KEY CONTACT ........................................................................................................... 8  

6.0 QUALITY RECORDS.................................................................................................. 8  

7.0 ATTACHMENTS ......................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the safe operation and inspection for manually operated lifting equipment on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- 29 CFR 1910.241, Definition
- 29 CFR 1910.244, Other Portable Tools and Equipment
- 29 CFR 1926.305, Jacks - Lever and Ratchet, Screw, and Hydraulic
- Form 2A-13.1, Chain Fall and Come-A-Long Inspection

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Chain Hoist and Lever Hoist**

Each contractor shall designate a competent person(s) to administer an operations, maintenance, and inspection program for all manually operated hoist and jacks. The program shall ensure that this equipment is used, maintained, and inspected in accordance with the safe operating procedures and manufacturer’s specifications.

4.2 **Testing and Inspection: Chain Hoist, Lever Hoist**

The designated competent person(s) shall perform and document a detailed inspection. This inspection shall be performed quarterly and on all new and repaired hoists. When any extensive repairs are performed, the hoist shall be load tested for the maximum designed rated capacity by the manufacturer. All tests shall be documented on a written log, and a tag affixed to the device that denotes date of inspection. The following components shall be inspected, and if any defective condition is present, the equipment shall be taken out of service and repaired or replaced.

- Check the top and bottom hooks. If the hooks are bent, cracked, or if the hook throat is opened greater than the designed measurement, they shall be replaced.

- Check the pull handle on the lever hoist for bends or cracks. The handle shall operate (ratchet) freely in the up or down direction. The up or down pull switch or toggle switch shall operate freely.
• Check housing for any cracks, dents, or gouge marks.

• Check the load chains interlink points for signs of wear. Check the length of the chain against the original length using, at a minimum in length, 20 links of chain. If the length shows an increase of 3-percent elongation, replace the chain.

• Check load chain and pull chain for any other defects such as bends, cracks, gouges, or arc marks.

• All lubrication shall be performed according to the equipment manufacturer’s specifications. Never lubricate clutch brakes.

4.3 Visual Inspection: Chain Hoist and Lever Hoist

Prior to each assigned task, all users shall perform a visual inspection of the list of the following components, looking for any damage, wear, or irregularities:

• Brake mechanism.

• Hoist housing and sheaves.

• Hooks and safety latches.

• Lever handles.

• Wire rope.

• Load chains and pull chains.

• Lubrication.

4.4 General Precautions: Chain Hoist and Lever Hoist

When operating the hoist, observe the following safety precautions:

• Make sure the supporting structure, monorail system, and trolleys capacities are equal to or greater than the capacity of the hoist and the load. The system shall support the loads and forces imposed by the lifting operation. The monorail system and the hoist shall be clearly marked with the maximum rated capacity.

• Never use a hoist to lift more than its maximum rated capacity load. Use a larger capacity hoist if necessary.

• Do not leave a load on any hoist unattended without proper warning signs and barricades.

• Do not stand below or expose any parts of the body below a hoisted load. Use a tag line to control load.
• Hoists are designed for a one-person operation. Use a larger capacity hoist if one person cannot operate the hoist.

• Never use damaged or malfunctioning equipment. Make sure the hoist has been inspected and properly tagged.

• Do not throw or drop the hoist. Handle the equipment with care.

• Never use the load chain as a sling. The load line shall not be hooked back into itself.

• The hoist shall have an automatic, fail-safe-type load brake to prevent the load from dropping while the hoist is in the up or down position.

• Make sure the load chain and the pull chain are not twisted.

• Never use a manual material hoist to lift or support personnel. Specially designed rescue/extrication or other approved devices shall be used to lift personnel.

• Always use a shackle when using two or more eyes in the hook.

• Barricade the perimeter of the lift area. Alert others in the general area.

• Load hook shall be equipped with a safety latch or mouse.

• Suitable softeners shall be used to protect hoist chains and slings as applicable.

• Wire rope-type come-a-longs (fence pullers) are prohibited except for chain link fence installation.

• Do not engage hooks directly on beam flanges, angle iron, channel iron, or similar structures (the technique is commonly referred as "point loading").

• Follow the manufacturer’s recommendations when using chain-and-lever-type hoists.

4.5 Testing and Inspection: Jacks

Prior to each work assignment, every jack shall be visually inspected. Observe the following points when evaluating this equipment:

• Make sure fluid is at the proper levels.

• Check for leaks around the ram, jacking lever, and the toggle switch. All these functions shall be working properly before lifting.

• Check housing for cracks, gouge marks, and dents.
NOTE

These inspection procedures and general precautions shall also apply to port-a-powers.

4.6 General Precautions: Jacks

- Always store hydraulic jacks in the vertical position.
- Do not leave a load on jacks unattended.
- Handle jacks carefully. Do not throw or drop them.
- Never use a damaged, leaky, or malfunctioning jack. Make sure jacks have been inspected and properly tagged before using.
- Never jack metal to metal. Use wood or rubber softeners. Never jack against rollers.
- Operate jack handles with your hands only. Never step on a jack handle to get additional force or add leverage through the use of a jack handle extension (“cheater bar”).
- Properly position jacks and raise loads uniformly to avoid unexpected load shifts.
- To prevent the load from shifting or keep the jack from kicking, as the load is elevated, place wooden blocks between the load and the jacking surface. Never leave a jack under a load without blocking the load.
- When jacking large profile loads, determine the center of gravity and place the jacks at an equal distance apart from the center of gravity. Always place the jacks as wide as possible to ensure a stable lift.
- Place the jack base firmly and evenly on a solid footing to ensure that the jack is stable when loaded. Never place the jack directly on soil. Wood or plate is good temporary footing support.
- If blocking is necessary for elevation adjustment, place the block under the jack instead of between the ram and the object being lifted.
- Make sure jacks are level before lifting.
- When raising a load with a multijack system, brace the load laterally with struts to prevent the jacks from upsetting at once.
- Lash or block the jacks when used in the horizontal position.
- When using a multijack system, use matched jacks for uniform performance.
- Use caution when lowering loads with a multijack system.
- When hydraulic jacks are used to lift such items as vehicles for repair, there shall be positive means of support (dunnage) before entry under vehicle.

4.7 Record Retention

Each contractor shall keep inspection records on file and available for review for the length of his or her contract on the project.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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<tr>
<td>Remarks:</td>
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<td>Revised 3.0, Responsibility, to reflect updated E&amp;CS contract strategy. Corrected position title (5.0).</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-14

Power Tools

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<tbody>
<tr>
<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
</tr>
<tr>
<td>Reviewed By Project Safety Leadership Team</td>
<td></td>
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<tr>
<td>Approved By</td>
<td></td>
</tr>
<tr>
<td>Project Services</td>
<td>Bill Boyd</td>
</tr>
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# Contents

1.0 PURPOSE AND SCOPE ............................................................................................................. 3  
  1.1 Purpose ............................................................................................................................ 3  
  1.2 Scope .............................................................................................................................. 3  

2.0 DEFINITIONS AND REFERENCES ....................................................................................... 3  
  2.1 Definitions....................................................................................................................... 3  
  2.2 References ..................................................................................................................... 3  

3.0 RESPONSIBILITY ................................................................................................................. 3  
  3.1 Construction Site Manager ............................................................................................ 3  
  3.2 Startup Manager............................................................................................................. 4  
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,   
      Procurement, and Construction (EPC) Contractors) .................................................. 4  
  3.4 Contractors .................................................................................................................... 4  

4.0 STANDARD ......................................................................................................................... 4  
  4.1 General............................................................................................................................ 4  
  4.2 Saws (General) .............................................................................................................. 5  
  4.3 Circular Saws ................................................................................................................. 6  
  4.4 Reciprocating Saws ....................................................................................................... 6  
  4.5 Drills ............................................................................................................................. 6  
  4.6 Pneumatic Tools ........................................................................................................... 6  
  4.7 Portable Band Saws ...................................................................................................... 7  
  4.8 Radial Arm Saws ........................................................................................................... 7  
  4.9 Magnetic Base Drills.................................................................................................... 7  

5.0 KEY CONTACT .................................................................................................................... 8  

6.0 QUALITY RECORDS .......................................................................................................... 8  

7.0 ATTACHMENTS ................................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 PURPOSE

This standard provides requirements for the safe use of power tools on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.302, Power operated hand tools.
- 29 CFR 1926.300, General requirements.
- 29 CFR 1926.304, Woodworking tools.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Employees shall follow all manufacturers’ instructions regarding the safe storage, operation, and maintenance of power tools.

- Employees shall not use a power tool unless they have been trained to use it properly and safely.

- All guards shall be in place before operating the tool.

- Appropriate eye protection shall be worn when operating or working near power tools.

- Hearing protection shall be worn when using high noise-producing power tools such as saws and jack hammers.

- Employees shall not wear loose-fitting clothing or jewelry when using power tools.
- Employees shall disconnect the tool from power source before changing blades, bits, and so forth.

- Employees shall remove chuck keys and so forth before using a power tool.

- Employees shall disconnect power tools from the power source by pulling out the plug; they shall not pull on the power cord.

- Portable electric power tools shall be disconnected from power source when unattended.

- Tools shall be either double insulated or have three-prong plugs with grounded extension cords and ground-fault circuit interruption (GFCI) protection.

- Employees shall be required to keep their finger off the trigger and ensure the switch is in the OFF position before plugging in a tool.

- Employees shall not use electric tools that have worn or damaged plugs or cords.

- Employees shall secure small pieces of work with a clamp or in a vise.

- When using power tools, the work area shall be kept free of any trip hazards or slippery conditions.

- Employees shall never use compressed air to blow off equipment or clothing; use a brush.

- Safety devices and automatic cutoff switches on all power tools shall not be disabled or removed.

- Where oil is used in conjunction with power tools such as drills and threaders, a means of containing the debris shall be provided. An example is a box with oil absorbent under the tool.

4.2 Saws (General)

- Employees shall not jam or force saws into the work.

- Portable saws shall have a spring-loaded operating switch.

- Employees shall be instructed to stay out of the saw's line of cutting.

- Employees shall be instructed to start and stop the saw outside the work piece.
4.3 Circular Saws

- Employees shall not retract the lower guard while the blade is moving.
- Employees shall use the retracting handle or safety lift lever to move the lower guard.
- Employees shall not clamp or tie the guard open.
- Employees shall not operate the saw if the guard is not working properly.
- Employees shall keep their hand(s) away from the blade while using the saw.
- Employees shall keep the power cord out of the line of the saw cut.
- The work piece shall be supported by means other than solely handheld such as a cut table or other safe, solid surface.

4.4 Reciprocating Saws

- Employees shall not use the saw unless the insulating boot is in place.
- Employees shall be especially careful to keep their hands away from the blade when using a reciprocating saw.

4.5 Drills

- Employees shall not use dull or chipped bits.
- Employees shall let the bit cool down before changing or adjusting it.
- Employees shall not force the drill into the work.
- Employees shall use light oil to keep the bit lubricated and cool during use.
- Oil and metal shaving shall be cleaned frequently from around drill operations.
- The additional handgrip provided on large high torque drills shall not be removed and must be used during operation of the drill.

4.6 Pneumatic Tools

- Appropriate hand protection shall be worn, including gloves sufficiently padded to absorb the shock of such tools as jack hammers.
• Pneumatic power tools shall be securely attached to the compressed air hose.

• Employees shall not make adjustments to pneumatic tools until air pressure is no longer being supplied to the hose or tool.

• Employees shall not hoist, lower, or carry a tool by the hose.

• Pneumatic impact tools shall have safety clips or retainers for tool bits.

• Employees shall follow the manufacturers' guidelines for safe operating pressures.

• Employees shall locate all air hoses so they do not present a tripping hazard.

• An excess flow valve shall be installed at the source of supply to reduce pressure in case of hose failure for all hoses exceeding ½ inch inside diameter.

• Airline hose section connections shall be secured against separation. Chicago couplings shall be pinned together by positive means such as a pin or wire.

• When using pneumatic tools in a confined space, the air source must provide clean air and must not increase the hazard of the confined space.

• Additional foot protection (that is, metatarsal guards) is required when operating tools such as jack hammers and tampers.

4.7 Portable Band Saws

Employees shall not use dull or damaged blades. Do not leave blades in the work area because they create trip hazards. Dispose of used or defective blades properly. Do not change the blade with the tool plugged in.

4.8 Radial Arm Saws

• The radial arm shall be self-retracting.

• Employees shall not remove any manufacturers' guards.

• Only properly trained and authorized employees shall use a radial arm saw.

• Eye, face, chest, and hearing protection are required to operate a radial arm saw.

4.9 Magnetic Base Drills

• Employees shall use a safety chain to secure magnetic base drills to the work.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

| Rev. 0          | Approved by Bruce Long and Bill Boyd |
|                | Reviewed by Project Safety Leadership Team |
| 09/13/2016     | Revised by Bill Batts                 |

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-14, Power Tools.

| Rev. 1          | Approved by Bruce Long and Bill Boyd |
|                | Reviewed by Project Safety Leadership Team |
| 05/09/2017     | Revised by Bill Batts                 |

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-15

Grinders – Pedestal, Bench, and Portable

<table>
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Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3
  1.1 Purpose .............................................................................................................................. 3
  1.2 Scope ............................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .................................................................................... 3
  2.1 Definitions .......................................................................................................................... 3
  2.2 References .......................................................................................................................... 3

3.0 RESPONSIBILITY ................................................................................................................. 3
  3.1 Construction Site Manager .............................................................................................. 3
  3.2 Startup Manager ................................................................................................................ 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................................................. 4
  3.4 Contractors ....................................................................................................................... 4

4.0 STANDARD ........................................................................................................................... 4
  4.1 Safe Practices ...................................................................................................................... 4
  4.2 Personal Protection .............................................................................................................. 5
  4.3 Grinding Wheels ................................................................................................................ 5
  4.4 Pedestal and Bench Grinders ............................................................................................. 6
  4.5 Portable Grinders ................................................................................................................. 6

5.0 KEY CONTACT ..................................................................................................................... 7

6.0 QUALITY RECORDS ............................................................................................................. 7

7.0 ATTACHMENTS ...................................................................................................................... 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements to safely use abrasive, wheel-grinding machines including pedestal, stationary bench, and hand-held portable grinders designed and guarded for use with abrasive wheels on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.300, General Requirements.
- ANSI B7.1, Safety, Code for the Use, Care, and Protection of Abrasive Wheels.
- Form 2A-15.1, Grinder Inspection (Bench and Portable).

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Safe Practices

- Each contractor shall ensure that his or her employees are trained by a competent or qualified person prior to using grinders and grinding wheels. Training shall be documented.

- Prior to performing repair or maintenance on grinders, proper electrical/pneumatic disconnect procedures shall be followed.

- Operators shall inspect their grinders for proper wheel RPM rating, washers, and spacing of work rest and guards.

- Grinding wheels shall be run at full operating speed with safety guards in place before beginning work. While starting the grinder, stand to the side of the grinding wheel and out of the plane of rotation. Do not stand in line with the unprotected part of the wheel.

- For bench grinders, the operator shall ensure the wheel not in use is guarded to protect the operator and other personnel in the area in case of wheel breakage.
• Do not grind soft metals (such as aluminum, brass, or copper) with general purpose wheels. These soft metals will clog the grinding wheels making them useless and can cause wheels to overheat leading to the potential to explode.

• Peripheral grinding wheels shall not be used for side grinding. They lack sufficient support to withstand the pressure exerted by this operation. For side grinding, use only wheels that are manufactured and designed for that purpose.

• All grinding and cutting wheels and grinders (pedestal, bench, and portable) shall bear the RPM identification affixed by the manufacturer. This identification shall be maintained in readable condition.

• Employees shall not wear loose-fitting clothing when using a grinder.

4.2 Personal Protection

• Safety glasses and a faceshield shall be worn when using abrasive wheels. If the work creates significant airborne dust, consider adding monogoggles to your personal protective equipment. Grinding while in confined spaces increases potential eye injury and requires use of additional precautions such as the upgrade to monogoggles with faceshield.

• Gloves shall be worn when using portable grinders. Depending on the work, gloves may not be appropriate when operating a bench grinder.

• Many grinding machines produce noise levels that require hearing protection. Refer to procedure SH-2B1, Personal Protective Equipment, for additional information on hearing protection.

• Consider the need for respiratory protection or a ventilation system when dusty conditions exist. Consult the safety data sheet (SDS) on materials being ground for more information about health hazards and the need for respiratory protection.

• Protection shall be provided for personnel near the grinder, with protection equivalent to the operator’s, or keep personnel away or shielded from the exposure area.

• Portable screens for spark containment shall be used if the potential for fire from sparks exists.

4.3 Grinding Wheels

• Only grinding wheels of the proper type and construction for the work shall be used. Wheels shall be properly attached to the grinder per the manufacturer’s requirements. No special adapters, arbors, or other improvisations are permitted. No more than one wheel shall be mounted between a single set of flanges.

• Installation and inspection of grinders and grinding wheels shall be performed by a qualified person.
- Reinforced wheels reduce the hazard of flying parts or pieces in case of breakage. Organic (resinoid) bonded wheels have greater resistance to shock and breakage than do inorganic (vitreous) bonded wheels.

- Before mounting or using a grinding wheel, inspect it closely and perform a ring test to make sure it has not been damaged while in shipping, handling, or use.

- The wheel RPM rating shall be equal to or above the maximum potential RPM of the grinder on which it is mounted. Reducing air pressure or volume to the grinder is not an acceptable substitute for the use of a wheel that has a higher RPM rating than the grinder.

- Grinding wheels shall be stored in accordance with manufacturer's recommendations and shall be protected from physical damage that could cause cracking.

- Avoid grinding on the sides of a wheel. This action weakens it and can lead to wheel failure.

4.4 Pedestal and Bench Grinders

- Bench or pedestal grinders shall be securely anchored in place.

- The operator using the grinder is responsible for maintaining the proper clearance (1/8 in. maximum) between the work rest and the wheel. Do not allow work rests to extend to the side of the wheel, unless the wheel is specifically made and designed for this purpose.

- Safety guards - Provide all abrasive wheel benches and pedestal grinders with safety guards that cover the spindle ends as well as the nut and flange projection. These guards shall be strong enough to withstand the effects of a bursting wheel. The angular exposure of the grinding wheel periphery and sides of safety guards shall not exceed 90 degrees.

- Hood guards - The distance between the wheel and the hood guard at the top of the opening shall not be more than 1/4 in. (0.5 centimeters).

- A dressing tool shall be available to keep the wheel in proper condition.

- An EYE PROTECTION REQUIRED caution sign shall be posted at the grinder. A faceshield will also be available at the grinder.

4.5 Portable Grinders

- Portable grinders shall not be used as a replacement for a bench grinder.

- Each contractor shall ensure that all portable grinders are inspected before initial use and at least quarterly thereafter. Employees shall inspect their grinders before each use.
• Each contractor shall ensure that air-powered grinders are speed checked quarterly.

• Employees using portable grinders shall be responsible for changing the wheels when necessary. Use only wheels with RPM ratings equal to or above that of the grinder.

• All wheels shall be used with safety guards, with the single exception of wheels 2 in. or less in diameter to which it is impossible to apply safety guards. In this case, wear a full heavy-duty faceshield, along with safety glasses. Allow safety guards on portable grinders a maximum exposure angle of 180 degrees, and affix them firmly to the grinder. Position guards so that pieces of an accidentally broken wheel are deflected away from the operator. Protect cup-type wheels with either a revolving-cup guard or a band-type guard.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0  
09/13/2016  
Remarks:  

Rev. 1  
05/09/2017  
Remarks:  
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy.

05/15/2019  
Organization name updated.
### Excavation and Trenching

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</tbody>
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Contents

1.0 PURPOSE AND SCOPE .................................................................................................. 3
  1.1 Purpose.................................................................................................................... 3
  1.2 Scope......................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ................................................................................. 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References................................................................................................................. 3

3.0 RESPONSIBILITY ............................................................................................................. 4
  3.1 Construction Site Manager ....................................................................................... 4
  3.2 Startup Manager ....................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .................................................. 4
  3.4 Contractors............................................................................................................... 4

4.0 PROCEDURE ................................................................................................................... 4
  4.1 General ..................................................................................................................... 4
  4.2 Hydro Excavation Operations .................................................................................. 8
  4.3 Encountering Unknown or Abandoned Underground Utilities .............................. 10
  4.4 Working Near Natural Gas or CO₂ Pipelines ............................................................. 11
  4.5 Training ................................................................................................................... 11
  4.6 Record Retention ..................................................................................................... 11

5.0 KEY CONTACT ............................................................................................................. 11

6.0 QUALITY RECORDS ..................................................................................................... 12

7.0 ATTACHMENTS ............................................................................................................. 12
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides requirements for work in and around excavations and trenches on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- Frequently Asked Questions (FAQ), SH-2A-17, Excavation and Trenching
- 29 CFR 1926, Subpart P, Excavations
- 29 CFR 1926.652, Requirements for protective systems
- T&PS procedures:
  - SH-1K, Procedure and Standard Deviation Approval Process
  - SH-2A-08, Fall Protection
- Environmental, Health, and Safety standards:
  - SH-S-2A-05, Signs and Barricades
  - SH-S-2E-08, Hazardous Energy Control
- Forms:
  - 2A-17.1, Trenching and Excavation Permit
  - 2A-17.2, Excavation/Trenching Daily Inspection Form
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 General

- Each contractor that performs excavation and trenching operations shall develop a site-specific written excavation plan. The contractor’s plan shall, at a minimum, meet all requirements of this procedure and any local, state, and federal government regulations. The plan shall be submitted to the T&PS site manager or designee for approval prior to any entry to excavations or trenches.

- All contractors that will have personnel enter an excavation must have a plan in place to ensure their employees are properly protected from cave-ins or potential atmospheric hazards. The contractor’s site-specific plan will detail the means of coordination with the contractor performing the excavation work and shall include the name/position of the person responsible for coordination.
• Each contractor shall designate an excavation competent person who will remain onsite at all times while excavation activities are conducted. The contractor shall provide the name of the excavation competent person to the T&PS construction site manager.

• An excavation permit system, such as form 2A-17.1, Trenching and Excavation Permit, or equivalent shall be implemented by any contractor performing excavation work. The excavation permit is intended to ensure interferences that might be encountered during underground digging are identified and located, if possible, before work begins. The excavation permit shall be completed by the contractor with input from the authorized person for underground testing (utility identification) and the contractor’s excavation competent person. A properly executed excavation permit is critical when digging in and around operating facilities. Excavation permits are required for the following:
  – When the depth is greater than 12 in. for manual excavations or manual post driving.
  – At any depth when using mechanical excavation equipment.

• Blanket excavation permits can be used on nonindustrial, clearly delineated areas where utility locating services have confirmed no presence of utilities. Such permits can remain in effect until permanent underground systems are energized or pressurized. This work includes the installation of (driving) support poles into the ground.

• Excavation in areas containing temporary construction services and utilities shall be managed by specific excavation permits.

• The estimated location of underground utility installations such as sewers, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered shall be determined and marked prior to beginning any excavation or trenching operation. The appropriate state utilities protection center (811 call center), proper utility company, or owner shall be notified 72 hours prior to excavating.

• Soil classification shall be made by the contractor’s competent person or a registered professional engineer (P.E.) trained in soil classification. Unclassified soil shall be assumed to be type C. The contractor shall keep written documentation on the methodology used to determine soil classification, and on request, make the record available to the T&PS construction site manager for review.

• All excavations over 5 ft deep shall be shored, sloped, or benched in accordance with 29 CFR 1926.652, Requirements for protective systems, if personnel are to enter.
- Soil shall be sloped, shored, or shielded according to the following requirements of 29 CFR 1926.652:

<table>
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<td>Sloped 3/4:1 or shored/shielded</td>
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<tr>
<td>Type B</td>
<td>Sloped 1:1 or shored/shielded</td>
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<td>Type C</td>
<td>Sloped 1½:1 or shored/shielded.</td>
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<td>Shall not be benched but must be sloped to bottom of the excavation if not shielded or shored.</td>
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Written documentation for the criteria used to determine the protective system selected shall be made available to T&PS upon request for review.

- All shoring for excavations over 20 ft shall be designed by a registered professional engineer, and all shoring installed shall be approved and signed off by a P.E.

- All spoils shall be placed a minimum of 2 ft from the edge of the excavation. Loose soil or rocks shall be removed from the sides of excavation walls.

- Excavations 4 ft or greater in depth shall have a stairway, ladder, ramp, or other safe means of egress within 25 ft of any worker.

- Fall prevention and/or fall protection systems shall be in place to protect workers in excavations that are not sloped or have vertical wall where a fall potential of greater than 4 ft exists. See SH-2A-08, Fall Protection, and SH-S-2A-05, Signs and Barricades.

NOTE

The 4-ft requirement is above and beyond the 6-ft requirement found in SH-S-2A-08, Fall Protection.

- Excavations shall be inspected by the contractor's excavation competent person when worker exposure can be reasonably anticipated:
  - Prior to the start of work and as needed throughout the shift.
  - After every rainstorm or other hazard-increasing occurrence, such as snowfall, and when freezing and/or thawing temperatures occur.

- Workers entering bell-bottom pier holes or other similar deep and confined footing excavations shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials and shall be individually attended at all times while the worker wearing the lifeline is in the excavation.
• Personnel shall not work in excavations in which there is accumulated water or in excavations in which water is accumulating unless adequate precautions have been taken to protect workers against the hazards posed by water accumulation. The excavation competent person shall monitor the operation if water is controlled or prevented from accumulating by the use of water-removal equipment.

• Where an oxygen deficiency (less than 19.5 percent) or a hazardous atmosphere exists or could reasonably be expected to exist (such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby), the atmosphere in the excavation shall be tested before workers enter excavations greater than 4 ft in depth. This test shall be performed by the contractor's excavation competent person. Additional indications of the potential for a hazardous atmosphere include, but are not limited to gas lines, sewer lines, and proximity to emissions sources for H₂S, SO₂, CO, and other gases that are heavier than air.

• The contractor shall evaluate excavations for hazards in addition to cave-in potential. Electrical sources, energized (pressurized) pipes, underground tanks, and so forth may present a hazard to workers who enter the excavation.

• The contractor’s excavation competent person responsible for the crew working in the excavation shall inspect the excavation throughout the work period and stop operations when unsafe conditions exist. Form 2A-17.2, Excavation/Trenching Daily Inspection Form, or equivalent shall be used to document the daily inspections.

• The number of workers in the excavation shall be limited to the number needed to perform the work.

• Stability of adjacent structures shall be evaluated before starting an excavation and monitored daily thereafter.

• When mobile equipment is operated adjacent to an excavation or when such equipment is required to approach the edge of an excavation and the operator does not have a clear and direct view of the edge of the excavation, a warning system will be used such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

• No one will be allowed under loads handled by mechanical means such as, but not limited to, shovels, backhoes, derricks, or hoists, or near vehicles being loaded by such equipment.

• Workers exposed to vehicular traffic operating in the area of excavations or trenches shall be provided with and instructed to wear warning vests or other personal protective equipment marked with or made of reflectorized or highly visible material.
• During construction, the location of buried utilities that are part of the new construction shall be identified above ground to prevent damage during later construction processes. For example, direct buried electrical cable on a solar project shall be marked at the surface to avoid damage when support posts are driven.

4.2 Hydro Excavation Operations

4.2.1 General Requirements

• Permit requirements including preexcavation identification of buried underground utilities shall be performed.

**NOTE**

Even if the operation is for discovery, all steps to identify buried underground utilities are necessary.

• Equipment near jetting operations should be shielded or protected from debris and the ingress of water from operating the jetting equipment.

• Any essential electrical installation shall meet the required protection levels against the ingress of water vapor or overspray.

• Jetting operations shall not exceed 3,500 psi. Deviations shall follow SH-1K, Procedure Deviation Approval Process.

• The jetting wand shall never remain motionless during excavation. Aiming directly at the underground facilities shall be avoided at all times.

• A distance of 8 in. shall be maintained between the end of the pressure wand nozzle and the underground facility and/or subsoil. The nozzle shall never be inserted into the subsoil while excavating in the area of suspected underground utilities.

• People other than the operating team shall be kept out of barricaded work areas.

• Work areas shall be at least 20x20 ft when feasible.

• Work activities shall be planned to provide safe access to the equipment and item or surface being jetted.

• Operators using manually operated jetting systems shall be in a safe and well-balanced position before starting jetting operations.
- Contractors shall perform a personal protective equipment (PPE) assessment for the task to identify all appropriate PPE. Minimum PPE requirements include:
  - Faceshield.
  - Safety glasses with foam backing.
  - Rubber boots with safety toe or equivalent.
  - Rubberized outerwear such as a rain suit or equivalent.
  - Gloves appropriate to the task.
  - Appropriate hearing protection (see manufacturers recommendation).
  - Hardhat.

- Operators shall perform a daily inspection of the equipment and check there is no interruption or interference to the release mechanism of hand or foot controls that could stop the equipment operating safely and consistent with the manufacturer’s specifications.

- Jetting operations shall stop when:
  - Conditions change or new hazards are introduced.
  - Unauthorized people enter the barricaded area.
  - Recommended safe work practices are not being followed.
  - A malfunction occurs.

- Jetting systems shall be depressurized and secured when:
  - Not in use and left unattended.
  - Components are being replaced or repairs are being made to the system.

- High pressure jetting guns or lances shall be fitted with at least one fast acting hold-to-activate device that, when deactivated, will stop the flow of high pressure water. This device shall be under the direct control of the jetting operator or accessible to others to activate in the case of an emergency.

### 4.2.2 Pump Units

The pump unit shall be maintained in accordance with the manufacturer's instructions. Maintenance includes daily preoperational checks on the following items as applicable:

- Engine and drive unit – lubricating oil, water, hydraulic fluid, and fuel levels.

- Pump unit – lubricating oil, water filters, drive belts, gauges, and gearbox oil levels.

- Hydraulic hose reel – lubricating oil and fluid levels.

- Condition of guards, shields, and safety interlocks.
4.2.3 **Hose Assemblies**

Hose, couplings, connectors, and hose end fittings shall be suitable for use with the maximum working pressure of the high-pressure water-jetting unit to be used.

Before each use, hose assemblies shall be inspected by the trained operator to ensure:

- The correct pressure rating and size is selected.
- The tools used (jetting wand/vacuum tube) have been specifically designed for excavating around buried facilities (for example, rubberized coating on jetting wand and rubberized sleeve attached to the end of the vacuum tube).
- There is no apparent structural damage such as corroded or broken wires, bulging, kinking, or cuts.
- End fittings are in good condition and of the correct pressure rating for the unit operating pressure.
- Hose connections to equipment or other hoses are restrained with braided stockings or are restricted in such a way as to stop their movement if the hose end fails.

Hoses with broken wires, deep abrasions, kinking, blisters, or bubbles in the outer covering shall be identified as defective and taken out of service.

End fittings and crimping with cracks, corrosion, damaged threads, or other evidence they may not be safe to use shall be identified as defective and taken out of service.

4.3 **Encountering Unknown or Abandoned Underground Utilities**

- When unknown or abandoned underground utilities are encountered during trenching and excavation, all work shall immediately stop and permits rescinded until the unknown encumbrance is identified, unless hydro/vacuum excavation activities are being performed.

- If the unknown encumbrance must be removed or relocated, see T&PS procedure SH-2E-08, Hazardous Energy Control, for specific requirements.
4.4 Working Near Natural Gas or CO₂ Pipelines

- When excavation work is to be performed within 100 ft of a Southern Company natural gas pipeline or CO₂ line for the purpose of the movement or removal of earth, rock, or other material by mechanized equipment, and such work includes, but is not limited to, augering, backfilling, boring, digging, ditching, drilling, grading, pile-driving, ripping, scrapping, subsoiling, or trenching, the T&PS representative shall, as early in the planning process as possible, inform the responsible engineer in Technical Services (the pipeline system operator) and request guidance.

- When a load exceeding 20,000 lb per axle will cross a Southern Company natural gas pipeline or a CO₂ line, the T&PS construction representative shall, as early in the planning process as possible, contact Technical Services (the pipeline system operator) and request guidance.

4.5 Training

- T&PS and each contractor with personnel working in or around an excavation shall be trained to recognize potential hazards associated with excavations such as cave-in potential, fall hazards, safe entry and exit, proximity to excavating equipment, air quality, back-filling and compacting activities, and protective systems.

- Each individual assigned as an excavation competent person shall have documented training or shall have documentation of experience and qualifications available to T&PS upon request.

4.6 Record Retention

Each trenching and excavation contractor shall maintain a copy of the Trenching and Excavation Permit (form 2A-17.1) and the Excavation/Trenching Daily Inspection Form (form 2A-17.2) for the duration of the project and make the file available upon request to the T&PS construction site manager. Should an incident occur in an excavation or trench, a copy of the appropriate excavation permit and inspection form(s) shall be provided to the T&PS construction site manager.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

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<td>Will Taylor</td>
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<td>Bruce Walker</td>
<td>Added scope statement (1.2). Added responsibility for construction site manager (3.1) and contractors (3.2). Added requirement for an excavation permit for an excavation 18 in. or greater and for an excavation in Type C soil to be sloped if not shielded or shored (4.1). Deleted information on simple excavations (4.1). Added prohibition of workers under suspended loads and added requirement for warning vests for workers exposed to traffic (4.1).</td>
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<td>Bill Batts, Chad Kendrick, and Bill Boyd</td>
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<td>Bill Batts</td>
<td>General review for punctuation, grammar, and clarity. Edited scope statement (1.2) for consistency with other procedures. Added link to glossary definition of competent person (2.1). Added responsibility for startup manager (3.2). Reformatted information on soil type, slope, and shoring as a table to improve readability (4.1). Added three bullet points on working near natural gas or CO₂ pipelines (4.2); added same language to form 2A-17.2. Changed organization name from Project Safety and Health to Construction Safety and Health (5.0). Added attachment A, Historical Summary of Changes.</td>
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SH-2A-17, Excavation and Trenching
Rev. 7

Remarks:
Added reference to SH-2E-08 (2.2 and 4.2). Added statement on installation of support posts (4.1).
Added bullet on identifying location of buried utilities above ground (4.1). Added section 4.2.

Rev. 6
02/21/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team and Process Coordination Team
Revised by Bill Batts

Remarks:
Added references and links to two E&CS procedures and two EH&S standard (2.1). Edited responsibility
for construction site manager (3.1) and startup manager (3.2). Edited and clarified 4.1, General. Added
4.2, Hydro Excavation Operations; renumbered following sections. Added clarifying language to 4.3 (was
4.2), Encountering Unknown or Abandoned Underground Utilities. Deleted bullet in 4.4 (was 4.3),
Working Near Natural Gas or CO₂ Pipelines, on contacting 811 call center.

Rev. 7
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy.

03/05/2019
SH-2A-17 was reviewed to ensure fall exposure trigger heights are consistent with requirements of E&CS
procedure SH-2A-08, Fall Protection. No changes were needed to SH-2A-17.

05/15/2019
Organization name updated.
NOTE

This Frequently Asked Questions (FAQ) document is not a substitute for training to Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) procedure SH-2A-17, Excavation and Trenching, and having a thorough understanding of that standard. If a conflict arises between this FAQ and SH-2A-17, the text of the procedure governs.

Q1. Is an excavation permit required for just “scratching” the surface with a backhoe or trackhoe?

A1. Any mechanical excavation requires implementation of the permit process regardless of the depth.

Q2. Is an excavation permit required for driving “T” posts or installing anchors for trailers?

A2. If the “T” post or anchor installed does not exceed 12 in. in depth, a permit is not needed as long as local assessment is performed by the contractor’s competent person. If the post or anchor exceeds 12 in, then yes, a permit is required.

Q3. Can we use a pressure washer purchased from a hardware store to perform hydro excavation?

A3. Not unless the pressure washer is designed to be used for hydro excavation. Many consumer pressure washer units are capable of exceeding 3,500 psi, and the tips are designed for washing, not excavating.

Q4. I am hand digging around a water valve that needs to be replaced. The valve is 18 in. below the surface. Do I need a permit if I dig with a shovel?

A4. When hand digging with a shovel, an excavation permit is required if the excavation is more than 12 in. below the surface. If less than 12 in., a permit is not required as long as the competent person has performed an assessment and nothing was found.

Q5. Are excavation permits required for loading spoil piles or stockpiled materials?

A5. No, as long as you do not go below the local grade where the materials are stored or stockpiled.

Q6. Who determines the soil classification and what the sloping, benching, and shoring requirements are?

A6. The contractor responsible for the excavation shall have a competent person for excavations. The competent person or P.E. will determine the soil classification...
and the required protective systems based on the classification. NOTE – ON SOUTHERN COMPANY SITES, ALL SOILS ARE CONSIDERED CLASS C UNLESS OTHERWISE PROVEN.

Q7. I have an excavation that is 8-ft deep and protected with a trench box. What are the fall protection requirements?

A7. If the excavation can be approached and there is a fall exposure of 4 ft or more from the surface into the excavation, fall protection or fall prevention must be in place. Fall protection or fall prevention can be accomplished by using personal fall arrest systems (PFAS) or, better yet, by using an engineering control such as a hard barricade to eliminate the hazard. The use of soft barricades (such as barricade tape) does not meet the fall protection requirements on a T&PS site.

Q8. Call Before You Dig 811 will not come to my site. Do I still need to call them every time?

A8. If the state laws require a notification to CBYD 811, then yes, call them regardless if they will come out or not. It’s always best to have the call on record if anything comes up.

Q9. A subcontractor to Prime Contractor X is performing an excavation, but they don’t have a competent person on site. Prime Contractor X is providing the competent person. Is this OK?

A9. Yes, as long as the competent person has the necessary knowledge and training, and the subcontractor has agreed to accept the prime contractor’s person as their competent person.

Q10. Can I use a blanket excavation permit for multiple excavations in a work area?

A10. Blanket permits can be used only in nonindustrial areas that are clearly delineated and only after the locating service has verified that there are no buried underground utilities in the area. Examples of nonindustrial areas include greenfield sites that have not been previously disturbed and borrow pits. Any area within the main footprint of a generating facility, any location with buried underground utilities, or any area with the potential for buried underground utilities must use a new permit for each excavation.
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager ...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 5
  4.1 General .................................................................................................................... 5
  4.2 Caissons .................................................................................................................. 7
  4.3 Cofferdams .............................................................................................................. 8

5.0 KEY CONTACT ........................................................................................................... 8

6.0 QUALITY RECORDS .................................................................................................. 8

7.0 ATTACHMENTS ......................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides minimum requirements for personnel building and working in tunnels, caissons, and cofferdams on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926:
  - Subpart E, section 103, Respiratory protection.
  - Subpart J, section 352, Fire prevention.
  - Subpart D, section 55, Gases, vapors, fumes, dust, and mists.
  - Subpart C, section 20, General safety and health provisions.
  - Subpart K, Electrical.
  - Subpart N, Helicopters, hoists, elevators, and conveyors.
  - Subpart S, Underground construction, caissons, cofferdams, and compressed air.
  - Subpart U, Blasting and use of explosives.
- U.S. Mine Safety and Health Administration (MSHA).
- U.S. Bureau of Reclamation, Coast Safety Standards.
- U.S. Army Corp of Engineers, EM 385-1-1, Section 18.
- Specific state plans.
• T&PS procedures:
  – SH-2A-08, Fall Protection.

• Environmental, Health, and Safety standards:
  – SH-S-2A-03, Illumination.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.
4.0 STANDARD

4.1 General

The contractor(s) performing operations in tunnels, caissons, and/or cofferdams shall have a written plan detailing the following requirements for tunnels, caissons, and cofferdams:

- Safe means of access and egress to protect personnel in all work areas. The safe means of access and egress shall protect personnel from being struck by excavators, hauling machines, trains, and other mobile equipment. No personnel, other than equipment operators operating their equipment, shall be allowed in tunnels during mucking operations.

- Check-in/checkout shall be established to ensure an accurate count of personnel in the event of an emergency.

- Employees shall be trained in the following safety procedures, standards, or guidelines:
  - Air monitoring.
  - Ventilation.
  - Illumination.
  - Hazard communication.
  - Personnel hoisting.
  - Communications.
  - Flood control.
  - Mechanical equipment.
  - Personnel protective equipment (PPE).
  - Explosives.
  - Fire prevention.
  - Emergency procedures.
  - Fall protection.

- Designated personnel shall inform oncoming shifts of any hazardous occurrences or conditions that have affected or might affect personnel safety.

- The workforce from the surface shall maintain continuous and uninterrupted communications to all portions of the underground work.

- If the shaft is used for access and egress, emergency hoisting capabilities shall be readily available.

- Fall protection shall be maintained at all times around caisson openings and tunnel shafts in compliance with procedure SH-2A-08, Fall Protection, and 29 CFR 1926, subpart M.
- Self-rescuers (respirators) shall be immediately available to all personnel at workstations in underground areas where employees might be trapped by smoke or gas.

- Rescue team(s) shall be established to fulfill the needs and requirements of the site/facility and regulatory requirements.

- At least one designated person shall be on duty above ground whenever any personnel are working underground. The designated person shall be responsible for securing immediate aid and keep an accurate count of personnel underground in case of an emergency.

- Each person underground shall have an acceptable cap lamp on for emergency use or an emergency lighting system that provides adequate illumination for escape.

- Underground construction shall have a hazardous classification if geographical or geological location indicates 10 percent lower explosive limit (LEL) of flammable gases are likely to be encountered or actual monitoring indicates a gassy operations of 10 percent LEL for methane or other explosive gas.

- The contractor shall perform air quality and monitoring check for LEL, O₂ deficiencies, and other potential contaminants. Provisions shall be made for fixed continuous air monitoring when high potential to generate or release hazardous contaminates exists. The continuous monitoring shall be in the immediate affected area or adjacent areas where the hazard has the potential to travel and accumulate. In addition to the continuous monitoring, hand-held monitoring shall be performed at least at the start of shift and midway through the shift in the affected areas.

- Ventilation of fresh air shall be supplied to all underground work areas in sufficient quantities to prevent dangerous or harmful accumulations of dust, fumes, mist, vapors, and gases.

- Illumination shall conform to standard SH-S-2A-03, Illumination, and table D-3 of 29 CFR 1926.56.

- Provisions shall be implemented to divert surface water flow away from tunnels and caissons. Measures, such as pumps or other means, shall be used to prevent, control, and remove groundwater intrusion. Rescue plans need to contain effective methods of rapid evacuation in cases of sudden and significant groundwater intrusion.

- Fire prevention and control measures shall conform to standard SH-S-3, Fire Protection and Prevention, and 29 CFR 926, subparts S, F, J, and K. When an operation is designated as potentially producing a hazardous atmosphere, the contractor shall implement a hot-work permit system.

- Gasoline-powered engines shall be prohibited in underground operations.
- Welding, cutting, and other hot work shall conform to procedure SH-2A-21, Welding, Cutting, and Heating Operations, and 29 CFR 1926, subpart J and subpart S.

- Ground support:
  - Portal areas: Shoring, fencing, head walls, shotcreting, or other equivalent means shall protect portal areas.
  - Subsidence areas: The contractor shall ensure ground stability in subsidence areas by shoring or erecting barricades in hazardous areas.
  - Underground areas shall be inspected by a competent person at least at the start of the shift and as often as needed thereafter for the following:
    - Stability and condition of any installed supports.
    - Ground conditions along haulageways and travelways to ensure safe passage of personnel and equipment.
    - Rock bolts for proper torque.
    - Support nets to ensure proper tension.

- Blasting will conform to standard SH-S-2A-19, Blasting Operations, and 29 CFR 1926, subpart S and U.

- Drilling rigs, associated drilling equipment, and jumbo decks shall be inspected prior to use each shift. All regulatory requirements and project requirements shall be adhered to for inspection, fall protection, and so forth.

- Hauling equipment such as power mobile haulers, personnel transportation equipment, and material hauling shall be inspected each shift. Personnel shall only ride equipment that is equipped for personnel transportation.

- Electric power lines shall be insulated and located away from water lines, telephone lines, airlines, or other conductive materials. Lighting circuits shall be located so that personnel or equipment movement shall not damage the circuits or disrupt service. All other requirements shall comply with 29 CFR 1926, subpart K.

- Hoisting of personnel and material shall conform to 29 CFR 1926, subparts N and S.

### 4.2 Caissons

- A shield shall be erected for the protection of the employees when all of the following conditions exist:
  - Compressed air is used during caisson work.
  - The working chamber is less than 11 ft in length.
– Such caissons are at any time suspended or hung while work is in progress so that the bottom of the excavation is more than 9 ft below the deck of the working chamber.

- Shafts shall be subjected to a hydrostatic or air-pressure test, at which pressure they shall be tight. The shaft shall be stamped on the outside shell about 12 in. from each flange to show the pressure to which they have been subjected.

- All caissons having a diameter greater than 10 ft shall be provided with a man lock and shaft for the exclusive use of employees.

4.3 Cofferdams

- Warning signals for evacuation of employees in case of emergency shall be developed and posted.

- Cofferdam walkways, bridges, or ramps with at least two means of rapid exit shall be provided with guardrails.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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<td>Bruce Long and Bill Boyd</td>
<td>Project Safety Leadership Team</td>
<td>Bill Batts</td>
<td>Issued. This standard supersedes E&amp;CS procedure SH-2A-18, Tunneling, Caissons, and Cofferdams.</td>
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<td>Bill Batts</td>
<td>Revised 3.0, Responsibility, to reflect updated E&amp;CS contract strategy.</td>
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Blasting Operations

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Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
1.1 Purpose ................................................................................................................... 3
1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
2.1 Definitions ................................................................................................................ 3
2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 3
3.1 Construction Site Manager ...................................................................................... 3
3.2 Startup Manager ...................................................................................................... 4
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 4
4.1 Receipt and Inventory Records of Explosives ......................................................... 4
4.2 Surface Transportation of Explosives ...................................................................... 5
4.3 Storage of Explosives and Blasting Agents ............................................................. 5
4.4 Use of Explosives and Blasting Agents ................................................................... 5
4.5 Blaster Qualifications ............................................................................................... 6
4.6 Loading of Explosives or Blasting Agents ................................................................ 6
4.7 Initiation of Explosive Charges ................................................................................ 7
4.8 Safety Fuse and Primer Blasting ............................................................................. 7
4.9 Nonelectric Blasting ................................................................................................. 8
4.10 Firing the Blast ........................................................................................................ 9
4.11 Procedures After Blasting ....................................................................................... 9
4.12 Underwater Blasting ............................................................................................... 10
4.13 Blasting in Excavation Work Under Compressed Air ............................................ 10
4.14 Underground Blasting ........................................................................................... 10
4.15 Poisonous Gas Hazards ......................................................................................... 11

5.0 KEY CONTACT ......................................................................................................... 11

6.0 QUALITY RECORDS ................................................................................................ 11

7.0 ATTACHMENTS ....................................................................................................... 11
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard establishes requirements for the safe handling, transportation, and use of explosive material on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- ANSI A10.7, Current.
- 27 CFR 555, Commerce in explosives.
- 49 CFR 171-177, Hazardous materials regulations.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

The blasting operations contractor shall develop and submit a written site-specific program. The written program shall cover at a minimum the following:

- Training of employees in handling, transporting, loading, and detonating of explosives, and inspecting the blast area postdetonation.
- Ordering, receiving, and storage of explosives.
- Disposing of old or damaged explosives.
- Safety of all employees in the area of the blast and mucking operations.
- Heavy equipment safety.

4.1 **Receipt and Inventory Records of Explosives**

- The blasting contractor shall designate authorized individuals who are allowed to receive shipments of explosive materials.
- The T&PS construction site manager shall ensure that the blasting contractor contacts the proper authority and informs them that the site/facility is storing explosive devices onsite.
The blasting contractor, in conjunction with approval from the T&PS construction site manager, shall have two separate designated storage areas, one for the explosive material and the other for blasting caps.

The blasting contractor shall maintain a perpetual inventory of all receipts and issues. All explosives shall be accounted for at all times and any loss, theft, or unauthorized entry into storage shall be immediately reported to the T&PS construction site manager and the proper authorities.

4.2 Surface Transportation of Explosives

Transportation of all explosive material shall be in compliance with government regulations. The contractor shall provide a safe and reliable vehicle for onsite transportation of explosive materials. Appropriate placards shall be affixed, and no person will be allowed to carry any spark-producing agents in or near the vehicle. The vehicle will be attended at all times when explosives are onboard.

4.3 Storage of Explosives and Blasting Agents

All explosive material shall be stored according to 27 CFR 555, Commerce in explosives, and ANSI Standard A10.7. A certified copy of the permit or license must be posted at each storage magazine. Magazines shall be safely isolated from other project activities and posted as NO SMOKING OR OPEN FLAME areas.

4.4 Use of Explosives and Blasting Agents

- The handling of explosives and blasting agents shall be performed by a qualified blaster or by other employees under his or her direct supervision. The contractor and blaster shall be duly licensed by any required regulatory authorities.

- All explosives, blasting agents, and blasting supplies shall be used in accordance with the manufacturer’s recommendations.

- Original containers or Class II magazines shall be used for taking detonators and other explosives from storage magazines to the blasting area.

- When blasting is done in congested areas or in proximity to a structure, railway, or highway, or any other installation that may be damaged, the blaster shall take special precautions in the loading, delaying, initiation, and confinement of each blast with mats or other methods so as to control the throw of fragments, and thus prevent bodily injury or property damage. Above ground blasting shall be conducted during daylight hours only.

- Persons authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution, including but not limited to, visual and audible
warning signals, flags, or barricades to insure the safety of the general public and site personnel.

- Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph, and steam utilities, the blaster shall notify the appropriate representatives of such utilities **at least 24 hours in advance** of blasting, specifying the location and intended time of such blasting. Verbal notice **shall** be confirmed with written notice. In an emergency, the authority having jurisdiction may waive this time limit.

- Where critical receptors (as in the previous bullet) and additionally any existing operating plant facilities or adjacent structures such as homes could receive or claim damage, the blasting contractor shall make arrangements for seismographic blast monitoring. Copies of all seismographic test monitoring shall be provided to the T&PS construction site manager.

- Precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms, or other sources of extraneous electricity. These precautions shall include ensuring that mobile radio transmitters which are less than 100 ft away from electric blasting caps in other than original containers shall be deenergized and effectively locked. In addition where roads are within 1,000 ft of the blasting operations, signs with appropriate lettering reading **BLASTING AREA - RADIO TRANSMITTING PROHIBITED** shall be posted.

### 4.5 Blaster Qualifications

- Shall be in adequate physical condition to perform the work required.

- Shall be able to understand and give written and verbal orders.

- Shall be qualified by reason of training, knowledge, and experience in the field of transporting, storing, handling, and use of explosives, and have a working knowledge of state and local laws and regulations, which pertain to explosives.

- Shall be duly licensed as required by regulatory authorities.

- Shall be required to furnish satisfactory evidence of competency in handling explosives and performing in a safe manner the type of blasting that will be required.

### 4.6 Loading of Explosives or Blasting Agents

- All drill holes shall be checked for water or other hazardous conditions before loading and be sufficiently large enough to admit freely the insertion of the cartridges of explosives.
• Tamping shall be done only with wood rods without exposed metal parts. Violent tamping shall be avoided. The primer shall never be tamped.

• No holes shall be loaded except those to be fired in the next round of blasting.

• Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges.

• No explosives or blasting agents shall be left unattended at the blast site.

• Machines and all tools not used for loading explosives into boreholes shall be removed from the immediate location of holes before explosives are delivered.

• No activity of any nature other than that which is required for loading holes with explosives shall be permitted in a blast area.

• Power lines and portable electric cables for equipment being used shall be kept a safe distance from explosives or blasting agents being loaded into drill holes. Cables in the proximity of the blast area shall be deenergized and locked out by the blaster.

• Holes shall be checked prior to loading to determine depth and conditions.

• Standard-type warning signs indicating a blast area shall be maintained at all approaches to the blast area.

• No loaded holes shall be left unattended or unprotected.

• The blaster shall keep an accurate, up-to-date record of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operation.

4.7 Initiation of Explosive Charges

Only electric blasting caps, delay electric blasting caps, nonelectric delay blasting caps, or detonating cord shall be used for blasting operations in congested areas or adjacent to highways open to traffic. Electric blasting caps shall not be used where sources of extraneous electricity make the use of electric blasting caps dangerous. Electric blasting methods require the prior approval of the T&PS construction site manager.

4.8 Safety Fuse and Primer Blasting

• Safety fuses shall only be used where sources of extraneous electricity make the use of electric blasting caps dangerous. The use of a fuse that has been hammered or damaged in any way shall be forbidden.
The average burning rate of the safety fuse being used shall be determined by test burns and posted on bulletin boards or other conspicuous places where all employees can see it.

Before capping a safety fuse, a short length shall be cut from the end of the supply reel so as to assure a fresh-cut end in each blasting cap.

Only a cap crimper of approved design shall be used for attaching blasting caps to a safety fuse.

No unused cap or short-capped fuse shall be placed in any hole to be blasted; such unused detonators shall be removed from the working place and destroyed.

No fuse shall be capped or primers made up in any magazine or near any possible source of ignition.

No one shall be permitted to carry detonators or primers of any kind on his person.

The minimum length of a safety fuse to be used in blasting shall be that which is required by state law or as established by the authority having jurisdiction, but in no instance shall it be less than 30 in.

At least two workers shall be present when multiple cap and fuse blasting is done by hand-lighting methods.

When blasting with safety fuses, consideration shall be given to the length and burning rate of the fuse. Sufficient time, with a margin of safety, should always be provided for the blaster to reach a place of safety.

### 4.9 Nonelectric Blasting

- Care shall be taken to select a detonating cord consistent with the type and physical condition of the borehole and stemming and the type of explosives used.

- Detonating cord shall be handled and used with the same respect and care given to other explosives.

- Detonating cord shall be handled and used with care to avoid damaging or severing the cord during and after loading and hooking-up.

- All detonating cord connections shall be inspected before firing the blast.

- Manufacturer’s recommendations shall be followed when using detonating cords with millisecond-delay connectors or short-interval electric blasting caps.

- Detonators for firing the trunkline shall not be brought to the loading area nor attached to the detonating cord until everything else is in readiness for the blast.
4.10 Firing the Blast

- A code of blasting signals shall be posted at one or more conspicuous places at the work site. All employees shall be required to familiarize themselves with the code and conform to it. The blast signal code is as follows:
  - Warning signal - a 1-minute series of long blasts, 5 minutes prior to blast signal.
  - Blast signal - a series of short blasts 1 minute prior to the shot.
  - All-clear signal - a prolonged blast following the inspection of the blast area.

- Before a blast is fired, a loud warning signal shall be given by the blaster in charge who has made certain that all surplus explosives are in a safe place and all persons, vehicles, and equipment are at a safe distance or under sufficient cover.

- The blast contractor shall provide adequate numbers of trained personnel to clear the blast area and prevent pedestrian or vehicular traffic from entry during blasting operations.

- Before firing an underground blast, warning shall be given and all possible entries into the blasting area and any entrances to any working place where a drift raise or other opening is about to hole through shall be carefully guarded. The blaster shall make sure that all persons are out of the blast area before firing a blast.

- The blaster shall give three verbal shouts: “Fire in the hole.”

- When electric blasting operations are conducted, appropriate precautions shall be taken to prevent accidental discharge of electric blasting caps.

4.11 Procedures After Blasting

- No person shall return to the blast area until permitted to do so by the blaster.

- During postblast clean up, only the operator and blaster are allowed in the area.

- Sufficient time should be allowed for the smoke and fumes to leave the blasted area before returning to the blast area.

- An inspection of the area shall be made by the blaster to determine if all charges have been exploded before employees are allowed to return to the operation.

- If a misfire is found, the blaster shall provide proper safeguards for excluding all personnel from the danger zone. No misfired loads will be extracted. No other work will begin until the misfire is reprimed and reblasted if safe, otherwise it will be washed out with water.

- After the postblast inspection is complete and all is determined safe, the blaster will sound the "all clear."
4.12 Underwater Blasting

- Loading tubes and casings of dissimilar metals shall not be used because of possible electric transient currents from galvanic action of the metals and water.

- Only water-resistant blasting caps and detonating cords shall be used for all marine blasting. Loading shall be done through a nonsparking metal loading tube when a tube in necessary.

- No blast shall be fired while any vessel under way is closer than 1,500 ft to the blasting area.

- Blasting flags shall be displayed.

- The storage and handling of explosives aboard vessels used in underwater blasting operations shall be in accordance with the provisions outlined under handling and storing explosives as prescribed in ANSI A10.7 - current.

4.13 Blasting in Excavation Work Under Compressed Air

- Detonators and explosives shall not be stored or kept in tunnels, shafts, or caissons.

- When detonators or explosives are brought into an air lock, no employees except the powderman, blaster, lock tender, and the employees necessary for carrying, shall be permitted to enter the air lock. No other material, supplies, or equipment shall be locked through with the explosives.

- All metal pipes, rails, air locks, and steel tunnel lining shall be electrically bonded together and grounded at or near the portal or shaft, and such pipes and rails shall be cross-bonded together at not less than 1,000-ft intervals throughout the length of the tunnel. In addition, each low air supply pipe shall be grounded at its delivery end.

4.14 Underground Blasting

- Holes shall be electrically fired to give all personnel a chance to get out of the shaft or tunnel.

- In shaft blasting where there is danger of damaging property or injuring personnel by flying rocks and debris, blasting mats shall be used. When mats are metal, care shall be taken to keep them from grounding out the blasting circuit and possibly causing a misfire.

- In underground operations, blasting machines should be used. However, when firing from a power circuit, a safety switch shall be placed in the permanent firing line at intervals. This switch shall be made so it can be locked only in the OFF position and
shall be provided with a short-circuiting arrangement of the firing lines to the cap circuit.

4.15 Poisonous Gas Hazards

- Confine the charge with incombustible stemming.
- Provide adequate ventilation and make frequent tests for carbon monoxide and gases.
- Spray muck pile with water.
- Allow the maximum practical time for debris, smoke, and fumes to clear from air after blasting before returning to the blast area.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-19, Blasting Operations.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2A-21

Welding, Cutting, and Heating Operations

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<td>Bruce Long</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides requirements for safe welding, cutting, and heating on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.350, Gas welding and cutting.
- 29 CFR 1926.351, Arc welding and cutting.
- 29 CFR 1926.353, Ventilation and protection in cutting, welding, and heating.
- 29 CFR 1926.354, Welding, cutting, and heating in way of preservative coatings.
- Form 2A-21.1, Open Flame/Hot Work Permit.
- EH&S standard SH-S-2D-04, Lead.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities.
and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 General Requirements

- Workers shall follow the applicable facility's procedures when engaged in welding, cutting, or heating operations.

- Depending on potential hazards and the scope of the project, the T&PS construction site manager may determine the need to implement a welding, cutting, and heating permit system. See form 2A-21.1, Open Flame/Hot Work Permit.

- All welding, cutting, or heating operations on surfaces that have the potential to be coated with a lead-based paint or primer shall comply with procedure SH-2D-04, Lead. Other potentially hazardous substances contained in coatings such as zinc, cadmium, hexavalent chromium, and asbestos also require additional safeguards to be implemented.

- A dry-chemical fire extinguisher shall be within the immediate vicinity (25 ft) of all welding and burning activities.
• All flammable and combustible materials potentially exposed to flame, sparks, or molten metal shall be removed or covered by fire-resistant material prior to welding or burning.

• The need for firewatches during welding or cutting operations will be determined by project requirements.

• Firewatch personnel shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas and try to extinguish them only when obviously within the capacity of the equipment available, or sound the alarm. A fire watch shall be maintained for at least a half-hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

**NOTE**

Certain power generation facilities use Powder River Basin (PRB) coal as a fuel source and require a firewatch a full 8 hours after welding, burning, or grinding ceases in designated areas. Firewatch personnel may have to be on different levels and possibly in other rooms, depending on the configuration of the building.

• All users of oxyfuel burning and welding equipment shall be trained in safe-operating practices. Training shall be documented and available for review by T&PS.

• The need for welding screens during welding or cutting operations will be determined by project requirements. Any welding operation adjacent to walkways, stairways, or other high traffic areas shall implement measures to protect passers-by from weld flash, splatter, and/or grinding debris.

### 4.2 Arc Welding and Cutting

• Welders shall wear the head and eye protection required in their work area. They shall wear appropriate welding helmets, long-sleeved shirts, leathers, and welder’s gloves. Soft-hat welding is not allowed without a formal exemption. If grinding or chipping is done, a face shield shall be worn. If respirators are required, these also shall be used.

• At a minimum, employees who are working with welders shall wear clothing made of 100-percent natural fibers or fire-retardant material, long-sleeved shirts, and appropriately tinted glasses with side shields or welding eye goggles.
4.2.1 Equipment and Inspection

- Arc-welding and cutting equipment shall be industrial rated, in good condition, and meet local governing authority requirements regarding application, installation, and operation. Trained and qualified people shall make a complete, preventive maintenance inspection at least annually. The last inspection date shall be marked on the equipment.

- All oxyfuel burning and welding units shall be equipped with flashback arrestors installed between the regulator and the hose and between the hose and the torch. Arrestors shall be inspected and maintained in accordance with the manufacturer’s recommendations.

- Before each use, the following items shall be inspected:
  - All leads for broken or cut insulation.
  - Electrode holders for broken insulators or worn holders.
  - Oil and fuels on gas- or diesel-powered units.
  - Covers are in place where leads attach to welding machines.
  - All connections have no exposed current-carrying parts.

4.3 Electric Shock Hazard

- Almost all electric currents present some degree of potential shock hazard. Under optimum conditions, even welding voltages as low as 30 V can be hazardous. Operating voltages listed on nameplates are usually much lower than open-circuit voltages, which should not exceed 100 V dc or 80 V ac.

- Either ac or dc current can be used for welding, and although both present serious shock hazard, ac is potentially more hazardous. Do not use any equipment that is either wet or that has been recently drenched. Welding units that are powered by ac shall be adequately grounded. To change polarity, the unit shall be shut down.

- Electrodes shall never be changed with bare hands or wet gloves or when standing on a wet floor or grounded surface. Cables that become worn enough to present a hazard shall be replaced immediately. Keep welding cables away from power supply cables and high-voltage wires. Do not dip hot electrode holders in water to quickly cool them.

- Ground-fault circuit interrupters (GFCIs) shall not be used on welding machines with dc current outlets for cord plugs. They do not function properly in this application.

4.4 Inert and Toxic Gas Exposure

Many welding procedures require an inert gas, such as argon and/or helium, both of which present an asphyxiation hazard. Welders and fitters need to keep the following points in mind:
- Inert gases are odorless and colorless. They can only be detected by monitoring with the proper detection meters.

- Large-diameter pipes contain larger volumes of inert gas and greater potential for problems. Removing the gas containment quickly will release the gas into the immediate area.

4.5 Ventilation Requirements

4.5.1 Welding, Cutting, and Heating In Enclosed Spaces

General mechanical or local exhaust ventilation shall be provided whenever welding, cutting, or heating is performed in areas with inadequate ventilation and in enclosed spaces. The ventilation shall be of sufficient capacity and so arranged as to produce the number of air changes necessary to maintain welding fumes and smoke within safe limits. (Levels below OSHA permissible exposure limits (PELs) and/or threshold limit values (TLVs) will be considered to be safe limits as described above. In some cases, OSHA action levels, excursion limits, and short-term exposure limits (STELs) may be substituted as safe limits.) The adequacy of the ventilation shall be determined by air monitoring.

- When sufficient ventilation, as described above, cannot be obtained, the employees shall be protected by appropriate respiratory protection.

- Oxygen shall never be used to ventilate an area.

- Employees performing welding and/or cutting operations on the materials listed below in enclosed spaces shall use local exhaust ventilation, or the employees shall be protected with airline respirators. Airline respirators shall also protect other employees working in the immediate area.
  - Lead-base metals or materials coated with lead-bearing materials (see EH&S standard SH-S-2D-04, Lead).
  - Cadmium-bearing or cadmium-coated materials.
  - Metals coated with mercury-bearing materials.
  - Beryllium-containing base or filler metals (because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-supplied respirators).

- Upon completion of the work, the atmosphere in the confined space shall be monitored. If a toxic atmosphere is present, the confined space shall be purged and/or vented to return the space to a nontoxic status.
4.5.2 **Welding, Cutting, and Heating in Open Air (areas with adequate ventilation)**

Employees performing welding and/or cutting operations on the materials listed below in the open air shall be protected by air-purifying respirators (filter type). Air-purifying respirators shall also protect other employees working in the immediate area.

- Lead-based metals or materials coated with lead-bearing materials (see EH&S standard SH-S-2D-04).
- Cadmium-bearing filler materials.
- Chromium-bearing metals or metals coated with chromium-bearing materials.
- Metals coated with mercury-bearing materials.
- Beryllium-containing base or filler metals. Because of its high toxicity, work involving beryllium shall be done with both local exhaust ventilation and air-supplied respirators.

4.5.3 **Inert-Gas Metal Arc Welding**

- The use of chlorinated solvents (example: tap-free) shall be kept at least 200 ft away from any inert-gas metal arc welding unless shielded from the exposed arc.
- Surfaces prepared with chlorinated solvents shall be thoroughly dry before welding is permitted on such surfaces.
- Welders and other employees who are exposed to welding flash shall be protected so that skin is covered completely to prevent burns and other exposure to ultraviolet radiation.
- When inert-gas metal arc welding is performed on stainless steel, either local ventilation or air-supplied respirators shall be used. The local ventilation shall be of sufficient capacity and so arranged as to maintain nitrogen dioxide levels at or below the current TLV for nitrogen dioxide (3 ppm).

4.5.4 **Welding, Cutting, and Heating Paints and Coatings**

- Before welding, cutting, or heating any surface covered by a coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Coatings shall be considered to be highly flammable when scrapings burn rapidly.
- When coatings are determined to be flammable, they shall be stripped from the area to be heated/burned/welded to prevent ignition (a minimum of 4 in. to each side of the location heated).
- When coatings are determined to be toxic, the coating shall be stripped at least 4 in. from the area of heat application, or the employees shall be protected with
appropriate respiratory protection. Half-mask cartridge respirators equipped with HEPA filters are the minimum acceptable respiratory protection that can be used when welding on surfaces with toxic coatings.

- When working in enclosed spaces on surfaces covered with toxic preservatives (for example, lead, cadmium, or zinc chromate paints), the coating shall be stripped at least 4 in. from the area of heat application. If stripping the area is not possible, the employees in the enclosed space shall be protected by air-supplied respirators.

- When working in enclosed spaces on surfaces covered with coatings that have been determined to be other than toxic, the coatings shall be removed a sufficient distance from the area that is to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heated area may be used to limit the size of the area required to be stripped.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0 12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker

Remarks:
Issued.

Rev. 1 03/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker

Remarks:
Added scope statement (1.2). Added responsibility statements for E&CS construction site manager (3.1), and contractors (3.2). Added note (4.1). Added restrictions for welding operations (4.1).

Rev. 2 07/30/2012
Approved by PCT chair
Revised by Bob Fitzgerald

Remarks:
Approved by PCT chair as nonsubstantive change.

09/13/2016
Corrected text and link to new EH&S standard SH-S-2D-04.

Rev. 3 05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

Remarks:

05/15/2019
Organization name updated.
### Pressure Vessel, Tank, and Piping System Testing

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<td>05/09/2017</td>
<td>Bill Batts, manager–Construction Safety and Health</td>
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<td>Project Support</td>
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</table>
## Contents

1.0 PURPOSE AND SCOPE ............................................................................................. 3  
1.1 Purpose .................................................................................................................. 3  
1.2 Scope .................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ............................................................................ 3  
2.1 Definitions.............................................................................................................. 3  
2.2 References .......................................................................................................... 3  

3.0 RESPONSIBILITY ....................................................................................................... 3  
3.1 Construction Site Manager .................................................................................. 3  
3.2 Startup Manager .................................................................................................. 4  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) 4  
3.4 Contractors ........................................................................................................... 4  

4.0 STANDARD ................................................................................................................ 4  
4.1 General.................................................................................................................. 4  
4.2 Test Pressure ....................................................................................................... 5  
4.3 Relief Valves ........................................................................................................ 5  
4.4 Test Gauges ......................................................................................................... 6  
4.5 Temporary Test Blanks ...................................................................................... 6  
4.6 Test Limitations .................................................................................................. 6  
4.7 Hydrostatic Testing ............................................................................................. 6  
4.8 Pneumatic Testing ............................................................................................... 7  

5.0 KEY CONTACT ....................................................................................................... 8  

6.0 QUALITY RECORDS ............................................................................................... 8  

7.0 ATTACHMENTS ...................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard establishes requirements to ensure personnel safety while performing pressure vessel, tank, and piping system testing on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- ANSI/ASME B31.1, Power Piping.
- ANSI/ASME Boiler and Pressure Vessel (B&PV) Code, Section I, Power Boilers.
- ANSI/ASME Boiler and Pressure Vessel (B&PV) Code, Section VIII, Pressure Vessels.
- T&PS procedure DC-01, Quality Records Requirements
- EH&S standard SH-S-2A-05, Signs and Barricades
- SCG-SH-0200, Generation Clearance Procedure
- Southern Company Record Retention Schedule

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 General

- For the purpose of this standard, pressure vessels include both temporary construction and permanent equipment installations.
- All testing shall be hydrostatic or pneumatic. Tests shall be performed either to:
  - Verify the integrity of a pipe system, pressure vessel, or tank.
  - Confirm system functionality, for example, through service testing.
- When testing systems that involve pressurized hazardous fluids and gases, Construction Safety and Health shall review the site-specific test procedures that have been developed or reviewed by T&PS Mechanical Design for applicable safety and health requirements.
- Test procedures shall address applicable hazardous energy control requirements. For equipment under startup or generating facility control, SCG-SH-0200, Generation Clearance Procedure, shall be the governing procedure.

NOTE

For systems under startup or generating facility control, a clearance with appropriate isolation points shall be established prior to performing any work. When introducing a source of hazardous energy by way of the testing media (hydrostatic or
pneumatic), a functional release for testing shall be obtained as required by SCG-SH-0200.

- Prior to beginning any testing, a pretest job safety analysis (JSA) or job safety briefing (JSB) meeting shall be held with all personnel involved. Items to discuss and document on the JSA or JSB shall include:
  - The individual(s) in charge of the test.
  - Personal protective equipment (PPE) requirements.
  - Test pressures.
  - Hold points during the test.
  - Appropriate signs and barricades.
  - The size and configuration of the barricaded area.
  - When personnel can cross the boundaries and enter the barricaded area to check for leaks.
  - When personnel can make repairs.
  - Location of nearest eyewash and safety shower.
  - Any other known safety hazard.

- Boundaries for the test area shall be evaluated and established based on test pressures involved and access and egress requirements. Boundaries shall be maintained at all times during testing activities. Boundaries shall be identified with a warning barricade (red) and signage appropriate to the test using language such as DANGER – PNEUMATIC TESTING IN PROGRESS or DANGER – HYDROSTATIC TESTING IN PROGRESS. Signs shall be placed in increments not to exceed 25 ft. Additionally, high traffic areas may require a monitor to be posted to alert individuals who approach the test boundary and to visually ensure the integrity of the boundary. See SH-S-2A-05, Signs and Barricades, for general barricade and signage requirements not specifically covered by this standard.

- During testing, personnel shall not be permitted within the boundaries of the test while pressure is being increased. Access shall be allowed only during established hold points as identified in the test plan.

4.2 Test Pressure

Personnel performing tests as described in this standard shall ensure the test pressures used are approved by T&PS Design.

4.3 Relief Valves

Relief valves shall be installed for all tests. The relief valve setting shall be set to no more than 110 percent or 10 psi above the test pressure, whichever is lower.
4.4 Test Gauges

Test gauges shall have a sufficient range, allowing the upper limits of the test pressure to be 33 to 66 percent of the gauge range. Calibration of test gauges shall follow manufacturer’s recommendations.

4.5 Temporary Test Blanks

Temporary test blanks shall be fabricated and installed in accordance with applicable engineering specifications.

4.6 Test Limitations

- Blinding or bypassing is required for the isolation of:
  - Equipment and equipment seals, for example, pumps, turbines, compressors, and package units that have been previously tested by the manufacturer.
  - Equipment and vessels that are not to be subjected to pressure testing.
  - Vessel components that would be contaminated or damaged by the testing media.
  - Equipment that cannot be drained or pneumatically tested, or if the manufacturer specifically recommends that tests should not be made.

- Any installed filter elements shall be removed from the system prior to pressure testing.

- All instruments shall be protected from damage when hydrotesting piping systems.

- All instrument air signal tubing shall be excluded from testing.

- Process lead lines for instruments that are to be excluded from pressure testing shall be tested to the first block valve.

4.7 Hydrostatic Testing

- Vents or drains shall be installed at the high or low points of all lines to be hydrostatically tested. The vents or other connections shall be opened to eliminate air from lines that are to be hydrostatically tested. Lines shall be thoroughly purged of air before hydrostatic test pressure is applied. If required, additional vents or drains shall be installed with approval of T&PS Mechanical Design.

- Adequate vents and drains shall be installed in the system for filling and draining. Each system shall be analyzed to locate vents for removal of all air.

**CAUTION**
Vents shall be fully opened while filling and draining the system, in order to purge all air and prevent a possible collapse of the system.

- The preferred location for the test pressure gauge is the lowest elevation of the system and as near the test pump as practical. Test pressures shall be increased to compensate for any static head above the gauge connection.

- Lines that are variable spring, constant support, or counterweight supported shall be temporarily blocked up during testing, unless specifically directed otherwise by T&PS Mechanical Design.

- Large ducts for air or steam/vapor service shall be checked for temporary supporting requirements that may be necessitated by the weight of the test media. Foundations and supports for all vessel, tank, and piping systems to be hydrostatically tested shall be verified as adequate to support the weight of the liquid medium used for testing.

- Care shall be taken to avoid overloading any parts of supporting structures that might not be able to support the test fluid weight. An example is equipment to be hydrotested that is supported by another piece of equipment.

- Test pressure shall not be applied until the piping, equipment, or vessel and the pressurizing fluid are at approximately the same temperature and meet the requirements of the applicable code.

- The system under test shall be held to applicable test pressure and maintained for not less than 10 minutes, then decreased to design pressure to perform inspection of welds and joints for leaks.

- Personnel shall wear a faceshield and safety goggles when making a close inspection for leaks.

- The maximum test pressure shall be in accordance with the applicable code.

- Personnel shall relieve pressure before making any repairs to the system being tested.

- Pressures above 600 psi shall be considered high pressure. The area where such a test is performed shall be evaluated for access and egress and limited by barricades and/or signs (see SH-S-2A-05).

### 4.8 Pneumatic Testing

- Pneumatic testing shall not be done without approval from T&PS Mechanical Design and consultation with Construction Safety and Health.

- Pneumatic testing method requires careful supervision and shall be performed per the applicable code.
• If the system leaks during testing to the extent that the required test pressure cannot be obtained, the system shall be depressurized and the necessary repairs shall be made. The system shall be retested following the same test method requirements prior to the leak being discovered. Maximum test pressure shall be in accordance with applicable code requirements.

• No adjustments or repairs are to be made on any part of the test system while it is pressurized.

• When using test gasses that, in the event of a leak, have the potential to displace oxygen, a sufficient number of calibrated air monitors will be available and used based on the workforce and location of the tested system.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

The contractor and T&PS personnel shall file, store, and maintain all quality documents throughout the construction project to completion in accordance with DC-01, Quality Records Requirements, and the Southern Company Record Retention Schedule.

Quality records generated from this standard, where applicable, include, but are not limited to, site-specific test procedures.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:

Rev. 1
05/09/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy.

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-23

Compressed Gas Cylinders

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides established safe practices for identifying, handling, and storing compressed gas cylinders on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- All personnel whose duties involve the use, handling, and storage of compressed gas cylinders shall be properly trained.

- Compressed gas cylinders shall not be accepted from the distributor or supplier unless the cylinder is clearly identified with a visible and proper manufacturer’s label.

- A safety data sheet (SDS) shall be supplied with and kept in the site files for each type of product contained in compressed gas cylinders.

- T&PS construction site managers shall ensure that periodic inspections are performed on both vendor-supplied and site-owned cylinders. The condition of the cylinders and U.S. Department of Transportation (or other regulating authority) required testing shall be verified.

- Defective cylinders shall be tagged and identified as defective and shall be segregated from other cylinders. Management shall establish a policy for exchanging or disposing of defective cylinders.

- Cylinders shall be moved or stored in the upright position. Racks or cradles shall be used to prevent them from tipping, falling, or dropping. Approved lifting racks shall be used to lift cylinders from one level to another. Rope or chain slings shall not be used. When transporting cylinders on trucks or trailers, cylinders shall be stored and
secured upright in a cage or cradle. Individual bottle carts containing oxy/fuel cylinders shall not be stored together.

- The valves on compressed gas cylinders shall always remain closed unless the cylinder is in use.

- If the cylinder is designed to accept a cap, valve protection caps shall always be in place and hand tight, except when cylinders are in use or connected for use.

4.2 Storage and Use

- Compressed gas cylinders shall be stored and used in the upright position. Cylinders shall be secured with a noncombustible material to provide maximum stability and prevent them from falling. Cylinders shall not be secured by their valves or collars. Cylinders shall be placed in carts or storage racks only.

- Segregate cylinders by the type and amount of their contents. Full and empty cylinders shall be stored separately. Cylinders of oxygen or other oxidizing gases shall be stored separate from fuel-gas cylinders and other flammable materials by a minimum of 20 ft (6 m), unless a suitable, 1/2-hour rated, flame-resistant partition is provided.

- Cylinders shall be kept 25 ft away from all sources of heat including boilers in operation.

- Smoking, spark-producing work, and open flame are not permitted within 20 ft (6 m) of any cylinder storage area containing cylinders of flammable gas. Signs shall be posted prohibiting these activities in cylinder storage areas.

- Cylinders shall not be placed where they can become part of an electrical circuit.

- Cylinders should be stored so they can be used in the order they were received.

- All existing facility policies shall be adhered to before cylinders are stored inside buildings. Cylinders stored inside buildings shall be stored in a well-ventilated and protected location. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

- The bulk storage facility shall be a minimum of 50 ft (15 m) from adjacent buildings and easily accessible for pickup and delivery of cylinders. The storage rack or site/facility should have a ramp with a 1:12 maximum pitch so that cylinders can be lifted or rolled off forklifts without dropping or chipping them. Consider installing ramps on bottle racks to eliminate the need to manually lift cylinders in or out of the racks.

- While in use, cylinders shall be placed or shielded to prevent contact with hot sparks or slag.
- Compressed gas cylinders that are used daily, such as skid-mounted racks and bottle carts, may be stored closer than 50 ft (15 m) to adjacent buildings as determined by site/facility management.

- Compressed gas cylinders shall not be taken into confined or enclosed spaces.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-24

Transporting Personnel

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<thead>
<tr>
<th>Date</th>
<th>Rev. 1**</th>
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<th>Bill Boyd</th>
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<td>Project Support</td>
<td>Bruce Long</td>
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</tbody>
</table>
**Contents**

1.0 PURPOSE AND SCOPE ................................................................. 3  
1.1 Purpose .................................................................................. 3  
1.2 Scope ................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ............................................. 3  
2.1 Definitions ............................................................................ 3  
2.2 References ............................................................................ 3  

3.0 RESPONSIBILITY ........................................................................ 3  
3.1 Construction Site Manager ..................................................... 3  
3.2 Startup Manager .................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4  
3.4 Contractors .......................................................................... 4  

4.0 STANDARD ................................................................................ 4  
4.1 Equipment Inspection .............................................................. 4  
4.2 Operator Qualifications .......................................................... 4  
4.3 Equipment Requirements ...................................................... 4  
4.4 Operating Requirements ....................................................... 5  
4.5 Passenger Requirements ...................................................... 5  
4.6 Transporting Personnel with Materials or Equipment ............. 5  
4.7 Transporting Personnel in Pickup Truck Beds ...................... 6  
4.8 Alternate Means of Transportation ....................................... 6  

5.0 KEY CONTACT .......................................................................... 6  

6.0 QUALITY RECORDS .................................................................. 6  

7.0 ATTACHMENTS ......................................................................... 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides minimum requirements for the safe transport of personnel in vehicles or transporters on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

Form 2A-24.1, Vehicle Inspection Form.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Equipment Inspection**

Vehicles that transport personnel shall be inspected as follows:

- A new vehicle shall receive an initial inspection prior to being placed in service.
- The vehicle operator shall conduct a daily preuse inspection.
- State safety inspections shall be conducted per any applicable state requirements.

4.2 **Operator Qualifications**

Vehicles used to transport personnel shall be operated only by a qualified operator. The operator of a vehicle used to transport personnel must be familiar with the contents of this standard, possess the appropriate class vehicle operator’s license valid for use on public roadways, and meet any additional site or governmental requirements.

4.3 **Equipment Requirements**

Equipment used to transport personnel must have the following safety features as a minimum:
- All appropriate safety features shall be operational including, but not limited to brakes, horns, headlights, tail lights, brake lights, turn signal lights, and windshield wipers. In addition, the vehicle shall have an undamaged windshield.

- Vehicles that have an obstructed view to the rear shall have an adequate audible warning device when backing.

- The vehicle must have a safe means of access and egress. Methods include, but are not limited to, steps and ladders.

4.4 Operating Requirements

- When operating vehicles onsite or on public roadways, the vehicle operator shall obey all site rules and all applicable laws.

- Before operating any equipment on public roadways, the vehicle operator shall make sure it meets the requirements of local governing body.

- The vehicle operator shall always observe posted speed limits.

- When seatbelts or shoulder harnesses are provided, the vehicle operator shall limit the number of occupants (operator plus passengers) to the number of seatbelts or shoulder harnesses available in the vehicle. The operator shall ensure that all vehicle occupants use the seatbelts or shoulder harnesses.

4.5 Passenger Requirements

When riding in vehicles, passengers and drivers must observe the following safety precautions:

- Vehicles shall not be loaded in excess of capacity as designed by the manufacturer.

- Use the proper method of access and egress.

- Always keep torsos and extremities within the confines of vehicles or transporters.

4.6 Transporting Personnel with Materials or Equipment

- When purchasing, designing, and using vehicles, ensure personnel are not transported in the same compartment with materials or equipment whenever possible.

- When it is necessary to transport personnel and materials or equipment in the same compartment, the T&PS construction site manager or designee must develop a written plan that details the rules for preventing injury to personnel.
4.7 Transporting Personnel in Pickup Truck Beds

- Transporting personnel in truck beds offsite is strictly prohibited.

- Personnel being transported to or from locations within the confines of projects may be permitted to ride in the bed of pickup trucks, provided that the following conditions are met:
  
  - Trucks shall be equipped with benches and properly constructed side guardrails.
  
  - Personnel shall remain seated with all body parts inside the bed at all times.
  
  - The tailgate of the vehicle shall be closed.
  
  - Transport speed shall not exceed 15 mi/h.
  
  - The vehicles shall be completely stopped while loading and unloading.
  
  - Personnel and material shall not be transported together.
  
  - No more than 8 persons shall be transported in the bed of a long (8 ft) bed pickup; no more than 6 in the bed of a short (6 ft) bed pickup.
  
  - The operator shall ensure the truck is not overloaded.

- The preferred method of transporting personnel to and from locations on projects shall require that employees be seated inside a vehicle that has been designed to carry passengers (such as a school bus).

4.8 Alternate Means of Transportation

Other special forms of transporting personnel (for example, bicycles, golf carts, gators, mules, and four-wheelers) require a site/facility plan that addresses safe operation, inspection, and maintenance.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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<td>Bruce Long and Bill Boyd</td>
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<td>Bill Batts</td>
<td>Issued. This standard supersedes E&amp;CS procedure SH-2A-24, Transporting Personnel.</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-25

Working Over or Near Water

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</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................3
  1.1 Purpose ....................................................................................................................3
  1.2 Scope ......................................................................................................................3

2.0 DEFINITIONS AND REFERENCES ................................................................................3
  2.1 Definitions ................................................................................................................3
  2.2 References ..............................................................................................................3

3.0 RESPONSIBILITY ...........................................................................................................4
  3.1 Construction Site Manager ....................................................................................4
  3.2 Startup Manager ....................................................................................................4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................4
  3.4 Contractors ............................................................................................................4

4.0 STANDARD ..................................................................................................................4
  4.1 Requirements .........................................................................................................4

5.0 KEY CONTACT ............................................................................................................6

6.0 QUALITY RECORDS ...................................................................................................6

7.0 ATTACHMENTS .........................................................................................................6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements to protect personnel on Technical and Project Solutions (T&PS) projects from hazards associated with working over or near water.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedure SH-2A-08, Fall Protection.

Note


- 29 CFR 1926.502, Fall protection systems criteria and practices.
- 29 CFR 1926.106, Working over or near water.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

Each contractor shall conduct a hazard assessment and develop a site/facility-specific plan that details how the contractor’s employees will be protected from recognized or foreseeable hazards while engaged in activities that require them to work over or near water. The site/facility-specific plan shall address the following elements:
• Employees working over or near water, where the danger of drowning exists, shall be provided with U. S. Coast Guard-approved life jackets or buoyant work vests.

• Fall protection including:
  – Fall-arresting devices.
  – Fall-restraint devices.
  – Safety nets.
  – Lifelines.

• Working in an isolated setting - Work shall be monitored so at least one person is capable of initiating the rescue plan. Methods shall be established to allow prompt notification of rescue services in the event of an emergency.

• Electrical safety - Refer to EH&S Manual, volume 2E, Electrical Safety.

• Rescue plan - Shall indicate equipment, methods, and persons involved in rescue operations.

• Water rescue equipment such as:
  – Ring buoys with at least 90 ft of rope shall be readily available. The distance between ring buoys shall not exceed 200 ft.
  – Rescue boat or lifesaving skiff immediately available when working over or adjacent to water.
  – Self-rescue or egress from the water to dock, barge, or boat shall be provided.

• Transportation of an injured or drowning victim to a treatment facility.

• Training requirements:
  – Training shall cover the elements of the site-specific plan. Employees shall be trained prior to being assigned activities that require them to work over or near water.
  – Retraining shall be conducted annually, when work conditions or procedures, standards, or guidelines change, or when the employees’ performance indicates the need for retraining.

**NOTE**

Best practice is that only personnel who know how to swim be assigned to tasks involving work on or near water. Work near open tanks, vessels, sluiceways, holding ponds, and other areas where personnel can fall into and have the potential to drown shall be considered in the site plan.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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09/13/2016
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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
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Revised by Bill Batts

Remarks:
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-26

Commercial Diving Operations

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 3
  3.1 Construction Site Manager ...................................................................................... 3
  3.2 Startup Manager ...................................................................................................... 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 4
  4.1 Requirements .......................................................................................................... 4

5.0 KEY CONTACT ........................................................................................................... 5

6.0 QUALITY RECORDS ................................................................................................. 5

7.0 ATTACHMENTS ......................................................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe commercial diving operations on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926, Subpart Y, Diving.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

- T&PS shall hire approved contractors to perform any required commercial diving operations. Each contractor performing underwater diving operations shall develop, maintain, and provide the T&PS construction site manager with a copy of the contractor’s site-specific safe practices manual, and shall ensure that a copy of this manual is made available at the dive location to each dive-team member. The safe practices manual shall contain:
  - A copy of OSHA Standard 29 CFR 1926, Subpart Y or 29 CFR 1910, Subpart T.
  - The contractor’s policies for implementing the requirements of 29 CFR 1926, Subpart Y or 29 CFR 1910, Subpart T.
  - Safety procedures and checklists for diving operations.
  - Assignments and responsibilities of the dive-team members.
  - Equipment procedures and checklists.
  - Emergency procedures for fire, equipment failure, adverse environmental conditions, and medical illness and injury.

- Each contractor performing underwater diving operations shall provide the T&PS construction site manager with the name of the contractor’s designated person-in-charge who will be at the dive location in charge of all aspects of the diving operation affecting the safety and health of dive-team members.
• The designated person-in-charge shall have experience and training in the conduct of the assigned diving operation and shall have the authority to ensure that all requirements outlined in the safe practices manual are adhered to.

• Each dive-team member shall have the experience and training necessary to perform assigned tasks in a safe and healthful manner. This training shall include:

  – The use of tools, equipment, and systems.
  – Techniques of the assigned diving mode.
  – Diving operations and emergency procedures.
  – Cardiopulmonary resuscitation and first-aid.
  – Diving-related physics and physiology.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A. Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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09/13/2016  Reviewed by Project Safety Leadership Team
Rev. 0  Revised by Bill Batts
Remarks:
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05/09/2017  Reviewed by Project Safety Leadership Team
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Remarks:
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-27

Commercial Motor Vehicle Operations

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</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 3
  3.1 Construction Site Manager ...................................................................................... 3
  3.2 Startup Manager ...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
     Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4

4.0 STANDARD ................................................................................................................ 4
  4.1 Commercial Motor Vehicle Description ................................................................. 4
  4.2 Requirements .......................................................................................................... 4

5.0 KEY CONTACT ........................................................................................................... 5

6.0 QUALITY RECORDS .................................................................................................. 5

7.0 ATTACHMENTS ......................................................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the operation, maintenance, and recordkeeping of commercial motor vehicles (CMV) used by Technical and Project Solutions (T&PS) personnel.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- Alabama Power Company Safety and Health “Commercial Driver’s License and FMCS Regulations” Program Guide.
- Georgia Power Company Safety and Health Guides.
- ______. New rule: No texting while operating a CMV. Published May 2012.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Commercial Motor Vehicle Description**

“Commercial motor vehicle” (CMV) means any self-propelled or towed vehicle used on public highways to transport property or passengers when:

- The vehicle has a gross vehicle weight rating (GVWR) or a combination GVWR that exceeds 10,000 pounds; or
- The vehicle of any size is used to transport hazardous materials in a quantity that requires the vehicle to be placarded; or
- The vehicle is designed to transport 16 or more passengers, including the driver.

4.2 **Requirements**

All company vehicles used by T&PS are owned or leased by the operating companies. T&PS employees shall abide by the guidelines for operating CMVs issued by the appropriate operating company where the specific T&PS operation is based.

**NOTE**

Alabama, Georgia, Florida, and Mississippi may have differing state requirements for the CMV operation.
When the need arises for T&PS to use a company-owned or -leased vehicle meeting the definition of CMV (see 4.1, Commercial Motor Vehicle Description), the T&PS manager responsible for the operation of the vehicle shall consult with the appropriate operating company fleet manager to determine appropriate contacts to make and steps to take to ensure all applicable federal, state, local, and operating company requirements are met. (See appendix A, Commercial Motor Vehicle Driver Qualifications, for a listing of items required for drivers of CMVs.)

All applicable requirements shall be met prior to allowing the operation of the CMV on a public roadway.

These requirements include, but may not be limited to:

- Drivers licenses of the appropriate class and endorsements.
- Training specific to the vehicle to be operated.
- Physical qualifications of drivers.
- Drug and alcohol testing of drivers.
- Development and maintenance of driver qualification files.
- Hours of service limitations for drivers.
- Record of duty logs for drivers.
- Vehicle pre-trip and post-trip inspections.
- Vehicle maintenance records.
- Vehicle markings.
- Vehicle safety equipment.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

• Attachment B - Historical Summary of Changes.
Attachment A - Commercial Motor Vehicle Driver Qualifications

In accordance with 49 CFR 391.51, Southern Company must maintain driver qualification files for each employee who drives a CMV weighing more than 10,000 lb. At a minimum, the following records must be contained in the employee’s driver qualification file:

- Driver’s completed application for employment.
- Copy of the response by each State agency concerning a driver’s driving record.
- Certificate of driver’s road test issued to the driver, or a copy of the license or certificate which the motor carrier accepted as equivalent to the driver’s road test.
- Response of each State agency to the annual driver record inquiry.
- Note relating to the annual review of the driver’s driving record.
- A list or certificate relating to violations of motor vehicle laws and ordinances.
- Medical examiner’s certificate of driver’s physical qualification to drive a CMV.
- Letter from the Field Administrator, Division Administrator, or State Director granting a waiver of a physical disqualification, if a waiver was issued.
- Additional documentation as provided by the manager–T&PS Safety and Health – corporate.

In addition to maintaining the items identified above in an employee’s driver qualification file, employees who drive CMVs exceeding 26,000 lb must meet the following requirements:

- Random drug test.
- Commercial Driver’s License.

Resource: https://www.fmcsa.dot.gov/regulations/title49/section/391.51
Attachment B - Historical Summary of Changes

Rev. 0 09/13/2016 Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:

Updated 05/17/2017
Added references and links to two FMCSA documents (2.2).

Rev. 1 05/09/2017 Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-28

Demolition Operations

<table>
<thead>
<tr>
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</tr>
</thead>
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<tr>
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<td>Project Safety Leadership Team (PSLT)</td>
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<td>Approved By</td>
<td>Bill Boyd</td>
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<tr>
<td></td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 5

4.0 STANDARD ................................................................................................................ 5
  4.1 Engineering Survey and Written Job Plan............................................................... 5
  4.2 Competent Person .................................................................................................. 6
  4.3 Structural Considerations ....................................................................................... 6
  4.4 Control of Hazardous Energy ................................................................................ 6
  4.5 Temporary Electrical Power .................................................................................. 7
  4.6 Control of Hazardous Materials ............................................................................ 8
  4.7 Rigging and Lifting ................................................................................................. 8
  4.8 Burning, Cutting, or Welding ............................................................................... 9
  4.9 Special Precautions .............................................................................................. 9
  4.10 Equipment ............................................................................................................ 10

5.0 KEY CONTACT ......................................................................................................... 10

6.0 QUALITY RECORDS ................................................................................................ 10

7.0 ATTACHMENTS ....................................................................................................... 10
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe demolition operations of existing facilities, buildings, or equipment at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- Environmental, Health, and Safety procedures:
  - SH-2A-08, Fall Protection.
  - SH-2A-10, Rigging and Lift Plans.
  - SH-2A-34, Floor Opening, Wall Opening, Grating Removal, or Guardrail Removal.
  - SH-2C-03, Cranes, Derricks, and Powered Hoists.
- Environmental, Health, and Safety standards:
  - SH-S-1N, Planning and Hazard Analysis.
  - SH-S-2A-05, Signs and Barricades.
  - SH-S-2E-01, Temporary Electrical Power.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

The site manager for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their
managers meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Engineering Survey and Written Job Plan

Before permitting the start of any demolition operation, the T&PS construction site manager shall ensure the contractor’s competent person for demolition has conducted an engineering survey to determine the exact scope of work, any regulatory permit requirements, and the method for safely executing the demolition operation. The engineering survey shall be documented in writing and will be used to develop a written job plan.

The written job plan shall meet all of the following requirements:

- Outline the specific sequence of events for demolition.
- Identify known hazards associated with the work scope and measures taken to mitigate the hazards. This identification must include measures taken for demolition of systems that have the potential to have hazardous energy such as, but not limited to:
  - Electrical.
  - Ammonia.
  - Hydrogen.
  - Steam.
  - Water.
  - Gas.

See 4.4, Control of Hazardous Energy, for further requirements regarding the control of hazardous energy.

- Identify the contractor’s competent person(s) for the demolition operation.
- Form 2A-28.2, Predemolition Engineering Survey, must be completed and submitted to the T&PS construction site manager in its entirety. Contractors may use their own predemolition survey if it meets or exceeds form 2A-28.2. Any hazards identified in
the survey must be mitigated before demolition begins. To ensure mitigation occurs prior to demolition, contractors must update their construction schedules showing hold points for all the issues identified for tracking purposes.

The plan must be reviewed and approved by the T&PS construction site manager or his or her designee before any demolition work begins. The approved written job plan may not be deviated from unless a safer method of demolition is discovered or physical conditions of the structure have changed such that new hazards are present. Any change must be documented in the written job plan and approved by the T&PS construction site manager or his or her designee.

At the discretion of T&PS construction site manager or his or her designee, simple single-story structures may be grouped with structures of similar design and complexity into a single written job plan.

4.2 Competent Person

The competent person shall have requisite knowledge and experience related to demolition and for the complexity of the scope. The contractor shall submit the qualifications and resume of the competent person to the construction site manager or his or her designee for review and approval.

The competent person shall regularly inspect the structure for known or predictable hazards associated with demolition. The inspection shall be documented on form 2A-28.1, Daily Demolition Inspection Checklist.

4.3 Structural Considerations

The engineering survey shall determine the condition of the framing, floors, and walls, and the possibility of unplanned collapse of any portion of the structure in the demolition area and any adjacent areas that could be affected by the demolition. Shoring or bracing requirements shall be identified and installed prior to allowing personnel to work in the area. Wind loading will be factored into the assessment.

No cement or masonry walls shall be knocked down onto above-ground floors unless they are designed to handle the anticipated impact loading.

Structural support members left in place shall be cleared of loose material as demolition progresses downward.

4.4 Control of Hazardous Energy

The control of hazardous energy is a prerequisite for the demolition of any electric, gas, water, steam, sewer, or other service, lines, pipes, tanks, vessels, and so forth. Before authorizing any equipment removal, the T&PS construction site manager shall ensure
that all potentially hazardous energy sources planned for demolition have been physically identified and traced. Special attention shall be given to identify potential sources of energy that may be fed from outside the area involved in the demolition scope; for example, control room indicators that are fed from a separate power source.

The demolition contractor shall use a positive means of identification such as marking, tagging, maintaining visual and physical contact, or another approved method to verify that the correct equipment, cables, pipes, and so forth are being dismantled or rearranged.

Prior to cutting or removing any existing electrical cable or conduit, the circuit will be verified as deenergized. Contractors shall include methods in their plans, such as multiple air gaps, to prove a system is deenergized. When the system spans multiple floors, rooms, and so forth, the isolation points must be verified or visible to the worker performing the dismantling. If the system cannot be verified as deenergized, the system must be treated as energized, and craft personnel with the proper training and qualifications must be used to perform the work. The contractor's plan must also include verification techniques and documentation.

NOTE

The use of noncontact detectors such as “TIC TRACERS” as the sole source of verification is prohibited. Only individuals trained in the limitations of noncontact detectors will be allowed to use them.

When deenergizing a system where the feed cannot be identified, has been abandoned, or is fed from an unknown source, workers shall follow the requirements in Environmental, Health, and Safety standard SH-S-2E-08, Hazardous Energy Control, 4.5, Unidentified Systems, Abandoned Systems, or Systems With an Unknown Source of Energy, prior to performing any work.

4.5 Temporary Electrical Power

A temporary electrical power plan shall be developed for demolition projects. This plan will be developed with T&PS Design to supply necessary power for 600-V equipment after station service is removed. The equipment to be supplied includes, but is not limited to:

- Stack lighting for personnel safety and FAA requirements.
- Stack elevator.
- Sump pumps.
- Personnel elevators.
- Overhead cranes.
The contractor responsible for temporary electrical power will provide a full-time, qualified electrician on site during demolition activities.

The use of existing plant switchgear in a temporary power circuit will not be allowed. Exceptions will follow the requirements of SH-1K, Procedure Deviation Approval Process.

Temporary electrical power will be provided by way of dedicated cables or raceways that have been designated for temporary power use. Existing permanent circuits will not be used for temporary power unless the following requirements have been met:

- The existing cable or raceway can be traced for its full length to ensure no branch circuits are involved, the integrity of the cable or raceway is intact, and can be flagged to indicate that it is redesignated for temporary power.
- The existing cable or raceway must be clearly visible with no hidden runs.
- Signage is posted to indicate existing permanent cables or raceways have been redesignated for temporary power.

The use of battery-operated tools should be evaluated and used to reduce the need for temporary electrical needs.

The repurposing of existing plant buildings for temporary office space where branch circuits are fed within walls, ceilings, and floors shall not be allowed. Contractors will be required to provide their own temporary office space. Exceptions will be processed following the requirements of SH-1K, Procedure Deviation Approval Process.

Unless specifically listed above, all provisions of SH-S-2E-01, Temporary Electrical Power, shall remain in force.

4.6 Control of Hazardous Materials

Any hazardous chemicals, PCBs, radiation, gases, explosives, flammable materials, asbestos, or similar dangerous substances used in any pipes, tanks, or other equipment shall be identified before any demolition work begins, and methods shall be determined for decontaminating or containing them.

4.7 Rigging and Lifting

Special consideration shall be given to rigging because of the potential deteriorated state of the facilities. In addition, special consideration shall be given to rigging and removing equipment and materials during demolition.
All lifts shall be planned in accordance with SH-2A-10, Rigging and Lift Plans, and shall meet all further requirements found in SH-2C-03, Cranes and Derricks, and 29 CFR 1926, Subpart CC, Cranes.

4.8 Burning, Cutting, or Welding

A hazard assessment shall be performed prior to any cutting, burning, or welding on any coated surface to determine if hazardous substances such as lead, cadmium, or zinc are present.

4.9 Special Precautions

- Pretask job briefings (JSA, STA, PJB, and so forth) with all involved personnel shall be conducted and documented at the beginning of each shift and for each significant daily job change. At a minimum, the following aspects of the job shall be covered and documented on form 1N.1, Job Safety Analysis, and form 1N.2, JSA Supplement, as required by SH-1N, Planning and Hazard Analysis.
  - The status of demolition operations.
  - Task steps.
  - Hazards associated with the job.
  - Safe work practices or hazard mitigation steps.
  - Work procedures involved.
  - Methods for fall protection and fall prevention (see SH-2A-08, Fall Protection).
  - Special precautions.
  - Hazardous energy controls.
  - Personal protective equipment requirements.

- Existing floor and wall openings and those created during the work shall be guarded as required in SH-2A-34, Floor Opening, Wall Opening, Grating Removal, or Guardrail Removal.

- Where glass is present, appropriate precautions shall be taken to protect personnel from laceration hazards.

- Appropriate drop zones and chute systems shall be designated and/or installed.

- Controlled demolition with explosives shall follow all requirements in SH-S-2A-19, Blasting Operations.

- Hazardous areas shall be prominently identified with signs. Access to demolition areas shall be restricted to authorized personnel only. See SH-S-2A-05, Signs and Barricades.

- Appropriate, well-illuminated access and egress stairways, passageways, and ladders shall be provided and maintained throughout the demolition work.
Debris shall be routinely removed and disposed of properly. Waste material and debris shall not be allowed to accumulate or be stored where it will exceed floor capacities or create a hazard for workers.

4.10 Equipment

Demolition equipment shall meet all appropriate crane and heavy equipment safety requirements.

Demolition balls shall not exceed 50 percent of the cranes rated capacity at specified boom length/angle and shall not exceed 25 percent of the line breaking strength.

The ball shall be connected by a swivel-type attachment.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–T&PS Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0  
09/13/2016  
Approved by Chad Kendrick and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts  
Remarks:  
Issued. This standard supersedes E&CS procedure SH-2A-28, Demolition Operations.

Rev. 1  
11/15/2016  
Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts  
Remarks:  
Added links to four EH&S procedures, five EH&S standards, and two forms including new form 2A-28.1; added reference to one CFR subpart (2.2). Strengthened requirements for written demolition job plan (4.1). Added 4.2, Competent Person. Renamed second-level heading and strengthened requirements for structural considerations (4.3). Added 4.5, Temporary Electrical Power. Added requirement that lifts be planned in accordance with SH-2A-10 (4.7). Strengthened requirements in 4.9, Special Precautions. Moved text on deenergizing unknown or abandoned equipment to 4.4 and deleted second-level heading (was 4.9, Deenergizing Unknown or Abandoned Equipment With an Unknown Source of Energy). Added 4.10, Equipment. Updated attachment A, Historical Summary of Changes.

Rev. 2  
02/21/2017  
Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts  
Remarks:  

05/03/2017  
Approved by Bill Batts  
Corrected procedure title and link (2.2).

05/15/2019  
Organization name updated.
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe concrete and masonry construction on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926, Subpart Q, Concrete and masonry construction.
- T&PS procedure SH-2A-08, Fall Protection.
- Forms: 
  - 1N.1-EN, JSA: Job Safety Analysis, Pre-Work and Pre-Task Planning Tool.
  - 1N.1-SP, JSA: Job Safety Analysis (Spanish).
  - 1N.2, JSA Supplement – Specialty Work/High Risk Work.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Concrete Construction**

- All vertically protruding reinforced steel onto which employees could fall shall be capped or otherwise protected to prevent the possibility of impaling personnel. Non-reinforced plastic caps are not approved protection for falls greater than 4 ft. Use covers of wood or other approved devices.

- Reinforcing steel for walls, piers, columns, and similar vertical structures shall be adequately supported to prevent collapse and overturning.

- Personnel shall be required to tie-off properly in accordance with T&PS procedure SH-2A-08, Fall Protection, when placing or tying reinforcing steel 4 ft or more above adjacent surfaces.

- All form work shall be designed, fabricated, erected, supported, braced, and maintained so that it will be capable of supporting without failure all vertical and lateral loads that may reasonably be anticipated.

- Shoring equipment shall be inspected prior to erection, immediately prior to concrete placement, during the placement, and immediately after the placement.
- Concrete buckets shall be connected by shackles or approved safety hooks.
- No personnel shall be allowed to ride concrete buckets.
- No personnel shall be allowed to work under concrete buckets while they are being elevated or lowered into position.
- To the extent practical, concrete buckets shall not be hoisted over employees.
- Electric concrete vibrators shall be protected by ground-fault circuit interrupters (GFCI).
- All powered concrete trowels shall be equipped with a dead-man switch or equivalent that will automatically shut off the power when the operator removes his or her hand from the equipment.
- Employees shall wear appropriate head, eye, face, and skin protection (gloves and boots) while placing concrete or grout.

4.2 Masonry Wall Construction

- Whenever a masonry wall is being constructed, a limited access zone shall be established on the side of the wall that will not be scaffolded. This zone shall meet all of the following characteristics:
  - Equal to the height of the wall plus 4 ft.
  - Run the entire length of the wall.
  - Remain in place until the wall is adequately supported to prevent collapse and overturning.
  - Restricted to entry by employees actively engaged in constructing the wall.
- All masonry walls over 8 ft in height shall be adequately braced to prevent overturning and collapse unless the wall is supported so that it will not do so. This bracing shall remain in place until permanent supporting elements of the wall are in place.

4.3 Concrete Pump Truck Safety

- When a concrete pump truck is to be used for concrete placement, the concrete placement subcontractor shall be responsible for the adherence to the following tasks:
  - Establish proper placement of concrete pump truck to include:
    - Adequate ground support to support the pump truck and concrete truck.
    - Adequate accessibility by concrete trucks.
o Adequate working distances from any obstructions, such as overhead obstructions or power lines.
o Traffic/equipment control needs (such as flaggers or spotters).
o A “clean out” area.
o Controlled access zones, as needed.
o Minimum distance of 6 ft from excavation edge to nearest pump truck outrigger pad.

– Inspection of pump truck including, but not limited to:
o Hoses.
o Hose connections.
o Outriggers.
o Outrigger pads.
o Controls.
o Emergency shut off.
o Maintenance records.

– Other safety requirements and considerations:
o Faceshields for hose operator, vibrator operator(s), and pump truck hopper attendant.
o Radios, hand signals and other communications.
o Emergency contact numbers.
o Evacuation routes.

Prior to concrete deliveries and starting any concrete placement, the concrete placement subcontractor shall complete a Concrete Pump Truck Safety Checklist and document a job safety analysis (JSA) using form 1N.1, Job Safety Analysis (JSA), specifically informing the pump truck operator and all parties involved in the concrete pumping operation of the hazards involved.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-29, Concrete and Masonry Construction.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Added titles and links to two forms (2.2). Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Deleted as redundant the requirement for E&CS site manager to ensure requirements of standard were adhered to (was 4.1; repeated the responsibility in 3.1). Corrected position title (5.0).

Rev. 1
03/05/2019
Approved by Robin Hurst and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Changed references to fall exposure trigger height from 6 ft to 4 ft to reflect changes to requirements of SH-2A-08, Fall Protection (4.1).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2A-30

Fiberglass Reinforced Plastics Production

<table>
<thead>
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<tr>
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<td>Bill Boyd</td>
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<tr>
<td></td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose............................................................................................................... 3
  1.2 Scope ................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions........................................................................................................... 3
  2.2 References ......................................................................................................... 3

3.0 RESPONSIBILITY ................................................................................................... 4
  3.1 Construction Site Manager ............................................................................. 4
  3.2 Startup Manager ............................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ..................................................................................................... 4

4.0 STANDARD ............................................................................................................ 4
  4.1 Site-Specific Safety and Health Plan................................................................. 4
  4.2 Hazardous Materials ....................................................................................... 5
  4.3 Personal Protective Equipment ....................................................................... 6
  4.4 Safe Practices Requirements for Hand Lay-up Operations ........................... 8
  4.5 Safe Practice Requirements for Spraying Operations .................................... 8
  4.6 Safe Practices Requirements for Winding Operations .................................. 9
  4.7 Safe Handling of Drums ................................................................................. 9
  4.8 Sanding, Grinding, and Cutting FRP Material ............................................... 10

5.0 KEY CONTACT .................................................................................................... 10

6.0 QUALITY RECORDS ............................................................................................ 10

7.0 ATTACHMENTS .................................................................................................. 10
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the fabrication and installation of fiberglass reinforced plastics (FRP) at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 40 CFR Chapter 1, subchapter I, Solid Wastes.
- T&PS procedure SH-2A-08, Fall Protection.

NOTE


- Environmental, Health, and Safety standards:
  - SH-S-2A-14, Power Tools.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Site-Specific Safety and Health Plan

Each contractor shall submit a written site-specific safety and health plan to the T&PS project manager for review and acceptance. The plan shall provide specific procedures for the protection of personnel during FRP production activities. Elements of the site-specific plan shall include, but are not limited to, the following:

- Methods for elimination or mitigation of hazards associated with FRP production.
• An industrial hygiene plan that includes methods for exposure control along with methods and frequency of personal sampling activities for styrene, dusts, and other airborne contaminants. The industrial hygiene sampling plan must be approved in writing by a certified industrial hygienist (CIH).

NOTE

The use of colorimetric tubes for sampling is not considered to be an effective method to determine a time weighted average of employee dose. Personal sampling methods such as OSHA Method 09 must be used.

• Methods for fire prevention and protection including types and placement of fire suppression equipment.

• Methods for maintaining sanitary conditions.

• The lockout/tagout program to be used for contractor-controlled machinery.

4.2 Hazardous Materials

• All hazardous materials to be used onsite shall be approved by the T&PS EHS resource in accordance with Environmental, Health, and Safety (EH&S) standard SH-S-2D-02, Hazard Communication.

• All personnel shall be trained on the hazards and use of the materials being used during FRP production. Training shall be documented.

• Location and types of storage for hazardous materials shall be included in the contractor’s site-specific safety and health plan submitted before beginning work. The contractor shall provide information to T&PS on the quantities of hazardous materials that will be used on the project. The contractor shall notify T&PS weekly on the amounts of hazardous materials received or shipped from the project and the amount of hazardous waste generated for disposal, unless facility-specific hazardous waste and materials management rules apply.

• Containers such as buckets and drums shall be labeled in accordance with 29 CFR 1910.1200, Hazard Communication. The type of label to be used shall be included in the site-specific safety and health plan.

• Contractor personnel who will handle or supervise hazardous materials for shipment shall be trained in accordance with applicable U.S. Department of Transportation regulations, 49 CFR Part 172, subpart H. The training shall be documented and available for review.

• Catalysts, such as methyl ethyl ketone peroxide (MEKP), shall be stored in a cool, secure location away from promoters (such as cobalt) or promoted resins. Catalysts shall be stored in original containers away from direct sunlight, sparks, and sources
Storage area temperature shall follow manufacturer’s recommendations or be kept below 100 °F, whichever is lower. Temperatures above 100 °F may cause product degradation, gassing, and container rupture resulting in a fire.

- The original catalyst containers shall not be reused, and steps shall be taken to ensure contaminants such as promoted resin are not allowed to be rinsed or washed into an open catalyst container. This action could result in an uncontrolled reaction.

- Flammable resins and solvents shall be stored in areas away from direct sunlight and where temperatures are controlled to less than 120 °F.

- The contractor shall submit a site-specific safety plan to T&PS for the use of acetone/solvent distillation units or similar methods of acetone/solvent recovery prior to being used on the project. Acetone shall be stored in approved fire-rated/fire-proof containers, and appropriate fire protection equipment shall be readily available for use. Acetone shall not be used in confined spaces where there is limited access.

- The use of flammable and combustible liquids shall conform to requirements contained in EH&S standard, SH-S-3, Fire Protection and Prevention.

- Resin storage tanks and associated piping shall be designed for the storage of flammable liquids in accordance with applicable codes. The contractor shall submit documentation of engineering and construction.

- Spill containment shall be provided in accordance with the established facility SPCC plan.

- Management of hazardous wastes shall be in accordance with facility-specific plans and/or EPA RCRA regulations.

- An emergency safety shower and eyewash that can deliver tepid water for at least 15 minutes shall be available in all areas where hazardous materials are handled and used. Areas shall also be available for washing of the hands and body with appropriate cleaning soaps when the skin is exposed to hazardous materials.

- All materials shall be used and handled in accordance with the Safety Data Sheet.

- The contractor shall inspect all hazardous material’s storage areas on a daily basis. Any spills or leaks will be properly cleaned and disposed of. The daily inspection shall be documented. Inspection requirements will be included in the facility SPCC plan.

4.3 Personal Protective Equipment

- The types of personal protective equipment (PPE) needed to complete specific tasks shall be included in the site-specific safety plan including, but not limited to, the following:
- Hand lay-up.
- Spraying (single or multisprayer tasks).
- Winding.
- Resin mixing or promoting.
- Handling of catalysts.
- Sanding.
- Cutting.
- Grinding.
- Tool cleaning.
- Drum handling.
- Fiberglass cutting.

- PPE shall be provided and used in accordance with the EH&S standards SH-S-2B, Personal Protective Equipment, along with the following requirements:

  - Skin and eye protection shall be used when sanding, cutting, or any activity that produces fiberglass dust. Protection should be in the form of protective clothing. Where protective clothing is not feasible for areas of the body, appropriate barrier creams can be used for protection. Eye protection methods shall provide full protection from dusts (examples include goggles, foam seal spectacles, and full face respirator).
  
  - Skin and eye protection shall be used for body parts potentially exposed to acetone, resins, catalysts, and other hazardous materials. The contractor shall ensure that the appropriate protective materials are used that will not allow permeation of the chemical. Appropriate barrier creams shall be used to protect areas of the body that may potentially be exposed to chemicals from normal use where full protection from clothing is not feasible. Protective clothing exposed to catalysts shall not be disposed of in containers containing other items contaminated with resins or solvents and shall not be stored in direct sunlight. Methods for disposal or laundering of contaminated clothing shall be included in the site-specific safety and health plan.
  
  - Fall protection shall be in accordance with T&PS procedure SH-2A-08, Fall Protection. A site-specific fall protection plan including rescue methods shall be included in the site-specific safety and health plan. Measures shall be included in the plan for protection of fall arrest equipment from exposure to resin mists or chemical exposures that can degrade fibers and damage parts used in construction of full body harnesses, lanyards, lifelines, retractable lifelines, and so forth.
  
  - Respiratory protection shall be provided in accordance with EH&S standard SH-S-2B-09, Respiratory Protection. A site-specific written respiratory protection program meeting the requirements of 29 CFR 1910.134, Respiratory Protection, shall be submitted with the site-specific safety and health plan. The plan shall include feasible engineering controls for potential contaminants.
4.4 Safe Practices Requirements for Hand Lay-up Operations

- Containers used for application of resin, putty, or catalyst shall be labeled in accordance with 29 CFR 1910.1200, Hazard Communication. The type of label to be used shall be included in the site-specific safety and health plan.

- Box knives or utility knives shall not be used for cutting fiberglass roving, mat, strand, and so forth. Scissors or similar means shall be employed.

- Wet-out areas shall be placed to avoid spillage of materials.

- Catalyst bottles shall not be placed in close proximity to promoters.

- Precautions shall be taken for eye and face protection when performing overhead rolling activities.

4.5 Safe Practice Requirements for Spraying Operations

- The use of air atomizing spray guns is prohibited unless the contractor can demonstrate that the application of the resin cannot be accomplished through the use of flow-coating chamber mixing spray guns.

- All spray guns shall be effectively grounded during normal use and during flushing operations.

- Electric hose line heaters shall be an approved type and be effectively grounded.

- Sprayers shall not be operated if pointed in the direction of other employees.

- Precautions shall be taken to ensure the buildup of resin or chop strand on floors will not produce a slip hazard.

- Catalyst containers shall not be stored or left in areas where spraying is being conducted.

- Precautions shall be included in the site-specific safety and health for prevention or dissipation of static electricity.

- Molds shall be free from sharp edges.

- Precautions shall be taken to prevent damage to adjacent structures, electrical cords, tools, equipment, and so forth from overspray. Hoists and cable used on suspended scaffolds for FRP spraying activities shall be protected. The specific methods to be used for protection shall be included in the site-specific safety and health plan.
4.6 **Safe Practices Requirements for Winding Operations**

- Mandrel shaft couplings shall be guarded if less than 7 ft from the floor or working surface. If fixed access is provided to shaft coupling areas, then guards shall be installed.

- Point of operation nip-and-pinch points shall be guarded or equivalent methods used to protect employees, such as rails, restraints, light curtains, and so forth.

- Precautions shall be taken to protect employees from rotating mandrels.

- Resin bath carriages shall be equipped with an emergency stop switch that can be accessed from the operator’s working position.

- A fire extinguisher shall be accessible from the operator’s elevation on elevated winding platforms.

- Signs shall be posted on all automatic winding machines that warn of an automatic start.

- Employees shall not climb on or over resin baths that are in operation.

- Creel racks for fiberglass strand shall be placed in a manner to avoid producing a hazard to employees.

- Specific rigging plans and safety precautions shall be included in the contractor’s site-specific safety and health plan for the removal of FRP shells from mandrels. Rigging and lifting devices shall not be subjected to unknown loading.

- When winding in a structure, there shall be more than one exit, each labeled appropriately.

4.7 **Safe Handling of Drums**

- The practice of rolling drums for movement is prohibited. Drums shall be moved through the use of drum dollies, drum carriages, or similar devices.

- The contractor shall ensure drum carriages are placed securely between the chimes and are designed for use on steel drums. The use of drum carriages on plastic drums is prohibited.

- Bung openings shall not be left open unless material is being dispensed from the drum. Solvent collection drums will be equipped with a drum funnel and lid with flash arrester or equivalent device.

- Drums shall be electrically bonded when dispensing flammable liquids such as resin or acetone. Hoses and pumps for dispensing flammable liquids shall be an approved type.
- Belt-type drum heaters shall be an approved type and shall be used for resin drums only. Drum heaters shall be used only where atmospheric conditions warrant.

- Drums shall not be placed directly on the forks of a forklift or powered industrial truck.

### 4.8 Sanding, Grinding, and Cutting FRP Material

- Methods shall be included in the site-specific safety and health plan for the control of dust. Feasible engineering controls shall be implemented. Sampling programs for the determination of dust exposure shall be included in the industrial hygiene plan. Where engineering controls cannot maintain dust below established permissible exposure levels (PEL), an effective respiratory protection program in accordance with 29 CFR 1910.134, Respiratory Protection, shall be implemented.


- Guards and handles on portable grinders shall not be removed when abrasive wheels or discs are in use. Tools shall not be altered from the manufacturer’s design.

### 5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

### 6.0 QUALITY RECORDS

None.

### 7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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| 05/15/2019 | Organization name updated. |
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2A-31

Line Break

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Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 3
  3.1 Construction Site Manager ...................................................................................... 3
  3.2 Startup Manager ...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
     Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4

4.0 PROCEDURE ............................................................................................................. 4
  4.1 General .................................................................................................................... 4
  4.2 Preparation for Line Break ...................................................................................... 4
  4.3 Execution of Line Break .......................................................................................... 5
  4.4 Hot Tap .................................................................................................................... 6

5.0 KEY CONTACT ........................................................................................................... 6

6.0 QUALITY RECORDS .................................................................................................. 6

7.0 ATTACHMENTS ......................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the minimum requirements for safely entering a piping system on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- Form 2A-21.1, Open Flame/Hot Work Permit.
- Form 2A-31.1, Line Break Permit.
- EH&S standard SH-S-2B-09, Respiratory Protection.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 General

- The T&PS site manager shall ensure the contractor completes form 2A-31.1, Line Break Permit, under the following conditions:
  - The initial opening of a piping system.
  - Subsequent opening of an undrained system.
  - Hot tap tie-ins.
  - Any unknown or abandoned system.

- Any contractor requiring line breaks must develop a site-specific line break procedure.

4.2 Preparation for Line Break

- The T&PS representative responsible for the work, appropriate contractor personnel including craft, and facility representatives shall hold a planning meeting prior to breaking any line. The purpose of the meeting is to determine the necessary clearance procedure or lockout/tagout (LO/TO) isolation points for the system. The
isolation point identification shall be determined by both available drawing verification and walking down the system with the contractor.

- After all isolation points are identified, the system shall be placed in a zero energy state. The LO/TO shall be established by use of the facility clearance if the system is under the operating plant control or a contractor lockout/tagout if under T&PS control. A Line Break Permit shall be completed by the contractor with approval from the T&PS site representatives.

- Determine the appropriate level of PPE for the line break and include the information on the permit. Refer to the appropriate safety data sheet (SDS).

- Obtain form 2A-21.1, Open Flame/Hot Work Permit, if necessary.

- The contractor crew foreman shall be present when the line break is performed.

### 4.3 Execution of Line Break

- The area where the line break will occur shall be barricaded, and all drains plugged to prevent exposing other workers in adjacent areas and on floors below. Volume and pressure of the system being worked on shall be considered when setting the barricade and drains to be plugged. Only those personnel immediately involved with the line break operation shall be allowed in the barricaded area.

- Each employee involved in the line break shall be shown the location of the nearest exit, safety shower, and eyewash station before the line break occurs. Employees shall be instructed in emergency first-aid procedures for the system they will be working on. Employees shall be trained in the use of special protective equipment such as air-supplied respirators, self-contained respirators, and/or air purifying respirators if used. Employees making the first line break shall be instructed where to stand so that any initial spray is directed away from them, that is, upwind and on the opposite side from the first loosed bolt. Standard practice for breaking a flange is to loosen the bolts on the lower and opposite side from the mechanic, keeping the bolts nearest the mechanic under control and allowing the line to separate in a manner that will cause any spillage to be away from the mechanic. The flange should then be spread apart. The mechanic shall always be positioned on the upwind side of the flange being broken.

- Respirators shall be worn where concentrations of a toxic substance might exceed allowable limits. Contact the site, divisional, or corporate EH&S office for assistance. See procedure SH-2B-09, Respiratory Protection.

- After the first break is completed and the line is verified by management to cleared (that is, drained, vented, flushed, and demonstrated to be clear of any hazardous residue, plugged, or pressure), work may be done on the system or in the area without special PPE. If the line or system cannot be verified to be clear, all workers shall remain in required PPE for the line break.
- When a valve bonnet is removed, the line shall be drained, and the valve placed in the open position before the bonnet bolts are loosened. Ball-and-plug valves may have pressure in the cavity under the stem packing and bonnet, regardless of the position of the valve and the pressure in adjacent lines. Ball-and-plug valves that are to be removed from the system shall be opened, closed, and reopened to relieve pressure after the line is drained.

- For first line breaks requiring hot suits, acid suits, or any type of respirator or fresh air breathing apparatus, a standby member of the work team and the pipe superintendent shall be present. The standby person shall have the same PPE and the same training as the person performing the first line break. The standby person and the superintendent shall both remain in full view of the job and be prepared to render emergency assistance.

- Should the conditions of the task to be performed differ from the job planning and safety analysis (JPSA), work shall stop, and a new plan developed.

### 4.4 Hot Tap

Hot taps shall be treated the same as line breaks with the following additional requirements:

- The T&PS construction site manager shall approve all hot taps.
- All hot taps shall be performed by a qualified contractor. Documentation of training shall be submitted to the T&PS safety representative.
- Ultrasonic thickness testing shall be performed on piping in the area of the hot tap. The hot tap shall not be made if the pipe wall shows thinning in excess of corrosion allowance according to applicable codes.
- Additional signatures are required on the Line Break Permit.

### 5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

### 6.0 QUALITY RECORDS

None.

### 7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
# Attachment A - Historical Summary of Changes

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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

**SH-S-2A-32**

Falling Objects

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</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose ................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3
2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions ................................................................................................................ 3
  2.2 References .............................................................................................................. 3
3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager ...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
     Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4
  3.5 Qualified Rigger ....................................................................................................... 4
  3.6 Lifting Monitor .......................................................................................................... 5
  3.7 Crane Operator ........................................................................................................ 5
4.0 STANDARD ................................................................................................................ 5
  4.1 Written Plans ........................................................................................................... 5
  4.2 Tools ........................................................................................................................ 6
  4.3 Material Handling ..................................................................................................... 6
  4.4 Overhead Loads ....................................................................................................... 6
  4.5 Barricades ............................................................................................................... 7
  4.6 Overhead Protection ................................................................................................. 7
  4.7 Scaffolding ............................................................................................................... 8
  4.8 Housekeeping ......................................................................................................... 8
  4.9 Training ................................................................................................................... 9
5.0 QUALITY RECORDS .................................................................................................. 9
6.0 KEY CONTACT ......................................................................................................... 9
7.0 ATTACHMENTS ......................................................................................................... 9
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard identifies key positions responsible for ensuring safety of workers at Technical and Project Solutions (T&PS) work sites and methods to be used to eliminate the risk of injury from falling objects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

**WARNING**

The methods discussed in this standard are not intended to act as fall protection for employees.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

- **canopies** – A deck used to protect workers from overhead hazards.
- **debris nets** – A net used to catch debris from falling to lower levels; the net is not designed for fall protection.
- **midrail screens** - Mesh or equivalent screen material that that extends from the top rail of the scaffold to the toe board designed to prevent material from falling to lower levels.
- **tag line** – Rope used to control loads.
- **tool lanyard or tether** - A short rope or webbing used to secure tools and equipment to an anchorage point to reduce the risk of injury from a falling object.

2.2 References

- T&PS procedure [SH-2A-07, Scaffold Safety](#).
- Environmental, Health, and Safety standards:
  - [SH-S-1H, Contract Safety and Health Management](#).
  - [SH-S-2A-05, Signs and Barricades](#).
• Forms:
  – 1N.1-EN, JSA: Job Safety Analysis, Pre-Work and Pre-Task Planning Tool (English).
  – 1N.1-SP, JSA: Job Safety Analysis (Spanish).

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

3.5 Qualified Rigger

A qualified rigger is responsible for slinging a load to be lifted and affixing tag lines to the ends of a load before any material is lifted. Along with a crane operator, riggers give audible warning with the crane horn and/or portable air horns before lifting a load near persons.
3.6 Lifting Monitor

A lifting monitor is responsible for following the overhead load to keep people from being underneath it if loads are being lifted long distance, and red barricade tape is not being used to secure the area.

3.7 Crane Operator

Crane operators are responsible for working with qualified riggers to provide an audible warning with the crane horn and/or portable air horns before lifting a load near persons.

4.0 STANDARD

WARNING

Work activities, such as working at heights and lifting loads over work areas, produce an environment at risk for falling objects.

Southern Company is committed to eliminating the hazards associated with a work environment at risk for falling objects. To support this commitment, each T&PS construction site manager shall implement falling object protection measures. Some methods of hazard prevention that can be used are:

- Lanyards and tethers.
- Canvas-type bolt bags.
- Load slings and tag lines for crane-lifted loads.
- Barricades or ground man.
- Canopies, catch platforms, and debris nets.
- Scaffolding.
- Housekeeping.
- Training (including job safety analyses (JSAs)).

4.1 Written Plans

Along with a site-specific safety plan, each contractor shall submit to the EC&S construction site manager a written plan that prepares for falling object hazard prevention. The methods listed in this standard can be used as a guide to develop a falling object safety plan. The examples are not an all-inclusive list of hazards or safety measures.
4.2 Tools

All hand-held tools used in overhead work must be secured with a tool lanyard or tether to prevent the tools from dropping to lower levels. A tool lanyard, a short rope or webbing used to secure tools and equipment to an anchorage point to reduce the risk of injury from a falling object, may be attached to an anchorage point such as the person using the tool or around a column or beam.

A lanyard should be made from material such as synthetic fiber, natural fiber, or steel rope or webbing that is able to maintain the required strength and resistance to abrasion under harsh conditions. Give consideration to the length of rope or webbing used to secure a tool, especially if the tool is to be used near the edge of a working platform and other persons are working below.

For example, a tool lanyard attached at the wrist should have a length no longer than 24 in. This length will ensure that if the tool is dropped, the lanyard would prevent the tool from hitting a person working below. The length of the lanyard should also be kept to a minimum to reduce the risk of the line snagging as the worker moves about. If the tool weight is more than 24 oz, tool lanyards for striking tools (hammers) shall be secured to an anchorage point, not to the body.

Striking tools heavier than 24 oz can adversely affect a worker’s balance and cause greater injury if control of the tool is lost. For this reason, if tethers are used, they must be secured to an appropriate structural anchorage.

For example, a rigger who is erecting steel may secure working tools to his or her body by a lanyard to prevent a person below from being hit by a dropped tool. However, heavier tools may be secured to the structural steel or work platform with a tether.

Contractors may have some tools that are not compatible with tool lanyards or tethers. They may request an alternative measure of protection. Requests for using the alternative measure must be made in writing to the site manager for his or her approval. The site manager must sign the request before it is in effect.

4.3 Material Handling

While working on upper levels not protected by handrails, workers shall transfer tools and materials in canvas type bolt bags instead of buckets. Do not use plastic and metal buckets to hoist materials or tools to upper levels, because these types of buckets are not designed for lifting. This includes rope and pulley type systems. All buckets used for lifting must be approved lifting devices.

4.4 Overhead Loads

Before lifting any material, a qualified rigger will sling the load to be lifted and affix tag lines to the ends of the load. Crane operators and riggers will give audible warning with crane horn and/or portable air horns before lifting loads near persons. If horns are not effective, the contractor shall develop another means of warning. If loads are lifted long
distances, a designated monitor(s) shall follow the overhead load to keep people from being underneath it. To eliminate the use of a monitor, the contractor can use red barricade tape to secure the area.

4.5 Barricades

The contractor shall barricade areas below overhead work to prevent objects from falling on or hitting people. The contractor shall label all barricades with the following information, at a minimum:

- Contractor name.
- Person responsible for the work.
- Type of hazard.
- Date erected.
- Contact number or radio channel.
- Estimated completion date.

Each week the contractor shall have a designated person to do a documented inspection of all barricades. The designated individual must evaluate barricades for proper and effective installation.

4.6 Overhead Protection

Areas where people are working over other workers require hard barriers, such as canopies, catch platforms, and/or debris nets.

Where required, canopies shall be fixed to the perimeter of the structure or working surface to prevent a person or objects, such as tools and materials, from falling into an area accessed by persons at or near the workplace. The working surface/structure shall be covered with:

- Timber or plywood.
- Metal or synthetic sheets.
- Metal or synthetic mesh.

Where a canopy is used, the sheeting shall extend to a height that will prevent falling objects. When selecting containment sheeting, workers shall consider the following:

- Whether the sheeting is capable of supporting the loads to be imposed on it.
- Whether the sheeting is capable of containing materials and equipment, such as nuts, bolts, and tools.
- The likely forces that will be imposed on the structure from wind effects.

Where skeleton steel erection is in progress, the controlling contractor shall bar other construction processes below steel erection unless overhead protection for the
employees below is provided. Where other overhead protection methods are infeasible, the controlling contractor shall install debris nets directly under any erection work being performed. The debris nets shall be capable of supporting the anticipated loads imposed on them by potential falling objects and be tight enough to catch intended hazards. The controlling contractor shall ensure debris nets are inspected and cleaned on a weekly basis.

4.7 Scaffolding

Contractors shall build all scaffolding as physically complete as possible, with the following components (see procedure SH-2A-07, Scaffolding):

- A fully decked scaffolding having no more than 1-in. openings.
- Handrails, midrails, and toeboards.
- If people are working under or walking underneath a scaffold, a midrail screen is required. A midrail screen is a mesh or equivalent screen material that prevents material from falling. The screen should extend from the toeboard to the midrail.

**WARNING**
The rope hoist area shall be barricaded or have a ground person to make sure no one walks under the area during hoisting operations.

All scaffold ladders shall have a rope to hoist tools and materials.

During the scaffold erection and dismantling process, the contractor shall build a temporary protection deck over the vertical pass line route to protect the person receiving materials on the ground level.

**WARNING**
To protect the ground person, locate the racks on which to stack materials near the deck.

The ground person should receive the material while under the protection of the deck.

4.8 Housekeeping

All workers shall practice good housekeeping to keep items from falling on persons below. Most notably:

- Store material away from edges of scaffolding or platforms.
- Tie down metal sheeting, plywood, or lightweight materials to prevent them from being blown away or falling.
- Store round stock materials in racks or crib/block them to prevent them from falling.
• Secure all materials, equipment, and tools, which are not in use while aloft, against accidental displacement.

4.9 Training

Contractors shall ensure all workers are trained on identifying falling object hazards. Training shall instruct workers who perform work at elevated heights to survey the work area prior to start, and identify hazards relating to the overhead work and falling objects in a job safety analysis (JSA); see 2.2, References, for appropriate forms. Any possibility of items falling must be mentioned in the JSA. The foreman shall determine the control measures to implement that will eliminate or mitigate the hazards for the protection of personnel below, and shall list the control measures on the JSA.

5.0 QUALITY RECORDS

None.

6.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2A-32, Falling Objects.

Rev. 1
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environment, Health, and Safety Procedures

SH-2A-33

Safe Work Procedures for Confined Spaces

<table>
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<tr>
<th>Date</th>
<th>05/09/2017</th>
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<tbody>
<tr>
<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
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<tr>
<td>Reviewed By</td>
<td>Process Coordination Team</td>
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<td>Approved By</td>
<td>Project Services  Bill Boyd</td>
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<td>Project Support   Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE .................................................................................................. 3
  1.1 Purpose .................................................................................................................... 3
  1.2 Scope ....................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ................................................................................. 3
  2.1 Definitions ................................................................................................................. 3
  2.2 References ................................................................................................................ 8

3.0 RESPONSIBILITIES ......................................................................................................... 9
  3.1 Construction Site Manager ....................................................................................... 9
  3.2 Startup Manager ....................................................................................................... 9
  3.3 T&PS Site Safety Lead .............................................................................................. 9
  3.4 T&PS Construction Discipline Lead or Coordinator or Startup Discipline Lead or Coordinator .................................................. 9
  3.5 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................. 10
  3.6 Contractors .............................................................................................................. 10
  3.7 Confined Space Log Administrator .......................................................................... 10
  3.8 Host Employer .......................................................................................................... 10
  3.9 Authorized Entrants ................................................................................................. 10
  3.10 Attendants .............................................................................................................. 11
  3.11 Confined Space Competent Persons ...................................................................... 12
  3.12 Entry Supervisors .................................................................................................. 12
  3.13 Contractor Who Designates Rescue and Emergency Services ............................. 13
  3.14 Rescue and Emergency Services Provider ............................................................. 14

4.0 PROCEDURE ................................................................................................................. 15
  4.1 Site Confined Space Inventory List and Activity Log .............................................. 15
  4.2 Confined Space Signs, Barriers, and Barricades .................................................... 16
  4.3 Site-Specific Instructions ....................................................................................... 16
  4.4 Worker Training ...................................................................................................... 16
  4.5 Coordinating Contractor Confined Space Entry ................................................... 17
  4.6 Annual Review ....................................................................................................... 17
  4.7 Entry Permit/Reclassification Form ....................................................................... 18
  4.8 Atmospheric Testing .............................................................................................. 18
  4.9 Reclassification of Permit-Required Confined Spaces ......................................... 19
  4.10 Permit-Required Confined Spaces Entered Using Alternate Procedure ............ 20
  4.11 Reclassification Tag Removal .............................................................................. 21
  4.12 Confined Space Entry Process ............................................................................. 21

5.0 KEY CONTACTS .......................................................................................................... 26

6.0 QUALITY RECORDS .................................................................................................... 27

7.0 ATTACHMENTS .......................................................................................................... 27
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the minimum requirements to enter and work in confined spaces on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

Alternate Procedure – The work practice used when the only serious hazard in a confined space is atmospheric, and it can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.

atmospheric test readings – Atmospheric checks of a permit-required confined space for (in the following order):

1. Oxygen content.
2. Flammable gases and vapors.
3. Potential toxic air contaminants.

attendant – A trained individual stationed outside one or more permit-required confined spaces who monitors the authorized entrants and who performs all the attendant's duties assigned in 3.9, Attendants.

authorized entrant – A worker who is authorized by the entry supervisor to enter a permit-required confined space.

blanking or blinding – The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

bump test (also called function check) – A qualitative function check where a challenge gas is passed over the gas monitoring instrument sensor(s) at a concentration and exposure time sufficient to activate all alarm indicators to present at least their lower alarm setting. The purpose of this check is to confirm that gas can get to the sensor(s) and that all the alarms present are functioning. A bump test of portable gas monitors shall be conducted before each day's use in accordance with the manufacturer's instructions. Any portable gas monitor
that fails a bump test shall be adjusted by means of a full calibration procedure before further use, or it shall be removed from service.

calibration check – A quantitative test using a known traceable concentration of a test gas to demonstrate that the gas monitoring instrument sensor(s) and alarms respond to the gas within manufacturer’s acceptable limits. A full calibration adjusts the sensor’s response to match the desired value compared to a known traceable concentration of test gas. This calibration check shall be done in accordance with the manufacturer's instructions. A full calibration shall be conducted at regular intervals in accordance with instructions specified by the instrument’s manufacturer. Any portable gas monitor that fails a calibration check shall be adjusted by means of a full calibration procedure before further use, or it shall be removed from service.

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

confined space – A space that meets all of the following criteria:

- Is large enough for an individual to enter and perform assigned work.
- Has limited or restricted means for entry or exit.
- Is not designed for continuous occupancy.

confined space log administrator – An individual appointed by the T&PS site safety lead to maintain form 2A-33.2, Site Confined Space Inventory List and Activity Log.

control – The action taken to reduce the level of any hazard inside a confined space using engineering methods (for example, by ventilation), and then using methods to maintain the reduced hazard level. Control also refers to the engineering methods used for the purpose. Personal protective equipment is not a control.

controlling contractor – The employer who has overall responsibility for construction at the worksite.

double block and bleed – The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

T&PS site contract coordinator – The person designated as the liaison between T&PS and the contractor.

early warning system – The method used to alert authorized entrants and attendants that an engulfment hazard may be developing. Examples of early warning
systems include, but are not limited to, alarms activated by remote sensors and lockouts with equipment for immediately communicating with all the authorized entrants and attendants.

**emergency** – Any occurrence (including any failure of power or hazard control monitoring equipment) or event internal or external to the permit-required confined space that could endanger entrants.

**engulfment** – The surrounding of an individual by a liquid or particulate that can fill or plug the respiratory system, or cause death by strangulation, constriction, or crushing.

**entry** – The action by which an individual passes through an opening into a permit-required confined space. Entry includes activities in that space and occurs as soon as any part of the authorized entrant’s body breaks the plane of an opening into the space.

**entry employer** – Any employer who decides that a worker he or she directs will enter a permit-required confined space.

**entry permit** – The written or printed document that is provided by the employer who designated the space as a permit-required confined space to allow and control entry into a permit-required confined space and that contains the information specified in 29 CFR 1926.1206, Entry permit.

**entry rescue** – Occurs when a rescue service enters a permit-required confined space to rescue one or more workers.

**entry supervisor** – The qualified person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit-required confined space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this procedure.

**hazardous atmosphere** – An atmosphere that may expose an individual to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- Oxygen concentration below 19.5 percent or above 23.5 percent.
- Carbon monoxide (CO) concentration above 35 ppm.
- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) or lower explosive limit (LEL).
- Any airborne contaminant in a concentration sufficient to expose a worker to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness.
- An immediately dangerous to life and health (IDLH) atmospheric condition.
**host employer** – The employer that owns or manages the property where the construction work is taking place.

**immediately dangerous to life and health (IDLH)** – Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit-required confined space.

**isolate or isolation** – The process by which workers in a confined space are completely protected against the release of energy and material into the space, and contact with a physical hazard, by such means as blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; blocking or disconnecting all mechanical linkages; or placement of barriers to eliminate the potential for worker contact with a physical hazard.

**limited or restricted means for entry or exit** – A condition that has a potential to impede a worker’s movement into or out of a confined space. Such conditions include, but are not limited to, trip hazards, poor illumination, slippery floors, inclining surfaces, and ladders.

**lockout** – The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**lower flammable limit** or **lower explosive limit** – The minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.

**monitor or monitoring** – The process used to identify and evaluate the hazards after an authorized entrant enters the space. This process involves checking for changes in a periodic or continuous manner after the completion of the initial testing or evaluation of that space.

**nonentry rescue** – Occurs when a rescue service, usually the attendant, retrieves workers in a permit-required confined space without entering the permit-required confined space.

**nonpermit-required confined space** – A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm.

**oxygen deficient atmosphere** – An atmosphere containing less than 19.5 percent oxygen by volume.

**oxygen enriched atmosphere** – An atmosphere containing more than 23.5 percent oxygen by volume.
permit system – The written procedure for preparing and issuing permits for entry and for returning the permit-required confined space to service following termination of entry.

permit-required confined space (PRCS) – A confined space that has one or more of the following hazardous characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that has the potential to engulf an entrant.
- Has an internal configuration where an entrant may become entrapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section.
- Contains any other recognized serious safety or health hazard; that is, a safety hazard that exposes entrants to the risk of death, incapacitation, impairment of the ability to self-rescue, or serious injury.

NOTE

All confined spaces shall be considered permit-required confined spaces until the hazards are assessed and controlled or eliminated.

physical hazard – An existing or potential hazard that can cause death or serious physical damage. Examples include, but are not limited to, explosives (as defined by paragraph (n) of 29 CFR 1926.914, definition of “explosive”); mechanical, electrical, hydraulic and pneumatic energy; radiation; temperature extremes; engulfment; noise; and inwardly converging surfaces. Physical hazard also includes chemicals that can cause death or serious physical damage through skin or eye contact (rather than through inhalation).

prohibited condition – Any condition in a permit-required confined space that is not allowed by the permit during the period when entry is authorized.

qualified person – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, the work, or the project.

reclassification tag – A tag posted at all points of entry to a confined space indicating the confined space has been reclassified to a nonpermit-required confined space or an Alternate Procedure confined space.

representative permit-required confined space – A mockup of a confined space that has entrance openings that are similar to, and is of similar size, configuration, and accessibility to, the permit-required confined space that authorized entrants enter.
rescue – Retrieving and providing medical assistance to one or more workers who are in a permit-required confined space.

rescue service – The personnel designated to rescue workers from a permit-required confined space.

retrieval system – The equipment (including a retrieval line, chest or full body harness, wristlets or anklets, if appropriate, and a lifting device or anchor) used for nonentry rescue of persons from permit-required confined spaces.

tagout – (1) Placement of a tagout device on a circuit or equipment that has been deenergized, in accordance with an established procedure, to indicate that the circuit or equipment being controlled may not be operated until the tagout device is removed; and (2) the employer ensures that (i) tagout provides equivalent protection to lockout, or (ii) lockout is infeasible and the employer has relieved, disconnected, restrained, and otherwise rendered safe stored (residual) energy.

test or testing – The process by which the hazards that may confront authorized entrants of a permit-required confined space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit-required confined space.

NOTE

Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry.

time – All times used on forms, logs, and so forth related to this procedure shall be recorded as local time in a 24-hour format.

ventilate or ventilation – The process of controlling a hazardous atmosphere using continuous forced-air mechanical systems.

2.2 References

- Form 2A-33.1, T&PS Project Safety and Health Confined Space Entry Permit/Reclassification Form.
- Form 2A-33.2, Site Confined Space Inventory List and Activity Log.
- Form 2A-33.3, Confined Space Reclassification Tag.
- Form 2A-33.4, Atmospheric Monitoring Data.
- 29 CFR 1926 Subpart AA, Confined spaces in construction.
3.0 RESPONSIBILITIES

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 T&PS Site Safety Lead

The T&PS site safety lead is responsible for the following:

- Reviewing and approving a contractor’s site-specific confined space program.
- Providing training for T&PS project-assigned personnel on this procedure.
- Ensuring the confined space log administrator maintains form 2A-33.2, Site Confined Space Inventory List and Activity Log.

3.4 T&PS Construction Discipline Lead or Coordinator or Startup Discipline Lead or Coordinator

The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator is responsible for the following:

- Ensuring contractor activity under his or her direction is in compliance with this procedure.
- Communicating daily confined space activities of all contractors on the project to the confined space log administrator.
- Communicating newly established confined spaces through normal construction activities to the confined space log administrator.
3.5 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.6 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

3.7 **Confined Space Log Administrator**

The confined space log administrator is responsible for maintaining form 2A-33.2, Site Confined Space Inventory List and Activity Log, and making it available to all site employers. See 4.1, Site Confined Space Inventory List and Activity Log.

3.8 **Host Employer**

The host employer is responsible for providing a list of existing, known confined spaces and their respective hazards to the confined space log administrator.

3.9 **Authorized Entrants**

Authorized entrants into a confined space are responsible for the following:

- Knowing the hazards that could be faced during entry, including the mode, signs or symptoms, and consequences related to exposure.

- Properly using equipment as required by 29 CFR 1926.1204 (d)(1) through (9):
  - Testing and monitoring equipment as described in 4.8, Atmospheric Testing.
  - Ventilating equipment used to obtain acceptable entry conditions.
  - Communications equipment for attendants and authorized entrants.
  - Personal protective equipment, insofar as feasible engineering and work practice controls do not adequately protect workers.
  - Lighting equipment used to enable workers to see well enough to work safely and to exit the space quickly in an emergency.
  - Barriers and shields used to isolate the space and protect authorized entrants from external hazards.
  - Equipment, such as ladders, used for safe ingress and egress by authorized entrants.
  - Rescue and emergency equipment used to affect self-rescue and/or summon emergency services.
  - Any other equipment necessary for safe entry into and rescue from permit-required confined spaces.

- Communicating with the attendant as necessary to enable the attendant to
monitor entrant status and to alert authorized entrants of the need to evacuate the space.

- Alerting the attendant when either of the following occurs:
  - The authorized entrant recognizes any warning signs or symptoms of exposure to a dangerous situation.
  - The authorized entrant detects a prohibited condition.

- Exiting from the permit-required confined space as quickly as possible when one of the following events occurs:
  - An order to evacuate is given by the attendant or the entry supervisor.
  - The authorized entrant recognizes any warning sign or symptom of exposure to a dangerous situation.
  - The authorized entrant detects a prohibited condition.
  - An evacuation alarm is activated.

### 3.10 Attendants

Attendants are responsible for the following:

- Knowing the hazards authorized entrants could face during entry, including the mode, signs or symptoms, and consequences of the exposure.
- Being aware of possible behavioral effects of hazard exposure on authorized entrants.
- Continuously maintaining an accurate count of authorized entrants in the permit-required confined space.
- Ensuring the means used to identify authorized entrants accurately identifies who is in the permit-required confined space.
- Remaining at the entry point, outside the permit-required confined space, during entry operations until relieved by another attendant.
- Monitoring the early warning system and communicating with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the confined space.
- Monitoring activities inside and outside the permit-required confined space to determine if it is safe for authorized entrants to remain in the space, and ordering the authorized entrants to evacuate the permit-required confined space immediately under any of the following conditions:
  - The attendant is alerted to a hazard by the early warning system.
  - The attendant detects a prohibited condition.
  - The attendant detects the behavioral effects of hazard exposure in an authorized entrant.
  - The attendant detects a situation outside the space that could endanger the authorized entrants.
  - The attendant cannot effectively and safely perform the required duties of an attendant.
• Summoning rescue and emergency services as soon as the attendant determines authorized entrants need assistance to escape from the permit-required confined space.

• Taking the following actions when unauthorized persons approach or enter a permit-required confined space while entry is underway:
  - Warning the unauthorized persons that they must stay away from the permit-required confined space.
  - Advising the unauthorized persons that they must exit immediately if they have entered the permit-required confined space.
  - Informing the authorized entrants and the entry supervisor if unauthorized persons have entered the permit-required confined space.
  - Evacuating the confined space if an unauthorized entrant exposes an authorized entrant to a recognized hazard.

• Performing nonentry rescues as specified by the rescue preplan.

• Not performing any duties that could interfere with the attendant's primary duty to monitor and protect the authorized entrants.

3.11 Confined Space Competent Persons

Confined space competent persons are responsible for evaluating confined spaces on a project.

3.12 Entry Supervisors

Only confined space competent persons shall be designated as entry supervisors. Entry supervisors are responsible for the following:

• Knowing the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

• Authorizing initial entry into only those spaces that satisfy the following requirements:
### The entry supervisor shall...

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<thead>
<tr>
<th>Reclassified space</th>
<th>At all doors opened for entry:</th>
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<tr>
<td></td>
<td>• Personally confirm the appropriate signage is posted.</td>
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<td></td>
<td>• Visually confirm the reclassification tags are posted.</td>
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</table>

<table>
<thead>
<tr>
<th>Permit-required confined space</th>
<th>At the primary point of entry:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Personally confirm the appropriate signage and form 2A-33.1, T&amp;PS Project Safety and Health Confined Space Entry Permit/Reclassification Form, is posted.</td>
</tr>
<tr>
<td></td>
<td>• Confirm an attendant is in place.</td>
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</tbody>
</table>

- Completing form 2A-33.1 or equivalent approved permit including verifying appropriate information has been documented on the form, all tests specified by the form have been conducted, and the rescue preplans, procedures, and equipment specified by the form are in place before signing the form and allowing the entry to begin.
- Terminating the entry and cancelling form 2A-33.1 as required.
- Verifying rescue and emergency services are available, the means for summoning them are operable, and the contractor shall be notified as soon as the services become unavailable.
- Removing unauthorized individuals who enter or attempt to enter the permit-required confined space during entry operations.
- Determining that entry operations remain consistent with terms of form 2A.33-1.
- Determining that acceptable entry conditions are maintained when responsibility for a permit-required confined space entry operation is transferred from one attendant to another.
- At intervals dictated by the hazards and operations performed within the space, determining that acceptable entry conditions are maintained.

#### 3.13 Contractor Who Designates Rescue and Emergency Services

The contractor who designates rescue and emergency services is responsible for the following:

- Evaluating a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified.
- Evaluating a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit-required confined space or types of permit-required confined spaces identified.
• Selecting a rescue team or service from those evaluated that:
  - Has the capability to reach the victim(s) within a timeframe that is appropriate for the permit-required confined space hazard(s) identified.
  - Is equipped for and proficient in performing the needed rescue services.

• Informing each rescue team or service of the hazards they may confront when called on to perform rescue at the site.

• Providing the rescue team or service selected with access to all permit-required confined spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

• Verifying that rescue services are available, the means for summoning them are operable, and the contractor who designates rescue and emergency services will be notified as soon as the services become unavailable.

3.14 Rescue and Emergency Services Provider

The rescue and emergency services provider (that is, the contractor whose workers have been designated to provide permit-required confined space rescue and emergency services) is responsible for the following:

• Providing rescue workers with the personal protective equipment (PPE) needed to conduct permit-required confined space rescues safely and train affected workers so they are proficient in the use of the PPE.

• Training rescue workers to perform assigned rescue duties. The rescue and emergency service provider shall ensure that such workers successfully complete the training required to establish proficiency as an authorized entrant.

• Training rescue workers in basic first aid and cardiopulmonary resuscitation (CPR). The rescue and emergency service provider shall ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available.

• Ensuring rescue workers practice making permit-required confined space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit-required confined spaces or from representative permit-required confined spaces.

  NOTE

Representative permit-required confined spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit-required confined spaces from which rescues are to be performed, including nonentry rescue.

• Ensuring retrieval systems or methods are used for nonentry rescue when an authorized entrant enters a permit-required confined space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the
rescue of the entrant. Retrieval systems shall meet the following requirements:

- Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point that the employer can establish. The chest or full body harness shall present a profile small enough for the successful removal of the entrant. Wristlets may be used in lieu of the chest or full body harness if the employer can demonstrate that the use of a chest or full body harness is not feasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

- The other end of the retrieval line shall be attached to a manually operated mechanical device or fixed point outside the permit-required confined space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A manually operated mechanical device shall be available to retrieve workers from vertical-type permit-required confined spaces more than 5 ft deep.

- If an injured entrant is exposed to a substance for which a safety data sheet (SDS) or other similar written information is required to be kept at the worksite, ensuring the SDS or written information shall be made available to the medical facility treating the exposed entrant.

4.0 PROCEDURE

4.1 Site Confined Space Inventory List and Activity Log

4.1.1 Inventory List

The confined space log administrator shall maintain a list of all confined spaces and make the list available to all site employers. See form 2A-33.2, Site Confined Space Inventory List and Activity Log.

- The confined space log administrator shall obtain a list of existing, known confined spaces and their respective hazards from the host employer (plant operating company).

- The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall ensure all contractors under his or her direction report all newly identified confined spaces to the confined space log administrator.

- Each confined space on the list shall be uniquely numbered in sequential order.

- Multiple entry points to a confined space shall be identified alphanumerically with the number designating the permit-required confined space and the letter designating the entry point.

4.1.2 Activity Log

The confined space log administrator shall maintain a log of confined spaces derived from the site confined space inventory list and shall make the log available to all site employers. The log entries shall be dated and shall include:
- Status of the confined space (closed, permit-required, reclassified confined space, alternate entry).
- Permit number, if the permit is issued by Southern Company.
- Confined space owner (host employer).
- Controlling employer.
- Entry employer.
- Notes and/or special precautions.
- Authorized entrant activities.

4.2 Confined Space Signs, Barriers, and Barricades

All confined spaces shall have warning signs posted at all points of entry. The sign shall include the numeric space identification and alphabetic entry point. All entry points not under active entry or entry points to permitted spaces not otherwise attended shall have physical barricades or barriers in place to prevent unauthorized entry.

4.3 Site-Specific Instructions

A project may implement site-specific instructions that supplement but do not replace this procedure. Site-specific instructions shall be reviewed and evaluated by the T&PS construction site manager, the T&PS site safety lead, and the regional safety and health manager. Site-specific instructions may include an operating company’s site-specific Alternate Procedure.

4.4 Worker Training

All workers whose jobs involve responsibilities associated with confined spaces shall be initially trained so they shall have the understanding, knowledge, and skills necessary for working safely in confined spaces.

Worker retraining is required when a worker fails to demonstrate knowledge or skills necessary to properly enter a confined space.
Annual confined space awareness training is required for all workers whose work activity or work direction may include confined space entry. Annual training shall include:

- Purpose of the confined space program.
- Emergency notification process.
- Duties of authorized entrants.
- Duties of attendants.
- Duties of entry supervisors.
- Rescue and emergency service.
- Permit/reclassification review.
- Atmospheric hazards and testing requirements.

### 4.5 Coordinating Contractor Confined Space Entry

When T&PS arranges for a contractor to perform work that involves permit-required confined space entry, the T&PS site contract coordinator shall:

- Ensure a contractor coordinates all confined space entries with the T&PS employee responsible for the work.
- Ensure T&PS employees coordinate with the facility system owner for all contractor entries, if applicable.
- Inform the contractor that the workplace contains confined spaces and entry will be allowed only through compliance with the contractor’s confined space program that meets the requirements of 29 CFR 1926 subpart AA, Confined spaces in construction.
- Apprise the contractor of the current confined space conditions, including any serious hazards identified and any previous experience in the space that has made it a permit-required confined space.
- Apprise the contractor of any precautions or programs, such as signage, that the facility has implemented for the protection of workers in or near the confined space where contract workers will be working.
- When both T&PS personnel and contractor workers will be working in or near a confined space, coordinate entry operations with the contractor so that workers of one company do not endanger the workers of the other.
- Debrief the contractor at the conclusion of the entry operations regarding the permit-required confined space program followed and regarding any serious hazards confronted or created in the space.

### 4.6 Annual Review

The T&PS construction site manager shall ensure a review of the site-specific confined space program is conducted annually.
4.7 Entry Permit/Reclassification Form

The entry supervisor shall complete form 2A-33.1, T&PS Confined Space Entry Permit/Reclassification Form, prior to the entry of any authorized entrants into a confined space. See 6.0, Quality Records, for record retention requirements.

The confined space log administrator shall track all approved or cancelled entry permit/reclassification forms on form 2A-33.2, Site Confined Space Inventory List and Activity Log.

The completed form 2A-33.1 shall be available to all authorized entrants:

- For permit-required confined spaces, the completed form 2A-33.1 shall be posted at the primary point of entry.

- For reclassified spaces, a green reclassification tag (form 2A-33.3, Confined Space Reclassification Tag) shall be posted at each point of entry to the confined space. The green reclassification tags shall include the following information:
  - Permit/reclassification number.
  - Entry supervisor name.
  - Contact number.
  - Issued date.
  - Closing date.
  - Controlling contractor.
  - Atmospheric test levels.

See 6.0, Quality Records, for retention requirements for cancelled reclassification tags.

- For spaces entered using the Alternate Procedure, a yellow reclassification tag shall be posted at each point of entry. See 4.10, Permit-Required Confined Spaces Entered Using Alternate Procedure.

4.8 Atmospheric Testing

Personnel assigned to perform atmospheric testing shall be trained on the specific device used.

All monitors shall be calibrated in accordance with the manufacturer’s recommendations, and a bump test (functional test) shall be performed during each shift at a minimum or after an abnormal reading has been detected.

4.8.1 Initial Atmospheric Testing Requirements

Southern Company requires testing of a confined space to ensure no hazardous atmosphere exists before allowing workers to enter the space.

When a confined space is to be entered, the atmosphere shall be tested before allowing workers to enter the space. The test equipment must consist of direct reading gas
monitoring instruments. The individual performing the test shall enter all required information on form 2A-33.1.

- The confined space shall be opened and ventilated or purged, as necessary.
- The atmospheric test shall be performed by a qualified individual.
- Any portable forced ventilation of the confined space shall be stopped prior to performing an initial atmospheric test.
- When conducting the initial test, the qualified individual shall check for (in the order listed):
  1. Oxygen content.
  2. Flammable gases and vapors.
  3. Potential toxic air contaminants.
- The qualified individual shall complete initial tests prior to any worker entering the space through any opening into the space (such as boiler door and observation doors). The workers who are performing the test shall not enter the space to perform the atmospheric test.
- Any worker authorized to enter a space, or that worker’s authorized representative, shall be provided the opportunity to observe any atmospheric testing done for the space he or she is about to enter.
- After the atmospheric test is complete, the qualified individual shall complete all information on form 2A-33.1.

If the confined space is classified as a nonpermit required space, the entry supervisor shall complete the Reclassification section of form 2A-33.1. He or she shall ensure that green reclassification tags are posted at all points opened and used for worker access covered by the atmospheric test, or shall post an attendant. Only tagged or attended points of entry may be used. Atmospheric testing shall be documented daily on the green reclassification tag until the confined space is closed or conditions change. See 4.11, Reclassification Tag Removal, for removal of green reclassification tag.

4.8.2 Additional Atmospheric Testing Requirements

If authorized entrants are present in any reclassified confined space and atmospheric hazards that could reasonably be expected to cause the space to become a permit-required confined space are introduced, the entrants shall vacate the space, the green reclassification tag shall be removed from all entry points, and the space shall be repermitted. Continuous monitoring is required. See 4.11 for removal of green reclassification tags.

4.9 Reclassification of Permit-Required Confined Spaces

A permit-required confined space can be reclassified to a nonpermit-required confined space provided that:

- All related equipment and systems have been properly isolated and cleared.
• Testing and inspection results indicating that all serious atmospheric and physical hazards in the permit-required confined space have been eliminated are documented on form 2A-33.1.

• Workers who are required to enter the permit-required confined space to eliminate the serious atmospheric and physical hazards comply with all requirements of permit-required confined space entry until the serious atmospheric and physical hazards are eliminated.

• A reclassification tag is posted at all points opened and used for worker access covered by the atmospheric test or an attendant is present.

• A green reclassification tag is posted at each point of entry to the confined space. See 4.7, Entry Permit/Reclassification Form, for information needed on a green reclassification tag.

• Atmospheric testing requirements have been met. See 4.8.1, Initial Atmospheric Testing Requirements.

A green reclassification tag shall be completed and posted at the nonpermit-required space. The green tag indicates all potential serious atmospheric and physical hazards in the space have been eliminated and the space is safe for authorized worker entry.

If hazardous changes to a reclassified space occur that endanger the entrants, the confined space shall be immediately evacuated and the confined space reevaluated.

4.10 Permit-Required Confined Spaces Entered Using Alternate Procedure

T&PS contractors and/or T&PS personnel are not allowed to use the Alternate Procedure for confined space entry performed in spaces under the control of T&PS or its contractors (T&PS or its contractor acting as the host employer or controlling employer).

If T&PS employees or T&PS contractors must make entry into a confined space under the control of an operating company, as host or controlling employer, the operating company’s Alternate Procedure may be used with the review and approval of the T&PS construction site manager and T&PS site safety lead.

A confined space entered using theAlternate Procedure shall meet the following criteria:

• The only serious hazard or potential serious hazard in the space is atmospheric.

• It can be demonstrated that continuous forced air ventilation alone is sufficient to maintain the space for safe entry.

• The mechanical ventilation used is from a clean air source and is in place prior to entry.

• The atmosphere of the space is monitored continuously. Results shall be recorded on form 2A-33.4, Atmospheric Monitoring Data.

• Form 2A-33.1 is completed and indicates the space is being entered using the Alternate Procedure.

• Yellow reclassification tags have been placed by the operating company at all
entry points.

If a hazardous atmosphere is detected during entry:

- Each entrant shall leave the space immediately.
- The space shall be evaluated by the confined space host to determine how the hazardous atmosphere developed.
- Action shall be implemented to protect workers from the hazardous atmosphere before any subsequent entry takes place.

As applicable, each reclassification tag shall have the corresponding number from form 2A-33.1 that identifies the confined space, the entry supervisor, and the date reclassified.

4.11 Reclassification Tag Removal

Reclassification tags shall be removed when the work has been completed or when conditions in the space have become unsafe.

When work is completed or when the space has become unsafe for entry, the entry supervisor shall be contacted and shall be responsible for seeing that all of the reclassification tags are removed from entrances. A confined space entrance cannot be closed until the entry supervisor has been notified and he or she verifies that the reclassification tags have been removed. This process shall be accomplished as follows:

- The entry supervisor shall ensure the removal of the reclassification tags, account for all of the tags, and ensure each reclassification tag number corresponds with the number on form 2A-33.1. The entry supervisor shall sign at the bottom of form 2A-33.1 indicating the permit has been cancelled and write the date on the green reclassification tags in the appropriate space. This action shall also be documented on form 2A-33.2, Site Confined Space Inventory List and Activity Log.
- The cancelled form 2A-33.1 and the green reclassification tags with corresponding numbers shall be attached to each other and retained. See 6.0, Quality Records, for record retention requirements.
- If the entry supervisor is not available, the facility manager or his or her designee can perform this operation.

4.12 Confined Space Entry Process

4.12.1 General

See attachment A, Confined Space Entry Flowchart. When work must be performed in a space that potentially meets the definition of a confined space, the entry employer shall initiate the following steps:
1. The entry employer’s confined space competent person shall determine if the space meets the definition of a confined space.
   a. If the space does not meet the definition of a confined space, work may proceed with normal work procedures.
   b. If the space meets the definition of a confined space, the entry employer’s confined space competent person shall check form 2A-33.2, Site Confined Space Inventory List and Activity Log, to determine if the space is an existing plant-owned confined space.

2. If the space meets the definition of a confined space and is not listed on form 2A-33.2, the T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall contact the confined space log administrator to register the space as a confined space.

3. If the space is listed on form 2A-33.2, the T&PS construction site manager shall designate a T&PS confined space competent person, who shall serve as the entry supervisor when the space is entered, to evaluate the confined space.

4. The T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator shall determine if operating company personnel or its contractors will enter the confined space.
   a. If neither operating company personnel nor its contractors will enter the confined space, work shall proceed following SH-2A-33, Safe Work Practices for Confined Spaces.
   b. If operating company personnel or its contractors will enter the confined space, the T&PS confined space competent person shall obtain the status of hazards and other contractors’ activities in and near the space. The T&PS confined space competent person shall then provide plant operations with the activities and hazards of T&PS contractor entrant activities.

5. The T&PS confined space competent person shall determine if the operating company has established an Alternate Procedure and is entering the space using the Alternate Procedure.
   a. If the operating company’s Alternate Procedure will be used, the T&PS site manager and the T&PS site safety lead shall evaluate the Alternate Procedure to determine if it meets the criteria of 4.10, Permit-Required Confined Spaces Entered Using Alternate Procedure.
   b. If the operating company’s Alternate Procedure does not meet the criteria of 4.10, the T&PS site manager and the T&PS site safety lead shall deny T&PS employees and T&PS contractors access to the space.

6. If the operating company’s Alternate Procedure meets the criteria of 4.10, the entry supervisor shall ensure continuous monitoring of the space while following SH-2A-33.

7. The T&PS confined space competent person shall then determine who will enter the confined space:
   a. Only T&PS personnel.
   b. Both T&PS personnel and contractor workers.
c. Only contractor workers.

4.12.2 T&PS Personnel Only as Entrants

1. If only T&PS personnel will enter the space, the T&PS confined space competent person shall evaluate the confined space for known or potential hazards.

2. If the space has no known or potential hazards, the T&PS confined space competent person shall:
   a. Assume the role of entry supervisor.
   b. Complete the reclassification section of form 2A-33.1.
   c. Report needed information to the confined space log administrator.
   d. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.
   e. Sign form 2A-33.1, approving entry of the confined space. Authorized entrants may enter the space and perform the assigned work.

3. If the space has known or potential hazards, the T&PS confined space competent person shall determine if the serious hazards can be eliminated. If the serious hazards can be eliminated, the T&PS confined space competent person shall:
   a. Assume the role of entry supervisor.
   b. Complete the reclassification section of form 2A-33.1.
   c. Report needed information to the confined space log administrator.
   d. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.
   e. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.

4. If all serious hazards cannot be eliminated, the T&PS confined space competent person shall:
   a. Assume the role of entry supervisor.
   c. Report needed information to the confined space log administrator.
   d. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, the attendant is in place, and rescue services are available.
   e. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.

4.12.3 Both T&PS Personnel and Contractor Workers as Entrants

1. If both T&PS personnel and contractor workers will enter the confined space, the T&PS confined space competent person shall coordinate with the contractor's confined space competent person to evaluate the confined space for known or potential hazards.
2. If the space has no known or potential hazards, the T&PS confined space competent person shall:

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<tr>
<td>Coordinate entry of T&amp;PS personnel under the contractor’s approved entry program.</td>
<td>Assume the role of entry supervisor for T&amp;PS personnel who are authorized entrants, and:</td>
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<td>i. Complete the reclassification section of form 2A-33.1.</td>
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<td>ii. Report needed information to the confined space log administrator.</td>
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<td>iii. Complete the information on green reclassification tags (form 2A-33.3) and hang them at all entry points.</td>
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<td>iv. Sign form 2A-33.1, approving entry of the confined space. Authorized entrants may enter the space and perform the assigned work.</td>
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3. If the space has known or potential hazards, the T&PS confined space competent person shall coordinate with the contractor’s confined space competent person to determine if the serious hazards can be eliminated. If both parties agree the serious hazards can be eliminated, the T&PS confined space competent person shall:
### EITHER... | OR...
---|---
**Coordinate entry of T&PS personnel under the contractor’s approved entry program:**

i. Ensure the contractor’s confined space program has been reviewed and approved by the T&PS site safety lead.

ii. Ensure all T&PS entrants are trained in the contractor’s confined space entry program.

iii. Ensure the contractor is aware of all hazards in the space.

iv. Ensure the contractor has access to form 2A-33.2.

v. Ensure the contractor identifies and properly tags all entry points with an acceptable reclassification tag.

vi. Ensure the contractor reports all needed information to the confined space log administrator.

vii. Ensure acceptable entry conditions are maintained, and necessary air monitoring is performed.

**Assume the role of entry supervisor for T&PS personnel who are authorized entrants:**

i. Complete the reclassification section of form 2A-33.1.

ii. Report needed information to the confined space log administrator.

iii. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, and rescue services are available.

iv. Sign form 2A-33.1, approving entry of the space. Authorized entrants may enter the space and perform the assigned work.

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4. **If the T&PS confined space competent person and the contractor’s confined space competent person agree all serious hazards cannot be eliminated, the T&PS confined space competent person shall:**

### EITHER... | OR...
---|---
**Coordinate entry of T&PS personnel under the contractor’s approved entry program:**

i. Ensure the contractor’s confined space program has been reviewed and approved by the T&PS site safety lead.

ii. Ensure all T&PS entrants are trained in the contractor’s confined space entry program.

iii. Ensure the contractor is aware of all hazards in the space.

iv. Ensure the contractor has access to form 2A-33.2.

v. Ensure the contractor executes and posts an acceptable entry permit.

**Assume the role of entry supervisor for T&PS personnel who are authorized entrants:**

i. Ensure all T&PS entrants are trained to SH-2A-33, Safe Work Procedures in Confined Spaces.

ii. Ensure the entrants are aware of all hazards in the space.


iv. Report all needed information to the confined space log administrator.

v. Ensure acceptable entry conditions are maintained, continuous air monitoring is performed, the attendant(s) is(are) in place, and rescue services are available.

vi. Sign form 2A-33.1, approving entry of the space. Authorized entrants may...
vi. Ensure the contractor reports all needed information to the confined space log administrator.  
vii. Ensure acceptable entry conditions are maintained, proper air monitoring is performed, the attendant is in place, and rescue services are available.

4.12.4 Contractor Workers Only as Entrants

If only contractor workers will enter the space, the T&PS confined space competent person shall:

- Ensure the contractor’s confined space program has been reviewed and approved by the T&PS site safety lead.
- Make the contractor aware of all hazards in the space.
- Ensure the contractor has access to form 2A-33.2.
- Ensure the contractor has trained and established rescue services in place.

The contractor shall classify the space using his or her approved confined space program and communicate with the T&PS construction discipline lead or coordinator or the startup discipline lead or coordinator. The contractor shall report all needed information to the T&PS confined space log administrator.

4.12.5 Completing the Entry Process

When work in the confined space is completed, the T&PS confined space competent person/entry supervisor shall:

- Verify that all authorized entrants have left the confined space and that no tools or equipment has been left in the space unintentionally.
- Ensure all permits are removed, and if a T&PS permit was used, remove the posted copy of form 2A-33.1 and sign it, cancelling the permit.
- Notify rescue services the permit has been cancelled.
- Remove all green tags, if applicable, and attach to the cancelled permit.
- Return any cancelled copies of form 2A-33.1 to the confined space log administrator for record retention and filing. See 6.0, Quality Records.

5.0 KEY CONTACTS

For questions regarding the content and implementation of the confined space program, contact the manager–Construction Safety and Health.
6.0 QUALITY RECORDS

Contractors shall retain cancelled copies of form 2A-33.1 and other records generated by this procedure in accordance with the records retention schedule.

7.0 ATTACHMENTS

- Attachment A, Confined Space Entry Flowchart (2 pages).
- Attachment B, Historical Summary of Changes.
Attachment B, Historical Summary of Changes

Rev. 0
10-20-2015
Approved by Bob Fitzgerald, Chad Kendrick, and Bill Boyd
Reviewed by Project Safety Leadership Team and Procedure Consolidation Team
Revised by Bob Fitzgerald

Remarks:
Issued.

12-20-2016
Approved by Bill Batts
Corrected broken hyperlink to referenced document (2.2).

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Floor Opening, Wall Opening, Grating Removal, or Guardrail Removal

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This procedure was voided. For information on floor opening, wall opening, grating removal, or guardrail removal, see Operations Safety and Health procedure SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal. For a printable version of the form, see Open Hole Permit.
1.0 PURPOSE AND SCOPE ............................................................................................................. 3
  1.1 Purpose ................................................................................................................................ 3
  1.2 Scope ................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ......................................................................................... 3
  2.1 Definitions ............................................................................................................................. 3
  2.2 References ............................................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................................... 3
  3.1 Construction Site Manager ................................................................................................ 3
  3.2 Startup Manager .................................................................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ......................................................... 4
  3.4 Contractors ........................................................................................................................... 4

4.0 STANDARD ............................................................................................................................. 4
  4.1 Planning ................................................................................................................................. 4
  4.2 Temporary Construction Elevators ....................................................................................... 4
  4.3 Existing Plant Elevators ...................................................................................................... 6
  4.4 Stack Elevator ...................................................................................................................... 6
  4.5 Demolition ............................................................................................................................ 6
  4.6 Maintenance and Inspection ............................................................................................... 7
  4.7 Repair ................................................................................................................................... 7

5.0 KEY CONTACT ......................................................................................................................... 7

6.0 QUALITY RECORDS ............................................................................................................... 7

7.0 ATTACHMENTS ....................................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for:

- Installation of temporary construction elevators on Technical and Project Solutions (T&PS) projects.
- Maintenance and use of existing permanent and temporary construction elevators on T&PS projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- 29 CFR 1926.552, Material hoists, personnel hoists, and elevators.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 **STANDARD**

4.1 **Planning**

When planning for elevators, project site management shall observe the following requirements:

- The T&PS construction site manager or designee and the designated T&PS engineer who leads the work shall meet and analyze available power sources, locations, and anchorages for temporary construction elevators.
- The vendor shall provide appropriate drawings and/or specifications to facilitate engineering review and approval prior to installation of temporary elevators.
- If existing plant elevators will be used for construction activities, the T&PS construction site manager or designee shall coordinate with the operating facility for the elevator’s use, care, and maintenance.

4.2 **Temporary Construction Elevators**

The installation, use, and maintenance of temporary construction elevators shall be done according to the following requirements:

- All manufacturer’s requirements and local, state, and federal codes shall be followed for the installation, use, and maintenance of temporary construction elevators. At a minimum, the following standards shall govern the installation, use, and maintenance of elevators on T&PS projects:

- Protective devices shall be installed to protect personnel from falling objects in accordance with 29 CFR 1926.552.

- Temporary construction elevators shall be load-tested according to the manufacturer’s recommendations. Results shall be documented; see 6.0, Quality Records, for record retention requirements.

- Signage indicating the maximum number of passengers and the rated load shall be posted in the passenger car. Emergency information shall also be posted. Signage shall be visible and legible. For locations that require operating permits or licenses, the permit or license shall be posted to meet requirements and kept current at all times.

- A fire extinguisher of the appropriate size and class shall be provided and mounted properly in the passenger car.

- An operator shall be assigned to operate manually controlled elevators.

- The elevator operator shall be trained on the operational controls and emergency procedures. The training shall be conducted by a manufacturer’s representative or a competent person designated by management and shall be documented. Training shall include:
  – Make-and-model-specific written test.

- A means of communication shall be provided. Acceptable means of communication include, but are not limited to:
  – Intercom system (independently powered).
  – Two-way radio.
  – LINC phone.

- Where applicable, the T&PS construction site manager or designee shall coordinate with the plant emergency response team or high-angle rescue provider to ensure proper equipment is available for rescue of personnel from an inoperable elevator. The T&PS construction site manager or designee also shall ensure rescue services are familiar with the design, configuration, and special needs for rescue of personnel from an inoperable elevator.

- Fall protection equipment shall be staged in or on the car for use when needed during a rescue. Appropriate quantity and sizes of fall protection equipment shall be determined by site management.

- The operator shall not allow the elevator’s rated capacity to be exceeded at any time.

- Protective systems shall be installed to prevent contact with any moving parts (car, cables, pulleys, and so forth) at each elevation where personnel could be exposed to a hazard.
4.3 Existing Plant Elevators

The use of existing plant elevators shall meet the following requirements:

- The use of existing plant elevators shall be coordinated with the system owner. The T&PS construction site manager or designee shall ensure personnel assigned to the project follow the rules and requirements of the facility.
- If required by the facility, an elevator operator shall be assigned to an existing plant elevator. The operator shall meet the same training requirements as a temporary construction elevator operator.

4.4 Stack Elevator

The use of the stack elevator shall meet the following requirements:

- The use of stack elevators shall be limited to personnel authorized by site management.
- Personnel authorized to use the stack elevator shall follow the facility’s access requirements.
- Personnel authorized to use the stack elevator shall be familiar with the operation, emergency procedures, and self-rescue provisions of the elevator prior to operating the elevator. Personnel shall at all times operate the elevator according to the manufacturer’s instructions.
- Personnel authorized to use the stack elevator shall inspect the elevator prior to ascending. The inspection shall verify that:
  - The elevator’s emergency equipment is available.
  - The emergency lighting is operational.
  - Instructions for use are posted and legible.
  - The communication system with the control room via phone or intercom is operational.
  - The braking system operates according to the manufacturer’s guidelines (if applicable).
- Training on the appropriate self-rescue device shall be conducted and documented. See 6.0, Quality Records, for record retention requirements.
- The T&PS construction site manager or designee shall verify the appropriate harness with ladder safety device is prestaged for use in an emergency. The project may also choose to provide the appropriate harness with the proper ladder safety device and lanyards for use by personnel using the stack elevator.
- A T&PS project point of contact shall be established and means of communication established with personnel working in or using stack elevators.

4.5 Demolition

If existing elevators remain in service during demolition, the contractor will document a plan to ensure personnel safety for the duration of the elevator’s use.
Due to changing conditions during demolition, protective systems shall be continually evaluated and modified as needed to maintain the protective levels required.

If a condition arises that affects the integrity of the elevator or constitutes a hazard to an elevator passenger, the elevator shall be taken out of service until the condition or hazard is eliminated.

Any elevator that is relocated during the course of demolition shall be reinstalled following all applicable federal, state, and local codes, manufacturer’s requirements, and the requirements of this standard.

4.6 Maintenance and Inspection

Elevator maintenance and inspection shall be performed according to the following requirements:

- Elevators under T&PS control shall be maintained according to the manufacturer’s guidelines. Regular maintenance shall be documented in a log and maintained at the project site.
- Elevators shall be inspected according to the manufacturer’s guidelines. In addition, all local, state, and federal inspection requirements shall be met.
- Inspections shall be documented and maintained on the project site; see 6.0, Quality Records, for record retention requirements.
- Provisions for a site technician should be considered for timely repair in the case of failure while occupied.

4.7 Repair

Elevator repair shall observe the following requirements:

- Elevator repairs shall be made only by authorized, qualified personnel.
- All elevator repairs shall be made according to the manufacturer’s requirements.
- No alteration shall be made to an elevator without written authorization from the manufacturer.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

Documents shall be retained in accordance with the Southern Company Record Retention Schedule.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0 09/13/2016
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
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Revised by Bill Batts
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2B-01

Personal Protective Equipment

<table>
<thead>
<tr>
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<th>Rev. 1**</th>
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<tbody>
<tr>
<td>Date</td>
<td>05/09/2017</td>
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<td>Project Support</td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>

UNCONTROLLED COPY
## Contents

1.0 PURPOSE AND SCOPE ................................................................................................ 3
  1.1 Purpose .................................................................................................................. 3
  1.2 Scope ..................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ............................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................. 3

3.0 RESPONSIBILITY .......................................................................................................... 4
  3.1 Construction Site Manager ..................................................................................... 4
  3.2 Startup Manager ..................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
    Procurement, and Construction (EPC) Contractors) ....................................................... 4
  3.4 Contractors .......................................................................................................... 4

4.0 STANDARD.................................................................................................................... 4
  4.1 Requirements ......................................................................................................... 4

5.0 KEY CONTACT .............................................................................................................. 5

6.0 QUALITY RECORDS ..................................................................................................... 5

7.0 ATTACHMENTS ............................................................................................................ 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the use of personal protective equipment (PPE) on Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel whenever a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1910.132. Personal protective equipment, general requirements
- 29 CFR 1926.95, Criteria for personal protective equipment
- Environmental, Health, and Safety standards:
  - SH-S-2B-02, Head Protection
  - SH-S-2B-03, Eye and Face Protection
  - SH-S-2B-04, Foot Protection
  - SH-S-2B-05, Hand Protection
  - SH-S-2B-06, Traffic Vests
  - SH-S-2B-07, Personal Floatation Devices
  - SH-S-2B-08, Basic Work Clothing
  - SH-S-2B-09, Respiratory Protection
- Form 2B-01.1, PPE Assessment Form
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

T&PS reserves the right to select and/or approve all PPE to be issued and used by its employees, visitors, and/or contractors. Only equipment issued or approved by T&PS shall be allowed on its sites/facilities.

The T&PS construction site manager shall ensure the workplace has been assessed to determine if hazards are present or likely to be present. This assessment shall be documented in writing. The documentation shall identify the workplace, the person(s) evaluating the workplace, the dates of the assessment, and the hazards found, if any. The T&PS construction site manager shall certify the hazard assessment as accurate and complete.
If hazards are present, engineering and administrative controls shall be implemented to eliminate the hazard. If engineering and administrative controls will not eliminate the hazard, PPE shall be used. Site management shall:

- Select the PPE and have each affected employee use the PPE chosen.
- Communicate the selection of PPE to employees (training).
- Ensure employees have properly fitting PPE.

Defective or damaged PPE shall be removed from service and shall not be reused unless repaired.

Each employee who is required to wear PPE shall be trained on the following:

- When PPE is necessary.
- What PPE is necessary.
- How to don, doff, adjust, and wear the PPE.
- The limits of the PPE.
- The proper care, maintenance, useful life, and disposal of the PPE.

The PPE training shall be documented. The written documentation shall include the name of each employee trained, the dates of the training, and the subject of the training.

NOTE

The use of employee-owned fall protection PPE is prohibited.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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Rev. 0  
09/13/2016  
Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts

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11/29/2016  
11/29/2016  
Added links to references (2.2).  
Approved by Bill Batts

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Revised by Bill Batts

Remarks:  
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05/15/2019  
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2B-02

Head Protection

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<td>Bruce Long</td>
</tr>
</tbody>
</table>
## Contents

1.0  PURPOSE AND SCOPE ................................................................. 3
   1.1  Purpose .................................................................................. 3
   1.2  Scope .................................................................................... 3

2.0  DEFINITIONS AND REFERENCES ............................................. 3
   2.1  Definitions .............................................................................. 3
   2.2  References ............................................................................ 3

3.0  RESPONSIBILITY ...................................................................... 3
   3.1  Construction Site Manager ..................................................... 3
   3.2  Startup Manager ................................................................... 3
   3.3  Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
   3.4  Contractors ............................................................................ 4

4.0  STANDARD .............................................................................. 4
   4.1  Requirements ......................................................................... 4

5.0  KEY CONTACT ......................................................................... 5

6.0  QUALITY RECORDS .................................................................. 5

7.0  ATTACHMENTS ........................................................................ 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for head protection on Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel whenever a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- ANSI Z89.1, Current.
- ANSI Z89.2, Current.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Requirements**

- All workers shall wear T&PS-approved hardhats while working in construction/maintenance areas or areas of an existing site/facility that have been designated as a hardhat area. This restriction includes visitors, contractors, engineers, inspectors, and anyone else who has authorized access to the project. When company activities result in establishing a hardhat area in an area that typically does not require hardhats, signs shall be posted to inform others that hardhats are required.

- Hardhats shall not be altered by drilling, cutting, or other means unless approved by the manufacturer. Hardhats that have been altered by the addition of any items on the outside of the hat other than approved items shall not be permitted. When it is necessary to use additional personal protective equipment that is attached to the hardhat, only those hardhats designed for this purpose may be used.

- Hardhats shall be inspected monthly and replaced when damaged, or every 5 years at a minimum due to the effects of ultraviolet light on the polymers of the shell. Headband assemblies shall be in good condition and shall be exchanged whenever they become broken or weakened. The area between the top of the headband and the top of the hardhat shall not be used for storage.

- Welders are required to wear hardhats when in a hardhat area. Soft-cap welding is not permitted without the approval of the site manager and the environmental, health, and safety (EH&S) professional.
• Hardhats shall be required in areas that typically would not require the use of a hardhat (offices, break areas, barracks, and so forth) when the work activity creates an overhead hazard.

• Hardhats shall comply with the requirements of the most current ANSI Z89.1 standard with the exception that metal hardhats and cowboy-style hardhats shall not be allowed.

• Hardhats shall be worn with the bill facing forward. Welders shall wear their hardhats with the bill facing forward while not welding.

• In addition, any employee potentially exposed to any voltage shall wear a hardhat that meets Di-electric Standards. It is therefore recommended that all hardhats purchased meet both the Z89.1 and Z89.2 specifications.

NOTE
Hardhats will clearly identify the respective employer by means of company name and/or logo on the front of the hardhat.

5.0 KEY CONTACT
For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS
None.

7.0 ATTACHMENTS
Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2B-02, Head Protection.

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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2B-03

Eye and Face Protection

<table>
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<td>Bruce Long</td>
</tr>
</tbody>
</table>

UNCONTROLLED COPY
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose ......................................................... 3
  1.2 Scope ...................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................ 3
  2.1 Definitions .................................................. 3
  2.2 References ............................................... 3

3.0 RESPONSIBILITY ..................................................................... 3
  3.1 Construction Site Manager ........................................... 3
  3.2 Startup Manager .............................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .................................................. 4

4.0 STANDARD ........................................................................... 4
  4.1 Safety Glasses with Side Shields ..................................... 4
  4.2 Visitors’ Glasses ............................................... 5
  4.3 Faceshields .................................................. 5
  4.4 Goggles ...................................................... 5
  4.5 Welding Shields ............................................. 5
  4.6 Burning Goggles ........................................... 6

5.0 KEY CONTACT ................................................................. 6

6.0 QUALITY RECORDS ......................................................... 6

7.0 ATTACHMENTS ............................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for eye and face protection on Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel when a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- ANSI Z87.1, Current.
- 29 CFR 1910.133, Eye and face protection.
- 29 CFR 1926.102, Eye and face protection.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

In general, eye protection is required in all work areas except offices. Approved eye and face protection shall be worn whenever warranted by the work exposure. Eye and face protection shall be kept clean and in good repair. Eye protection shall also be worn in office settings when the work conducted creates the potential for eye injuries.

4.1 **Safety Glasses with Side Shields**

- Each T&PS project shall be deemed a 100-percent eye protection project. ANSI-approved safety glasses with full rigid side shields shall be worn in all areas of the project and/or plant site.

- Employees requiring corrective lenses shall have glasses in which the frames and lenses meet ANSI specifications, or they shall be required to wear protective eyewear over their corrective lenses. The addition of side shields to nonsafety glasses shall not be permitted.

- Employees who wear contact lenses shall wear safety glasses in addition to the contact lenses where safety glasses are required. Contacts shall not be worn in chemical atmospheres.
• Safety glasses shaded greater than shade #1 shall not be worn by employees working indoors or in any other artificially lit area.

4.2 Visitors’ Glasses

Visitors shall wear ANSI Z87.1-approved glasses when in areas where safety glasses are required.

4.3 Faceshields

• In addition to safety glasses, an approved faceshield shall be worn during activities such as the following:
  – Grinding.
  – Cad welding.
  – Handling chemicals, corrosive liquids, or molten materials.
  – Chain sawing.
  – Chipping.
  – Jackhammering.
  – Chiseling.
  – Concrete placement using pumps or pump trucks.

• Faceshields shall be used any time a work activity places an employee in the zone of danger where the employee would be struck if something is unexpectedly splashed, sprayed, or propelled. Other employees in the area (that is, in any area in which grinding dust is falling/flying) shall be protected by screens, goggles, or faceshields.

4.4 Goggles

Goggles shall also be worn in areas where dusty operations are conducted, windy conditions result in greater potential for flying particles, or the potential for a chemical splash, spray, or mist exists. Examples include grinding operations inside ductwork and enclosed vessels or spaces.

4.5 Welding Shields

• Welders shall wear a welder’s hood with lenses that have the correct color density for the type of welding involved.

• Welder’s helpers and others exposed to the same level of hazard as the welder shall wear the same level of eye protection as the welder.

• Safety lenses shall be worn in front of and behind the welder’s shaded lenses.
• Welders shall wear safety glasses under their welding hood.

4.6 Burning Goggles

Workers shall use an approved burning goggle with no less than a #4 filter plate during all torch-cutting operations.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Remarks:
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05/09/2017

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Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2B-04

Foot Protection

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<td>Project Support  Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................................................ 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ............................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ............................................................................... 3
  2.1 Definitions ...................................................................................................................... 3
  2.2 References ..................................................................................................................... 3

3.0 RESPONSIBILITY .......................................................................................................... 3
  3.1 Construction Site Manager ............................................................................................. 3
  3.2 Startup Manager ............................................................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
Procurement, and Construction (EPC) Contractors) ............................................................... 4
  3.4 Contractors ..................................................................................................................... 4

4.0 STANDARD .................................................................................................................... 4
  4.1 Requirements ................................................................................................................. 4

5.0 KEY CONTACT .............................................................................................................. 5

6.0 QUALITY RECORDS ..................................................................................................... 5

7.0 ATTACHMENTS ............................................................................................................ 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for foot protection at Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel when a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- ANSI Z41-1991, Safety-Toe Footwear
- ASTM F2413, Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear
- 29 CFR 1926.96, Occupational Foot Protection
- 29 CFR 1910.136, Foot Protection

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Requirements**

- Hard-soled boots and leather uppers that support the ankle shall be worn by all personnel in construction work areas. Canvas top or athletic shoes and sandals are prohibited.

- Safety-toed boots shall be worn by all employees performing tasks with the potential hazard of falling or rolling objects such as sorting rebar, shaking out structural steel, and sorting scaffold components. The safety-toed boots shall meet the requirements of ANSI Z41.1, Safety-Toe Footwear or ASTM F2413, Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear.

- Metatarsal guards shall be worn by employees operating hand vibratory tampers, jackhammers, and similar operations with a potential for serious foot injury.

- When working in wet concrete, workers shall wear rubber boots.

- Shoes and boots shall be kept in good repair, and those with worn heels or thin or worn soles shall not be permitted.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2B-05

Hand Protection

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</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose ............................................................................... 3
  1.2 Scope ................................................................................ 3

2.0 DEFINITIONS AND REFERENCES ..................................................... 3
  2.1 Definitions .......................................................................... 3
  2.2 References .......................................................................... 3

3.0 RESPONSIBILITY ........................................................................ 3
  3.1 Construction Site Manager ..................................................... 3
  3.2 Startup Manager .................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ......................................................................... 4

4.0 STANDARD ............................................................................... 4
  4.1 General ................................................................................ 4
  4.2 Leather Gloves ....................................................................... 4
  4.3 Rubber or Vinyl Gloves ........................................................... 5
  4.4 Thermal Insulated Gloves ......................................................... 5
  4.5 Cut-Resistant Gloves ............................................................... 5
  4.6 Cloth Gloves ......................................................................... 5
  4.7 Chemical Gloves .................................................................... 5
  4.8 Welder’s Gloves ..................................................................... 6
  4.9 Voltage-Rated Rubber Gloves .................................................. 6

5.0 KEY CONTACT .......................................................................... 6

6.0 QUALITY RECORDS ................................................................... 6

7.0 ATTACHMENTS ......................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for hand protection at Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel whenever a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

• 29 CFR 1910.138, Hand protection
• T&PS procedure SH-2E-07, Work On or Near Electrical Services and/or Equipment

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

Each contractor shall develop a hand protection matrix that shall list the types of gloves used onsite and the type of work that each glove is used for. All major activities shall be listed.

Appropriate gloves shall be worn when persons work with materials or equipment with the potential for hand injury due to sharp edges, corrosives, flammable and irritating materials, extreme temperatures, splinters, and so forth. General requirements for wearing gloves are described in the following sections.

4.2 Leather Gloves

- Leather gloves shall be worn when working with the following materials, equipment, or when work conditions present the potential for hand injury:
  - When handling material with rough, sharp, or splintered edges.
  - When handling rough or unfinished lumber, metal banding, or materials likely to cause hand injuries.
NOTE

Leather gloves may not be sufficient for razor-sharp edges often encountered with stamped steel, metal shavings, and gaskets with sharp edges, and so forth.

- Tools causing friction such as shovels, picks, and sledge hammers.

- Do not use leather gloves for handling caustic, hydrocarbons, corrosive, irritating liquids, or acids. Heavily soiled leather gloves shall be discarded to avoid skin irritation.

- Personnel operating drill presses, threading machines, and similar rotating equipment shall not wear gloves.

4.3 Rubber or Vinyl Gloves

Appropriate rubber or vinyl, chemical-resistant gloves shall be worn when handling corrosive and irritating materials such as acids, caustics, and hydrocarbons.

4.4 Thermal Insulated Gloves

Insulated gloves (such as Kevlar) shall be worn when handling equipment or materials at extremely low or high temperatures that could cause thermal burns if contact with the hands occurs.

4.5 Cut-Resistant Gloves

Cut-resistant gloves (Kevlar or metal reinforced) should be worn when handling extremely sharp instruments or equipment that could cause severe lacerations if hand contact occurs.

4.6 Cloth Gloves

In general, cloth gloves may be worn to keep hands from getting dirty when handling harmless substances such as dirt, dust, and so forth.

4.7 Chemical Gloves

Gloves such as neoprene, nitrile, butyl rubber, polyvinyl alcohol, Silver-Shield, or Black Knight may be required when handling specific chemicals. Consult the safety data sheet for the chemical and use the glove specified.
4.8 Welder’s Gloves

Personnel shall wear leather welding gloves with a cuff that fully covers the hand and wrist during all welding and burning operations.

4.9 Voltage-Rated Rubber Gloves

See procedure SH-2E-07, Work On or Near Electrical Services and/or Equipment, for the requirements regarding use, storage, and testing of voltage-rated rubber gloves.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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Remarks:
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Remarks:
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

**SH-S-2B-06**

Traffic Vests

<table>
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<td>Bill Boyd</td>
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<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose ................................................................................. 3
  1.2 Scope .................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ........................................... 3
  2.1 Definitions .......................................................................... 3
  2.2 References ......................................................................... 3

3.0 RESPONSIBILITY ................................................................. 3
  3.1 Construction Site Manager .................................................. 3
  3.2 Startup Manager .................................................................. 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................. 4
  3.4 Contractors ........................................................................ 4

4.0 STANDARD ........................................................................... 4
  4.1 Requirements ...................................................................... 4

5.0 KEY CONTACT ....................................................................... 4

6.0 QUALITY RECORDS ............................................................. 5

7.0 ATTACHMENTS ..................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the use of high-visibility traffic vests at Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel whenever a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under
his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and
construction (EPC) contractors are responsible for ensuring contractors under their
management meet the minimum requirements established by this standard as part of the
contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing
and ensuring compliance with the minimum requirements established by this standard
as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

When workers are assigned work that places them near moving traffic, engineering
controls such as guards, barriers, or the rerouting of traffic shall be used to protect
employees. Where engineering controls cannot safely and effectively be used, such as
for vehicle or equipment flaggers or spotters and possibly surveyors, workers shall wear
a high-visibility safety vest, jacket, or shirt. If such activities are conducted at night, the
garment shall be reflective.

All Southern Company Operations personnel, onsite vendor representatives, and all
construction site visitors should wear a high-visibility safety vest, jacket, or shirt while on
the project site. If such activities are conducted at night, the garment shall be reflective.

At the owner’s discretion, it will be a requirement to wear a high-visibility safety vest or
garment when it is determined by the owner that an area is congested and subjects
personnel to greater than normal risk. These additional requirements will apply to all
contractor craft personnel and supervision.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the
manager—Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
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Remarks:
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental Health and Safety Standards

SH-S-2B-07

Personal Floatation Devices

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| Approved By        | Project Services: Bill Boyd  
|                    | Project Support: Bruce Long |
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3  
1.1 Purpose ......................................................................................................................... 3  
1.2 Scope ............................................................................................................................ 3  

2.0 DEFINITIONS AND REFERENCES ............................................................................... 3  
2.1 Definitions ...................................................................................................................... 3  
2.2 References .................................................................................................................... 3  

3.0 RESPONSIBILITY .......................................................................................................... 3  
3.1 Construction Site Manager .......................................................................................... 3  
3.2 Startup Manager .......................................................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,  
Procurement, and Construction (EPC) Contractors) ...................................................... 4  
3.4 Contractors ................................................................................................................ 4  

4.0 STANDARD................................................................................................................... 4  
4.1 Requirements ................................................................................................................. 4  

5.0 KEY CONTACT .......................................................................................................... 4  

6.0 QUALITY RECORDS .................................................................................................... 4  

7.0 ATTACHMENTS .......................................................................................................... 4  

1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the use of personal floatation devices at Technical and Project Solutions (T&PS) projects to reduce the risk of injury to personnel whenever a hazardous or potentially hazardous condition exists.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References


3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Requirements

- Personnel working over or near water where the danger of drowning exists shall be provided with and wear an orange U.S. Coast Guard-approved life jacket or buoyant work vest that has been inspected for defects prior to and after each use. Defective units shall not be used.

- Ring buoys shall be provided within 200 ft of any location where employees are working over or adjacent to water. Each ring buoy shall be equipped with at least 90 ft of line and shall be readily available for emergency rescue operations.

- At least one life-saving skiff shall be immediately available at locations where employees are working over or adjacent to water.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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|        |           | Revised by Bill Batts  

05/15/2019  
Organization name updated.
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides minimum requirements for basic work clothing in construction work areas on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

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3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

- Clothing with full-length trousers and shirts that cover the shoulders are minimum requirements at all T&PS projects. At certain times, the nature of the job or local requirements may necessitate the wearing of full-length sleeves. When long sleeves are not required, sleeves shall be a minimum of 4 in. in length. Perforated or mesh shirts or trousers are prohibited.

- The wearing of synthetic clothing should be discouraged, as it tends to absorb greases and oil more readily than natural fibers.

- All personnel working on T&PS projects who are performing work that has the potential to expose them to the hazard of flames or electric arcs, shall wear clothing made of 100-percent cotton, other natural fibers, or flame-retardant (FR) materials.

- Raingear and rubber boots shall be issued as necessary.

- Normally construction and maintenance workers should wear clothing that is reasonably snug particularly about the neck, wrists, and ankles. Employees shall be cautioned against wearing loose clothing, rings, watches, necklaces, or having long hair, all of which may catch in power-driven equipment and cause serious injury.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
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<td>Bruce Long and Bill Boyd</td>
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</tr>
</tbody>
</table>

05/15/2019
Organization name updated.
Respiratory Protection
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3  
1.1 Purpose ................................................................................................................. 3  
1.2 Scope .................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3  
2.1 Definitions .............................................................................................................. 3  
2.2 References ............................................................................................................ 3  

3.0 RESPONSIBILITY ..................................................................................................... 3  
3.1 Construction Site Manager .................................................................................... 3  
3.2 Startup Manager .................................................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ...................................................................... 4  
3.4 Contractors ............................................................................................................ 4  

4.0 STANDARD............................................................................................................... 4  
4.1 General.................................................................................................................. 4  
4.2 Written Plans ......................................................................................................... 4  

5.0 KEY CONTACT ......................................................................................................... 5  

6.0 QUALITY RECORDS ................................................................................................ 5  

7.0 ATTACHMENTS ....................................................................................................... 5  

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SH-S-2B-09, Respiratory Protection  
Rev. 1
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard establishes requirements for respiratory protection on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.103, Respiratory protection.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **General**

- The primary function of T&PS and contractors in the control of occupational disease caused by breathing air contaminated with harmful levels of dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors is to prevent the atmospheric contamination through the use of engineering controls.

- When effective engineering controls are not feasible or while they are being instituted, appropriate respiratory protection shall be provided and used per the following requirements.

4.2 **Written Plans**

- When Southern Company Operations employees must use respiratory protection, T&PS shall adopt and ensure compliance with the appropriate operating company’s written respiratory protection plan.

- Each contractor using respiratory protection shall develop and implement a written respiratory protection plan for the specific respiratory hazards of each site/facility where respirators are used. The written plan shall be administered by a suitably trained program administrator who is qualified to recognize, evaluate, and determine appropriate controls for respiratory hazards in the workplace and shall address the following issues:
– Procedures for selecting respirators for use in the workplace.
– Medical evaluations of employees required to use respirators.
– Fit-testing procedures for tight-fitting respirators, including disposable particulate respirators.
– Procedures for the control and issuance of respirators to qualified users.
– Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations.
– Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators.
– Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators.
– Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations.
– Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.
– Procedures for regularly evaluating the effectiveness of the program.
– Recordkeeping/documentation.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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|        | Reviewed by Project Safety Leadership Team  
| 09/13/2016 | Revised by Bill Batts |

**Remarks:**  
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| 05/09/2017 | Revised by Bill Batts |

**Remarks:**  
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05/15/2019  
Organization name updated.
Southern Company Operations
Technical and Project Solutions
Environmental, Health, and Safety Procedures

SH-2C-01
Qualifying Equipment Operators

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</table>
## Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3  
  1.1 Purpose ................................................................................................................... 3  
  1.2 Scope ...................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3  
  2.1 Definitions ................................................................................................................ 3  
  2.2 References .............................................................................................................. 3  

3.0 RESPONSIBILITY ....................................................................................................... 3  
  3.1 Construction Site Manager ...................................................................................... 3  
  3.2 Startup Manager...................................................................................................... 3  
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,  
      Procurement, and Construction (EPC) Contractors) .............................................. 4  
  3.4 Contractors .............................................................................................................. 4  
  3.5 Crane Operators...................................................................................................... 4  

4.0 PROCEDURE ............................................................................................................. 4  
  4.1 Requirements for All Workers Operating Construction Equipment ......................... 4  
  4.2 Additional Requirements for Crane Operators ........................................................ 5  

5.0 KEY CONTACT ........................................................................................................... 5  

6.0 QUALITY RECORDS .................................................................................................. 5  

7.0 ATTACHMENTS ......................................................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements for qualifying and authorizing workers to operate construction equipment on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all personnel on T&PS projects and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

construction equipment – Large, motorized equipment used on a construction project including, but not limited to, cranes, bulldozers, pans, front-end loaders, track hoes, grade-alls, scrapers, and rollers.

workers – Employees of Southern Company Services or contractors working on T&PS projects.

2.2 References

Form 2C-01.1, Equipment Operator Authorization
29 CFR 1926, Subpart CC, Cranes and Derricks in Construction
ASME B30.5, Mobile and Locomotive Cranes
ASME B30.22, Articulating Boom Cranes

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

3.5 Crane Operators

Crane operators are responsible for following the requirements established by this procedure.

4.0 PROCEDURE

4.1 Requirements for All Workers Operating Construction Equipment

All workers who operate construction equipment on a T&PS project shall meet the following requirements:

- Each worker shall have a valid state driver’s license to operate any construction equipment or vehicle (including utility carts) on the construction project.

- Workers who are assigned work involving the operation of construction equipment shall be trained to use that equipment.
  - Worker training shall include a written and practical examination demonstrating the worker’s ability to safely operate and inspect the construction equipment. The training shall be specific to the make and model of the particular equipment involved.
  - The training, written test, and practical examination shall be conducted and documented by a supervisor designated as an equipment competent person, a recognized outsource, or a manufacturer’s representative.
  - At completion of the training and after successfully demonstrating competence in the operation of the construction equipment, the worker shall be issued a written authorization by his or her employer to operate the construction equipment

- A worker shall be retrained if there is any reason to believe he or she does not possess the knowledge or skills required to work safely. The following circumstances require retraining:
  - Workplace changes that render the previous training obsolete.
  - The worker demonstrates lack of knowledge of construction equipment or safe working procedures.
- The worker shall maintain possession of the written authorization at all times when operating construction equipment. The employer shall maintain and keep available for review a record of the training, practical examination results, and written authorization.

4.2 Additional Requirements for Crane Operators

In addition to the general requirements identified in 4.1, Requirements for All Workers Operating Construction Equipment, all crane operators shall meet the following requirements:

- Be qualified in strict compliance with 29 CFR 1926 Subpart CC, Cranes and Derricks in Construction, for third-party certification of operators.
- Have current certification and hold a license for the class of crane to be operated. The certification shall be issued by a nationally recognized certifying agency, accredited by a nationally recognized agency, such as the National Commission for Certifying Agencies (NCCA).
- Pass a preassignment physical examination conducted per the requirements of ASME B30.5, current, written examination (make and model specific), and a functions test on the actual piece of equipment to be assigned. Prior to operation of any crane, contractors shall submit operator certification documentation to T&PS site management.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A – Historical Summary of Changes

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<th>Approved by Don Gaddy</th>
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<td>• Added 4.2, Requirements – Crane Operators (previously held in each crane procedure).</td>
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Southern Company Operations
Technical and Project Solutions
Environmental, Health, and Safety Procedures

SH-2C-02

Mobile Equipment Near Energized Electric Lines

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Contents

1.0 PURPOSE AND SCOPE ................................................................................................. 3
1.1 Purpose ....................................................................................................................... 3
1.2 Scope .......................................................................................................................... 3
2.0 DEFINITIONS AND REFERENCES ................................................................................ 3
2.1 Definitions .................................................................................................................... 3
2.2 References .................................................................................................................. 3
3.0 RESPONSIBILITY ........................................................................................................... 4
3.1 Construction Site Manager .......................................................................................... 4
3.2 Startup Manager .......................................................................................................... 4
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ............................................................................ 4
3.4 Contractors .................................................................................................................. 4
3.5 Crew Foreman ............................................................................................................. 4
3.6 Operator ...................................................................................................................... 4
3.7 Qualified Electrical Person ........................................................................................... 5
3.8 Signal Person .............................................................................................................. 5
3.9 Site Assessment Team ................................................................................................ 5
3.10 Spotter ......................................................................................................................... 5
4.0 PROCEDURE ................................................................................................................. 5
4.1 General ........................................................................................................................ 5
4.2 Mobile Equipment in Transit Near Electric Lines .......................................................... 6
4.3 Working Near Energized Lines .................................................................................... 7
4.4 Operating Mobile Equipment Near Cable Trays or Conduit ........................................ 10
4.5 Contact with Energized Lines .................................................................................... 10
5.0 KEY CONTACT ............................................................................................................. 11
6.0 QUALITY RECORDS .................................................................................................... 11
7.0 ATTACHMENTS ........................................................................................................... 11
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements for mobile equipment, including insulated bucket trucks, in transit and while operating near aboveground lines and cables at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

Frequently Asked Questions (FAQ), SH-2C-02, Mobile Equipment Near Energized Electric Lines

ANSI A 92.2, Vehicle Mounted Elevating and Rotating Aerial Devices

ANSI A 92.5, Boom-Supported Elevating Work Platform

29 CFR 1926, Subpart K, Electrical

ASME B30.5, Mobile and Locomotive Cranes

NFPA 70E Part II, Section 2.9

29 CFR 1926, Subpart CC, Cranes and Derricks in Construction

Forms:

- 1N.1-EN, JSA: Job Safety Analysis, Pre-Work/Pre-Task Planning Tool (English)
- 1N.1-SP, JSA: Job Safety Analysis (Spanish)
- 2C-02.1, Overhead Line Permit

SH-2E-07, Working On or Near Electrical Services and/or Equipment

SH-1K, Procedure and Standard Deviation Approval Process
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

3.5 Crew Foreman

The crew foreman is responsible for the following:

- Along with the spotter and operator, completing form 1N.1-EN, JSA: Job Safety Analysis or form 1N.1-SP, JSA: Job Safety Analysis (Spanish).
- Secure the area when contact with an energized line occurs and not allowing anyone except emergency rescue personnel go near the energized equipment.

3.6 Operator

The operator is responsible for the following:

- Along with the spotter and crew foreman, completing the JSA.
- Following procedures in 4.2, Contact with Energized Lines, if contact with an energized line occurs.
3.7 **Qualified Electrical Person**

The qualified electrical person is responsible for reviewing the job setup prior to starting the task when the mobile equipment or its load will come within 4 ft of the conduit or cable tray.

3.8 **Signal Person**

The signal person shall meet the requirements of 29 CFR 1926, Subpart CC, and is responsible for ensuring specified clearances are maintained.

3.9 **Site Assessment Team**

The site assessment team is made up of personnel from Transmission, Distribution, Construction, Engineering, the plant, and any additional applicable utility owner. The team is responsible for defining areas of concern, boundaries of safe work area, and other control measures necessary to eliminate or mitigate the hazards associated with energized power lines.

3.10 **Spotter**

The spotter is responsible for the following:

- Walking ahead of the vehicle and aiding the operator in identifying clearance issues when the distance to an overhead or adjacent line is less than 20 ft.
- Along with the crew foreman and operator, completing the JSA/STA.

4.0 **PROCEDURE**

Before work begins on a project, a site assessment team shall be established, comprising Transmission, Distribution, Construction, Engineering, plant personnel, and any additional applicable utility owner. The site assessment team shall define areas of concern, boundaries of safe work areas, and other control measures necessary to eliminate or mitigate the hazards associated with energized power lines.

4.1 **General**

The preferred safety method is to deenergize and ground the lines near the worksite or equipment crossings. If it is not feasible to deenergize lines, the following requirements shall be met:

- Mobile equipment with rubber tires shall not be parked under high voltage transmission lines. A static charge can build up and a severe shock transmitted to the operator accessing the mobile equipment.
- All employees shall be instructed on all hazards involved, including the potential hazard of a high-voltage line contacting the earth or an object that is not insulated from the earth.
4.2 Mobile Equipment in Transit Near Electric Lines

4.2.1 Minimum Clearance Distance

**CAUTION**

The minimum safe clearance distance from the power line shall be maintained unless the hazard has been eliminated or properly controlled with the controlling utility and noted on the overhead line permit.

Mobile equipment and materials in transit shall maintain clearance distances listed in table 1, Equipment in Transit Minimum Clearance Distances, and shall engage the use of a spotter or goalpost.

**Table 1 - Equipment in Transit Minimum Clearance Distances**

<table>
<thead>
<tr>
<th>Voltage of electric lines</th>
<th>Minimum clearance</th>
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<tbody>
<tr>
<td>Up to 230 kV</td>
<td>10 ft</td>
</tr>
<tr>
<td>Greater than 230 kV</td>
<td>16 ft</td>
</tr>
</tbody>
</table>

**Spotter**

If the distance to an overhead or adjacent line is less than 20 ft, a dedicated spotter shall be required. The spotter shall walk ahead of the vehicle and aid the operator in identifying clearance issues.

The crew foreman, operator, and spotter shall complete the JSA/STA together, identifying control measures for each of the following hazards:

- Overhead power line locations.
- Buildings or other obstructions that could pose clearance issues.
- Vehicular traffic.
- Pedestrian traffic.

**Goalposts**

When not using a spotter, goalposts shall be used as shown in table 2, Goalpost Minimum Clearance Distance. A goalpost structure shall be installed to maintain the safe clearance distances from the lowest conductor. The horizontal distance shall be established from the outside conductor on both sides; the vertical height of the cross-member shall be established from the lowest conductor. See attachment A, Avoiding Electrical Hazards When Working Near Overhead Lines as a guide.
Table 2 - Goalpost Minimum Clearance Distance

<table>
<thead>
<tr>
<th>Voltage of overhead lines</th>
<th>Minimum clearance¹ (horizontal)</th>
<th>Minimum clearance (vertical)</th>
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<tr>
<td>Up to 230 kV</td>
<td>20 ft</td>
<td>10 ft</td>
</tr>
<tr>
<td>Greater than 230 kV</td>
<td>25 ft</td>
<td>16 ft</td>
</tr>
</tbody>
</table>

NOTE

If the above criteria cannot be met, see 4.3.2, Permit-Required Criteria.

4.3 Working Near Energized Lines

4.3.1 Non-Permit Required Criteria

See attachment A, Avoiding Electrical Hazards When Working Near Overhead Lines, as a guide.

If the mobile equipment or load can reach the danger zone, then a meeting shall be held onsite with the utility to establish safety procedures. Safety procedures shall be established before work begins.

Other than in transit, an approved overhead line permit is required for any piece of equipment or any part of its load coming closer than the minimum distance identified in table 3, Minimum Working Distances for Mobile Equipment in Operation Without an Overhead Line Permit. Determine permit requirements based on information in table 3.

Table 3 - Minimum Working Distances for Mobile Equipment in Operation without an overhead line permit

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Minimum distance</th>
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<td>Up to 350 kV</td>
<td>20 ft</td>
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<td>Greater than 350 kV up to 500 kV</td>
<td>50 ft</td>
</tr>
<tr>
<td>Greater than 500 kV</td>
<td>Contact regional safety and health manager.</td>
</tr>
</tbody>
</table>

¹ Clearance for qualified electrical workers may permit closer distances than listed here, and will be defined in the appropriate operating company’s procedures.
In areas where there is no planned work on, or passage of equipment under, a live overhead line but the equipment is capable of passing under a live overhead line, contractors shall do the following:

- Install a barrier to run parallel to the line. The barrier may be fixed post fencing or drums filled with rubble spaced no more than 8 ft apart.
- If cranes are in use, supplement the barriers with a line of flagging at a height of 10 ft.
- Space notices stating **DANGER - LIVE OVERHEAD LINE** at intervals no more than 50 ft.

The following criteria shall be adhered to during non-permit required work:

- Mobile equipment shall not be used to handle material stored under power lines unless the equipment cannot reach the minimum distances identified in table 3. If an overhead line permit is obtained, then mobile equipment is restricted to the distances identified in table 4, Minimum Working Distances for Mobile Equipment in Operation with an Overhead Line Permit.
- Any overhead wire shall be considered energized unless the owner or electric utility provides evidence it is not energized.
- Mobile equipment operators shall not rely on coverings (insulation) for protection.
- The equipment and load shall be properly grounded at all times. Only qualified personnel shall determine if grounding requirements are met.
- The area around the equipment shall be barricaded and signs posted warning personnel to stay clear.
- The operator is the only person permitted on the equipment.
- A signal person with no other duties shall ensure specified clearances are maintained.
- All personnel shall maintain a safe distance while the mobile equipment is being positioned and during operation.
- For load control, nonconductive tag lines shall be used around power lines.

**Crane-Specific Requirements**

- A sign warning of the hazards of power lines shall be posted on all cranes.
- A qualified signal person shall be assigned in all cases, and shall meet the requirements of 29 CFR 1926, Subpart CC.

**4.3.2 Permit-Required Criteria**

If equipment must be used or moved closer than the safe working clearance distance identified in table 3, the contractor shall complete an overhead line permit. A copy of the approved overhead line permit shall be posted in the mobile equipment cab.
The following items shall be considered for an overhead line permit.

- Can the utility deenergize and visibly ground the power lines?
- Can the utility move power lines beyond the safe working distance?
- Is barrier protection an option?

If the location of the work requires any part of mobile equipment or its load to be less than the distances specified in table 4, the line shall be deenergized. If lines cannot be deenergized, the contractor shall follow SH-1K, Procedure Deviation Approval Process.

### Table 4 - Minimum Working Distances for Mobile Equipment in Operation with an Overhead Line Permit

<table>
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<th>(nominal, kV, alternating current)</th>
<th>Minimum clearance distance (ft)</th>
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<tr>
<td>Up to 50</td>
<td>10</td>
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<tr>
<td>Greater than 50 up to 200</td>
<td>15</td>
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<td>Greater than 200 up to 350</td>
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<tr>
<td>Greater than 350 up to 500</td>
<td>25</td>
</tr>
<tr>
<td>Greater than 500 kV</td>
<td>Contact regional safety and health manager.</td>
</tr>
</tbody>
</table>

The following requirements apply to permit-required work:

- At all times when performing work near overhead lines the contractor shall identify the work zone in either of the following ways:
  - Demarcate boundaries with flags, a range limit device, or a range control warning device and prohibit the operator from operating the equipment past those boundaries.
  - Define the work zone as the area 360 degrees around the equipment, up to the equipment’s maximum working radius.

- The maximum working radius is the radius required to load, not the maximum radius of the crane/boom combination. This maximum working radius must ensure the load will not be handled in violation of minimum distance requirements.

**NOTE**

Insulated bucket trucks used to perform electrical work around overhead lines, cables, and open substations shall be operated only by trained and qualified persons as identified in SH-2E-07, Working On or Near Energized Electrical Equipment. Special minimum approach distances shall be established by the contractor and submitted to the T&PS construction site.
manager for approval prior to the use of insulated bucket trucks for any close proximity work.

- Requirements listed in 4.3.1, Non-Permit Required Criteria, also apply to permit-required work activities.

4.4 Operating Mobile Equipment Near Cable Trays or Conduit

4.4.1 Energized Cables

When operating mobile equipment near cable trays or conduit containing energized cables, the minimum approach distances specified in prior sections do not apply. However, the equipment and its load shall not be allowed to contact the cable tray or conduit.

4.4.2 Critical Cables

If the conduit or cable tray contains cables considered critical (cables that disrupt production or create a serious environmental incident if damaged) and the mobile equipment or its load will come within 4 ft of the conduit or cable tray, a qualified electrical person, as identified by T&PS construction site management, shall review the setup prior to starting the task. Additionally, the contractor shall consider adding such protective measures as wood covers over conduit or cable trays in case small items drop during lifts.

4.5 Contact with Energized Lines

CAUTION

After a power line contact, the current flows outward through the ground in a ripple pattern. Areas of high and low electrical potential fields will encircle the energized equipment like the ripples in a pond after a stone hits the surface. If a worker steps from an area of high electrical potential to an area of low electrical potential, electricity can flow through his or her legs and cause injury or death.

If contact with an energized line occurs, follow these procedures:

- The equipment operator shall remain inside the cab.
- All other personnel shall keep away from the crane, ropes, and load, because the ground around the machine might be energized.
- The equipment operator shall attempt to remove the equipment from contact by moving it in the reverse direction from that which caused the contact.
• If the equipment cannot be moved away from contact, the operator shall remain inside cab until the lines have been deenergized.

• If the equipment operator must leave the equipment because of a more immediate hazard, such as a fire, the operator shall jump clear from the equipment and shuffle his or her feet in small steps.

• The crew foreman shall secure the area and not allow anyone except emergency rescue personnel go near the energized equipment.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Project Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

• Attachment A, Avoidance of Electrical Hazards When Traveling Near Overhead Lines.

• Attachment B, Historical Summary of Changes.
AVOIDANCE OF ELECTRICAL HAZARDS WHEN TRAVELING NEAR OVERHEAD LINES

At the planning stage and before starting work near an overhead line, consult your onsite safety professional or Southern Company representative.

THERE ARE TWO GENERAL CASES

SITE WHERE THERE WILL BE NO WORK OR PASSAGE OF EQUIPMENT UNDER A LIVE OVERHEAD LINE

- A barrier should run parallel to the line.
- This may be fixed post fencing or drums filled with rubble spaced 8 feet apart.
- If cranes are in use a line of flagging at a height of 10 feet should supplement the barriers. (Use Yellow Reflection Strips)
- Danger notice stating “Danger Live Overhead Line” should be spaced at intervals.

(Distance between drums - 8 ft) (Distance between danger notices - 50 ft)

SITE WHERE EQUIPMENT WILL PASS UNDER A LIVE OVERHEAD LINE

In addition to the above, a spotter or goalposts shall be used.

**Goalpost dimension as follows:**
- Minimum clearance (vertical):
  - Up to 230 kV: 10 ft
  - Greater than 230 kV: 16 ft
- Minimum clearance (horizontal):
  - Up to 230 kV: 20 ft
  - Greater than 230 kV: 25 ft

*In general, if work is to be undertaken directly under the line, generation will insist the line is disconnected and grounded for the duration of the work.
Generation may permit working under a live line only if special agreed precautions are put in place and these areas are outside established safe work zones and a permit is obtained.*
Attachment B – Historical Summary of Changes

Rev. 0
12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks: Issued

Rev. 1
03/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks: Issued

Rev. 2
01/31/2010
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bob Fitzgerald
Remarks: Added reference to ANSI A 92.5, 29 CFR 1926.550m, and ASME B30.5. Updated requirements in section 4.1.1, number 3.

Rev. 3
7/30/2012
Approved by PCT Chair
Revised by Bob Fitzgerald
Remarks: Approved by PCT chair as nonsubstantive changes.

Rev. 4
04/18/2013
Approved by Bob Fitzgerald, Bill Boyd, Will Taylor
Reviewed by Project Safety Leadership Team and PCT
Revised by Bob Fitzgerald
Remarks: Added reference to Form 2C-02.01, procedure SH-2E-07, and SH-1K. Modified reference to 29 CFR 1926 from subpart N to subpart CC.
Added content regarding a site assessment team; preferred safety method for deenergizing lines; section 4.1.1, Mobile Equipment in Transit Near Electric Lines; section 4.1.2, Working Near Energized Lines; 4.2 Contact with Energized Lines; and Attachment B, Historical Summary of Changes. Updated form SH-2C-02.01, Overhead Line Permit.
Added attachment A, Avoidance of Electrical Hazards When Traveling Near Overhead Lines.

Rev. 5
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

10/03/2017
Added text and link for FAQ document (2.2).

05/15/2019
Organization name updated.
NOTE
This Frequently Asked Questions (FAQ) document is not a substitute for training to Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) procedure SH-2C-02, Mobile Equipment Near Energized Electric Lines, and having a thorough understanding of that procedure. If a conflict arises between this FAQ and SH-2C-02, the text of the procedure governs.

Q1. Does SH-2C-02 apply primarily to cranes, or does it also apply to other mobile equipment?

A1. While the procedure does focus heavily on cranes or crane activity due to the obvious reach of this equipment, it applies to all mobile equipment working or operating near aboveground lines and cables including, but not limited to, excavators, track hoes, front-end loaders, aerial lifts, or dump trucks. If any equipment has the capability of coming within the minimum clearance distance of an energized line, the procedure must be followed.

Q2. Why does T&PS have minimum clearance distances greater than those required by OSHA?

A2. T&PS took a proactive approach to develop a comprehensive procedure that is more stringent than OSHA minimums and also meets some State laws in our service territory. Instead of allowing site personnel to determine the minimum clearance distance based on various voltages, T&PS sets a standard minimum clearance up to a certain voltage.

Q3. Is an overhead line permit required for equipment in transit?

A3. An overhead line permit is not required for equipment in transit as long as the minimum clearance distances are maintained in transit and a spotter is used. For energized electric lines up to 230 kV, the minimum clearance distance is 10 ft. For energized electric lines greater than 230 kV, the minimum clearance distance is 16 ft.

Q4. The procedure mentions goalposts and spotters. Are both required?

A4. Typically, goalposts are used for equipment transit areas. If goalposts are installed, spotters are not required for equipment traveling under power lines via goal post. In all other circumstances, spotters are required when working within minimum clearances distances covered in the procedure.
Q5. Are spotters necessary if mobile equipment is working parallel to power lines and outside the minimum clearance distances?

A5. Spotters are not required if a demarcation barricade is in place preventing equipment entry and the equipment itself could not encroach within the minimum clearance distances designated in the tables in procedure SH-2C-02.

Q6. Is a permit or spotter necessary if equipment can be physically limited where it cannot approach the minimum clearance distance?

A6. If range limiting/warning devices are used on equipment, they must be in accordance with manufacturer’s recommendations. This type of arrangement is usually performed with permit-required work so everyone including the utility owner is aware of potential of electrical contact on the line. If equipment can maintain a 20-ft minimum clearance, a permit may not be necessary. If the work needs to encroach within 20 ft but less than 15 ft, a permit is required. The use of a spotter is not necessary in this type of arrangement where equipment is physically limited. The contractor performing the work must also consider grade elevation and base restraint on the highest point.

Q7. How close can equipment be to power line with overhead line permit?

A7. The minimum clearance distance with an overhead line permit are covered in table 4, Minimum Working Distances for Mobile Equipment in Operation with an Overhead Line Permit, of the procedure based on voltages involved. The only way work can be any closer is for the lines to be de-energized by the utility and grounded or work is being performed by qualified persons as identified in SH-2E-07, Working On or Near Electrical Services and/or Equipment (typically distribution or transmission workers).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2C-03

Cranes, Derricks, and Powered Hoists

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<td>Bill Batts, manager–Construction Safety and Health</td>
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1.1 Purpose ......................................................................................................................... 3  
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2.1 Definitions ...................................................................................................................... 3  
2.2 References .................................................................................................................... 3  

3.0 RESPONSIBILITY ......................................................................................................... 4  
3.1 Construction Site Manager ............................................................................................ 4  
3.2 T&PS Contract Administrator ........................................................................................ 4  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,  
Procurement, and Construction (EPC) Contractors) ....................................................... 4  
3.4 Contractors .................................................................................................................... 4  
3.5 Crane Operators ............................................................................................................ 5  

4.0 PROCEDURE ................................................................................................................. 5  
4.1 General .......................................................................................................................... 5  
4.2 Premobilization Planning ............................................................................................... 7  
4.3 General Crane Requirements ....................................................................................... 9  
4.4 Specific Crane Requirements ...................................................................................... 18  
4.5 Additional Crane Requirements .................................................................................. 21  
4.6 Powered Hoist / Tugger Operations (includes pneumatic, hydraulic, and electric  
equipment) ...................................................................................................................... 23  

5.0 KEY CONTACT ............................................................................................................. 26  

6.0 QUALITY RECORDS ..................................................................................................... 26  

7.0 ATTACHMENTS ............................................................................................................. 27
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements for the use of cranes, derricks, and powered hoists on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**cranes and derricks** – Power-operated equipment that can hoist, lower, or horizontally move a suspended load. Such equipment includes, but is not limited to, the equipment referenced in 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction.

2.2 References

29 CFR 1926, Subpart CC, Cranes and Derricks in Construction

29 CFR 1926.652, Requirements for Protective Systems

Forms:
- 2C-03.1, Crane Log Template
- 2C-03.2, Pre-Use Inspection Checklist for Electrical or Air-Powered Hoists
- 1H.2, Contractor Safety, Health, and Environmental Orientation Checklist

T&PS Procedures:
- SH-1K, Procedure and Standard Deviation Approval Process
- SH-2A-10, Rigging and Lift Plans
- SH-2C-01, Qualifying Equipment Operators

EH&S standard SH-S-2A-09, Steel Erection

ASME B30.7
ASME B30.10

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for the following:

- Implementing and ensuring compliance with this procedure for T&PS-specific duties.
- Monitoring contractors for compliance with the requirements of this procedure.
- Overseeing and maintaining the T&PS site-specific crane use plan.
- Identifying changes and having each contractor update his or her portion of the site-specific crane use plan.
- Determining the content of the crane log. See attachment A, Sample Crane Log.
- Determining when changes in site conditions warrant the following:
  - The recertification of the load-bearing information.
  - Updating the overhead and underground obstruction documentation.
- Determining the content of the crane log based on the size and complexity of the project.
- Implementing the site procedure for responding to hydraulic fluid spills.
- Reviewing and updating the obstruction information as site conditions change.

3.2 T&PS Contract Administrator

The T&PS contract administrator is responsible for issuing a controlling entity letter to all contractors awarded crane work on T&PS projects. See attachment B, Sample Controlling Entity Letter.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS projects are responsible for meeting the minimum requirements established by this procedure as part of their site-specific safety plan. The plan shall include:
• Submitting a site-specific crane use plan prior to performing work on the project.
• Including the site-specific crane use plan as part of their steel erection plan as outlined in SH-2A-09, Steel Erection.
• Submitting crane log information. See attachment A, Sample Crane Log.
• Designating a competent person for the management of the crane inspection process.
• Contacting local authorities to determine requirements for aviation lighting requirements.

3.5 Crane Operators

Crane operators working on T&PS projects are responsible for complying with the requirements in this procedure including the following:

• Performing a daily inspection prior to use or prior to each shift and posting the form in the crane cab.
• Following the requirements of SH-2C-01, Qualifying Equipment Operators.
• Maintaining visual or vocal contact with a designated signal person.

4.0 PROCEDURE

4.1 General

All work performed with cranes and derricks shall be in strict accordance and compliance with 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction. T&PS environmental, health, and safety (EH&S) procedures provide additional requirements that are more stringent than the OSHA standard. For reference to specific information, see the following table:

<table>
<thead>
<tr>
<th>Program Components</th>
<th>Reference (includes, but is not limited to)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Conditions</td>
<td>29 CFR 1926.1402</td>
</tr>
<tr>
<td>Assembly and Disassembly of Equipment</td>
<td>29 CFR 1926.1403</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1404</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1405</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1406</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1407</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1408</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1409</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>29 CFR 1926.1410</td>
</tr>
<tr>
<td>Mobile Equipment Near Electric Lines</td>
<td>SH-2C-02</td>
</tr>
<tr>
<td>Equipment in Transit</td>
<td>29 CFR 1926.1411</td>
</tr>
<tr>
<td>Equipment in Transit</td>
<td>SH-2C-02</td>
</tr>
<tr>
<td>Program Components</td>
<td>Reference (includes, but is not limited to)</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Inspections</td>
<td>29 CFR 1926.1412 29 CFR 1926.1413</td>
</tr>
<tr>
<td>Operation of Equipment</td>
<td>29 CFR 1926.1417 29 CFR 1926.1418</td>
</tr>
<tr>
<td>Fall Protection</td>
<td>29 CFR 1926.1423 SH-2A-08</td>
</tr>
<tr>
<td>Training</td>
<td>29 CFR 1926.1430</td>
</tr>
<tr>
<td>Multiple Crane Lifts and Lift Planning</td>
<td>29 CFR 1926.1432 SH-2A-10</td>
</tr>
<tr>
<td>Equipment Conformance</td>
<td>29 CFR 1926.1433 29 CFR 1926.1434</td>
</tr>
<tr>
<td>Tower Cranes</td>
<td>29 CFR 1926.1435</td>
</tr>
<tr>
<td>Derricks and A-Frames</td>
<td>29 CFR 1926.1436</td>
</tr>
<tr>
<td>Floating Equipment</td>
<td>29 CFR 1926.1437</td>
</tr>
<tr>
<td>Overhead and Gantry Equipment</td>
<td>29 CFR 1926.1438</td>
</tr>
<tr>
<td>Pile Drivers</td>
<td>29 CFR 1926.1439</td>
</tr>
<tr>
<td>Side Boom Cranes and Forklifts</td>
<td>29 CFR 1926.1440 SH-2C-11</td>
</tr>
<tr>
<td>Equipment 2,000-lb and Less</td>
<td>29 CFR 1926.1441</td>
</tr>
</tbody>
</table>
4.2 Premobilization Planning

4.2.1 Site-Specific Crane Use Plans

Contractors shall submit a site-specific crane use plan prior to performing work on the project. Each contractor’s site-specific crane use plan shall be incorporated into the T&PS site-specific crane use plan. At a minimum, the contractor’s crane use plan shall include the following information for each crane:

- Size.
- Type.
- Purpose.
- Capacity.
- Intended use.

The T&PS construction or third-party site manager shall maintain the T&PS site-specific crane use plan as part of the construction project’s site-specific safety plan.

NOTE

Contractors performing steel erection shall include the site-specific crane use plan as part of their steel erection plan as outlined in SH-2A-09, Steel Erection.

When the erection strategy of the project necessitates a change in the crane strategy, the T&PS or third-party construction site manager shall identify changes and have each contractor update his or her portion of the site-specific crane use plan.

Each T&PS project shall maintain a crane log for the site. The crane log shall be a living document and shall be updated as cranes are added, removed, modified, inspected, or otherwise changed. The T&PS or third-party construction site manager shall determine the content of the log based on the size and complexity of the project. The required information shall be submitted by the contractor as requested by site management. See attachment A, Sample Crane Log.

4.2.2 Ground Conditions

Each T&PS project shall maintain all details of the load-bearing capacity of the site in drawing, chart, or other technical format.

The load-bearing information shall be:

- Certified by a T&PS engineering representative with a current professional engineering (P.E.) license in good standing with the state in which the property is located.
- Reviewed, updated, and recertified as site conditions change. The T&PS or third-party construction site manager shall determine when changes in site conditions warrant the recertification of the load-bearing information.
• Incorporated into the site-specific safety plan for the project prior to any construction-related activities.

• Reviewed as part of form 1H.2, Contractor Safety, Health, and Environmental Orientation Checklist (as required).

NOTE

The most current certified load-bearing information shall be provided to each contractor during the inquiry phase of the contracting process and shall become part of the agreement between the purchaser and the contractor.

Updates of the load-bearing certified information shall be provided to all contractors working on the project site as required. Each contractor has the authority and control to make the necessary ground preparations to safely perform work. In all crane and derrick activity, the contractor shall be the controlling entity and shall comply with the regulation.

T&PS contract administrator shall issue a controlling entity letter to all contractors awarded crane work on T&PS projects. See attachment B, Sample Controlling Entity Letter.

4.2.3 Underground and Overhead Obstructions

Each T&PS project site shall maintain the details of all known overhead and underground obstructions that could interfere with the use of a crane or derrick, including transit of a crane, on the project property. Details shall be included in the project’s site-specific plan as follows:

• By map and drawing format of the necessary dimensions or survey coordinates to clearly mark the extent of the obstruction(s).

• Any areas designated as NO CRANE USE ALLOWED shall be clearly marked on maps and drawings as well as in the field of operation.

As site conditions change, the T&PS or third-party construction site manager shall review and update the obstruction information, as necessary.

NOTE

The most current obstruction information shall be provided to each contractor during the inquiry phase of the contracting process. The information shall become part of the agreement between the purchaser and the contractor.

Updates of the obstruction information shall be provided to contractors working on the project site as required.
4.3 General Crane Requirements

4.3.1 Inspection and Erection

Crane components shall be inspected and required repairs shall be completed prior to arrival on the site. All repairs shall be done by qualified individuals in compliance with the manufacturer’s specifications as required by 29 CFR 1926, Subpart CC.

Contractors shall adhere to the following requirements:

- Cranes that require operator input to prevent the free fall of hoist lines are prohibited from T&PS projects where the operation of the crane involves personnel rigging or connecting material to the load hook.
- T&PS shall approve all crane supplier and erection supervisors who will be supplying and erecting cranes on T&PS projects.
- Each contractor shall designate a competent person for the management of the crane inspection process. This person shall administer and document a crane-operator license program and an equipment inspection program.
- All cranes and derricks shall have their limiting devices for load, acceleration, and deceleration installed in enclosures that can be locked or sealed to inhibit tampering.
- Operational tests shall be conducted, and a load-limit device setting shall be verified by applying test loads of 100 percent of the heaviest lift weight at the longest radius or 95 percent of the load chart, whichever is the greatest. These tests shall be performed prior to using newly erected and altered cranes. Dated records shall be retained in site files for the duration of the project.
- All cranes shall be equipped with a functioning positive acting anti-two block device. Exceptions to this requirement are addressed in the specific crane requirements.
- Hydraulic lines shall be maintained to prevent leakage. If a leak or failure occurs in a hydraulic system, the spill shall be cleaned according to site, local, state, and federal regulations. The site shall have a written procedure to respond to this type of spill. Implementation is the responsibility of the T&PS site manager.
- A carbon-dioxide, dry-chemical, or equivalent fire extinguisher shall be kept in the immediate vicinity of the crane cab.
- Live booms are prohibited.
- The contractor shall contact local authorities to determine requirements for aviation lighting regulations.
- Exposed moving parts, such as gears, ropes, setscrews, projecting keys, chains, chain sprockets, and reciprocating components that constitute a hazard under normal operating conditions, shall be guarded. Guards shall be securely fastened. Each guard shall be capable of supporting, without permanent distortion, the weight of a 200-lb person unless the guard is located where it is impossible for a person to step on it.
• Wire rope with any of the following defects shall be replaced immediately:
  – When one wire rope in a set of pendant lines requires replacement, the entire set shall be replaced.
  – In standing ropes, more than two broken wires in one lay, in areas beyond end connections, or more than one broken wire at the end connection.
  – In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay.
  – Wear of one-third of the original diameter of the outside individual wires caused by abrasion, scrubbing, flattening, or peeling.
  – Kinking, crushing, birdcaging, or any other damage resulting in distortion of the rope structure.
  – Evidence of heat damage from any cause.
  – Reduction from nominal diameter of more than:
    o 1/64 in. for diameters up to and including 5/16 in.
    o 1/32 in. for diameters from 3/8 in. up to and including 1/2 in.
    o 3/64 in. for diameters 9/16 in. to and including 3/4 in.
    o 1/16 in. for diameters from 7/8 in. up to and including 1 in.
    o 3/32 in. for diameters from 1-1/4 in. up to and including 1-1/2 in.

4.3.1.1 Daily Inspection

Crane operators shall perform a daily inspection prior to use or prior to each shift. This inspection shall be documented and the form posted in the crane cab. At the end of the shift, the inspection form shall be retained in site files for the duration of the project.

All daily inspections shall comply with 29 CFR 1926 Subpart CC and furthermore shall be documented on checklists that are make-/model-specific and shall include all installed safety and operational aids. Listed items shall be inspected daily for defects, and also shall be observed during operation for any defects that might appear between regular inspections, including the following:

• Deficiencies for any safety hazard.
• All control mechanisms for adjustment, wear, lubrication, and proper functioning.
• All chords and lacing.
• All pins used to secure components.
• Tension in guys; plumb of the mast and bull wheel.
• Deterioration or leakage in air or hydraulic systems.
• Rope reeving per manufacturer’s recommendations.
• Electrical apparatus, for signs of excessive deterioration, dirt, or moisture accumulation.
• Hooks shall be removed from service if any of the following issues exist:
  – Missing or illegible hook manufacturer’s identification or secondary manufacturer’s identification.
  – Missing or illegible rated load identification.
  – Excessive pitting or corrosion.
  – Cracks, nicks, or gouges.
  – Wear – any wear exceeding 10 percent, or as recommended by the manufacturer, of the original section dimension of the hook or its load pin.
  – Deformation – any visibly apparent bend or twist from the plane of the unbent hook.
  – Throat opening – any distortion causing an increase in throat opening of 5 percent not to exceed 1/4 in. (6 mm) or as recommended by the manufacturer.
  – Inability to lock – any self-locking hook that does not lock.
  – Inoperative latch (if required) – any damaged latch or malfunctioning latch that does not close the hook’s throat.
  – Damaged, missing, or malfunctioning hook attachment and securing means.
  – Thread wear, damage, or corrosion.
  – Evidence of excessive heat exposure or unauthorized welding.
  – Evidence of unauthorized alterations such as drilling, machining, grinding, or other modifications.

4.3.1.2 Monthly Inspection

A monthly inspection shall be performed on all equipment. All inspection schedules shall be documented and retained in site files for the duration of the project.

Complete inspections of the crane or derrick shall be performed at other periodic intervals as required on the equipment’s activity, severity of service, environment, or as specifically indicated below.

Monthly inspections shall include the items listed in 4.3.1.1, Daily Inspection, plus the following:

• Bolts or rivets for tightness.
• Guide sheave shafts.
• Parts such as pins, bearings, shafts, gears, sheaves, drums, rollers, and locking and clamping devices for wear, cracks, and distortion.
• Structural members for deformities, cracks, and corrosion; and gudgeon pin for cracks, wear, and distortion each time the derrick is to be erected.

• Power plants for proper performance and compliance with applicable safety requirements.

• Foundation or supports shall be inspected for continued ability to sustain the imposed loads.

• Proper control function such as load hoisting and lowering, boom up and down, and swing.

4.3.1.3 Annual Inspection

After arrival on site and prior to initial use, all new, newly installed, or altered cranes shall have an OSHA annual certification inspection performed by a third-party crane inspector that meets OSHA/ASME qualification requirements before being placed in service. A crane that has been idle for more than 6 months shall have an OSHA annual certification inspection performed by a third-party crane inspector who meets OSHA and SME qualification requirements before it is returned to service. A crane that has been idle for 1 month or more, but less than 6 months, shall be given an inspection conforming to the requirements of daily and monthly inspections before being placed in service.

T&PS shall approve all third-party inspection companies and personnel before the third-party inspection company inspects the cranes to be used on T&PS projects.

A copy of the annual inspection (long form) shall be kept on file. If required by the state in which the project is located, a yearly inspection sticker shall be posted on the windshield of the equipment. If the annual inspection expires while the crane is on the project, a new inspection shall be performed by a third-party crane inspector that meets OSHA and ASME qualification requirements before the crane can continue operation.

CAUTION

Any crane involved in an incident including, but not limited to, shock loading, two-blocking, the load contacting the boom, the boom contacting a stationary object, a lightning strike, or contact with an electrical source by the crane or the load, shall immediately be removed from service. An annual inspection shall be performed, and any repairs shall be made in accordance with manufacturer’s recommendations prior to returning the crane to service.

Any crane disassembled for transport and reassembled at the site requires a third-party inspection prior to use. This requirement is applicable even if the crane has a current annual sticker from the previous work site.

NOTE

Jib attachments captured as part of the annual inspection may be configured for use or stowed without performing a new annual inspection.
Configuration shall be performed under the supervision of a qualified person. Jib attachments not captured in the annual inspection or removed after the initial annual inspection shall have a new annual inspection prior to use onsite.

4.3.1.4 Hook and Becket Inspection

The hook and becket inspection shall be performed at the same time as the initial crane inspection.

Before the crane is authorized for use, a nondestructive examination (NDE) shall be performed. NDE shall be performed by a person currently certified by the American Society for Nondestructive Testing (ASNT) to a Level II or III in the type of test to be performed. The testing company shall submit test procedures or instructions for each method of testing prepared by a person currently certified Level III by the ASNT. In addition, all applicable certifications of the technician performing the examination shall also be submitted.

The most accurate methods of inspecting hooks and becets for cracks are dye penetrant testing and magnetic-particle inspection with no paint or coatings on the inspected area. Hooks with threaded shanks shall be carefully inspected for wear in the thread area. If the hook shows signs of wear or stress, the hook shall be removed from service.

For an effective inspection, the block and/or ball shall be disassembled. The magnetic particle test or dye penetrant test shall be conducted by a level II technician. Items to be checked during this annual inspection are the following:

- Missing or illegible hook manufacturer’s identification or secondary manufacturer’s identification.
- Missing or illegible rated load identification.
- Excessive pitting or corrosion.
- Cracks, nicks, or gouges.
- Wear – any wear exceeding 10 percent (or as recommended by the manufacturer) of the original section dimension of the hook or its load pin.
- Deformation – any visibly apparent bend or twist from the plane of the unbent hook.
- Throat opening – any distortion causing an increase in throat opening of 5 percent not to exceed 1/4 in. (6 mm) or as recommended by the manufacturer.
- Inability to lock – any self-locking hook that does not lock.
- Inoperative latch (if required) – any damaged latch or malfunctioning latch that does not close the hook’s throat.
- Damaged, missing, or malfunctioning hook attachment and securing means.
- Thread wear, damage, or corrosion.
- Evidence of excessive heat exposure or unauthorized welding.
- Evidence of unauthorized alterations such as drilling, machining, grinding, or other modifications.
- Measurement of hook throat shall be documented.

Results of this inspection and original measurements, for the purpose of comparison in subsequent annual inspection, shall be documented and retained in site files for the duration of the project.

4.3.2 Operation

4.3.2.1 General

Contractors shall adhere to the following requirements:

- All crane operators shall follow the requirements of SH-2C-01, Qualifying Equipment Operators.
- The manufacturer’s operator’s manual shall be kept with the crane while it is onsite. Follow manufacturer's instructions for entering and exiting the cab.
- Crane and derrick operation shall be directed only by the individual specifically designated for that purpose. The operator shall always maintain visual or vocal contact with a single designated signal person. If for any reason contact is lost, the operator shall stop all operations until contact is restored.
- The pretask/job planning document for all crane operations involving rigging under the hook shall include the following statement: “If any unforeseen problem or potential deviation is encountered, rigging operations must cease until the operator, signal person, supervisor, and rigger agree to a resolution.”
- Every crane shall be equipped with a legible durable load and range chart that shows the manufacturer’s recommended load configurations and maximum load weights. When engineered recommendations are more restrictive than the manufacturer’s recommendations, the engineer shall provide a new chart. The chart shall be visible to operators at all times when they are seated at the control station.
- No crane shall be loaded beyond the rated load. When a load reaches 80 percent of the maximum rating, the operator shall verify the weight of the load has been determined within plus or minus 10 percent before it is lifted. The rated load shall not be exceeded at any time except during an authorized load test. The operator shall know the radius of the load at all times.
- The operator shall be constantly alert to the effects of dynamic loading when swinging, hoisting, and lowering the load or when moving the crane.
- The equipment shall be shut down and a fire extinguisher shall be available during refueling.
- When the crane is loading or unloading trucks, the truck’s cab shall be unoccupied.
4.3.2.2 Set Up

Contractors shall adhere to the following requirements:

- All required/installed safety devices and operational aids shall be properly functioning for all lifting operations.
- The crane shall be level before operations begin. When cranes are set up on soft or unstable ground, mats shall be used.
- Manufacturer recommendations shall be followed when mats are required. All cranes with outriggers, regardless of ground conditions, shall be set up with the blocking or mats under the outrigger floats. Blocking and mats shall be of sufficient strength to prevent crushing, bending, or shear failure and such thickness, width, and length to support the float and transmit the load to the supporting surface without shifting or excessive settlement under load.
- All outriggers shall be extended as required when the crane is hoisting or lowering a load. Strict adherence to manufacturer’s recommendations for outrigger use and lift capacities shall be maintained.
- The accessible swing radius of the crane shall be barricaded. Only the rigging crew and the mechanics working on the crane shall have access inside the barricade. Extreme caution shall be used when working in the path of the rotating counterweight.
- Loose items such as tools, oilcans, and waste materials are prohibited in the operator’s cab. Do not allow anyone else on the crane when it is in use.
- Use extreme caution when operating cranes next to or near excavations, or in an area that may become impassable or unstable by rainfall, flash floods, or similar events. Proper matting and shoring shall be used in these circumstances. The excavation’s competent person shall be notified prior to setup and shall assess any cave-in potential. Additional matting or shoring may be necessary.

4.3.2.3 Lifting

Contractors shall adhere to the following requirements:

- The following procedures shall be followed when lifting and moving a load:
  - The rated load shall not be exceeded at any time.
  - The hoist rope shall not be wrapped around the load.
  - The load shall be attached to the hoist hook by means of a sling or other approved lifting devices.
  - The load shall be balanced and well secured in the sling or lifting device before it is lifted more than a few inches.
  - All loads being landed or received shall be controlled by a tag line. Keep hands off suspended loads.
Before moving the load, the operator shall ensure the hoist rope is free from kinks, multiple-part lines are not twisted around each other, and the upper boom point is positioned over the load’s center of gravity to prevent drifting.

When moving the crane, the operator shall ensure no one is on the hook or the load, the load does not pass over any personnel, and the load is not lowered below the point where there are two full wraps of rope on the drum.

The load hook shall be equipped with a safety latch or mouse.

- Up to two eyes of a sling may be used in a crane hook providing the following criteria are met:
  - Load shall be centered in the base (bowl or saddle) of the hook to prevent point loading of the hook.
  - When two slings are placed in the base (bowl or saddle) of the hook, the maximum included angle between sling legs shall be 90 degrees, or as determined by hook manufacturer. The maximum sling leg angle, with respect to the hook centerline, for any rigging arrangement shall be 45 degrees.
  - A collector ring, such as a link or shackle, shall be used when more than two legs are placed in a hook or for angles greater than 45 degrees.
  - Double crane hooks or blocks can use two slings per side under the same conditions.
  - Hooks shall not be used in such a manner as to place a side load, back load, or tip load on the hook.

NOTE

T&PS site management may allow a crane hook to have more than two eyes on the hook, if the contractor has presented information regarding the size of the rigging and hook. The contractor shall complete a deviation request per procedure SH-1K, Procedure Deviation Approval Process.

- The operator shall not be allowed to leave the controls while the load is suspended. The crane shall not be unattended while the engine(s) is operating.
- Follow manufacturer’s recommendations regarding operation during winds. A device indicating wind velocity shall be used to ensure manufacturer recommendations are not exceeded.
- Personnel shall not be permitted to stand or pass under a load on the hook. If the load remains suspended for any considerable length of time, a dog, pawl and ratchet, or other equivalent means, rather than the brake alone, shall be used to hold the load.

4.3.2.4 Securing

Contractors shall adhere to the following requirements:
• The load line shall be positively secured at the end of the shift or left in a position prescribed by the crane manufacturer. Make sure all brakes and locks are engaged if the operator is leaving the immediate area or if the unit is going to be left unattended for an extended period of time.

• In the event of forecasted inclement weather such as high winds or icy conditions, the crane shall be positioned per manufacturer’s recommendation for the expected conditions. During high winds or when left overnight, cranes shall be stowed per manufacturer requirements.

4.3.3 Maintenance

Maintaining cranes and derricks in good working condition shall be top priority to eliminate unnecessary downtime and prevent accidents. Companies (outside owner, vendor, or contractors) shall be able to provide documentation for preventive maintenance as defined in 29 CFR 1926, Subpart CC. Preventive maintenance shall be documented and retained in site files for the duration of the project. A preventive maintenance program based on the crane manufacturer’s recommendation shall be established.

The following maintenance requirements shall be adhered to:

• When making repairs or adjustments, the following precautions shall be taken:
  − Move the crane to a place on the project where it will not interfere with other cranes or operations.
  − Shut off the main power disconnect and lock it in the open position per the contractor’s energy control program.
  − Place warning or out-of-order signs on the crane so they are visible from ground elevation. Use barricades to secure the area under the crane to protect personnel from falling objects.
  − After adjustments and repairs have been made, the crane shall not be operated until guards have been reinstalled, safety devices reactivated, and maintenance equipment and parts removed.
  − Depending on the scope and nature of repair, an annual inspection may need to be performed. However, at a minimum, the requirements of a monthly inspection shall be performed.

• Mechanics shall not be permitted to adjust, oil, lubricate, or repair any mechanism with moving parts until the equipment is shut down. Some adjustments require operation of the equipment to perform the final adjustment; extreme caution shall be used while these tasks are being performed. Any guards removed to adjust, oil, or repair shall be promptly replaced.
4.4 Specific Crane Requirements

4.4.1 Mobile Cranes

4.4.1.1 Inspection and Erection

The following items shall be inspected:

- Tires (proper pressure and wear).
- Outriggers, beams, pads, hydraulic system (proper functions, leaks, wear).
- Engine and torque converter (proper pressure and fluid levels).
- Cab, controls, windshield, instruments, seat belts, brakes (proper functions, wear).
- Gantry (pins, sheaves, lubrication, and wear).
- Cable for boom hoist, main hoist, auxiliary hoist (proper lubrication, broken wires, flat spots, wear).
- Boom (pins, bent or dented lattices, bent boom sections).
- Boom point (pins, bent or dented lattice, sheaves, lubrication).
- Boom pendant lines (pins, broken wires in cable, flat spots, lubrication, wear).
- Jib (pins, bent or dented lattices, sheaves, and lubrication).
- Jib pendants and jib gantry (pins, broken wires in cable, flat spots, lubrication, wear).

4.4.1.2 Operation

Contractors shall adhere to the following requirements:

- Rubber-tired mobile cranes shall be equipped with an audible backup alarm that can be heard above ambient noise levels. This device shall sound continuously while the crane is backing up.
- Secondary outrigger mats or pads shall be used for all mobile crane operations unless site management has approved an engineered design.
- Mobile cranes mounted on barges shall be positively secured to the barge and, when required by the manufacturer, shall be equipped with a load chart that reduces capacity to stay within the listed limits for the barge.
- A crane cannot be used to transport a load except as a last resort. Otherwise, use forklifts, boomtrucks, farm wagons, flatbed trucks, and similar equipment to transport loads. If the crane will be used to transport a load, follow the load charts for dynamic and static loading provided by the manufacturer. Use extreme caution when using this equipment to transport a load. Follow these guidelines if transporting loads on rubber tires:
  - Position the boom and load directly over the rear or the front of the crane.
  - Swing (house) lock shall be engaged.
- Keep boom as short as possible. The boom angle shall be configured per the manufacturer recommendations.
- Secure load to carrier with tag line or wire rope.
- Position load as close to the ground as possible.
- Travel on smooth, firm, and level terrain.
- Maintain a constant and controlled speed that is suitable to the terrain and load.
- Avoid sudden starting or stopping.
- Use flaggers, both front and rear.

4.4.2 Tower Cranes

4.4.2.1 Inspection and Erection

Contractors shall adhere to the following requirements:

- All tower, jib, and structural bolts and nuts, and other structural fasteners shall be new at erection time and meet the manufacturer’s specifications. All tower, jib, and slewing ringbolts and nuts shall be closely inspected and replaced as required during erection.
- Continuous fall protection shall be used at all times when climbing the tower or mast of a crane, and during inspection of the boom and jib.

4.4.2.2 Operation

Contractors shall adhere to the following requirements:

- Tower cranes shall have flags or other indicators on the jib identifying the working load radius.
- Tower cranes shall have devices to limit:
  - Trolley travel at both ends of the jib.
  - Pressures in hydraulic or pneumatic circuits.
  - Crane travel at both ends of the runway tracks.
- Hand signals are not recommended for tower crane operations. Radio communication is the preferred method.

4.4.3 Derricks and A-Frames

4.4.3.1 General

4.4.3.2 Inspection and Erection

Contractors shall adhere to the following requirements:
The top 6 ft of the boom or jib shall be painted bright yellow.

All timbers for A-frames shall be of correct size, length, and condition to bear the maximum expected loads. A-frame timbers shall be braced with two spreaders spaced 1/4 the length of the A-frame from each end. Cross bracing shall cross between the two spreaders. Bracing material shall be not less than 2/3 of the rated strength of the A-frame timbers. Tie rods (stay bolts) of not less than 1½ times the diameter of the main A-frame timbers shall be used.

Tie rods shall be placed directly above the upper spreader and directly below the lower spreader. Ends of bolts shall be secured at each end with malleable washers and nuts. The base of the A-frame shall be securely anchored.

Elevating type A-frames shall be set in pinion-type sockets. Pinion bases shall be securely anchored. Guy lines shall be of sufficient strength to carry the load imposed upon them and shall be securely fastened in place.

4.4.3.3 Maintenance

All anchorages shall be approved by the competent person in charge of crane operations. Rock and hairpin anchorages require special testing as identified by the manufacturer.

4.4.4 Draglines and Clamshells

4.4.4.1 Operation

Contractors shall adhere to the following requirements:

- Ensure no one walks or stands between the dragline or clamshell load and a bank, high wall, spoil, or other obstacle.
- Ensure dragline or clamshell buckets are sized according to the load capacity of the crane.
- Lower the load bucket to the ground before leaving the controls so that it does not remain suspended while the crane is inactive.

NOTE

The T&PS requirement of an anti-two block device does not apply to cranes with dragline or clamshell configurations.

4.4.5 Overhead Cranes

4.4.5.1 Inspection and Erection

Newly installed overhead cranes shall be load tested to 125 percent of their rated capacity prior to routine use of the crane.
4.4.5.2 Operation

The rated load of overhead cranes shall be plainly marked on each side. Overhead cranes containing more than one hoisting unit shall have a rated load marked on each hoist or its load block. In all cases, the marking shall be clearly legible from the ground.

4.4.6 Boom Trucks for Lifting Material

4.4.6.1 Operation

Contractors shall adhere to the following requirements:

- All boom trucks (except articulating booms) shall have a functioning anti-two blocking device.
- All four tires shall be chocked during lifting operations for boom trucks not equipped with outriggers.
- Ensure the boom is secured and lying in a rest before the boom truck is allowed to travel. If a rest is not available, secure the boom to prevent movement.
- Boom trucks shall be equipped with a functioning audible back-up alarm. The alarm will sound continuously while the truck is backing up.

4.5 Additional Crane Requirements

4.5.1 Pile Driving

4.5.1.1 Inspection and Erection

Contractors shall adhere to the following requirements:

- Cranes used to handle leads for pile driving operations are not required to have an anti-two block device if, upon testing, the chain must be shortened or the device otherwise will not function. However, the crane used for handling leads may not be used for any other purpose unless an anti-two block device is installed. The contractor shall assign a spotter to watch and warn the crane operator if an anti-block situation is about to occur.
- Overhead cab protection shall be the equivalent of 2-in. planking or other solid material of equal strength and shall not interfere with the operator’s vision.
- Pile driving shall be accomplished by using fixed leads. Alternative methods shall be used only if approved by the site facility manager or designee.
- Hoses shall be secured approximately 12 in. from the coupler to an independent point on the boom or lead. Ensure a powered hose will remain secure if separation occurs.
- Blocking devices shall be provided for the leads to prevent the hammer from being raised against the head block and under the hammer at all times while employees are working under the hammer.
• Guards shall be provided across the top of the head block to prevent the cable from jumping out of the sheaves.

• When the leads must be inclined in the driving of batter piles, provisions shall be made to stabilize the leads.

• Fixed leads shall be provided with ladder and rings, or similar attachment points, so the loft worker can engage the body harness lanyard with the leads.

• When leads are provided with the loft platform, they shall be protected by standard guardrails.

• Steam line controls shall consist of two shutoff valves, one of which shall be a quick-acting lever-type within easy reach of the hammer operator.

• Guys, outriggers, thrustouts, or counterbalances shall be provided as necessary to maintain stability of pile driver rigs.

4.5.1.2 Operation

Each project shall develop a site-specific permit for pile driving. Permit considerations include the following:

• Vibration, noise, excavation permit, health hazards, disposition of waste materials, securing of supply hose, and hazard analysis.

• Underground physical interference (for example, underground pipelines or electrical cables) and any above-ground piping or electrical cables.

• Storage, hauling, and disposal of materials such as spoils and treated pile wastes shall be in accordance with site, facility, and governing agency regulations.

• Continuous positive fall protection such as lifelines, rope grabs, and complete guardrails shall be used when a person is on a vertical lead or an apron.

• Make every effort to eliminate the need to access the top of a pile. For example, use mechanical pile threaders and remote release shackles.

• Ladders and aerial platforms are the preferred means of access to elevated work areas.

• Additional precautions:
  – Only personnel essential to the operation are allowed within a radius equal to the length of undriven pile.
  – Personnel are not allowed near a turning auger. Personnel shall ensure extremities and loose clothing cannot be captured by auger. Personnel shall maintain sufficient distance from falling debris that could be conveyed up the auger shaft.
  – Personnel are to avoid skin contact with piles coated or treated with chemicals. Refer to the appropriate Safety Data Sheet (SDS). When driving treated piles, personnel shall wear the necessary personal protection equipment (PPE) and barrier cream.
- A faceshield shall be used when sawing a treated timber pile.
- When piles are being driven in an excavated pit, the walls of the pit shall be sloped to the angle of repose or sheet piled and braced, according to the requirements of 29 CFR 1926.652, Requirements for Protective Systems.
- When steel tube piles are being blown out, employees shall be kept well beyond the range of falling materials.
- When it is necessary to cut off the tops of driven piles, pile driving operations shall be suspended while the cutting is in progress.
- When driving jacked piles, all access pits shall be provided with ladders and bulkheaded curbs to prevent material from falling into the pit.

4.6 Powered Hoist / Tugger Operations (includes pneumatic, hydraulic, and electric equipment)

4.6.1 General

All powered hoisting equipment shall be installed, maintained, operated, and inspected per the requirements of ASME B30.7 (most current version).

4.6.2 Equipment Inspection

A qualified Inspector must inspect all powered hoist equipment prior to its use onsite and at least monthly. The hoist operator must also visually inspect equipment daily to ensure safe operation of the equipment.

Items to be reviewed shall include anchorage, weight of items to be hoisted/pulled, application of appropriate coefficients of friction, load capacity, load obstructions, and so forth.

4.6.3 Hook and Becket Inspection

Before a hoist is authorized for use, a nondestructive examination (NDE) shall be performed on hooks rated at 15 tons and above.

NDE shall be performed by a person currently certified by the American Society for Nondestructive Testing (ASNT) to a Level II or III in the type of test to be performed. The testing company shall submit test procedures or instructions for each method of testing prepared by a person currently certified Level III by the ASNT. In addition, all applicable certifications of the technician performing the examination shall also be submitted.

The most accurate methods of inspecting hooks and beackets for cracks are dye penetrant testing and magnetic-particle inspection with no paint or coatings on the inspected area. Hooks with threaded shanks shall be carefully inspected for wear in the thread area. If the hook shows signs of wear or stress, the hook shall be removed from service.
For an effective inspection, the block and/or ball shall be disassembled. The magnetic particle test or dye penetrant test shall be conducted by a Level II technician. Items to be checked during this annual inspection are the following:

- Missing or illegible hook manufacturer’s identification or secondary manufacturer’s identification.
- Missing or illegible rated load identification.
- Excessive pitting or corrosion.
- Cracks, nicks, or gouges.
- Wear – any wear exceeding 10 percent (or as recommended by the manufacturer) of the original section dimension of the hook or its load pin.
- Deformation – any visibly apparent bend or twist from the plane of the unbent hook.
- Throat opening – any distortion causing an increase in throat opening of 5 percent not to exceed 1/4 in. (6 mm) or as recommended by the manufacturer.
- Inability to lock – any self-locking hook that does not lock.
- Inoperative latch (if required) – any damaged latch or malfunctioning latch that does not close the hook’s throat.
- Damaged, missing, or malfunctioning hook attachment and securing means.
- Thread wear, damage, or corrosion.
- Evidence of excessive heat exposure or unauthorized welding.
- Evidence of unauthorized alterations such as drilling, machining, grinding, or other modifications.
- Measurement of hook throat shall be documented.

Results of this inspection and original measurements, for the purpose of comparison in subsequent annual inspection, shall be documented and retained in site files for the duration of the project.

4.6.4 Rented or Leased Equipment

Rented or leased hoists shall have new cable installed with a documented inspection prior to being placed in service.

Load test certifications shall be provided and placed on file prior to the hoist being placed in service.

4.6.5 Hoist Operator Qualifications

Hoist operators shall be qualified per the requirements found in SH-2C-01, Qualifying Equipment Operators. In addition, operators shall meet the physical requirements specified in ASME B30.7 that include:
• Vision of at least 20/30 Snellen in one eye and 20/50 Snellen in the other, with or without corrective lenses.

• Ability to distinguish colors, regardless of position, if color differentiation is required for operation.

• Hearing, with or without hearing aid, must be adequate for the specific operation.

• Sufficient strength, endurance, agility, coordination, and speed of reaction to meet the demands of equipment operation.

• Evidence of physical limitations or emotional instability that could render the operator a hazard to him- or herself or others, or that in the opinion of the examiner could interfere with the operator's safe performance, may be cause for disqualification. In such cases, specialized clinical or medical judgments and tests may be required.

• Evidence that an operator is subject to seizures or loss of physical control shall be reason for disqualification. Specialized medical tests may be required to determine these conditions.

• Operators and operator trainees should have good depth perception, field of vision, reaction time, manual dexterity, and coordination, and should not be prone to dizziness or similar undesirable characteristics.

Only qualified personnel may operate powered hoist equipment.

4.6.6 Operations

Loads to be lifted/pulled are restricted to a maximum of 75 percent of the rated capacity of the hoist and/or setup.

Powered hoists shall be inspected daily by the crew foreman and operator prior to operation.

Only personnel essential to the operation are allowed to work near the operating hoist, load line, and the moving load.

Never use the hoist line for other than its intended purpose (that is, tie-off for safety harness).

Special care shall be maintained during operation of the hoist to ensure the load does not hang up causing the hoist to be overloaded.

Each hoist location will also be reviewed after set up by the lift director to ensure the following:

• Required access is available.

• Setup is adequate for the intended loads (minimum 5-to-1 safety factor).
• Sign is posted identifying capacity of the hoist in its installed configuration.

4.6.7 Lift Planning

All lifts/pulls shall be planned in accordance with SH-2A-10, Rigging and Lift Plans, and documented on the appropriate form.

For each lift/pull, the operator shall ensure that:

• There are no potential interferences with hoist operation.
• A substantial shield is installed to protect the operator from cable failure.
• The lift area is properly barricaded.

The lift plan shall include the following critical elements of the lift/pull:

• Weight of the item being lifted.
• Capacity of the hoist in the configuration it will be used.
• Percent of hoist capacity the combined weight of the load and rigging represents.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

The following are quality records and shall be retained in accordance with the Southern Company records retention schedule:

• Site-specific crane use plans.
• Site-specific underground and overhead obstruction documentation.
• Site-specific hydraulic leak response plans.
• Site-specific crane logs.
• Copies of the controlling entity letters sent to crane contractors.
• Copies of signed Contractor Safety, Health, and Environmental Orientation checklists.
7.0 ATTACHMENTS

The following attachments are part of this procedure:

- Attachment A, Sample Crane Log.
- Attachment B, Sample Controlling Entity Letter.
- Attachment C, Historical Summary of Changes.
Attachment A – Sample Crane Log

At a minimum, the crane log shall include the following columns. Other columns may be added as needed on the site. The log shall be updated when cranes are added, removed, modified, inspected, or otherwise changed.

- Project.
- Arrival Date.
- Provider: Generation/Contractor.
- Ownership: Owned/Rented.
- Rented From.
- Type of Crane/Mfg.
- Model Number.
- Capacity (tons).
- ID Number.
- Serial Number.
- Crane Annual Certification Date.
- Certification Agency.
- Name of Inspector.
- Hook NDE.
- Inspection Agency.
- Level II Technician.
- Charts/Manual Verified.
- Authorized Operators.
- Certification Date.
- Certification Agency.
- NCCCO Categories
- Certification Expiration Date.
- Physical Exam Expiration Date.
- U.S. Driver's License.
- State.
- Expiration Date.
- Written Test.
- Functional Test.
- Crane Departure Date.
- Quarter One Assessment.
- Quarter Two Assessment.
- Quarter Three Assessment.
- Quarter Four Assessment.

See form 2C-03.1 for a crane log template.
Attachment B – Sample Controlling Entity Letter

Southern Company Services, Inc.
42 Inverness Center Parkway, Bin XXXX
Birmingham, AL 35242
Telephone: 205-992-XXXX

Supply Chain Management

[Date]

[Crane contractor's address]
Attention: XXXXX


To whom it may concern:

As you are probably aware, OSHA has implemented several new regulations that took effect on November 8, 2010 that formalize existing customs and practices. To the extent these regulations apply to work performed by your company, you are expected to comply with them in accordance with the terms of your contract.

One of these regulations places responsibility for ensuring that there are sufficient ground conditions to support a crane or derrick on the “controlling entity” of a project. 29 CFR 1926.1402(c)(1).

As an independent contractor to Southern Company or one or more of its affiliates, your company has the authority and control to make the necessary ground preparations to safely perform your work. To the extent that you use cranes and derricks to perform your work, your company will be the “controlling entity” and will be responsible for complying with the regulation.

We appreciate your cooperation in this matter. Please direct any questions that you may have to the T&PS site manager at your respective construction site.

Sincerely,

[Signature and position]
Attachment C – Historical Summary of Changes

Rev. 4
04/18/2013

Approved by Bob Fitzgerald, Bill Boyd, Will Taylor
Reviewed by Project Safety Leadership Team and PCT
Revised by Bob Fitzgerald

Remarks:
Complete rewrite; therefore, track changes were not used for this revision. Originally issued 10/29/2008. Focus was transferred to cranes and derricks. Related crane procedures modified at the same time include the following:

- SH-2A-10, Rigging Lift Plans.
- SH-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories.
- SH-2C-01, Qualifying Equipment Operators.
- SH-2C-02, Mobile Equipment Near Electric Lines.
- SH-2C-04, Tower Cranes.
- SH-2C-05, Derrick and A-Frame.
- SH-2C-06, Draglines and Clamshells.
- SH-2C-07, Overhead Cranes.
- SH-2C-08, Boom Trucks for Lifting Material.
- SH-2C-10, Pile Driving.
- SH-2C-11, Forklift Operations.
- SH-2C-16, Equipment in Transit.

Rev. 5
01/06/2015

Approved by Bob Fitzgerald, Bill Boyd, Will Taylor
Reviewed by PSLT and PCT
Revised by Bob Fitzgerald

Remarks:
The changes included in this version reflect action items from findings of an RCA done on a crane incident involving a “friction crane” on an E&CS project in 2013.

Rev. 6
04/27/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Title and purpose statement (1.1) edited to reflect expanded coverage of procedure. Added link to new form 2A-03.2 (2.2). Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Added phrase “or third-party” to occurrences of E&CS construction site manager. Added 4.6, Powered Hoist / Tugger Operations (including pneumatic, hydraulic, and electric equipment). Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2C-09

Aerial Lifts and Bucket Trucks

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for operating and using aerial lift work platforms, extendable boom platforms, articulating boom platforms, scissors lifts, and bucket trucks at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- ANSI A92.2 Current, Vehicle-Mounted Elevating and Rotating Work Platforms
- 29 CFR 1926, Subpart K, Electrical
- T&PS procedure SH-2C-02, Mobile Equipment Near Energized Electric Lines
- Forms:
  - 2C-09.1, Aerial Lift/Bucket Truck Operator Authorization
  - 2C-09.2, Aerial Lifts and Bucket Trucks Daily Inspection Form
3.0 Responsiblity

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

All personnel who work with aerial lift platforms, extendable boom platforms, articulating boom platforms, scissors lifts, and bucket trucks shall follow all safe work practices established by this standard, as well as those established by the manufacturer of the equipment.
4.2 Inspection

- Inspection of powered aerial work platforms will be made in accordance with manufacturer’s recommendations and company, governing agency inspection requirements, and regulations.

- A competent person must inspect all aerial lifts prior to their use on site and at least quarterly thereafter. Test lift controls each day to ensure that the controls are in safe working condition.

4.3 Operation

- Personnel shall not be permitted to use or operate lifts or platforms unless they have been trained and licensed by a competent person in the use and operation of such equipment.

- Powered aerial work platforms being used near electrical distribution or transmission lines shall comply with standards set forth in 29 CFR 1926, Subpart K and procedure SH-2C-02, Mobile Equipment Near Energized Electric Lines.

- Equipment shall not be moved when the boom is elevated in a working position with workers in the basket/bucket or on the platform unless equipment was manufactured to perform these functions as stated in writing by the manufacturer.

- Manufacturer’s specifications and limitations shall be followed. Do not allow rigging from the platform or boom.

- Safety harnesses shall be worn by employees working from the basket/bucket with the lanyard attached to the equipment. Under no circumstances shall the lanyard be attached to a pole, the structure, or other equipment. Personnel shall use the manufacturer’s designated anchorage point.

- Personnel must work while standing on the platform floor, never on the top rail, midrail, makeshift platform, or toeboard.

- Personnel shall not tamper with controls and/or bypass safety devices.

- Mobile and self-propelled lifts, platforms, and extended boom aerial work platforms shall not be used in outside work activities when severe wind conditions exist (winds above 20 mph or manufacturer’s recommendation, whichever is the most stringent).

- Work activities from aerial lifts, bucket trucks, or work platforms in outside areas are prohibited during electrical storms.

- Outriggers must be used when available with equipment.
- No alterations may be performed to the equipment unless the manufacturer approves them in writing.

- All contractors and projects that use aerial lifts and bucket trucks to access any elevated areas shall develop an effective site-specific plan for dealing with a stuck basket. At a minimum, the plan includes how the occupants will be removed from the immobilized basket prior to its extrication and how the stuck basket is to be safely released.

### 4.4 Operator Training and Licensing

- Each employer shall designate a competent person (such as an equipment superintendent) at each site. The competent person shall administer the practical test and a standard test (written) to determine an applicant’s/employee’s operating ability. Alternate source of service is a competent person from vendors who supply rental equipment.

- A practical test shall be used to determine an employee’s ability to operate each type and model of equipment to be operated.

- Training will be provided for each operator in compliance with equipment operator training procedures. Training shall be documented.

- Personnel successfully completing the practical test and standard test shall be issued a license by the competent person.

- A competent person will monitor all newly licensed personnel for the first month of operation to verify the operator’s competency. Retraining will be provided if necessary.

### 4.5 Record Retention

- A training and testing record for each employee designated as an equipment operator shall be kept on file at the site.

- Inspection and maintenance of equipment shall be performed and documented in accordance with the manufacturer’s standard.

### 5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.
6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
# Attachment A - Historical Summary of Changes

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Issued. This standard supersedes E&CS procedure SH-2C-09, Aerial Lifts and Bucket Trucks.

Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2C-11

Forklift Operations

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</table>
Contents

1.0  PURPOSE AND SCOPE ................................................................................................. 3
   1.1  Purpose ..................................................................................................................... 3
   1.2  Scope ......................................................................................................................... 3

2.0  DEFINITIONS AND REFERENCES ........................................................................... 3
   2.1  Definitions .................................................................................................................. 3
   2.2  References .................................................................................................................. 3

3.0  RESPONSIBILITY ....................................................................................................... 4
   3.1  Construction Site Manager ...................................................................................... 4
   3.2  Startup Manager ...................................................................................................... 4
   3.3  Contractor Site Manager (Third-Party Contract Management and Engineering,
        Procurement, and Construction (EPC) Contractors) .................................................. 4
   3.4  Contractors ............................................................................................................. 4
   3.5  Qualified Inspector ................................................................................................. 4
   3.6  Forklift Operator .................................................................................................... 4

4.0  STANDARD .................................................................................................................. 5
   4.1  Requirements .......................................................................................................... 5
   4.2  Inspection .................................................................................................................. 5
   4.3  Operator Training and Licensing ............................................................................ 5
   4.4  Operation .................................................................................................................. 5
   4.5  Forks ........................................................................................................................ 6
   4.6  Telescopic Boom Telehandlers ............................................................................... 6
   4.7  Operator Sight Lines and Safety Aids .................................................................... 6
   4.8  Attachments ............................................................................................................ 8
   4.9  Environmental Concerns ....................................................................................... 8

5.0  KEY CONTACT .......................................................................................................... 8

6.0  QUALITY RECORDS ................................................................................................. 8

7.0  ATTACHMENTS ........................................................................................................ 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for inspection, operation, and operator qualifications for forklifts on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all workers assigned to a T&PS project and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- Frequently Asked Questions (FAQ), SH-S-2C-11, Forklift Operations.
- 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction
- 29 CFR 1910.178(1), Powered Industrial Trucks
- 29 CFR 1926.602(c), Lifting and Hauling Equipment
- T&PS procedures:
  - SH-2C-01, Qualifying Equipment Operators
  - SH-2C-02, Mobile Equipment Near Energized Electric Lines
  - SH-2C-03, Cranes, and Derricks, and Powered Hoists
- Forms:
  - 2C-01.1, Equipment Operator Authorization
  - 2C-11.1, Forklift Inspection Record
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

3.5 Qualified Inspector

A qualified inspector is responsible for inspecting a forklift prior to its initial use at the site or facility.

3.6 Forklift Operator

The forklift operator is responsible for complying with the requirements established by this standard, including the following:

- Inspecting the forklift at the beginning of each shift and completing a daily forklift inspection form.
- Observing applicable traffic regulations.
4.0 STANDARD

4.1 Requirements

Each contractor shall designate a competent person to manage its forklift program in accordance with all applicable regulatory requirements and the requirements of this standard.

When a forklift is configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load, it shall be considered a crane and shall comply with 29 CFR 1926, Subpart CC, Cranes and Derricks in Construction, as well as procedure SH-2C-03, Cranes, Derricks, and Powered Hoists.

4.2 Inspection

A qualified inspector shall inspect a forklift prior to its initial use at the site or facility. All forklifts in use shall meet the applicable requirements of design, construction, stability, inspection, testing, maintenance, and operation as defined in ANSI Standard B56.1 2009 Safety Standard for Low Lift and High Lift Trucks. Forklift operators shall inspect the forklift at the beginning of each shift and complete a daily forklift inspection form equivalent to the one referenced in this standard. See form 2C-11.1, Forklift Inspection Record.

4.3 Operator Training and Licensing

- Operator training and licensing shall follow the requirements in SH-2C-01, Qualifying Equipment Operators.

- Training program content shall comply with 29 CFR 1910.178(a), Powered Industrial Trucks.

- Each operator’s performance shall be evaluated at least every 3 years. Refresher training shall be conducted if the operator demonstrates unsafe operation.

4.4 Operation

The following requirements shall be adhered to:

- Operate forklifts according to manufacturer’s instructions.

- Passengers are not permitted on forklifts.

- Do not modify or alter a forklift without written authorization from the manufacturer.

- When you must leave a forklift unattended, place the lift carriage in its lowest position, set the brake, turn off the engine, and if on an incline, chock the wheels.

- Maintain minimum safe working distances from overhead live electric lines or cables as defined in SH-2C-02, Mobile Equipment Near Energized Electric Lines.

- Ensure forklifts that will be operated on roadways with automobile traffic are equipped with turn signals and brake lights. Observe applicable traffic regulations, including authorized plant speed limits.
- Slow down and sound the horn where vision is obstructed. If the load being carried obstructs the forward view, travel with the load trailing.
- Give pedestrians the right of way.
- During refueling, stop the engine. Have a fire extinguisher available.
- Slow down at intersections, corners, ramps, and other danger points.
- Use seat belts while operating forklifts equipped with a rollover protection structure (ROPS) or a fall object protection structure (FOPS).
- Place forks under the load as far as possible; carefully tilt the mast backward to stabilize the load.
- Do not stand on or pass under the elevated portion of any forklift, whether loaded or empty. Ensure personnel stand clear of loads in transit and avoid standing directly in front of loads being set.
- When ascending or descending grades in excess of 10 percent, drive loaded forklifts with the load upgrade.
- When traveling with a load, travel no faster than a person can walk.
- Properly secure all loads to prevent their accidental release including, but not limited to, binding loose objects, using pallets, using four-sided containers or skip pans, and securing the load to the mast.
- Do not rig material from the bottom of the forks or mast (no free rigging).
- For any lifting under the forks, use a properly designed lifting device approved for use by the manufacturer of the forklift or fork truck.

4.5 Forks

Effective January 1, 2017, all material handling equipment equipped with forks shall be equipped so that the operator can adjust the forks remotely from the cab, either hydraulically or electrically. Independently adjusting forks are preferred. Manually adjusted forks shall not be allowed.

4.6 Telescopic Boom Telehandlers

Telehandlers shall be designed so a person cannot enter the area between the front and rear tires.

4.7 Operator Sight Lines and Safety Aids

- Operator sight lines from the cab shall be provided for in one or a combination of the following manners:
  - Equipment design – Equipment shall be configured in a manner that the operator has unobstructed sight lines when the boom or mast is in the carry position and when setting or picking up loads at or near the ground. The mounting point of the boom or mast to the structure is an exception.
– Operational or safety aids:

  o A camera system with display mounted in the cab that provides coverage for the areas where the operator’s sight lines may be impeded.

    - The display must be active when the unit is in operation. Multiple cameras may be used, if needed. When multiple cameras are displayed on a single display unit, the use of a split screen is preferred.

    - Unless otherwise designed by the manufacturer, the camera systems (camera, display, and associated hardware) are intended to be a safety device only and not an operational aid.

  o A mirror system that provides coverage of areas where the operator’s visibility may be impeded when the boom or mast is in the carry position and when setting or picking up loads at or near the ground.

  o A proximity warning system that provides an audible alarm when a predetermined distance from the unit has been encroached upon. The alarm activation distance will be determined by the operational specifications of the system but shall be no less than 5 ft.

– Spotters – Spotters may be used to provide warning to the operator as follows:

  o Contractors shall provide a written plan for the use of spotters for review and approval by the T&PS construction site manager or his or her designee.

  o Operators and spotters shall have documented training on the plan.

  o Operational requirements for the use of spotters shall be noted on the task specific JSA.

  o When used, spotters shall position themselves in the operator’s sight line at all times.

  o Spotters shall have no other function or duties or participate in activities that may distract them from their assigned duties while equipment is in motion.

  o If the operator loses sight of the spotter, the operator shall stop immediately.

  o Spotters will be required at all times when used to provide coverage for impeded operator sight lines, otherwise, spotters shall be used when operating in areas of high traffic (pedestrian or equipment), close quarters or proximity to vital plant equipment.
- Contractors shall certify, in writing, these requirements are met for operator sight lines and safety aids.

4.8 Attachments

If attachments are needed, such as fork extensions or an approved lifting attachment for below-the-forks lift, use manufacturer-supplied attachments unless an exception has been approved by the T&PS site manager.

The following attachment guidelines shall be adhered to:

- Only use attachments that are engineered and approved by the manufacturer.
- Do not perform modifications and additions that affect capacity and safe operation without the manufacturer’s prior written approval. If modified, then change capacity, operation, and maintenance instruction plates, tags, or decals accordingly. This restriction applies to the practice of directly attaching rigging equipment such as slings and shackles onto the forks of forklifts for below-the-forks lifts.
- Use attachments only for their designed and intended purpose.
- Use manufacturer-supplied fork extensions whenever possible. Any exception shall be approved by the T&PS site manager.
- When using equipment such as a skid steer with a fork attachment, the requirements of 4.5, Forks, shall be followed.

4.9 Environmental Concerns

The contractor shall maintain hydraulic lines to prevent leakage. If a spill occurs, the contractor shall follow the regulations of the site or facility, or governing authority.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2C-11, Forklift Operations.

Rev. 1
11/15/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:

11/21/2016
Added text and link for Frequently Asked Questions document.

Rev. 2
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
NOTE

This Frequently Asked Questions (FAQ) document is not a substitute for training to Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) standard SH-S-2C-11, Forklift Operations, and having a thorough understanding of that standard. If a conflict arises between this FAQ and SH-S-2C-11, the text of the standard governs.

Q1. I want to rent Brand X telehandler with a high mount boom to afford greater visibility, but they don’t have the remotely adjustable fork option. Can I forgo the remotely adjusting forks for the greater visibility or vice versa?

A1. No. Prior to putting the requirement for remotely adjusting forks into place, Southern Company has worked with the main vendors for equipment to ensure availability of that feature. Vendors are aware of our requirements both for visibility and remotely adjusting forks. To further ensure availability, we have modified our requirement for visibility giving additional options to meet the requirement through one or a combination of design, mirrors, cameras, proximity warning devices, and as a final option, the use of spotters following specific requirements.

Q2. We are using the spotter option to meet the visibility requirement. Does the spotter have to be with the equipment at all times?

A2. Yes. The spotter can have no other function. Further, the operator is required to stop if the spotter is not visible to him or her.

Q3. To meet the operator visibility requirement, can I use more than one option? For example, can I use a combination of mirrors and proximity warning or cameras and design?

A3. Yes. Section 4.7, Operator Sight Lines and Safety Aids, of SH-S-2C-11 allows for the use of one or a combination of the options. The goal is to provide the greatest operator visibility around the equipment to prevent personnel injury.

Q4. I have a front end loader that I want to use fork attachments to offload some material. Do I have to get remotely adjusting forks?

A4. Yes, unless it is not feasible to use remotely adjusting forks or remotely adjusting forks are not available for a particular piece of equipment. In that case, see SH-1K, Procedure Deviation Approval Process, for guidance on how to request a deviation. Any deviation must be accompanied by specific plans to ensure worker safety, and must be approved by contractor site management and corporate safety along with T&PS site and corporate management.
Q5. Why the focus on remotely adjusting forks?

A5. Hand injuries from manual fork adjustment have become a frequent occurrence across T&PS projects. As always, the preferred method of hazard elimination is an engineering control that eliminates the hazard. Remotely adjusting forks eliminates the need for employees to put themselves in a position where a hand injury occurs from adjusting forks.

Q6. I’m using a telehandler with a hook attachment to lift and transport materials from one location to another. Do I need an operator that is a certified crane operator to do this?

A6. Maybe. When OSHA issued Subpart CC in 2010, there was a lot of confusion as to when a forklift was classified as a crane. To help eliminate confusion, OSHA issued a Compliance Directive in 2014 to clarify their position (CPL 02-01-057). Forklifts are covered by Subpart CC when configured with a “winch or hook” and used like a crane. OSHA also explained in the preamble to Subpart CC that forklifts used to suspend a load below the forks were excluded from the standard. However, OSHA received numerous compliance inquiries requesting more guidance about the coverage of forklifts configured with booms/jibs and hoists. In response, OSHA intends to revise the standard to provide more clarity regarding forklift coverage. The proposed change would exclude forklifts from coverage under the standard unless they are equipped with a boom and a hoist and used like a crane. OSHA believes that this amendment would ensure that the forklift exclusion aligns with OSHA’s original intent when it issued the standard. Therefore, any forklift that lifts with a boom (including the boom of the forklift itself) and a hoist would be covered by requirements of the cranes a derricks standard. For example, a variable-reach forklift would also be covered by the cranes standard if it is configured with a hoist and used like a crane. Otherwise, this forklift would continue to be covered by 29 CFR 1926, Subpart O, Motor Vehicles, Mechanized Equipment, and Marine Operations.

Q7. I have an operator that doesn’t have a driver’s license. Does he really need a driver’s license in order to do his job on a forklift?

A7. T&PS EH&S procedure SH-2C-01, Qualifying Equipment Operators, requires a valid U.S.-issued driver’s license in order to operate any equipment or vehicle, including golf carts and buggies, on an T&PS site. U.S.-issued licenses include any State, territory, or district of the United States. Licenses from foreign countries are not allowed.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2C-12

Earth-Moving Equipment

<table>
<thead>
<tr>
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<tbody>
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<td>Date</td>
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</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
   1.1 Purpose................................................................................................................. 3
   1.2 Scope.................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
   2.1 Definitions.............................................................................................................. 3
   2.2 References............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
   3.1 Construction Site Manager .................................................................................... 4
   3.2 Startup Manager .................................................................................................... 4
   3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
   3.4 Contractors............................................................................................................ 4

4.0 STANDARD............................................................................................................... 4
   4.1 Equipment Inspection ............................................................................................ 4
   4.2 Operator Qualifications .......................................................................................... 5
   4.3 Permits .................................................................................................................. 5
   4.4 Operation ............................................................................................................... 5
   4.5 Hydraulic Lines ...................................................................................................... 6
   4.6 Backhoes ............................................................................................................... 6
   4.7 Trucks with Dumping Beds .................................................................................... 6
   4.8 Rollover Protection ................................................................................................ 6

5.0 KEY CONTACT ......................................................................................................... 7

6.0 QUALITY RECORDS ................................................................................................ 7

7.0 ATTACHMENTS ....................................................................................................... 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the minimum requirements for the inspection and operation of earth-moving equipment on Technical and Project Solutions (T&PS) projects. These requirements address dump trucks, front-end loaders, bulldozers, graders, backhoes, and tracked and rubber-tired hydraulic excavators.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.602, Material handling equipment.
- T&PS procedures:
  - SH-2A-17, Excavation and Trenching.
  - SH-2C-01, Qualifying Equipment Operators.
- Construction Safety and Health guideline SH-G-2C-12, Extricating Stuck Equipment.
- Forms:
  - 2C-12.1, Earth-Moving Equipment Inspection.
  - 2C-01.1, Equipment Operators Authorization.
  - 2A-17.1, Excavation and Trenching Permit.
  - 2A-17.2, Excavation/Trenching Daily Inspection Form.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Equipment Inspection

- A qualified inspector shall inspect all equipment before its onsite use.

- Operators shall inspect the equipment prior to each shift. An equipment checklist shall be used to document equipment inspections.
4.2 Operator Qualifications

- Only qualified operators may operate earth-moving equipment.
- Before an operator uses equipment on the site/facility, the operator shall demonstrate experience operating earth-moving equipment.
- Additional operator license requirements are found in procedure SH-2C-01, Qualifying Equipment Operators.

4.3 Permits

All excavations require an excavation permit (form 2A-17.1) in accordance with procedure SH-2A-17, Excavation and Trenching.

4.4 Operation

- Operate equipment in accordance with local traffic regulations. The contractor should make arrangements to provide, properly train, equip, and position personnel for traffic control where work may interfere with public traffic.
- Equipment may carry only as many people as there are factory-installed seatbelts.
- During refueling, engine shall be shutoff and fire extinguisher shall be present.
- Any equipment operated after dark shall be equipped with factory lighting or approved equivalent.
- Personnel shall not occupy excavators or buckets during equipment operation.
- When moving track equipment on paved surfaces, provide protection to prevent paving damage.
- Seatbelts shall be used at all times during operation of equipment.
- In large earth moving operations, the contractor shall establish a written man-on-the-ground procedure as part of the site-specific safety plan. At a minimum, the safety plan shall include those actions and safeguards to be implemented to protect personnel who must walk near heavy equipment. All site personnel shall be trained on the safety plan, and training is to be documented.
4.5 **Hydraulic Lines**

Hydraulic lines shall be maintained to prevent leakage. If a spill occurs, the spill shall be cleaned according to site/facility- and governing-agency regulations.

4.6 **Backhoes**

Backhoes shall not be used for operations exceeding the manufacturer’s recommendations or capacity of the equipment (for example, using the backhoe boom instead of a crane). If the manufacturer permits the backhoe’s use as a crane, the rigging shall meet site requirements and be attached to the bucket according to manufacturer’s recommendations and load charts. Radius capacities shall be posted on the backhoe.

4.7 **Trucks with Dumping Beds**

- If the cab of the dump truck is equipped with vertical and horizontal protection (designed to withstand the impact of material being loaded), all personnel may remain in the cab of the truck during loading of the dump bed with material less than 3 in. in diameter. If the cab has insufficient protection and/or the materials are larger than 3 in. in diameter, all personnel shall leave the truck during loading.

- The driver and passengers shall all wear required personal protective equipment when they are outside the vehicle.

- Follow manufacturer’s recommendations when dumping a load. Be aware of ground conditions and acceptable slope when operating the dump bed. Dumping operations shall be performed on stable compacted areas.

- Before and during dumping operations, the operator shall verify overhead clearances and maintain minimum safe-working distances from live electrical lines.

- The dump bed shall be down and locked before traveling.

4.8 **Rollover Protection**

- All earth-moving equipment requires rollover protection.

- All backhoes require rollover protection except a backhoe attachment mounted on a tractor of less than 20 horsepower.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

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05/09/2017
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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Guidelines

SH-G-2C-12

Extricating Stuck Equipment

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<td>Bill Batts</td>
</tr>
</tbody>
</table>
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>PURPOSE AND SCOPE</td>
<td>3</td>
</tr>
<tr>
<td>1.1</td>
<td>Purpose</td>
<td>3</td>
</tr>
<tr>
<td>1.2</td>
<td>Scope</td>
<td>3</td>
</tr>
<tr>
<td>2.0</td>
<td>DEFINITIONS AND REFERENCES</td>
<td>3</td>
</tr>
<tr>
<td>2.1</td>
<td>Definitions</td>
<td>3</td>
</tr>
<tr>
<td>2.2</td>
<td>References</td>
<td>3</td>
</tr>
<tr>
<td>3.0</td>
<td>RESPONSIBILITY</td>
<td>4</td>
</tr>
<tr>
<td>3.1</td>
<td>T&amp;PS Construction Site Manager</td>
<td>4</td>
</tr>
<tr>
<td>3.2</td>
<td>T&amp;PS Startup Manager</td>
<td>4</td>
</tr>
<tr>
<td>3.3</td>
<td>Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)</td>
<td>4</td>
</tr>
<tr>
<td>3.4</td>
<td>Contractors</td>
<td>4</td>
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<td>GUIDELINE</td>
<td>4</td>
</tr>
<tr>
<td>4.1</td>
<td>General</td>
<td>4</td>
</tr>
<tr>
<td>4.2</td>
<td>Recovery Phase</td>
<td>5</td>
</tr>
<tr>
<td>5.0</td>
<td>KEY CONTACT</td>
<td>6</td>
</tr>
<tr>
<td>6.0</td>
<td>QUALITY RECORDS</td>
<td>6</td>
</tr>
<tr>
<td>7.0</td>
<td>ATTACHMENTS</td>
<td>6</td>
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1.0 PURPOSE AND SCOPE

1.1 Purpose

This guideline provides suggestions and best practices to assist contractors in the development of procedures related to the extrication of stuck equipment, with a primary focus on personnel safety.

1.2 Scope

This guideline applies to Technical and Project Solutions (T&PS) project-assigned personnel and contractors whose contract document includes this guideline by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedures:
  - SH-2A-10, Rigging and Lift Plans
  - SH-2C-01, Qualifying Equipment Operators
  - SH-2C-03, Cranes, Derricks, and Powered Hoists

- EH&S standards:
  - SH-S-1N, Planning and Hazard Analysis
  - SH-S-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories
  - SH-S-2A-13, Chain Hoists, Lever Hoists, and Jacks
  - SH-S-4B, Spill Prevention, Control, and Countermeasures Plans

- Plant-specific spill prevention control and countermeasures (SPCC) plan
3.0 RESPONSIBILITY

3.1 T&PS Construction Site Manager

The T&PS construction site manager is responsible for reviewing and implementing this guideline as applicable for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this guideline for activities that fall under his or her scope.

3.2 T&PS Startup Manager

The T&PS startup manager is responsible for reviewing and implementing this guideline as applicable for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this guideline for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this guideline as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors are responsible for reviewing and incorporating this guideline into their respective plan for the extrication of stuck equipment and vehicles as applicable.

4.0 GUIDELINE

4.1 General

Contractors working in areas where equipment or vehicles could become stuck or fouled should submit a basic site-specific plan for extricating stuck equipment. The plan will then be the basis for more specific instructions in the case of stuck or fouled equipment. The plan should include the following:

- Identification of key personnel to be involved in the extrication process.
• Review of operator’s manuals to assess specific safety warnings and manufacturer’s recommendations for performing recovery operations.

• Weights of equipment in use on the project, both empty and with typical loads. Include additional weights of fuel, attachments, and so forth.

• Size and type of rigging hardware based on the weight of the machinery and resistance forces likely to be encountered (overturn resistance, mire resistance, and so forth).
  – Chains and nylon slings should not be used in any extrication effort.
  – All rigging hardware should meet the requirements found in EH&S standard SH-S-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories.
  – Jacks, chain hoists, and lever hoists (come-a-longs) should meet the requirements found in EH&S standard SH-S-2A-13, Chain Hoists, Lever Hoists, and Jacks.

• Number and size of additional machinery to be used in the extrication effort. Machinery should have protective systems to protect the operator.

• If a crane(s) is to be used, refer to T&PS procedure SH-2A-10, Rigging and Lift Plans, as well as T&PS procedure SH-2C-03, Cranes, Derricks, and Powered Hoists, for specific requirements.

• Attachment points for rigging hardware should be identified. If no manufactured points are available, the equipment competent person, rigging competent person, safety, and site management should be consulted prior to beginning extrication activities. When using manufactured attachment points, be aware that they may not be adequate to withstand side-pull forces.

• Operators should meet the training and certification requirements found in T&PS procedure SH-2C-01, Qualifying Equipment Operators.

• Adequate spill control materials should be available to control and contain any fuel or fluids that may spill from the fouled equipment. Consult the plant’s spill prevention control and countermeasures (SPCC) plan to determine disposal requirements. See EH&S standard SH-S-4B, Spill Prevention, Control, and Countermeasures Plan.

### 4.2 Recovery Phase

In the event a piece of equipment becomes immobilized, the priority should be to ensure the safety of the operator and those working in the vicinity, then to stabilize the equipment to prevent further injury or damage. Operators working on ash ponds should be instructed to stop work and not try to self-rescue. Further considerations include:

• Prior to beginning extrication operations, all involved should be involved in a pretask job safety analysis (JSA) or job safety briefing (JSB) to:
– Discuss the specific plan to extricate the equipment.
– Identify key individuals.
– Specific tasks each person will perform.
– Determine what to do in the event of unexpected circumstances.
– Identify all known hazards.
– Review safe work practices.
– Identify personal protective equipment (PPE) requirements.
– Review specialized training and certifications needed.

All involved should signify their understanding by signing the JSA or JSB document. See EH&S standard SH-S-1N, Planning and Hazard Analysis.

- A primary signal person should be identified to relay signals or communication to the operator(s) of the additional equipment using hand signals or radio communication. An adequate number of spotters should be available to view the fouled equipment and to advise in case of unknown or unexpected condition. The signal person and all spotters should have the authority to stop the extraction effort if unsafe conditions are recognized.
- No one should be within the danger zone or “whip” zone of rigging hardware during the active recovery phase in case of failure.
- Consult with T&PS site management if an outside recovery contractor will be used for site access requirements or contractual considerations.

5.0 KEY CONTACT

For questions regarding the content or implementation of this guideline, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
05/10/2016
Remarks:
Issued.

10/04/2016
Approved by Bill Batts
Corrected titles and links to referenced documents (2.2).

Rev. 1
05/09/2017
Reviewed by Project Safety Leadership Team
Approved by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2C-13

Drilling Equipment

<table>
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<tr>
<th></th>
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</tr>
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<td>05/09/2017</td>
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<td>Project Services</td>
<td>Bill Boyd</td>
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<td>Project Support</td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................ 3
  1.1 Purpose................................................................................................................... 3
  1.2 Scope ...................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ........................................................................... 3
  2.1 Definitions................................................................................................................ 3
  2.2 References .............................................................................................................. 3

3.0 RESPONSIBILITY ....................................................................................................... 4
  3.1 Construction Site Manager ...................................................................................... 4
  3.2 Startup Manager...................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .............................................................................................................. 4
  3.5 Drilling Equipment Competent Person .................................................................... 4
  3.6 Responsible Engineer and/or Geologist ................................................................. 5
  3.7 Responsible Drilling Operator ................................................................................. 5

4.0 STANDARD ................................................................................................................ 5
  4.1 Equipment Inspection .............................................................................................. 5
  4.2 Planning ................................................................................................................... 5
  4.3 Permits .................................................................................................................... 6
  4.4 Attachments ............................................................................................................ 6
  4.5 Operations ............................................................................................................... 6
  4.6 Deenergizing Unknown or Abandoned Equipment or Equipment With an Unknown
      Source of Energy .................................................................................................... 7

5.0 KEY CONTACT ........................................................................................................... 7

6.0 QUALITY RECORDS .................................................................................................. 7

7.0 ATTACHMENTS ......................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for safe operation of power-drilling equipment and for soil sampling, test wells, and drilled foundations on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- 29 CFR 1926.800, Underground construction
- Department of Transportation Regulations
- T&PS procedures:
  - SH-2A-08, Fall Protection
  - SH-2C-01, Qualifying Equipment Operators
- EH&S standard **SH-S-2E-08, Hazardous Energy Control**
- PPE Hazard Assessment Checklists
- Forms:
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

3.5 Drilling Equipment Competent Person

The drilling equipment competent person is responsible for inspecting drilling equipment used on the project.
3.6 Responsible Engineer and/or Geologist

The responsible engineer and/or geologist is responsible for considering soil and water conditions to protect personnel from hazards.

3.7 Responsible Drilling Operator

The responsible drilling operator is responsible for surveying the drilling area for above- and below-ground hazards.

4.0 STANDARD

4.1 Equipment Inspection

A drilling equipment competent person shall inspect all drilling equipment pre- and post-transportation to the drill site. In addition, the drilling equipment competent person shall conduct a preuse inspection using a written drilling equipment checklist (such as form 2C-13.1, Drilling Equipment Inspection Form, or equivalent) prior to its use onsite.

4.2 Planning

Before beginning work:

- The responsible engineer and/or geologist shall consider subsurface soil and water for potential contaminants and appropriate techniques to protect personnel from exposure of identified hazards.

- The appropriate safety data sheets shall be available at the site prior to start of drilling operations.

- The responsible engineer, geologist, and/or and operator shall also survey the area for physical hazards above and below ground. Examples of potential hazards include, but are not limited to:
  - Underground pipe.
  - Underground electric cable.
  - Swing radius of equipment.
  - Above-ground power lines.
  - Unidentified backfilled debris.

- When excavation work is to be performed within 100 ft of a Southern Company natural gas pipeline and/or CO₂ line for the purpose of the movement or removal of earth, rock, or other material by mechanized equipment and includes, but is not limited to augering, backfilling, boring, digging, ditching, drilling, grading, pile-driving, ripping, scraping, subsoiling, or trenching, the T&PS representative shall, as early in
the planning process as possible, inform the responsible engineer in Technical Services (the pipeline system operator) and request guidance.

- When loads exceeding 20,000 lb per axle will cross a Southern Company natural gas pipeline and/or CO₂ line, the T&PS construction representative shall, as early in the planning process as possible, contact Technical Services (the pipeline system operator) and request guidance.

- If planned activities fall within a DOT right-of-way, contact the local 811 call center, as well as Technical Services.

4.3 Permits

The drilling competent person shall complete either an excavation and trenching permit (such as form 2A-17.1, Excavation and Trenching Permit, or equivalent) or an overhead and underground conflict resolution permit (such as form 2C-13.2, Geotechnical and Environmental Drilling Overhead and Underground Conflict Resolution Permit, or equivalent) prior to drilling.

4.4 Attachments

The drilling operator shall:

- Use manufacturer-supplied attachments. If attachments not supplied by the manufacturer are used, the contractor shall submit appropriate engineering documentation to the construction site manager for review and approval prior to using the attachment. The contractor should discuss using non-manufacturer-supplied attachments at prebid and premobilization meetings to avoid delays in production.

- Use only attachments that are engineered and approved for use by the manufacturer.

- Use attachments only for their designed and intended purpose.

4.5 Operations

- Only properly trained and qualified personnel shall operate drill equipment. See T&PS procedure SH-2C-01, Qualifying Equipment Operators.

- Only essential personnel shall work near the turning drill.

- The contractor shall:
  - Determine noise levels and post high-noise boundaries.
– Ensure operator and workers around the drilling operation have proper hearing protection.

– Ensure any other personal protective equipment identified by the hazard assessment is available and properly used. See PPE Hazard Assessment Checklists.

– Immediately after completion of drilling each hole, ensure the hole is barricaded or install hole covers adequate to provide fall protection (minimum 2-in. nominal thickness scaffold grade lumber or equivalent and labeled HOLE COVER).

– Maintain access and egress at all times around excavation and drill rig.

– Maintain cleanup of spoil piles, tools, and equipment around work area.

– Follow site, local, state, and government regulations in the disposal of spoils.

– Maintain hydraulic lines to prevent leakage. The contractor shall make provisions to properly respond to any spills or leaks of hydraulic fluid.

– Ensure mobile drilling rigs are provided with mirrors and reverse direction alarms.

• When workers are required to climb the drill rig, they shall observe continuous fall protection. See T&PS procedure SH-2A-08, Fall Protection.

4.6 Deenergizing Unknown or Abandoned Equipment or Equipment With an Unknown Source of Energy

When deenergizing a system where the feed cannot be identified, has been abandoned, or is fed from an unknown source, workers shall follow the requirements in EH&S standard SH-S-2E-08, Hazardous Energy Control, 4.5, Unidentified Systems, Abandoned Systems, or Systems With an Unknown Source of Energy, prior to performing any work.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
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<td>09/13/2016</td>
<td>Bruce Long and Bill Boyd</td>
<td>Project Safety Leadership Team</td>
<td>Bill Batts</td>
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</table>
Movement of Oversized Loads
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
  3.1 Construction Site Manager .................................................................................... 4
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Site Discipline Lead ............................................................................................... 4
  3.5 Contractors ............................................................................................................ 4

4.0 STANDARD............................................................................................................... 5
  4.1 Flowchart ............................................................................................................... 5
  4.2 General .................................................................................................................. 5
  4.3 Written Plan ........................................................................................................... 6
  4.4 Preparation ............................................................................................................ 6
  4.5 Review and Approval ............................................................................................. 7

5.0 KEY CONTACT ......................................................................................................... 7

6.0 QUALITY RECORDS ................................................................................................ 7

7.0 ATTACHMENTS ....................................................................................................... 7
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard ensures the safe movement of oversized loads transported on Technical and Project Solutions (T&PS) project areas.

1.2 Scope

This standard applies to all oversized loads transported on T&PS sites along project or plant roadways and to contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

oversized load – Any load transported via truck, tractor-trailer, carry-deck, crane, boomtruck, multiaxle hydraulic hauler, or similar devices having dimensions that meet any of the following criteria:

• Exceeds 8 ft 6 in. in width, 13 ft 6 in. in height, or extends beyond the end of any trailer by more than 10 ft.

• Pick-and-carry loads that extend beyond the length of the boom or width of the crane.

• Any pick-and-carry lift with an overall crane width exceeding 8 ft 6 in.

• Any load with the means to come within 2 ft of overhead or adjacent permanent structures along project or plant roadways.

• Any load that requires a turning radius that is other than typical along plant roadways and intersections by virtue of length.

• Any load delivered to the project that requires permitting as an oversized load by the U.S. Department of Transportation and/or a state department of transportation.

2.2 References

• 23 CFR 658.15, Truck size and weight, route designations – length, width and weight limitations, Width.

• 29 CFR 1926, subpart G, Signs, signals and barricades.
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Site Discipline Lead

The T&PS site discipline lead is responsible for working with the construction site manager to review and approve the contractor’s written plan for the movement of an oversized load.

3.5 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.
4.0  STANDARD

4.1  Flowchart

Legend:
- C Contractor
- CSM Construction site manager
- D Discipline lead

Need for “movement of oversized load plan” exists

C

Write movement plan

CSM or D

Review movement plan

Does movement plan meet approval?

Yes

C

Approve movement plan

D

Store movement plan

Is movement plan appropriate/working?

Yes

C

Use/Follow movement plan

No

No

4.2  General

All loads transported on public roadways shall conform to the applicable U.S. Department of Transportation and state-mandated requirements.
4.3 Written Plan

The movement of an oversized load on a T&PS construction project shall be planned and documented in advance.

- For movement of an oversized load not covered by a contractor’s plan, the construction site manager or designee shall prepare a plan.

- Any plan for the movement of an oversized load shall include the following information:
  - The proposed haul route with verification, such as soil boring data or compaction tests, the route will support the full weight of the load. The contractor shall conduct testing needed to support and document the written plan.
  - Measures to be taken to ensure the load will not tip during movement.
  - The type and capacity of equipment that will be used to haul the load(s). Manufacturer’s load ratings, manufacturer’s load charts, or engineering load calculations shall be included with the plan. To facilitate the development of the written plan, the position or person who purchased or delivered engineering procured equipment or material shall provide the site with oversized load information. The contractor shall conduct engineering load calculations as needed.
  - Placement and types of escort vehicles.
  - Areas where traffic must be blocked or diverted, as well as the plans for placement of detour or closure signs and placement of traffic control personnel. For additional information, see Southern Company Generation Signaling Handbook for Signs and Flags.
  - Measures used by traffic control personnel to direct or alert oncoming traffic.
  - Measures to ensure traffic control personnel are not struck by oncoming or adjacent traffic.

4.4 Preparation

The construction site manager and site discipline lead shall supply the contractor with a site plan preparation document that includes:

- Primary available haul routes.
- Bridge or load-sensitive crossing locations.
- Any maximum weight, height, and width restrictions.
- Other information relevant to the movement of an oversized load on the project or plant property.
4.5 Review and Approval

The contractor shall submit the written plan to the T&PS construction site manager or the site discipline lead for review and approval prior to the movement of the oversized load(s).

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

A contractor shall retain the written plan for the movement of an oversized load for a period of 1 year after completion of the move for which it was written.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
09/13/2016
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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

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Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:

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Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose .................................................................................. 3
  1.2 Scope ..................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .............................................. 3
  2.1 Definitions .............................................................................. 3
  2.2 References ............................................................................. 3

3.0 RESPONSIBILITY ................................................................. 3
  3.1 Construction Site Manager ..................................................... 3
  3.2 Startup Manager ................................................................... 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors .......................................................................... 4

4.0 STANDARD ............................................................................ 4
  4.1 Noise Exposure ...................................................................... 4
  4.2 Training .................................................................................. 5

5.0 KEY CONTACT ........................................................................ 5

6.0 QUALITY RECORDS .............................................................. 5

7.0 ATTACHMENTS ...................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements to protect personnel from occupational noise exposure on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

29 CFR 1926.52, Occupational noise exposure.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Noise Exposure

- The T&PS construction site manager shall make provisions for the testing of sound levels throughout the course of the project. A sound meter that registers dBA slow response (A-scale) shall be available to monitor noise levels of heavy equipment and air compressors, and work processes such as chipping with jackhammers, newly installed operating equipment, and other high-noise producing processes.

- The T&PS construction site manager shall ensure that, if personnel are subjected to sound levels onsite exceeding those listed in the table below, Permissible Noise Exposure, exposure shall be controlled using feasible administrative or engineering controls. If such control measures fail to reduce sound levels within the levels of the table, appropriate personal protective equipment (hearing protection) shall be provided and used to reduce sound levels to within the ranges listed in the table.
### Permissible Noise Exposure

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<th>Duration per day (hours)</th>
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<tr>
<td>8</td>
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<tr>
<td>6</td>
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<tr>
<td>1/4 or less</td>
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- Where noise levels continue to exceed those in the table above for an 8-hour day, an effective hearing conservation program shall be administered for exposed personnel. Contractors shall also be responsible for implementation of a program for their affected employees.

- When hearing protection is required under this standard, the hearing protectors shall be selected for effectiveness by a competent person. If the hearing protectors are those inserted in the ear, a competent person shall check for fit.

- Signs shall be posted in those areas where personnel exposure may exceed those noise levels listed in the table above to warn of the noise hazard and inform of required hearing protection.

### 4.2 Training

Personnel required to wear hearing protection shall be trained in the proper usage and limitations of those devices.

### 5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

### 6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-02

Hazard Communication

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</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose .................................................................................. 3
  1.2 Scope ..................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ............................................ 3
  2.1 Definitions ............................................................................. 3
  2.2 References ............................................................................ 3

3.0 RESPONSIBILITY ................................................................. 3
  3.1 Construction Site Manager ...................................................... 3
  3.2 Startup Manager ...................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and
      Engineering, Procurement, and Construction (EPC) Contractors) .... 4
  3.4 Contractors ........................................................................... 4

4.0 STANDARD ............................................................................. 4
  4.1 Written Plan ........................................................................... 4
  4.2 Labeling ................................................................................ 5
  4.3 SDS File ................................................................................ 6
  4.4 Training .................................................................................. 7
  4.5 Nonroutine Tasks ................................................................. 8
  4.6 Coordination with Other Contractors ....................................... 8
  4.7 Record Retention ................................................................... 9

5.0 KEY CONTACT ....................................................................... 9

6.0 QUALITY RECORDS ............................................................... 9

7.0 ATTACHMENTS ..................................................................... 9
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements for the development and implementation of a site-specific hazard communication (HAZCOM) program at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.59, subpart D, Hazard communication.
- Forms:
  - 2D-02.1, SDS/Product Evaluation Form.
  - 2D-02.2, Chemical Inventory List.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and
monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Written Plan

- T&PS shall develop, implement, and maintain at the project a written site-specific HAZCOM plan using SCG-SH-2101, Hazard Communication, including all site-specific information required in paragraph 3.0, Site Specific Program, of SGC-SH-2101.

- On small projects in existing facilities, the regional safety and health manager may determine that it is appropriate for employees to work under and comply with the relevant facility's HAZCOM program in lieu of a site-specific T&PS program.

- Each contractor shall develop, implement, and maintain at the workplace a written site-specific HAZCOM plan as follows:
– Each contractor shall maintain labels and other forms of warning for his or her respective chemicals in the workplace.
– Each contractor shall obtain safety data sheets (SDS) and describe how the information will be used, how employees will be trained on the information, and how the SDS file will be maintained and employees will be provided access to SDS for their respective chemicals. Each contractor shall supply the T&PS site construction manager with a copy of the SDSs for all chemicals the contractor plans to bring onto or use at the site for review and approval.
– Each contractor shall provide information and training to their employees concerning the HAZCOM plan and the hazards in the workplace. Training shall be documented and available for review by T&PS personnel.
– Each contractor shall maintain a chemical inventory list of his or her chemicals on site. Depending on the scope of the project, T&PS site managers may determine the need to maintain a master list of all chemicals on site. The lists shall reference, as a minimum, chemicals known to be present in the workplace using an identity that is on the corresponding SDS.
– Each contractor shall supply the method used to inform his or her respective employees of the hazards of nonroutine tasks and the hazards associated with chemicals contained in unlabeled pipes and vessels in work areas.
– The contractor shall make attempts to identify less hazardous materials to perform work operations requiring the use of chemicals or hazardous materials. For example, flammable solvents may be replaced with less hazardous nonflammable varieties to perform equivalent tasks.
– Each contractor’s site-specific HAZCOM plan shall contain the process by which chemical information is made available to other employers and their employees on multiemployer worksites, including:
  o The methods used to ensure SDSs are either stored in a central location or copied and provided to other employer.
  o The methods used to notify other employers of any precautionary measures that need to be taken to protect employees during normal operating conditions and in foreseeable emergencies.
  o The methods used to inform the other employers of the labeling systems used in the workplace.

4.2 Labeling

• All containers of chemicals in the workplace shall be labeled, tagged, or marked with the following information:
  – The identity of the chemicals contained therein.
  – Appropriate hazard warnings.

NOTE

The diamond symbol (developed by the National Fire Protection Association (NFPA)) provides a limited amount of information and
does not satisfy the full requirements of this paragraph. Other types of labeling systems, for example, the HMIS (Hazardous Materials Information System) label is similar to the NFPA diamond; however, there is space on these labels to include the identity of the chemical and a section where target organ information, special warnings, and personal protective equipment requirements may be listed.

- The manufacturer’s labels and warning symbols shall not be removed or defaced unless a new label with the appropriate information is immediately affixed to the container.

- Retention of U.S. Department of Transportation hazardous materials markings shall be made in accordance with 29 CFR 1910.1201, Retention of DOT markings, placards, and labels.

- The site-specific HAZCOM plan shall specify the labeling system to be used on the project and the plans will be taken to ensure all site personnel are trained to understand the labeling system.

4.3 SDS File

T&PS shall request and receive a SDS from the manufacturer or distributor prior to ordering a chemical product, or in the case of contractors, prior to bringing the chemical onsite. The purchasing agent (or individual responsible for ordering a material) or each contractor shall forward a copy of the SDS to the site manager, or if there is an environmental, health, and safety (EH&S) professional onsite, the SDS shall be forwarded to him or her for review.

- An EH&S professional or resource shall review the SDS prior to the purchase of the material or contractors bringing the material onsite. Where assigned to the project, the EH&S professional shall be the point of contact. When there is not a site EH&S professional assigned, the appropriate regional safety and health manager shall be consulted.
  - When a SDS arrives onsite, the SDS shall be reviewed to ensure that it is the most recent issue. The SDS shall be marked with the date that the sheet was received. A copy of the SDS shall be maintained in the site master SDS file.
  - If the EH&S resource approves the material, the material shall be ordered. The EH&S resource shall supply form 2D-02.2, SDS/Product Evaluation Form, to the purchasing agent or contractor stating that the material has been approved, and the EH&S resource or designee shall place the SDS in a file or binder of approved SDS. If the approved material is to be used in an existing company facility, a copy of the SDS shall be forwarded by T&PS to the appropriate operating company’s Industrial Hygiene section for inclusion in the 3E online system.
If, based on the information in the SDS, the EH&S resource believes the product should not be used on the site, project management or the contractor shall be advised to find an alternative material. If no suitable alternative is available, the EH&S resource shall provide conditional approval for the material with the understanding that the material will require special training, engineering controls, protective equipment, and so forth, as appropriate.

A request for an SDS shall also appear on the purchase order for any chemicals other than those excluded by 29 CFR 1926.59(b)(6)(i-xii).

Chemical products ordered/received by the project shall not be distributed in the workplace until the site manager, contractor, or EH&S resource has confirmed receipt of the accompanying SDS.

Manufacturers and distributors who fail to supply SDSs will be notified that they will no longer be considered for chemical product purchases by T&PS.

- Trade Secret

Manufacturers are allowed to withhold some information concerning the identity of chemicals on the SDS if that information is classified as a trade secret. However, medical personnel and health care professionals have steps by which they may request the information for emergency or evaluation purposes. If assistance is required due to the trade secret provision being used on an SDS, contact the EH&S resource assigned to the project.

4.4 Training

All T&PS and contractor personnel shall be provided training on chemicals in their work area at the time of their initial assignment and whenever a new chemical is introduced into their work area. Employees shall be informed of:

- The requirements of the HAZCOM standard.
- Any operation in their work area where chemicals are present.
- The location and availability of the written site-specific HAZCOM program, the chemicals inventory list, and how to obtain a SDS.
- Employee training shall include at least the following:
  - Methods and observations that may be used to detect the presence or release of a chemical in the workplace.
  - The physical and health hazards of the chemicals in the work area.
  - The measures personnel can take to protect themselves from chemical hazards, including specific procedures implemented to protect from exposure to particular hazardous chemicals.
  - Specific details from the project’s written HAZCOM plan, including labeling information, SDSs, and how to use the appropriate hazard information.
The contractor shall ensure that personnel are trained as required by applicable U.S. Department of Transportation hazardous material regulations including, but not limited to, personnel involved in the packaging, loading, shipping, placarding, manifesting, and so forth, of hazardous materials as defined by the regulations. Documentation of training shall be available for review.

All training shall be documented. Contractor's training records shall be kept at the site and made available to T&PS for review upon request.

A written examination following the training shall be administered to document that the trainee understood the information provided during the training session.

4.5 Nonroutine Tasks

Prior to performance of nonroutine tasks (such as chemical cleaning, acid flush, or protective coating applications) involving hazardous chemicals, each contractor shall conduct a written hazard assessment to identify potential risks, exposures, control methods, and personnel training. Each contractor shall supply a copy of this assessment to the T&PS construction site manager for review. The site manager shall consult with the site EH&S resource or the regional safety and health manager for any comments or additional recommendations before any nonroutine task is undertaken. This consultation is necessary to evaluate and then communicate hazards to all affected site personnel.

Nonroutine tasks will vary from project to project; therefore, the details of the hazard assessment to be conducted shall be specified in the site-specific written plan. The written program shall also indicate the method of transmitting the information concerning the hazards to all site personnel involved or potentially affected.

4.6 Coordination with Other Contractors

Arrangements shall be established with contractors on multiemployer sites for the transfer of information concerning chemicals. The details of this arrangement shall be specified in the T&PS site-specific written plan.

Where T&PS is the controlling contractor on a project, each contractor shall be required to prepare and implement his or her own HAZCOM program that meets all the requirements of 29 CFR 1926.59, Hazard Communication. In addition, a copy of each contractor's chemical inventory and the SDS for each material or chemical on the inventory shall be submitted to the T&PS construction site manager providing a centralized location from which a SDS may be obtained. This requirement, however, in no way substitutes for the contractor's maintenance of a HAZCOM program or SDS file.
4.7 Record Retention

- SDSs will be treated as medical/exposure records and shall be maintained for the duration of the project plus 30 years. Each contractor shall provide T&PS with information on the location of the long-term retention of his or her records.

- Each contractor shall maintain the written HAZCOM program, chemical inventory list, SDS file, and employee training records at the site while he or she has any work in progress at the project.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Remarks:
Issued. This standard supersedes E&CS procedure SH-2D-02, Hazard Communication.

Rev. 1
05/09/2017

Remarks:

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-03

Bloodborne Pathogens

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<td>Date</td>
<td>05/09/2017</td>
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<td>Approved By</td>
<td>Project Services</td>
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<td>Project Support</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 3
  3.1 Construction Site Manager .................................................................................... 3
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD............................................................................................................... 4
  4.1 Awareness Training ............................................................................................... 4
  4.2 First Responder, First-Aid Facility Staff, or Designated Cleaning Crew Personnel. 4
  4.3 Written Program .................................................................................................... 5
  4.4 Recordkeeping ...................................................................................................... 6

5.0 KEY CONTACT ......................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................ 6

7.0 ATTACHMENTS ....................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the protection of personnel from occupational exposures to blood, body fluids, or other potentially infectious materials. All Technical and Project Solutions (T&PS) projects shall practice universal precaution in regards to bloodborne pathogen (BBP) exposure.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References


3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Awareness Training

All personnel shall receive bloodborne pathogen awareness training. Particular emphasis shall be that no unauthorized personnel should contact body fluids. The names of designated response and cleanup personnel and methods to contact these groups should be clearly communicated to all site personnel.

4.2 First Responder, First-Aid Facility Staff, or Designated Cleaning Crew Personnel

Personnel who have potential for exposure to blood or other body fluids that may result from the performance of their duties (such as first responders, emergency medical technicians (EMTs), paramedics, or nurses) must have more extensive training. The training is required initially, and on an annual basis. This training shall at a minimum include:
• An explanation of the OSHA BBP standard and the location of an accessible copy of the standard.

• A general explanation of the epidemiology and symptoms of bloodborne diseases.

• An explanation of the modes of transmission of bloodborne pathogens.

• An explanation of the T&PS or contractors site-specific exposure control plan and the procedure for obtaining a copy of the written plan.

• An explanation of the appropriate methods for recognizing tasks and procedures that may involve exposure to blood or other body fluids.

• An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment (PPE).

• Information of types, proper use, location, removal, handling, decontamination, and/or disposal of PPE.

• An explanation of the basis for the selection of PPE.

• The control of sharps and method for disposal of any biohazard waste generated. Also includes all labeling requirements.

• Information on the hepatitis B vaccine.

• Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious material.

• Information on the postexposure followup that will be provided for the employee following an exposure incident.

• An explanation of the signs and labels.

• Method to report and OSHA-recordkeeping requirements for needle sticks.

4.3 Written Program

Each employer who has personnel with potential for occupational exposure to blood or other bodily fluids shall have a site-specific written BBP program. The written program must be designed to eliminate or minimize employee exposure and must contain, at a minimum, the elements listed below:
• The identification of the personnel who have anticipated or potential exposure to blood or other body fluids.

• The methods of compliance, that is, engineering controls, work practices, including universal precautions, hand washing, waste management, sharps control, PPE, housekeeping, and labeling of trash container.

• The methods of compliance with the requirement for preexposure hepatitis B (see 4.4, Recordkeeping) vaccination series and postexposure evaluation/followup. This process shall include the required statement regarding an employee’s refusal to take the hepatitis vaccination.

• A description of the information and training program used for bloodborne hazards.

4.4 Recordkeeping

• Medical surveillance – Personnel who have potential for exposure to blood or other body fluids that may result from the performance of their duties (such as first responders, EMTs, nurses, or paramedics) must be offered the preexposure hepatitis B vaccination series. Other employees must have the hepatitis B vaccination within 72 hours of a reported BBP exposure incident. All other areas of postexposure followup will be performed after a BBP exposure incident.

• Training documentation – Available for review at the site.

• Documentation – Hepatitis B shots or letter of declination signed by employee on file.

• Sharps disposal and proper biohazard disposal records.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
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Rev. 1
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-04

Lead

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<th>Rev. 1**</th>
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<td>** Date **</td>
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</tr>
<tr>
<td>Project Services</td>
</tr>
<tr>
<td>Project Support</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
  3.1 Construction Site Manager .................................................................................... 4
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ........................................................................ 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD ............................................................................................................... 4
  4.1 General .................................................................................................................. 4
  4.2 Written Plan ........................................................................................................... 5

5.0 KEY CONTACT ......................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................ 6

7.0 ATTACHMENTS ....................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for planning lead exposure controls for work activities with potential lead exposure on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

- **action level** – Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 µg/m³) calculated as an 8-hour time-weighted average (TWA).

- **lead** – Metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

- **permissible exposure limit** – The employer shall assure that no employee is exposed to lead at concentrations greater than 50 micrograms per cubic meter of air (50 µg/m³) averaged over an 8-hour period.

2.2 References

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Because potential exposure to lead, particularly lead-based paints, is most closely associated with conditions at an operating facility, the T&PS construction site manager shall contact the appropriate facility personnel for plant project work to help identify those work activities and/or locations with potential lead exposure. The T&PS construction site manager shall determine any operating facility requirements
applicable to the scope of work and assure their incorporation into the written exposure control plan as outlined in 4.2, Written Plan.

- Lead is a highly regulated material. The T&PS construction site manager in conjunction with appropriate operating facility personnel and the contractor shall make provisions for strict adherence to all applicable federal, state, and local regulations. Proper contractor licenses, lead worker/supervisor certification, project notification and fee payments to state regulatory agencies, notification to other building occupants, and regulatory compliance inspections are examples of the coordination activities that might need to be addressed.

- Consideration shall be given to the use of effective engineering controls to eliminate or reduce exposure to inorganic lead to levels that are as low as reasonably achievable. At a minimum, no personnel are to be exposed to lead at concentrations greater than the OSHA-required permissible exposure limit (PEL) of 50 micrograms per cubic meter of air (50 µg/m³) averaged over an 8-hour period. In addition, anytime the OSHA action level of 30 micrograms per cubic meter of air (30 µg/m³) is met or exceeded, the contractor shall implement air monitoring, a medical surveillance program, employee information, and training for his or her affected employees.

- When feasible engineering controls are not effective for exposure control, personnel will use appropriate personal protective equipment (PPE) and respiratory protection equipment provided by the contractor at no charge to his or her employees.

### 4.2 Written Plan

The T&PS construction site manager shall ensure that each contractor who has potential lead-disturbing activities develops a written exposure control plan for the specific lead hazards at each site. The written plan must address the following issues as required by OSHA in 29 CFR 1910.1025, Lead, and/or 29 CFR 1926.62, Lead, and any applicable state or local requirements:

- Employee information and training.
- Contaminant-specific hazard communication.
- Task-specific exposure assessment.
- Monitoring observation procedures.
- Engineering and work-practice controls.
- Action-level requirements.
- Establishing regulated areas.
- Respiratory protection.
- Protective work clothing and equipment.
- Housekeeping.
- Hygiene facilities and practices.
- Medical surveillance.
- Medical removal program.
- Recordkeeping and documentation.
- Information from regulatory appendices.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
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Revised by Bill Batts
Remarks:
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05/09/2017
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Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-05

Arsenic

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<td>Date</td>
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<td>Bill Boyd</td>
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<tr>
<td>Project Support</td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ............................................................................................................... 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 3
  3.1 Construction Site Manager .................................................................................... 3
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
    Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD ............................................................................................................... 4
  4.1 General .................................................................................................................. 4
  4.2 Written Plan ........................................................................................................... 5

5.0 KEY CONTACT ......................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................ 6

7.0 ATTACHMENTS ....................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for planning arsenic controls for work activities with potential arsenic exposure on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

action level – A concentration of inorganic arsenic of 5 micrograms per cubic meter of air (5 µg/m³) averaged over any 8-hour period.

permissible exposure limit – The employer shall assure that no employee is exposed to inorganic arsenic at concentrations greater than 10 micrograms per cubic meter of air (10 µg/m³), averaged over any 8-hour period.

2.2 References

- 29 CFR 1926.1118, Inorganic arsenic.
- Applicable operating company/facility requirements.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and
monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Because potential arsenic exposure is most closely associated with conditions at an operating facility, the T&PS construction site manager shall contact the appropriate facility personnel for plant work to help identify those work activities and/or locations with potential arsenic exposure. The T&PS construction site manager shall determine any operating facility requirements applicable to the scope of work and assure their incorporation into the written exposure-control plan as outlined in 4.2, Written Plan.

- Consideration shall be given to the use of effective engineering controls to eliminate or reduce exposure to inorganic arsenic to levels that are as low as reasonably achievable. Such activities as acid washes and flushes to reduce exposure potential shall be implemented whenever feasible.
• At a minimum, no personnel are to be exposed to arsenic at concentrations greater than the OSHA-required permissible exposure limit (PEL) of 10 micrograms per cubic meter of air (10 µg/m³) averaged over an 8-hour period. In addition anytime the OSHA-action level of 5 micrograms per cubic meter of air (5 µg/m³) averaged over an 8-hour period is exceeded, the employer shall implement air monitoring, medical surveillance programs, employee information, and training for their affected employees.

• When feasible engineering controls are not effective for exposure control, personnel shall use appropriate personal protective equipment (PPE) and respiratory protection equipment provided by the contractor at no charge to his or her employees.

4.2 Written Plan

The T&PS construction site manager shall ensure contractors have a written exposure-control plan for the specific arsenic hazards at each site/facility where the potential for exposure exists. The written plan must address the following issues as required by OSHA in 29 CFR 1910.1018, Inorganic arsenic, and/or 1926.1118, Inorganic arsenic, and any applicable operating plant requirements:

• Employee information and training.

• Process to address OSHA action level requirements (5 µg/m³) averaged over an 8-hour period.

• Establishment of regulated areas.

• Contaminant-specific hazard communication.

• Exposure assessment.

• Monitoring observation procedures.

• Engineering and work practice controls.

• Respiratory protection.

• Protective work clothing and equipment.

• Housekeeping.

• Hygiene facilities and practices.

• Medical surveillance.

• Medical removal program.
• Recordkeeping and documentation.
• Information from regulatory appendices.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0 09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-2D-05, Arsenic.

Rev. 1 05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Safety, and Health Standards

SH-S-2D-06

Silica

<table>
<thead>
<tr>
<th>Rev. 2**</th>
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</thead>
<tbody>
<tr>
<td>Date</td>
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<td>Project Services</td>
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<tr>
<td>Project Support</td>
</tr>
</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ................................................................. 3  
1.1 Purpose ...................................................................................... 3  
1.2 Scope ......................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES ............................................. 3  
2.1 Definitions .................................................................................. 3  
2.2 References ................................................................................... 3  

3.0 RESPONSIBILITY ................................................................. 3  
3.1 Construction Site Manager ......................................................... 3  
3.2 Startup Manager ......................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ........................................ 4  
3.4 Contractors ................................................................................. 4  

4.0 STANDARD ........................................................................... 4  
4.1 General ....................................................................................... 4  
4.2 Written Plan ............................................................................... 4  

5.0 KEY CONTACT ....................................................................... 5  

6.0 QUALITY RECORDS .................................................................. 5  

7.0 ATTACHMENTS ....................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for site-specific exposure control program for silica-producing work activities at Technical and Project Solutions (T&PS) sites.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.55, appendix A, Mineral Dusts
- 29 CFR 1926.1153, Respirable Crystalline Silica

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Effective engineering controls shall be used to eliminate or reduce exposure to silica to levels that are as low as reasonably achievable. At a minimum, contractors performing work activities with the potential to produce respirable silica dust shall assure that no personnel are exposed to silica at concentrations greater than the U.S. Occupational Safety and Health Administration (OSHA)-required permissible exposure limit (PEL) established by 29 CFR 1926.55, appendix A, Mineral Dusts. Contractors shall also comply with the requirements of 29 CFR 1926.1153, Respirable Crystalline Silica. Some examples of potential silica-producing work activities are concrete saw cutting, use of jackhammers to scarify or break concrete, mixing of grout material, and surface preparation by use of sand as the blast medium prior to painting.

- When feasible engineering controls are not effective to control exposure below the OSHA PEL, contractors will assign appropriate personal protective equipment (PPE) and respiratory protection equipment to their employees with potential for exposure.

4.2 Written Plan

- Contractors must incorporate exposure control methods for specific silica hazards created by their work activities into their site-specific safety and health plan. The written control plan must either use a control method laid out in Table 1 of 29 CFR
1926.1153, or the contractor can measure the workers’ exposure to silica and develop an appropriate written exposure control plan. Copies of monitoring results shall be provided to the purchaser for review upon request.

- The contractor shall provide immediate notification to the Southern Company contract administrator if any sampling results meet or exceed the action level for the sampled substance. Additionally, contractors shall provide plans to mitigate the hazard(s) to ensure compliance with relevant standards, and append the site-specific safety plan to reflect the change(s).

- The exposure control measures implemented by the contractor shall address the following topics, in accordance with 29 CFR 1926.1153 and limit personnel exposures below the PEL as referenced in 29 CFR 1926.55, appendix A, Mineral Dusts:
  - Employee information and training.
  - Establishment of regulated areas.
  - Contaminant-specific hazard communication.
  - Exposure assessment.
  - Monitoring observation procedures.
  - Engineering and work practice controls.
  - Respiratory protection.
  - Protective work clothing and equipment.
  - Housekeeping.
  - Hygiene facilities and practices.
  - Medical surveillance and medical removal program.
  - Recordkeeping and documentation.
  - Emergency situations.
  - Information from regulatory appendices.
  - Offer of medical exams including chest X-rays and lung function tests.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
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Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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12/19/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Added reference to 29 CFR 1926.1153; deleted reference and link to OSHA SEP for Silicosis (2.2).
Added requirement for contractors to comply with 29 CFR 1926.1153 (4.1). Strengthened requirements for contractor’s written site-specific plan; deleted paragraph with Civil Field Services requirements (4.2).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-07

Asbestos

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<thead>
<tr>
<th>Rev. 1**</th>
<th>05/09/2017</th>
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<tr>
<td>Project Support</td>
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</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ....................................................................................................... 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope .............................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions ....................................................................................................................... 3
  2.2 References ...................................................................................................................... 4

3.0 RESPONSIBILITY .......................................................................................................... 4
  3.1 Construction Site Manager ......................................................................................... 4
  3.2 Startup Manager ............................................................................................................ 4
  3.3 Contractor Site Manager (Third-Party Contract Management and
      Engineering, Procurement, and Construction (EPC) Contractors) ......................... 4
  3.4 Contractors .................................................................................................................... 4

4.0 STANDARD ................................................................................................................... 4
  4.1 General ............................................................................................................................ 4
  4.2 Written Plan ................................................................................................................... 5

5.0 KEY CONTACT ............................................................................................................. 6

6.0 QUALITY RECORDS .................................................................................................... 6

7.0 ATTACHMENTS .......................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for planning asbestos controls for work activities with potential asbestos exposure on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

authorized person – Any person authorized by the employer and required by work duties to be present in regulated areas.

building/facility owner – The legal entity, including a lessee, that exercises control over management and record keeping functions relating to a building and/or facility in which activities covered by this standard take place.

employee exposure – Exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.

excursion limit – An airborne concentration of asbestos equal to 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of 30 minutes as determined by the method prescribed in appendix A of 29 CFR 1910.1001.

fiber – A particulate form of asbestos 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

homogeneous area – An area of surfacing material or thermal system insulation that is uniform in color and texture.

permissible exposure limit (PELS) – Time-weighted average limit (TWA): an airborne concentration of asbestos of 0.1 fiber per cubic centimeter of air as an 8-hour time-weighted average (TWA) as determined by the method prescribed in Appendix A of 29 CFR 1910.1001.

regulated area – An area established by the employer to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limits.

surfacing ACM – Surfacing material that contains more than 1 percent asbestos.
2.2 References

- 29 CFR 1926.1101, Asbestos.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 General

- Because potential asbestos exposure is most closely associated with conditions at an operating facility, the T&PS construction site manager shall contact the appropriate facility personnel for plant project work to help identify those work activities and/or locations with potential asbestos exposure. The T&PS construction site manager shall determine any operating facility requirements applicable to the
scope of work and assure their incorporation into the written exposure control plan as outlined in 4.2, Written Plan.

- Asbestos is a highly regulated material. The T&PS construction site manager, in conjunction with appropriate operating facility personnel and the abatement contractor, shall make provisions for strict adherence to all applicable federal, state, and local regulations. Proper asbestos contractor licenses, abatement worker/supervisor certification, project notification, and fee payments to state regulatory agencies, notification to other building occupants, and regulatory compliance inspections are examples of the coordination activities that might need to be addressed.

- Consideration shall be given to the use of effective engineering controls to eliminate or reduce exposure to asbestos to levels that are as low as reasonably achievable. At a minimum, no personnel are to be exposed to asbestos at concentrations greater than the OSHA-required permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter of air as an 8-hour time-weighted average (TWA) or an excursion limit value of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of 30 minutes as determined by the method prescribed in appendix A of 29 CFR 1926.1101, Asbestos.

- When feasible engineering controls are not effective for exposure control, personnel will use appropriate personal protective equipment (PPE) and respiratory protection equipment provided by their employer at no charge to personnel.

- The T&PS construction site manager, in conjunction with the regional safety and health managers, shall ensure that special conditions addressing asbestos abatement activities are included in the contract.

### 4.2 Written Plan

The T&PS construction site manager shall ensure the contractor has a written exposure control plan for the specific asbestos hazards at each site/facility where the potential for exposure exists. The written plan must address the following issues as required by OSHA in 29 CFR 1910.1001, Asbestos, and/or 1926.1101:

- Employee information and training.
- Establishment of regulated areas.
- Contaminant-specific hazard communication.
- Exposure assessment.
- Monitoring observation procedures.
- Engineering and work practice controls.
- Respiratory protection.
• Protective work clothing and equipment.
• Housekeeping.
• Hygiene facilities and practices.
• Waste handling and disposal (generally requires written manifest).
• Medical surveillance and medical removal program.
• Recordkeeping and documentation.
• Emergency situations.
• Information from regulatory appendices.
• Applicable operating facility requirements.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2D-07, Asbestos.

Rev. 1
05/09/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-08

Abrasive Blasting

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<thead>
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<th>Date</th>
<th>05/09/2017</th>
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<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
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<td>Reviewed By Project Safety Leadership Team</td>
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<td></td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ......................................................................................... 3
  1.1 Purpose .............................................................................................................. 3
  1.2 Scope ................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ..................................................................... 3
  2.1 Definitions ........................................................................................................ 3
  2.2 References ..................................................................................................... 3

3.0 RESPONSIBILITY .............................................................................................. 3
  3.1 Construction Site Manager ............................................................................. 3
  3.2 Startup Manager ............................................................................................. 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
     Procurement, and Construction (EPC) Contractors) ...................................... 4
  3.4 Contractors ................................................................................................... 4

4.0 STANDARD ...................................................................................................... 4
  4.1 Requirements ................................................................................................ 4

5.0 KEY CONTACT ................................................................................................. 5

6.0 QUALITY RECORDS ........................................................................................ 5

7.0 ATTACHMENTS .............................................................................................. 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe abrasive blasting operations on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 29 CFR 1926.57(e), Disposal of exhaust materials.
- Environmental, Health, and Safety standard SH-S-2D-04, Lead.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Requirements**

- Any abrasive blasting operation on surfaces that have the potential of being coated with a lead-based paint or primer shall comply with standard SH-S-2D-04, Lead.

- Approved respiratory protection is mandatory in any abrasive blasting operation. Appropriate air-line respirators shall be worn by blasting operators and any other person subject to the same hazards as the operator. Appropriate particulate filter respirators may be approved for persons other than operators for short intermittent and occasional basis only.

- Operators shall be equipped with heavy canvas or leather hoods, gloves, and aprons.

- All hose nozzles shall be equipped with an operational pressure release switch (deadman switch) which will automatically cutoff when released or dropped by the operator. These switches shall not be tied down or otherwise bypassed by the operator.
• All hoses and connections shall be of the type and design for abrasive blasting operations. All couplings shall be positively secured from accidental disconnecting.

• If air is supplied for breathing from an air compressor, it must supply Grade D breathing air and shall be equipped with:
  – An alarm to indicate compressor failure and overheating. The sensor must monitor the breathing air temperature, not the temperature of the air compressor’s cooling system.
  – A high-temperature and carbon-monoxide alarm if the compressor is oil lubricated.
  – An in-line filter system. Filters shall be checked, cleaned, and changed in accordance with the manufacturer’s recommendations.
  – An in-line air reducing safety valve.
  – A vortex cooling system is recommended for employee comfort.

• Air compressors shall be so situated as to prevent entry of contaminated air into the system.

• When compressors are too far away from the abrasive blasting operation to monitor the warning devices and safety features, a means must be devised and approved to adequately warn blasting operators of impending hazards.

• Warning signs shall be posted around the perimeter of all abrasive blasting operations to warn personnel of hazards.

• The hose nozzle must be grounded to prevent buildup of static charges.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Remarks:
Issued. This standard supersedes E&CS procedure SH-2D-08, Abrasive Blasting.

Rev. 1
05/09/2017

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Deleted 4.1, first bullet, as redundant; repeated responsibility from 3.1. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2D-09

Radiological Nondestructive Testing (NDT)

<table>
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<td>Date</td>
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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ............................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions ..................................................................................................................... 3
  2.2 References ................................................................................................................... 3

3.0 RESPONSIBILITY ............................................................................................................. 3
  3.1 Construction Site Manager .......................................................................................... 3
  3.2 Startup Manager .......................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .......................................................................... 4
  3.4 Contractors .................................................................................................................. 4

4.0 STANDARD .................................................................................................................... 4
  4.1 Requirements ................................................................................................................ 4

5.0 KEY CONTACT ............................................................................................................... 6

6.0 QUALITY RECORDS ...................................................................................................... 6

7.0 ATTACHMENTS .............................................................................................................. 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for personnel radiation protection and compliance with applicable regulatory requirements during nondestructive testing (NDT) operations on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- 49 CFR 172.700, Hazardous materials regulations, training, purpose and scope.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

Radioactive materials and other sources of ionizing radiation shall be used in accordance with applicable federal, state, or local laws and regulations and by applicable T&PS site-specific plans, programs, or procedures. The exposure of employees to ionizing radiation must be maintained as low as reasonably achievable (ALARA). Where ionizing radiation exposure associated with NDT operations exists, the following requirements shall be complied with:

- NDT operations shall be performed in accordance with a written site-specific radiation safety program developed by the NDT service provider and submitted to the T&PS construction site manager for approval.

- In conformance with specific license conditions or federal, state or local regulations, a local or site radiation safety officer (RSO) shall be appointed and responsible for compliance oversight of NDT operation(s). Conditional with individual qualifications and license requirements, the RSO may be the operating plant RSO designee, the site safety resource, or a qualified service-provider employee.
• Personnel conducting radiographic operations shall be trained, qualified, and certified in accordance with the appropriate federal, state, and local regulations.

• T&PS shall obtain documentation from the service provider that a copy of the contractor's radiation safety training program has been filed with the U.S. Nuclear Regulatory Commission (NRC) for the appropriate state in which the NDT operations are in progress.

• A qualified radiographer shall be in constant attendance whenever a sealed source is used for radiography.

• At least two radiographers or a radiographer trainer (instructor) and a radiographer’s assistance (trainee) shall perform radiography at temporary field locations (agreement state requirements may apply; refer to individual state licenses).

• The NDT service provider’s qualification and training records shall be maintained on file and available for review by NRC and/or state representatives and T&PS upon request.

• Personnel performing radiographic operations shall be inspected at intervals to ensure compliance with license requirements and conditions, applicable regulations, and implementation of site-specific radiation safety procedure requirements.

• T&PS NDT service providers shall use only the sealed sources and radiation projectors designated in the applicable state/NRC or agreement state radioactive materials license.

• A calibrated and operable survey meter shall be available and used at each site where radiography is performed. A backup survey instrument shall be available at the site. In the event that both survey instruments become inoperable or deviate from calibrated operation, the NDT operation shall cease until replacement instruments are made available.

• Appropriate and sufficient radiation surveys shall be conducted during NDT operations to ensure personnel radiation exposure is within regulatory limits.

• Personal dosimetry shall be used by all personnel performing NDT. Analysis of personal dosimeters shall be performed by a laboratory that is recognized and accredited to perform said analysis.

• Administration and management of the personnel dosimetry program shall be the responsibility of the NDT service provider and the assigned RSO.

• Implementation and management of the personnel dosimetry program shall be consistent with regulatory requirements, and prescribed measurement and analytical procedures.

• Posting and placarding of NDT work areas shall be in conformance with regulatory requirements and associated radiation exposure rates.
• Administrative controls shall be used to control access of unauthorized personnel into NDT work areas.

• A documented, physical inventory of licensed radioactive material shall be conducted by the NDT service provider and the RSO. Inventories shall be conducted in accordance with license conditions or quarterly (if sources are stored in approved areas on site), whichever is more frequent.

• Transportation and shipment of licensed radioactive material shall be accomplished in accordance with license condition(s), NRC, and/or Department of Transportation (DOT) regulations, and/or the site-specific radiation safety procedure. Personnel shipping or preparing for shipment of radioactive source shall be trained with DOT 49 CFR 172.700. Training shall be completed prior to assignment and every 3 years.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
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Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2E-01

Temporary Electrical Power

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<thead>
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</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
  3.1 Construction Site Manager .................................................................................... 4
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Construction Management and Engineering, Procurement, and Construction (EPC) Contractors) ........................................................................... 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD ............................................................................................................... 5
  4.1 Planning ................................................................................................................ 5
  4.2 General Temporary Electrical Installations ............................................................. 5
  4.3 Services ................................................................................................................ 6
  4.4 Feeders ................................................................................................................ 6
  4.5 Branch Circuits ...................................................................................................... 6
  4.6 Receptacles ........................................................................................................... 7
  4.7 Ground-Fault Protection for Personnel .................................................................. 7
  4.8 Welding Equipment ............................................................................................... 7
  4.9 Temporary Lighting ............................................................................................... 7
  4.10 Hazardous Locations .......................................................................................... 8
  4.11 Guarding .............................................................................................................. 8
  4.12 Construction Trailers and Metal Buildings ............................................................. 8
  4.13 Special Conditions ............................................................................................... 9
  4.14 Labeling ................................................................................................................. 9
  4.15 Marking ................................................................................................................ 9

5.0 KEY CONTACT ......................................................................................................... 9

6.0 QUALITY RECORDS ................................................................................................ 9

7.0 ATTACHMENTS ....................................................................................................... 9
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides an outline of the requirements necessary to install, maintain, and remove temporary electrical facilities at Technical and Project Solutions (T&PS) projects. Some examples of those facilities are new construction areas, temporary pumping stations, change houses, shacks, and trailers.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

authorized person – A qualified person identified by the employer (contractor) to perform specific tasks or functions.

2.2 References

- Frequently Asked Questions (FAQ), SH-S-2E-01, Temporary Electrical Power.
- Environmental, Health, and Safety standards:
  - SH-S-2E-03, Ground Fault Protection.
  - SH-S-2E-06, Welding and Portable Generators.
- Engineering Standard E5F, Cables Buried Directly in the Ground.
- NEC, Article 230, Services.
- NEC, Article 240, Overcurrent Protection.
- NEC, Article 250, Grounding.
- NEC, Article 590, Temporary Wiring.
• NEC, Article 400, Table 4.
• NEC, Article 500, Hazardous (Classified) Locations.
• NEC, Article 501, Class I Locations.
• NEC, Article 502, Class II Locations.
• NEC, Article 503, Class III Locations.
• NEC, Article 550, Mobile Homes.

3.0 RESPONSIBILITY

3.1 Construction Site Manager
The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager
The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Construction Management and Engineering, Procurement, and Construction (EPC) Contractors)
Site managers for third-party construction management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors
Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.
4.0 STANDARD

4.1 Planning

• The T&PS construction site manager or his or her designee and the designated T&PS engineer who leads the work shall meet and analyze needs, available power sources, and locations for temporary electrical equipment.

• The temporary power distribution design including the unit substation shall be designed or reviewed by a registered electrical engineer. This design shall be documented and maintained in PIMS with up-to-date records of circuit installation and/or removal.

• If the temporary electrical service requirement is large or complex, such as uninterruptible power supply (UPS) systems on temporary construction (TC) administration buildings, T&PS shall supply an appropriate design.

4.2 General Temporary Electrical Installations

• All National Electric Code (NEC) regulations pertaining to permanent wiring also pertain to temporary wiring, except as altered or modified by Article 590 of the NEC.

• Temporary electrical power and lighting installations shall be permitted during the period of construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities. The temporary power installations shall be removed immediately upon completion of the construction or the purpose for which the wiring was installed, unless the plant management decides to leave it in place for future projects or other plant needs. In that case, the temporary power installations shall be documented on permanent plant drawings.

• The following general precautions apply to the use of temporary wiring:

1. Install temporary wiring so that it is not subjected to physical damage (that is, bury, protect in conduit, suspend overhead, or isolate). Protect flexible cords and cables from accidental damage; avoid sharp corners and projections. In areas where there is a greater potential for damage due to work activity, cords and cables more than 220 V shall be of the interlocked armored-type or installed in conduit to provide additional protection. Installations shall not create additional hazards such as tripping or overhead obstructions.

2. All temporary feed and distribution power cables shall be installed subgrade when feasible. When not installed subgrade, all provisions of the National Electric Code (NEC) article 590 shall be followed. All subgrade installations of temporary power shall be clearly identified by placement of detectable locators red danger tape marked BURIED ELECTRICAL CABLE (or equivalent) at a distance 12 to 18 in. above the buried cable. Surface signage indicating buried electrical cables shall also be installed at intervals not to exceed 50 ft. The records for
temporary power installation should include a surveyed location by the installing contractor (if possible) of any underground installations.

NOTE

When lumber is encountered during installation of subgrade temporary power, the installing contractor shall ensure lumber does not indicate prior installation of temporary feeds or cables.

3. Direct buried temporary electrical installations shall use cable rated for direct burial application.
4. All underground temporary electrical installations shall be identified to include survey points (if possible) on a site plot plan to facilitate future identification for excavation work activities during the construction period.
5. Do not use equipment in poor condition for temporary wiring.
6. Flexible conductors used for temporary power installations shall be of the heavy duty or extra heavy-duty rating as identified in NEC Article 400, table 4. (SJ, SJE, SJEW, SJEO, SJEOW, SJEOW, SJO, SJOW, SJOO, SJOW, SJOOW, SJT, SJTW, SJTO, SJTOW, SJTOO, SJTOOW, SO, SOW, SOO, SOOW, SE, SEW, SEO, SEOW, SEOOW).
7. When passing wiring through doorways or other pinch points, provide protection to avoid damage.
8. When suspending temporary wiring from the building structure, use nonconductive material.
9. Protect temporary wiring from overcurrent according to the requirements of Article 240 of the NEC.

4.3 Services

Install electrical services according to the requirements of Article 230 of the NEC.

4.4 Feeders

Feeders shall originate in an approved power outlet or panel board. Conductors are permitted within cable assemblies or within multiconductor cord or cable of a type identified in Table 4 of Article 400 of the NEC for hard usage or extra-hard usage. If the feeder is 600-V class, the feeder cable shall be labeled with its circuit voltage at its points of origin and destination and at points along its length in such a way that the label is visible from all viewing locations along its route.

4.5 Branch Circuits

All branch circuits shall originate in an approved power outlet or panel board. Conductors are permitted within cable assemblies or within multiconductor cord or cable
of a type identified in Table 4 of Article 400 of the NEC for hard usage or extra-hard usage. Label branch circuits as indicated in 4.14, Labeling.

4.6 Receptacles

- Use only ground-fault circuit interrupter (GFCI) receptacles or receptacles with GFCI breakers. GFCI breakers must be reset by authorized persons identified by the responsible contractor.

- All branch circuits shall contain a separate equipment-grounding conductor, and all receptacles shall be electrically connected to the equipment-grounding conductors.

- Do not install receptacles on branch circuits that supply temporary lighting.

4.7 Ground-Fault Protection for Personnel

- Ground-fault protection for personnel on construction sites shall be provided by a GFCI program.

- All 120-V, single-phase, 15-A and 20-A receptacle outlets that are not part of the permanent wiring of the building or structure and that are in use by personnel shall have GFCI protection for personnel.

- Portable GFCIs are required when using receptacle outlets that are a part of the permanent wiring of a building.

- For more information on GFCI, see EH&S standard SH-S-2E-03, Ground Fault Protection.

4.8 Welding Equipment

For information on temporary wiring of welding equipment, see EH&S standard SH-S-2E-06, Welding and Portable Generators.

4.9 Temporary Lighting

Observe the following requirements when wiring for temporary lighting:

- Temporary string lights or area lights shall be fed from a circuit(s) dedicated to lighting only.

- Use lighting levels sufficient to perform the specific task safely.
- Protect all lamps used for general illumination from accidental contact or breakage by using a suitable fixture or lamp holder with a guard.

- Use portable lights that have premolded cords and keep them in good repair.

- Portable lights, when used, shall be positioned or lashed to prevent them from falling to lower levels.

- Use nonconductive materials to suspend overhead cables, leads, and extension cords.

- Temporary lighting circuits must be configured for three-wire installation to include grounding. Two-wire installation is prohibited.

- Ensure that maximum total wattage for a 20-A circuit is 1600 W.

- Use cable identified for hard usage or extra-hard usage for stringer lighting installations.

- Do not suspend temporary lights by their electric cords unless cords and lights are designed for this means of suspension.

- Portable electrical lighting used in wet and/or other conductive locations such as drums, tanks, and vessels shall be operated at 12 V or less. However, 120-V lights may be used if protected by a GFCI.

4.10 Hazardous Locations

Install temporary wiring in hazardous locations to meet the classification of the area. For more information on classifications, see NEC Articles 500-503.

4.11 Guarding

For temporary wiring over 600 V, provide suitable fencing, barriers, or other effective means to prevent access of anyone other than authorized and qualified personnel. Signage indicating AUTHORIZED PERSONNEL ONLY shall also be affixed to access points.

4.12 Construction Trailers and Metal Buildings

Provide grounding for construction trailers according to the requirements of Article 550 of the NEC. Provide grounding for metal buildings according to the requirements of Article 250 of the NEC.
4.13 Special Conditions

- When using temporary feeds to permanent equipment and facilities, take care to control back feeds, dual feeds, and similar situations. Attach appropriate caution and warning signs to both the equipment and cables.

- Upon completion of the job, remove any temporary underground cables. If the cables cannot be removed, the T&PS construction site manager shall ensure subgrade installations are recorded on permanent site maps and the appropriate engineering drawings.

4.14 Labeling

Identify and label all disconnect switches. State the circuit voltage source and the equipment being serviced. Label all receptacles on temporary racks with the circuit voltage present and the circuit number.

4.15 Marking

In areas where disconnect switch racks, distribution panels, and motor control centers (MCCs) are located, mark the floor with yellow caution paint 3 ft in front of the equipment, or install a permanent barricade to prevent personnel from blocking access to the operating handles. For short-term installations, use yellow safety tape instead of paint.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-2E-01, Temporary Electrical Power.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

Rev. 2
02/13/2018
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Added text and link for FAQ document (2.2). Added temporary pumping stations the example list (1.1). Added definition of authorized person (2.1). Changed word “contract” to “construction” (3.3). Clarified planning requirements (4.1). Clarified general temporary electrical installations (4.2). Added requirement to label branch circuits (4.5). Clarified requirements for GFCI reset (4.6). Added requirements for temporary lighting (4.9), guarding (4.11), and special conditions (4.13).

05/15/2019
Organization name updated.
NOTE

This Frequently Asked Questions (FAQ) document is not a substitute for training to Technical and Project Solutions (T&PS) Environmental, Health, and Safety (EH&S) standard SH-S-2E-01, Temporary Electrical Power, and having a thorough understanding of that standard. If a conflict arises between this FAQ and SH-S-2E-01, the text of the standard governs.

Q1. Is interlocked armored cable or metal conduit required on all temporary power above 220 volts?

A1. No, interlocked armored cable or metal conduit are one means of protection that can be used when there is a greater threat of damage and potential personnel exposure. As an example, standard cables cannot be run within 10 ft of or on scaffolding. The use of metallic conduit or interlocked armored cable will allow the temporary feed to be within 10 ft or, in some cases, supported by the scaffold and still afford adequate personnel protection.

Q2. What is meant by detectable locator red danger tape marked BURIED ELECTRICAL CABLE?

A2. Detectable warning tape is used to help locate underground pipes and cables, as well as warn excavation crews of the presence of underground utility lines. Typically, aluminum foil is integrated into the warning tape so inductive testing (metal detector) can be used to help identify underground utilities before excavation.

Q3. Why does Technical and Project Solutions (T&PS) prohibit two-wire lighting circuits when they are allowed by OSHA?

A3. Three-wire lighting circuits are intrinsically safer than two-wire circuits. If the location is wet or some other conductive environment, a GFCI can be readily added and will function properly. This situation is not always the case with two-wire lighting circuits when GFCI breakers are used.

Q4. Can anyone reset GFCI receptacles after a trip?

A4. Anyone using a GFCI receptacle can attempt a reset after it has tripped. If the receptacle will not reset or keeps tripping, first tag out the receptacle and assure personnel cannot be harmed, then contact the appropriate qualified/authorized personnel. Only authorized employees are allowed to reset GFCI breakers inside of panels.
Q5. Are all temporary electrical feeds and power distribution cables required to be installed subgrade?

A5. Yes, the intent is that all temporary electrical feeds and power distribution cables will be installed subgrade to provide the greatest protection from damage and isolation from employees. However, when it is not feasible to do so such as, but not limited to, routing inside a building, all installation requirements of the National Electric Code Article 590 relating to temporary wiring shall be followed.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

**SH-2E-02**

Electrical Testing and Startup

<table>
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<tr>
<th>Date</th>
<th>05/09/2017</th>
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<tr>
<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
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<td>Project Services</td>
<td>Bill Boyd</td>
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<td>Project Support</td>
<td>Bruce Long</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
1.1 Purpose ................................................................................................................. 3
1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
2.1 Definitions .............................................................................................................. 3
2.2 References/Additional Resources .......................................................................... 3

3.0 RESPONSIBILITY ..................................................................................................... 4
3.1 Construction Site Manager .................................................................................... 4
3.2 Startup Manager .................................................................................................... 4
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
3.4 Contractors ............................................................................................................ 4

4.0 PROCEDURE ........................................................................................................... 4
4.1 General .................................................................................................................. 4
4.2 Testing and Startup Team ..................................................................................... 5
4.3 Testing and Startup Plan ....................................................................................... 5
4.4 General Precautions .............................................................................................. 6

5.0 KEY CONTACT ......................................................................................................... 7

6.0 QUALITY RECORDS ................................................................................................ 7

7.0 ATTACHMENTS ....................................................................................................... 7
NOTE

For work that involves plant-controlled equipment, the hazardous energy control procedure in use at the facility (either SCG-SH-0200, Generation Clearance Procedure, or SCG-SH-0201, Lockout Tagout (LOTO) Procedure) shall be the guiding document to ensure personnel and equipment safety.

1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the requirements necessary to perform electrical testing and startup of electrical or electrically operated equipment and facilities on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References/Additional Resources

- T&PS procedures:
  - SH-2E-04, Energizing Electrical Equipment
  - SU-5, Tagging and Clearances
- SCG-SH-0200, Generation Clearance Procedure
- SCG-SH-0201, Lockout Tagout (LOTO) Procedure
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 General

- After initial construction tasks have been accomplished, testing and startup requires frequently energizing and deenergizing of equipment. These changing conditions can present hazards, such as process releases, rotating equipment, and stored energy. An electrical testing and startup plan shall be developed to address potential hazards in addition to the shock, flashburn, and equipment damage associated with electrical work.
• Testing and startup responsibilities shall be clearly defined by the T&PS project manager as soon as possible after the job task/scope of work has been defined so that:
  – A testing and startup team can be identified, properly trained, authorized, and available to perform testing and startup activities, and
  – An electrical testing and startup plan can be written and implemented.

4.2 Testing and Startup Team

• The testing and startup team shall understand what can happen when a circuit is initially energized. A limited number of personnel shall be authorized to energize and deenergize circuits as necessary to test and startup the system. All pertinent drawings (single lines, schematics, loops, P&IDs) should be available. Energizing the equipment shall be accomplished in accordance with procedure SH-2E-04, Energizing Electrical Equipment.

• If troubleshooting is necessary due to problems identified during testing, qualified personnel shall accomplish troubleshooting.

• The testing and startup team shall coordinate all design changes with the originating designer and/or engineer. All changes to design drawings shall be documented and should be returned to the originating designer and/or engineer for drawing revision.

• Preferably, testing work should be performed while the equipment and circuits are deenergized. If it becomes necessary to troubleshoot energized circuits to determine corrections needed for proper operation, qualified persons on the testing team shall perform the troubleshooting.

4.3 Testing and Startup Plan

The testing and startup team shall prepare an electrical testing and startup plan to cover all electrical testing and startup activities:

• The plan shall identify appropriate coordination with existing facility personnel and procedures.

• The plan shall identify the person who has responsibility to coordinate mechanical and other testing and startup teams.

• The plan shall identify the person who is responsible for authorization of electrically hazardous work.

• The plan shall identify the mechanism to be used to determine the status of testing and startup. An example of this mechanism is marked drawings.

• Each task shall be analyzed in a way that safe conditions are assured.
4.4 General Precautions

- To the extent possible, testing shall be accomplished with the system deenergized.

- Personnel shall remove all rings, watches, and other jewelry. Rings that cannot be removed shall be covered with electrical tape for electrical and physical protection.

- Personnel shall wear clothing and personal protective equipment appropriate to the job.

- Hand tracing of wiring without electrically isolating the starter or other electrical equipment shall be avoided.

  **NOTE**

  Test before touching.

- Unknown circuits in wiring have caused fatalities. Extreme caution shall be taken when working on them.

- Persons performing testing and startup work shall not be placed under time constraints and shall be prepared for unexpected events. Extended work hours should be evaluated for safety implications.

- All unauthorized or unnecessary personnel shall exit the affected area before energizing the equipment.

- Deviation from planned activities shall be approved by the team leader and communicated to all appropriate parties before implementing the change.

- All circuits and equipment rated 480 V and above should be insulation-resistance tested before being energized if required in the testing and startup plan.

- Before touching uninsulated conducting parts, personnel shall confirm the absence of voltage by using an approved meter.

- The appropriate clearance, hazardous energy control, or lockout/tag-out procedure shall be identified and followed.

- Safety grounds shall be constructed and installed.

- A procedure to control temporary jumpers shall be established. Some examples of how to accomplish this control are tagging the jumpers with red ribbon or keeping a written log of jumpers installed.
5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Issued.

Rev. 1
03/11/2009
Approved by Bruce Walker
Reviewed by Construction Safety Leadership Team
Revised by Will Taylor
Remarks:
Added note before 1.0 on SCG-SH-0200. Added scope statement (1.2). Added responsibility statements for construction site manager (3.1) and contractors (3.2).

Rev. 2
07/30/2012
Approved by PCT chair
Revised by Bob Fitzgerald
Remarks:
Approved by PCT chair as nonsubstantive change.

Rev. 3
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

11/28/2017
Added link to SCG-SH-0201, Lockout Tagout (LOTO) Procedure (2.2).

12/04/2017
Edited note before 1.0 to include SCG-SH-0201.

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2E-03

Ground Fault Protection

<table>
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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose .............................................................. 3
  1.2 Scope .............................................................. 3

2.0 DEFINITIONS AND REFERENCES ........................................ 3
  2.1 Definitions .......................................................... 3
  2.2 References .......................................................... 3

3.0 RESPONSIBILITY ................................................................. 3
  3.1 Construction Site Manager ............................................. 3
  3.2 Startup Manager ........................................................ 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................ 4

4.0 STANDARD .............................................................................. 4
  4.1 How GFCIs Work ......................................................... 4
  4.2 Required Use ............................................................ 4
  4.3 Type and Proper Use of GFCIs ........................................ 5
  4.4 Testing ................................................................. 5

5.0 KEY CONTACT ................................................................. 6

6.0 QUALITY RECORDS ............................................................ 6

7.0 ATTACHMENTS ................................................................. 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for using ground-fault circuit interrupters (GFCIs) and some manufacturers’ recommendations on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
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Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 How GFCIs Work

Under normal conditions, the current in an electrical branch circuit flows equally between the hot (supply) and neutral (return) conductors. The GFCI has a sensing element that monitors the current of both conductors. If the GFCI senses a current difference between the hot and neutral conductors of as much as 5 mA, it will trip, opening the circuit in a fraction of a second protecting the user of a defective tool, device, or extension cord from shock.

4.2 Required Use

- GFCIs shall be used on all extension cords and portable electric tools. Deviations, including substitution of an assured grounding program in lieu of 100-percent GFCI protection, may be authorized only by the T&PS construction site manager with concurrence from the environmental, health, and safety (EH&S) resource.

- Portable electric lighting used in confined spaces shall operate at 12 V maximum or 120 V if protected by a GFCI. Low-voltage (12 V) lighting is recommended because of the possibility of the GFCI tripping and leaving the entrants unable to see.

- Electric tools shall not be permitted on the same circuit as lighting where 120-V GFCI-protected lighting is used, for the same reason as stated in the previous bullet.

- All portable GFCIs are to be placed at the power source and not at the end use location.
4.3 Type and Proper Use of GFCIs

GFCIs should only be used on ac circuits. GFCI devices do not function properly on dc circuits.

- **Class A GFCIs:**
  - Are accepted as personal protection by OSHA in temporary wiring circuits.
  - Should be plugged in as close to the circuit source as possible.
  - Should be tested using the built-in test button before each use.
  - Do not afford protection in the event of an open circuit neutral condition.

**CAUTION**
Some Class A GFCIs have an automatic reset feature and are not approved for use on T&PS projects.

**CAUTION**
A GRCl breaker in a panel board does not afford protection in the event of a reverse polarity circuit condition.

**NOTE**
Class A GFCI receptacles and breakers in permanently wired systems that have been tested for open circuit neutral and reverse polarity are acceptable as personal protection and afford excellent shock protection.

- **Class B GFCIs** are not to be used for personal protection. They are intended for use as equipment protection only.

- Use an assured grounding program in lieu of GFCIs for magnetic base drills. The hazard created by the GFCI tripping can be greater than the shock hazard. When used in this fashion, a tag is required at the power source stating MAGNETIC DRILL IN USE – DO NOT REMOVE. The drill must be tethered to prevent falling in the event of power loss.

4.4 Testing

- All GFCIs have a test button that proves the internal contacts will mechanically trip. The test button shall be operated each time the GFCI is used. Other testing should be done per the manufacturer’s recommendation and documented.
• Field-fabricated portable GFCI units shall be 100-percent tested for open circuit neutral and reverse polarity.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
**Attachment A - Historical Summary of Changes**

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<td>Revised 3.0, Responsibility, to reflect updated E&amp;CS contract strategy. Corrected position title (5.0).</td>
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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2E-04

Energizing Electrical Equipment

<table>
<thead>
<tr>
<th>Rev. 3**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
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<td>Project Services</td>
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<td>Project Support</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 3
  3.1 Construction Site Manager .................................................................................... 3
  3.2 Startup Manager .................................................................................................... 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................................................................ 4

4.0 PROCEDURE ........................................................................................................... 4
  4.1 General.................................................................................................................. 4
  4.2 Energizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment ............................................................................................................. 5
  4.3 Energizing Utilization Equipment That Is 600 V or Less But Over 125 V-to-Ground ................................................................................................................................. 5
  4.4 Energizing Utilization Equipment That Is 125 V-to-Ground and Below ................... 5
  4.5 Using the Planning Outline .................................................................................... 6

5.0 KEY CONTACT ......................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................ 6

7.0 ATTACHMENTS ....................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the minimum planning and review requirements for safely energizing electrical equipment on Technical and Project Solutions (T&PS) projects. This procedure applies to equipment that has been tested (checked out) and is ready to be energized.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

Form 2E-04.1, Planning Outline for Energizing Electrical Equipment

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring
contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as part of the contractor's site-specific safety plans.

4.0 PROCEDURE

4.1 General

The T&PS or third-party site manager shall ensure the following steps are taken prior to energizing the electrical equipment:

1. Analyze the diagrams, drawings, and field conditions to evaluate the possibilities of creating a backfeed to equipment other than the equipment being energized and to find out if temporary feeds have been installed.

2. Verify the accuracy of the drawings and the absence of temporary feeds with the facility electrical representative who knows if the equipment has been modified. Any drawings found to be inaccurate shall be marked for updating and submitted to engineering for correction.

3. If the equipment was previously energized, determine the reason it was deenergized, and verify that the equipment is ready to be reenergized.

4. Check the operating voltage and energy levels of the equipment or system being energized to classify the work and to determine the types of voltage testers and personal protective equipment (PPE) that are required to energize the system safely. Refer to NFPA 70E for applicable PPE requirements.

5. Determine who will perform each of the following activities:
   - Throwing switches.
6. Notify all personnel affected.

7. Determine the test method to assure the system is clear.

8. Inspect the equipment visually to verify conditions and to ensure that appropriate labeling has been installed.

4.2 Energizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment

The T&PS or third-party representative responsible for the work and appropriate contractor personnel including electrical craft and facility electrical representatives shall hold a planning meeting prior to energizing any equipment over 600 V or any 600-V class distribution equipment. The purpose of the meeting is to establish a common understanding of the scope of work and associated hazards.

4.3 Energizing Utilization Equipment That Is 600 V or Less But Over 125 V-to-Ground

- The T&PS or third-party representative responsible for the work and appropriate contractor personnel including electrical craft and facility electrical representatives shall hold a planning meeting prior to energizing any equipment that is 600 V or less but over 125 V-to-ground. This equipment includes motor control centers (MCC), 600-V class distribution panels, 480-V motors, 480-V disconnects, the line side of power and lighting panels, and any other equipment that has a 480-V primary feed.

- The meeting can cover more than one piece of equipment, such as a package or a turnover system. The purpose of the meeting is to establish a common understanding of the scope of work and associated hazards.

4.4 Energizing Utilization Equipment That Is 125 V-to-Ground and Below

The T&PS or third-party representative in charge of the work, appropriate contractor personnel, and the site/facility electrical representative shall meet prior to energizing any equipment that is 125 V-to-ground or below, such as the breakers in power and lighting panels and 250-V class disconnect switches and related equipment. The meeting can cover work on several breakers in one panel or an entire turnover system. The purpose of the meeting is to establish a common understanding of the scope of work and associated hazards.
4.5 Using the Planning Outline

When any electrical equipment is energized, the T&PS representative in charge of the work should use form 2E-04.1, Planning Outline for Energizing Electrical Equipment, to help determine the scope of work, potential hazards, and appropriate safety precautions.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
12/10/2002
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Issued.

Rev. 1
03/11/2009
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Added scope statement (1.2). Added responsibility statements for construction site manager (3.1) and contractors (3.2). Clarified language (4.1).

Rev. 2
07/30/2012
Approved by PCT chair
Reviewed by Bob Fitzgerald
Remarks:
Approved by PCT chair as nonsubstantive change.

Rev. 3
04/27/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 1.2, Scope, to include third-party personnel. Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Added phrase “or third-party” to occurrences of E&CS construction site manager or representative. Corrected position title (5.0). Added attachment A, Historical Summary of Changes.

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedure

SH-2E-05

Deenergizing Electrical Equipment

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<tr>
<td>Date</td>
<td>04/27/2017</td>
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<tr>
<td>Revised By</td>
<td>Bill Batts, manager-Construction Safety and Health</td>
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| Approved By| Project Services  
|            | Bill Boyd  
|            | Project Support  
|            | Bruce Long |
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
  1.1 Purpose .......................................................................................................................... 3
  1.2 Scope ............................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES .............................................................................. 3
  2.1 Definitions ..................................................................................................................... 3
  2.2 References .................................................................................................................... 3

3.0 RESPONSIBILITY ........................................................................................................ 4
  3.1 Construction Site Manager ......................................................................................... 4
  3.2 Startup Manager .......................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ................................................. 4
  3.4 Contractors .................................................................................................................. 4

4.0 PROCEDURE ............................................................................................................... 4
  4.1 Requirements ................................................................................................................ 4
  4.2 Deenergizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment ................................................................................................................. 5
  4.3 Deenergizing Utilization Equipment of 600 V or Less with More than One Supply Source ...................................................................................................................... 6
  4.4 Deenergizing Utilization Equipment of 600 Volts or less with a Single Supply Source .............................................................................................................................. 6
  4.5 Deenergizing Unknown or Abandoned Equipment or Equipment With an Unknown Source of Energy .............................................................................................................. 6
  4.6 Using the Planning Outline .......................................................................................... 7

5.0 KEY CONTACT ........................................................................................................... 7

6.0 QUALITY RECORDS .................................................................................................. 7

7.0 ATTACHMENTS ......................................................................................................... 7
NOTE

For work that involves plant-controlled equipment, the hazardous energy control procedure in use at the facility (either SCG-SH-0200, Generation Clearance Procedure, or SCG-SH-0201, Lockout Tagout (LOTO) Procedure) shall be the guiding document to ensure personnel and equipment safety.

1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides the minimum planning and review requirements for safely deenergizing electrical equipment on Technical and Project Solutions (T&PS) projects. The procedure applies to equipment that has been permanently or temporarily energized.

1.2 Scope

This procedure applies to all T&PS or third-party project-assigned personnel and contractors whose contract includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- Form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment
- T&PS procedure SU-5, Tagging and Clearances
- EH&S standard SH-S-2E-08, Hazardous Energy Control
- SCG-SH-0200, Generation Clearance Procedure
- SCG-SH-0201, Lockout Tagout (LOTO) Procedure
- NFPA 70E-2009
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

4.0 PROCEDURE

4.1 Requirements

The T&PS or third-party construction site manager shall ensure the following steps are taken prior to deenergizing any electrical equipment:

- Analyze the diagrams and drawings to determine the possible location of any temporary feeds, backfeeds, alternate feeds, or other external sources or power and control voltages.
• Verify the accuracy of the drawings and the presence of feeds with the facility electrical representative.

• Check the operating voltage and energy levels of the equipment or system being deenergized to classify the work and to determine the types of voltage testers and personal protective equipment (PPE) that are required to deenergize the system safely. Refer to NFPA 70E for applicable PPE requirements.

• Determine who will perform each of the following activities:
  – Throwing switches.
  – Voltage testing.
  – Grounding.

• Determine the level of grounding required (discharge or safety).

• Identify the requirements for re-verifications at each work shift, including safety grounds and tests for voltage at the point of work.

• Identify the points where tests for voltage shall be made and the types of testers to be used. A test for voltage is required at each point of work, and no work may be started until all points have been checked for the absence of voltage.

• Inspect the equipment visually to verify existing conditions and appropriate labeling.

4.2 Deenergizing Equipment or Feeders Over 600 V and 600-V Class Distribution Equipment

• Planning Meeting
  – The T&PS or third-party representative responsible for the work, appropriate contractor personnel including electrical craft, and facility electrical representatives shall hold a planning meeting prior to deenergizing any equipment over 600 V or any 600-V class distribution equipment. The purpose of the meeting is to determine a scope of work and to complete form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment.
  – The planning outline requires the written approval of the area engineer (if applicable), the electrical superintendent, and the appropriate site/facility electrical representative.

• Installing Safety Grounds
  – Installing or removing safety grounds is potentially very dangerous and may be classified as hazardous work, depending on conditions.
  – Personnel who install or remove safety grounds shall be qualified electricians.
  – Safety grounds shall be installed on the following equipment and feeders before personnel come into contact with them:
o Feeders and equipment over 600 V.

o Switch gear and unit substation buses.

o 600-V class feeders from substations.

o All overhead electrical lines on both sides of the point of work.

4.3 Deenergizing Utilization Equipment of 600 V or Less with More than One Supply Source

- Deenergizing utilization equipment of 600 V or less that has more than one supply source can be particularly hazardous because of the presence of backfeeds, alternate feeds, or external sources of power. The T&PS or third-party representative responsible for the work, appropriate contractor personnel, including electrical craft, and facility electrical representatives shall hold a meeting prior to deenergizing any of the equipment. The facility electrical representative should be the person with the most knowledge about a particular system. The purpose of the meeting is to determine the scope of work and to complete form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment.

- The planning outline requires the verbal or written approval of the facility engineer and T&PS or third-party electrical representative. The complexity of the deenergizing task determines whether the approval shall be in writing.

4.4 Deenergizing Utilization Equipment of 600 Volts or less with a Single Supply Source

The T&PS or third-party representative responsible for the work, appropriate contractor personnel including electrical craft, and facility electrical representatives shall hold a meeting prior to deenergizing any of the equipment. The purpose of the meeting is to determine the scope of work and to complete form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment. After deenergizing and prior to starting any work on the equipment, test all points of work for the absence of voltage.

4.5 Deenergizing Unknown or Abandoned Equipment or Equipment With an Unknown Source of Energy

When deenergizing a system where the feed cannot be identified, has been abandoned, or is fed from an unknown source, workers shall follow the requirements in EH&S standard SH-S-2E-08, Hazardous Energy Control, 4.5, Unidentified Systems, Abandoned Systems, or Systems With an Unknown Source of Energy, prior to performing any work.
4.6 Using the Planning Outline

When any electrical equipment is deenergized, the T&PS or third-party representative in charge of the work shall use form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment, to review the scope of work, potential hazards, and appropriate safety precautions with the people who will do the work. All work shall be performed in the manner described in the planning outline. If the work cannot be performed according to the planning outline, the workers shall stop and initiate a new planning process.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager-Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A – Historical Summary of Changes

Rev. 0
07-11-2008
Approved by Don Gaddy
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Issued.

Rev. 1
7/31/2012
Approved by Will Taylor
Reviewed by Construction Safety Leadership Team
Revised by Bruce Walker
Remarks:
Added responsibility for Construction Site Manager and Contractors. Added references and links.

Rev. 2
07-30-2012
Approved by PCT Chair
Revised by Bob Fitzgerald
Remarks:
Approved by PCT chair as a nonsubstantive change. Changed organization names.

Rev. 3
05/25/2016
Approved by Bill Batts, Chad Kendrick, and Bill Boyd
Reviewed by Project Leadership Safety Team and Procedure Consolidation Team
Revised by Bill Batts
Remarks:
Added references to SH-2E-08 (2.2 and 4.5). Added 3.2, Startup Manager. Raised second-level headings to first-level to improve usability of table of contents, for example, 4.1.1 became 4.2. Added section on deenergizing unknown or abandoned equipment or equipment with an unknown energy source (4.5). Added Historical Summary of Changes.

10-04-2016
Corrected text and links to referenced documents.

Rev. 4
04/27/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Process Coordination Team and Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 1.2, Scope, to include third-party personnel. Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Added phrase “or third-party” to occurrences of E&CS construction site manager or representative. Corrected position title (5.0).

12/04/2017
Edited note before 1.0 to include 0201. Added text and link to SCG-SH-0201, Lockout Tagout (LOTO) Procedure (2.2).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

**SH-S-2E-06**

Welding and Portable Generators

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<td><strong>Date</strong></td>
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<td>Project Services</td>
</tr>
<tr>
<td></td>
<td>Project Support</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose .............................................................................. 3
  1.2 Scope .............................................................................. 3

2.0 DEFINITIONS AND REFERENCES .............................................. 3
  2.1 Definitions ........................................................................ 3
  2.2 References ....................................................................... 3

3.0 RESPONSIBILITY ....................................................................... 3
  3.1 Construction Site Manager .................................................. 3
  3.2 Startup Manager ................................................................ 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................. 4
  3.4 Contractors ...................................................................... 4

4.0 STANDARD ............................................................................ 4
  4.1 Electrical Hazards and Training Requirements ...................... 4
  4.2 Welding Machine Installation ............................................. 5
  4.3 Welders ........................................................................... 5
  4.4 Various Type Welding Machines Requirements ..................... 6
  4.5 Portable Generators ......................................................... 7

5.0 KEY CONTACT ...................................................................... 8

6.0 QUALITY RECORDS ............................................................... 8

7.0 ATTACHMENTS .................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides a safe method for using electric welding machines, welding, and small 120/240-V portable generators at Technical and Project Solutions (T&PS) projects. This standard also addresses the electrical hazards associated with electric welding and small portable generators as well as the electrical safety training requirements for welders.

This standard does not cover portable generators supplying voltages greater than 120/240-V. Generators supplying voltages other than 120/240 V are considered to be separately derived sources and require installation according to applicable over-current protection (fuses or circuit breakers) and grounding requirements of the National Electrical Code articles 240 and 250.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions
None.

2.2 References

NEC Article 630.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and
monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Electrical Hazards and Training Requirements

- The electrical hazards associated with electric welding and electric welding machines are:
  - Shock from both the welding machine incoming power and the welding voltages.
  - Burn from flash at the welding machine incoming power cable and connections.
- Electrical shock to welders can be avoided by using proper welding techniques and personal protective equipment (PPE). Training welders in the electrical hazards of welding and electric welding machines is a requirement of 29 CFR 1910 and 1926.
- Welder training, awareness, and the proper use of PPE can also prevent flash burn.
4.2 Welding Machine Installation

A qualified person shall:

- Install and inspect all electrically connected welding machine power sources at each new installation to ensure that the integrity of the conductor and its terminations are adequate.

- On an annual basis, inspect welding machines that are fixed installations. This inspection shall address the:
  - Insulation integrity of the supply-side conductors.
  - Adequacy of the supply-side conductor terminations.
  - Proper over-current protection for the welding machine.
  - Adequacy of the equipment grounding conductor.
  - Indications of weather or water damage.

- Ensure that each electric welding machine is supplied from a properly sized switch with properly sized over-current protection and cable. (NEC Article 630.)

- The power supply conductors are either four-conductor cords (with ground wire included within the cord) or three-conductor cords (with an external ground wire) and the ground conductor is adequately connected to a good ground.

4.3 Welders

Welders shall perform the following activities:

- Inspect welding leads prior to use to ensure that the insulation is not damaged and that the conductor is not exposed. Repair or discard damaged leads.

  NOTE

  It is not permissible to repair by splice or tape damage that is within 10 ft of the end of a lead; however, the lead may be cut and reterminated to the connector.

- Connect welding leads to the welding machine by a male plug. Ensure that the female portion of the connector is the energized part of the set.

- Make sure welding lead connection points on the welding machine have guards to avoid accidental contact with exposed terminals.

- Two leads shall be connected at the work location whenever there is the potential for the return path of the welding current to pass through delicate equipment such as turbines, generators, other rotating equipment, instrumentation, or controls. Do not use building steel or pipelines as the return path for the welding current. When
welding to building steel or pipelines, connect the return lead to the same steel part where welding is to proceed.

- Turn off the welding machine while pulling leads to a new location and in some cases until the welder is in position to make a weld. In cases where the welder shall lie/lean on a grounded surface to perform a welding task, another person should start the machine when the welder is ready to strike an arc and begin the task.

- Do not support welding leads with tie wire. This practice damages the welding lead insulation. Support leads with nonconductive materials or insulated wire. Install welding leads so that they are not potential tripping hazards.

- Eliminate the possibility of partially exposing a connection while pulling the leads. Male and female connectors of welding leads may need to be taped or otherwise restrained from separating. Welding leads should not be tied in a knot.

- Inspect electrode holders (rod holders) for cracked or broken insulated covers. Discard or repair insulation if found defective.

- Remove the rod from the holder when unattended.

- Do not weld on material or equipment suspended by a metallic support mechanism (choker, chainfall, and load line) unless it is insulated to ensure that the return path of welding current does not pass through the rigging. This practice is prohibited because of the possibility of damage to the choker or the load line. When such an operation is required, the support shall include an insulating element to eliminate the possibility of welding current flowing through the support.

NOTE

Pipelines and equipment containing flammable or combustible materials shall not be a part of the welding path.

4.4 Various Type Welding Machines Requirements

- Portable Welding Machines
  - A driven ground rod or case ground to building steel is not required for mechanically driven welding machines.
  - When a portable welding machine includes a receptacle for convenience power, the receptacle shall be guarded with a ground fault circuit interrupter (GFCI) if the voltage is alternating current. Many older machines have receptacles equipped with reset buttons that are not ground fault circuit interrupters; in this case, portables GFCIs shall be used. If the voltage is direct current, the receptacle should be disabled and not be used.
• Multiarc Welding Machines (this type welder is not to be confused with 6/8 pack rectifier-type machines. They normally consist of one welding output source, either 500 or 1000 A, connected to multiple grid units).
  
  – Do not use multiarc welding machines to supply welding power of different polarity from the same power source. Connect each power source to supply only single-polarity welding. Modify each unit as needed to provide a method for connecting the welding return cable to the unit source.
  – Use a different type of connector for each conductor function of multiarc welding machines. For instance, the work lead should use a connector that cannot be inserted into a return lead connector. It shall be impossible to connect either the work lead or the return lead into the conductors supplying the resistor unit.

• Dual-Polarity Welding
  
  – To ensure that a person cannot contact both polarities at the same time, keep the exposed electrode holders of different polarities at least 10 ft (3 m) from each other and from the work, or otherwise separate the electrode holders from each other and from the work by a physical barrier.
  – Identify reverse-polarity welding machines and welding leads by color code. (The reverse-polarity color code is normally red. The straight-polarity color code is normally yellow.) The welding return lead should be unmarked.

• High-Frequency Welding Machines
  
  – The potential for electrical shock is greater with high-frequency welding that with direct-current welding.
  – Both the work and return welding leads from high-frequency welding machines shall be as short as possible to prevent possible radio frequency interference with electronic equipment.

4.5 Portable Generators

• A driven ground rod or case ground to building steel is not required for portable generators.

• The 120-V convenience receptacle of a portable generator shall be guarded by a GFCI when used to supply power to electric hand tools.

  NOTE

Not all manufactured portable generators will function properly with GFCIs unless they are modified by installing a jumper from the neutral winding (at the terminal junction point) to the generator case. A simple test can be conducted to determine if a GFCI will operate properly. Using an approved-type voltage test meter, test with the generator running, between the hot side of the receptacle to the generator case; if the reading is 0, modification is required.
5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Issued. This standard supersedes E&CS procedure SH-2E-06, Welding and Portable Generators.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts
Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Procedures

SH-2E-07

Working On or Near Electrical Services and/or Equipment

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</table>
## CONTENTS

1.0 PURPOSE AND SCOPE .......................................................... 3  
   1.1 Purpose ........................................................................... 3  
   1.2 Scope ............................................................................. 3  

2.0 DEFINITIONS AND REFERENCES ........................................ 3  
   2.1 Definitions ........................................................................ 3  
   2.2 References ....................................................................... 3  

3.0 RESPONSIBILITY ................................................................. 4  
   3.1 Construction Site Manager .................................................. 4  
   3.2 T&PS Startup Manager ....................................................... 4  
   3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4  
   3.4 Contractors ....................................................................... 4  

4.0 PROCEDURE ........................................................................ 5  
   4.1 Electrical Hazards ............................................................... 5  
   4.2 Electrically Hazardous Tasks .............................................. 5  
   4.3 Electrically Nonhazardous Tasks ....................................... 5  
   4.4 Training Requirements ...................................................... 6  
   4.5 Emergency Preparedness ................................................... 6  
   4.6 Minimum Approach Distances for Nonqualified Personnel .................................................. 6  
   4.7 Minimum Approach Distances for Qualified Personnel ...................................................... 7  
   4.8 Performing Electrically Hazardous Tasks .......................... 7  
   4.9 Unidentified or Abandoned Systems or Systems With an Unknown Source of Energy ................................................... 9  
   4.10 Job Safety Briefings ......................................................... 9  

5.0 KEY CONTACT .................................................................. 9  

6.0 QUALITY RECORDS .......................................................... 9  

7.0 ATTACHMENTS ................................................................. 10
NOTE

For work that involves plant-controlled equipment, the hazardous energy control procedure in use at the facility (either SCG-SH-0200, Generation Clearance Procedure, or SCG-SH-0201, Lockout Tagout (LOTO) Procedure) shall be the guiding document to ensure personnel and equipment safety.

1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides requirements for working on or near electrical equipment and services that cannot be placed in an electrically safe working condition in accordance with the appropriate clearance, hazardous energy control, or lockout/tagout procedure, including grounding, at Technical and Project Solutions (T&PS) projects. This procedure provides requirements for minimum approach distances, planning, authorization, personal protective equipment (PPE), and training.

1.2 Scope

This procedure applies to all T&PS project-assigned personnel and contractors whose contract document includes this procedure by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

T&PS procedure SU-05, Tagging and Clearances
EH&S standard SH-S-2E-08, Hazardous Energy Control
Generation procedure SCG-SH-0200, Generation Clearance Procedure
Generation procedure SCG-SH-0201, Lockout Tagout (LOTO) Procedure
NFPA 70E-2009
29 CFR 1910, Occupational safety and health standards
29 CFR 1926, Safety and health regulations for construction

Forms:
- 1N.1-EN, JSA: Job Safety Analysis, Pre-Work/Pre-Task Planning Tool (English)
- 1N.1-SP, JSA: Job Safety Analysis (Spanish)
- 2E-07.1, Energized Electrical Work Permit
- 2E-07.2, Electrical Hazard Form for Work Performed Under a Clearance/Lockout Tagout

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.2 T&PS Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this procedure for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this procedure for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this procedure as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this procedure as a part of the contractor’s site-specific safety plans.
4.0  PROCEDURE

4.1  Electrical Hazards

The four types of hazards associated with work on or near energized electrical equipment are:

- Shock and burn due to contact or flashover.
- Electrical flash burn from arc.
- Blast injury resulting from electrical arcs.
- Upset or shutdown of an operating area.

4.2  Electrically Hazardous Tasks

- Potential electrically hazardous tasks shall be analyzed for two primary hazards: flash hazard and shock hazard. These hazards are identified by using minimum approach distances for qualified and nonqualified personnel based on voltage levels. Performing work inside these minimum approach distances requires special training, planning, procedures, and PPE.

- When a task is identified as a potential electrically hazardous task, every effort shall be made to have the equipment placed in an electrically safe working condition in accordance with the appropriate clearance, hazardous energy control, or lockout/tagout procedure prior to performing the work.

- When the electrical service or equipment cannot be placed in an electrically safe working condition, all requirements of this procedure shall be met.

4.3  Electrically Nonhazardous Tasks

CAUTION

Shorting or grounding of low voltage circuits may result in equipment damage, process upset, shutdowns, electrical burns, or explosions due to electric arcs.

Electrically nonhazardous tasks must be carefully planned. Tasks are classified as electrically nonhazardous and do not require special protective equipment if they involve the following:

- Equipment is placed in an electrically safe working condition in accordance with:
  - Appropriate clearance.
  - Hazardous energy control.
  - Lockout/tagout procedures, including grounding.
— Involving voltages below 50 V.

Appropriate precautions shall be taken if the task involves any moving machinery parts, other hazardous objects, or fall hazards.

NOTE

At low voltages, shock may cause a jerk reaction.

4.4 Training Requirements

• Employees shall be trained in safety-related work practices, safety procedures, emergency procedures, and other requirements associated with safety of their respective job assignments.

• To be considered qualified personnel to perform electrically hazardous tasks, workers shall also be trained and competent in all of the following areas:
  – The skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment.
  – The skills and techniques necessary to determine the nominal voltages of exposed live parts.
  – The minimum approach distances specified in this procedure corresponding to the voltages to which the qualified employee will be exposed.
  – The proper use of special precautionary techniques, PPE, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment.
  – Hazards associated with electrical arc and flame.

4.5 Emergency Preparedness

When personnel are performing electrically hazardous tasks, a sufficient number of personnel who are trained in CPR and first aid shall be available to ensure an injured worker could be reached by trained personnel within 4 minutes.

4.6 Minimum Approach Distances for Nonqualified Personnel

The following minimum approach distances for nonqualified personnel shall be adhered to by all personnel who have not been specifically qualified and authorized to perform electrical work. No nonqualified worker shall approach or take any conductive object closer than the distances prescribed in this paragraph:

• 10 ft for all voltages up to 50 kV.
• 16 ft for all voltages between 51 kV and 230 kV.
• 25 ft for all voltages above 230 kV.
If work must be performed that requires personnel or conductive objects to be within these minimum approach distances, it shall be performed by qualified personnel.

### 4.7 Minimum Approach Distances for Qualified Personnel

The following minimum approach distances for qualified personnel shall be adhered to by all personnel who have been specifically qualified and authorized to perform electrical work. No worker shall approach or take any conductive object closer than distances prescribed in this section unless all requirements in section 4.8, Performing Electrically Hazardous Tasks, are met.

<table>
<thead>
<tr>
<th>Nominal Voltage in kV Phase to Phase</th>
<th>Minimum Approach Distance for Phase to Ground Exposure</th>
<th>Minimum Approach Distance for Phase to Phase Exposure</th>
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<td>2 ft 2 in. (26 in.)</td>
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<td>2 ft 7 in. (31 in.)</td>
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<td>2 ft 10 in. (34 in.)</td>
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<td>230</td>
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<td>7 ft 6 in. (90 in.)</td>
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<td>500</td>
<td>11 ft 3 in. (135 in.)</td>
<td>18 ft 1 in. (217 in.)</td>
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### 4.8 Performing Electrically Hazardous Tasks

- The T&PS construction site manager or his or her designee shall permit (see form 2E-07.1, Energized Electrical Work Permit) electrically hazardous tasks described in this paragraph only after careful planning and authorization. Depending on the scope and nature of the work, this process may require consultation with operating company personnel and/or an environmental, health, and safety resource; and may require a formal written work plan. Work shall be stopped and reevaluated if it cannot be executed as planned or if conditions change.

- Only qualified personnel shall be permitted to work on or near exposed equipment, or work in areas containing unguarded, uninsulated energized equipment operating at 50 V or more. Equipment is considered and treated as energized unless it is locked out or tagged out, checked for absence of voltage, and when required, grounded. Qualified personnel must maintain at least the distances listed in the minimum approach table (section 4.7, Minimum Approach Distances for Qualified
Personnel), when approaching or taking a conductive object near exposed energized parts, unless one of the following conditions is met:

- The worker is insulated from the energized part (the proper use of insulating gloves is considered insulation of the worker only with regard to the energized part being serviced).
- The energized part is insulated from the worker and from any other conductive object at a different potential.

- Qualified personnel insulated from energized parts through the use of insulating gloves must use insulating sleeves as well unless both of the following conditions are met:
  - Exposed/energized parts that are not being serviced are insulated from the worker.
  - Such insulation is placed from a position that does not expose the worker’s upper arm to contact with other energized parts.

- Qualified personnel shall be positioned in such a way that a slip or shock will not bring them in contact with exposed, uninsulated parts energized to a different potential than the worker’s. The following conditions are required when making connections:
  - Qualified personnel connecting deenergized equipment to an energized circuit by means of a conducting wire shall first attach the wire to the deenergized part.
  - Qualified personnel disconnecting equipment from an energized circuit by means of a conducting wire shall remove the source end first.
  - When connecting or disconnecting equipment from energized circuits, keep loose conductors away from exposed/energized parts.

- Qualified personnel working within reaching distance of exposed, energized parts shall remove any exposed conductive articles such as keys, watch chains, rings, wrist watches, bands, or jewelry, unless such articles do not increase the hazards associated with contact to the energized parts.

- Qualified personnel shall be warned against wearing any clothing that could increase the extent of an injury due to exposure to flames or electric arcs.

- Tools and gloves that are properly rated for worker exposure to terminals energized at more than 300 V or with exposed parts at more than 50 V shall be used during fuse installation and removal. During installation of expulsion-type fuses with terminals energized at more than 300 V, qualified personnel shall also wear hardhats, proper eye protection, use proper voltage-rated tools, and remain clear of the exhaust path of fuse barrels. The requirements of this section regarding the hazards of exposed live parts also apply when work is performed near covered (noninsulated) wires. Non-current-carrying metal parts of equipment or devices, such as transformer cases and circuit breaker housings, shall be treated as energized at the highest voltages to which they are exposed, unless inspection of the
installation by qualified personnel reveal that these parts are grounded before work is performed. Devices used to open circuits under load shall be designed to interrupt the circuit involved.

4.9 Unidentified or Abandoned Systems or Systems With an Unknown Source of Energy

When working on or near electrical systems that are unidentified, have been abandoned, or have an unknown source of energy, refer to EH&S standard SH-S-2E-08, Hazardous Energy Control, for specific requirements prior to beginning work.

4.10 Job Safety Briefings

Using form 1N.1-EN, JSA (English) or form 1N.1-SP, JSA (Spanish), the appropriate manager or supervisor shall conduct job safety briefings (JSBs) prior to beginning the electrically hazardous task, at the beginning of each shift, and for each significant daily job change. These briefings can take the form of a short discussion of the job, unless a more extensive discussion is necessitated by particular hazards of the job that may be unfamiliar to the workers. JSBs shall cover, at a minimum, the following aspects of the job:

- Hazards associated with the job.
- Work procedures involved.
- Special precautions.
- Energy source controls.
- PPE requirements.

Form 2E-07.2, Electrical Hazard Form for Work Performed Under a Clearance/Lockout Tagout, shall be completed, attached to, and reviewed along with the JSB when performing electrical work more than 50 V. Use of the Electrical Hazard JSB supplemental form shall also apply when performing work less than 50 V that is in close proximity to higher voltages located in the same compartment or enclosure.

The JSB and its associated form 2E-07.2 shall be posted at the location of the work.

5.0 KEY CONTACT

For questions about the content and implementation of this procedure, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
# Attachment A - Historical Summary of Changes

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<td>Bob Fitzgerald, Bill Boyd, and Will Taylor</td>
<td>Project Leadership Safety Team and Procedure Consolidation Team</td>
<td>Bob Fitzgerald</td>
<td>Added link to Electrical Hazard Form (2.2). Revised responsibility for E&amp;CS project manager (3.1). Revised information on job safety briefings (4.10).</td>
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<td>Project Safety Leadership Team and Procedure Consolidation Team</td>
<td>Bill Batts</td>
<td>Added references to SH-2E-08 (2.2 and 4.10). Revised 1.2, Scope. Corrected heading and text from project manager to construction site manager (3.1). Added 3.2, Startup Manager. Added 4.10. Added attachment A, Historical Summary of Changes.</td>
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<td>Added text and links to two forms (2.2). Revised 3.0, Responsibility, to reflect updated E&amp;CS contract strategy. Corrected position title (5.0).</td>
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<td>Edited note before 1.0 to include SCG-SH-0201. Added text and link to SCG-SH-0201, Lockout Tagout (LOTO) Procedure (2.2).</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-2E-08

Hazardous Energy Control

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Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
  1.1 Purpose ......................................................................................................................... 3
  1.2 Scope ............................................................................................................................ 3

2.0 DEFINITIONS AND REFERENCES .................................................................................. 3
  2.1 Definitions ..................................................................................................................... 3
  2.2 References .................................................................................................................. 3

3.0 RESPONSIBILITY ........................................................................................................... 3
  3.1 Construction Site Manager ......................................................................................... 3
  3.2 Startup Manager .......................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,
      Procurement, and Construction (EPC) Contractors) ................................................. 4
  3.4 Contractors ................................................................................................................ 4

4.0 STANDARD .................................................................................................................... 4
  4.1 Contractor Written Plan ............................................................................................... 4
  4.2 Training ......................................................................................................................... 5
  4.3 Controlling Procedure ................................................................................................. 5
  4.4 T&PS Personnel Working Under SCG-SH-0200 or SCG-SH-0201............................... 5
  4.5 Unidentified Systems, Abandoned Systems, or Systems With an Unknown Source of
      Energy ....................................................................................................................... 5

5.0 KEY CONTACT ............................................................................................................. 6

6.0 QUALITY RECORDS ..................................................................................................... 6

7.0 ATTACHMENTS ............................................................................................................ 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the requirements necessary to control hazardous energy during construction activities on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedures:
  - SU-5, Tagging and Clearances
  - SH-2A-31, Line Break
  - SH-2E-07, Working On or Near Electrical Services and/or Equipment
- Form 1K.1, Procedure and Standard Deviation Request
- SCG-SH-0200, Generation Clearance Procedure
- SCG-SH-0201, Lockout Tagout (LOTO) Procedure
- SCG-SH-0201, Lockout Tagout (LOTO) Implementation Schedule
- 29 CFR 1926, Safety and health regulations for construction

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

NOTE

For work that involves plant-controlled equipment, the hazardous energy control procedure in use at the facility (either SCG-SH-0200, Southern Company Generation Clearance Procedure, or SCG-SH-0201, Lockout Tagout (LOTO) Procedure) shall be the guiding document to ensure personnel and equipment safety.

Verify implementation status prior to performing any work on facility-owned equipment.

4.1 Contractor Written Plan

Each contractor involved in construction activities where the control of hazardous energy may be required shall have a written hazardous energy control plan that meets the requirements of 29 CFR 1926.417, Lockout and tagging of circuits. This plan shall be submitted to the T&PS construction site manager or his or her designee for review. The contractor’s plan shall be the controlling document for all work on contractor-controlled equipment, including temporary equipment used during construction and permanent plant equipment while under the control of the contractor.

To avoid confusion with lockout devices placed by a LOTO holder under SCG-SH-0201, the contractor’s lockout devices shall be conspicuously marked to identify them as construction LOTO devices.
Contractors must meet the requirements of SCG-SH-0201, Lockout Tagout (LOTO) Procedure, when selecting contractor locks.

The contractor’s plan must not rely on noncontact voltage detectors to determine a zero-energy state.

4.2 Training

In the event that Southern Company personnel are required to perform activities under the control of a contractor’s hazardous energy control plan, the Southern Company personnel shall receive appropriate training by the contractor on their hazardous energy control plan.

4.3 Controlling Procedure

When newly installed equipment is turned over to Southern Company for testing and startup activities, either SCG-SH-0200, Southern Company Generation Clearance Procedure, or SCG-SH-0201, Lockout Tagout (LOTO) Procedure, replaces and takes precedence over the contractor’s hazardous energy control plan.

4.4 T&PS Personnel Working Under SCG-SH-0200 or SCG-SH-0201

T&PS personnel who are on a facility’s SCG-SH-0200 authorized list shall not act as a subclearance holder and as the responsible person for a supplemental roster at the same time.

Prior to issuing a supplemental roster to the contractor’s responsible person, T&PS personnel shall walk down the clearance and verify the isolation points are correct when signing on to the clearance for either personal protection or as the subclearance holder.

When performing work under SCG-SH-0201, T&PS personnel shall walk-down a system to verify isolation points prior to locking on as a LOTO coordinator (green lock) or for personal protection (blue or brown lock).

4.5 Unidentified Systems, Abandoned Systems, or Systems With an Unknown Source of Energy

When personnel encounter any system that has hazardous energy or has the potential to have hazardous energy (electrical, mechanical, and so forth), they shall positively verify a zero-energy state through proper isolation prior to performing any work. This situation would typically be encountered during excavations and demolition but is not exclusive to this type of work.

If the unknown system is outside the normal footprint of the generating facility, notify the operating company’s Distribution office.

If the unknown system is within the footprint of the generating facility, contact Plant Operations and request isolation in accordance with the facility’s operative clearance or LOTO procedure.
If a system cannot be isolated, it shall be considered energized.

If cables must be cut, request that the owner complete the task. If the cables are under T&PS control, the contractor shall complete form 1K.1, Procedure Deviation Request, including the contractor’s safe work plan for any work that has the potential to expose workers to hazardous energy. The contractor’s safe work plan shall include:

- Task description.
- Identification of crafts involved.
- Training requirements.
- Personal protective equipment (PPE) based on highest potential exposure to hazardous energy or materials.
- Step-by-step detailed instructions of the work plan and process to be used to ensure the safety of personnel involved.

See procedure SH-2E-07, Working On or Near Electrical Services and/or Equipment, for additional requirements. The procedure deviation must be approved by all parties and reviewed by the appropriate owner (Operations, Distribution, Transmission, and so forth) prior to work continuing.

For mechanical piping systems where the zero-energy state cannot be positively determined, follow first line break procedures found in procedure SH-2A-31, Line Break.

**NOTE**

Mechanical piping systems may have residual effluent within the system even after it has been properly isolated. This residual effluent could constitute a hazardous energy source.

5.0 **KEY CONTACT**

For questions about the content and implementation of this standard, contact the manager-Construction Safety and Health.

6.0 **QUALITY RECORDS**

None.

7.0 **ATTACHMENTS**

Attachment A, Historical Summary of Changes
## Attachment A – Historical Summary of Changes

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<td>Bruce Long and Bill Boyd</td>
<td>Project Safety Leadership Team</td>
<td>Bill Batts</td>
<td>Issued. This standard supersedes E&amp;CS procedure SH-2E-08, Hazardous Energy Control.</td>
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<td>Added references and links to 0201 and 0201 implementation schedule (2.2). Revised 3.0, Responsibility, to reflect updated E&amp;CS contract strategy. Added information on 0201 (4.0, Standard). Corrected position title (5.0).</td>
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-3

Fire Protection and Prevention

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides the minimum requirements for fire protection and prevention systems and practices on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

approved – Equipment listed or approved by a nationally recognized testing laboratory. Examples are Factory Mutual Engineering Corporation or Underwriters Laboratories, Inc.; or Federal Agencies, the Bureau of Mines, or U.S. Coast Guard.

closed container – A container sealed by means of a lid or other device in which neither liquid nor vapor will escape at ordinary temperatures.

combustible liquids – A liquid capable of a chemical process that involves oxidation sufficient to produce light or heat.

combustion – A chemical process that involves oxidation sufficient to produce light or heat.

fire brigade – An organized group of employees knowledgeable, trained, and skilled in the safe evacuation of employees during emergencies and assisting in firefighting operations.

fire resistance – Materials resistant to fire for a specified period time and under conditions of standard heat intensity. The material shall not fail structurally nor permit the side opposite the fire to become hotter than a specified temperature.

flammable – Capable of being easily ignited, burning intensely, or having a rapid rate of flame spread.

flammable liquids – A liquid with a flash point below 100 °F and a vapor pressure not exceeding 40 lb per square in. (absolute) at 100 °F.
**flash point** – The temperature at which the liquid gives off vapor sufficient to form an ignitable mixture with the air near the surface of the liquid or within the vessel used.

**liquefied petroleum gases, LPG and LP gas** – Material composed predominately of any of the following hydrocarbons, or mixtures of them such as propane, propylene, butane (normal butane or isobutane), and butylenes.

**portable tanks** – A closed container having a liquid capacity more than 60 U. S. gal, not intended for fixed installation.

**safety can** – An approved closed container, of not more than 5 gal capacity, having a flash-arresting screen, spring-closing lid and spout cover, and designed to safely relieve internal pressure when subjected to fire exposure.

**vapor density** – The weight of vapor or gas compared to an equal volume of air.

**vapor pressure** – The pressure, measured in lb per square in. (absolute), exerted by volatile liquid.

### 2.2 References

- Environmental, Health, and Safety standard [SH-S-2D-02, Hazard Communication](#).

### 3.0 RESPONSIBILITY

#### 3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

#### 3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Fire Protection

4.1.1 General

The T&PS construction site manager shall ensure that an approved fire protection program meeting the requirements of this standard is followed throughout all phases of construction and demolition work. There shall be no delay in providing the necessary equipment as fire hazards occur.

- Access to available firefighting equipment shall be maintained at all times.
- Firefighting equipment shall be inspected monthly and maintained in operating condition.
- Defective equipment shall be immediately replaced.
- Firefighting equipment shall be conspicuously located and not obstructed from view in the workplace. Fire extinguishers shall be located on all self-propelled equipment.
- Material storage areas shall be equipped with fire extinguishers adequate for their size, construction, and the material stored therein.
- Welding, cutting, grinding, and burning shall not be done within 25 ft of any flammable material storage area. A fire extinguisher shall be provided within 25 ft of any welding, cutting, grinding, burning, and open-flame operation.
- Flammable materials shall be stored at least 25 ft from the working area.
• Approved safety containers shall be used when handling and transporting fuel, gas, and other flammables.

• Only approved solvents are to be used for cleaning purposes. All hazardous materials, including flammable and combustible liquids, are required to be reviewed and approved by the site environmental, health, and safety (EH&S) resource prior to purchase or delivery to the site in accordance with SH-2D2, Hazard Communication. Nonflammable or less flammable alternatives shall be substituted for flammable liquids where feasible.

• The telephone number of the nearest organized firefighting group is to be displayed at the jobsite telephones.

• Where and when required or necessary, the T&PS construction site manager shall provide a trained and equipped firefighting organization (fire brigade) to assure adequate protection.

• Depending on the size, scope, and location of the project, the T&PS construction site manager and EH&S coordinator may determine the need for formal prefire planning in conjunction with the site fire brigade and local fire department.

4.1.2 Fire Extinguishing Equipment

• Fires are classified as Class A, B, C, D, or Special, depending upon the types of materials involved. These classifications are defined as follows:

  A  Class A - Fires in ordinary combustible materials such as wood, cloth, paper, trash, rubber, and plastic.

  B  Class B - Fires in flammable liquid, oil, grease, tar, oil-based paint, lacquer, and flammable gas.

  C  Class C - Fires involving energized electrical equipment or systems, resulting in the extinguishing media conduction electricity. (When electrical equipment or systems are deenergized, extinguishers for Class A or B fires can be used safely.)

  D  Class D - Fires involving combustible metals such as magnesium, titanium, zirconium, lithium, potassium, and sodium. Specialized techniques, extinguishing agents, and extinguishing equipment have been developed to control and extinguish fires of this type. Generally, do not use normal extinguishing agents on metal fires. In such fires, there is the danger of increasing the intensity of the fire because of a chemical reaction between some extinguishing agents and the burning metal.

  E  Special - Fires that involve certain combustible metals or reactive chemicals require, in some cases, special extinguishing agents or techniques.
Extinguisher Classifications and Ratings

- All types of extinguishers are not equally effective against all classifications of fires. Therefore, extinguishers are rated according to the classification and size of the fires against which they are effective. Extinguisher ratings are found on the extinguisher label. A rating consists of a letter indicating the classification of fire on which the extinguisher is effective and a rating number indicating the relative extinguishing effectiveness. The significance of the rating number varies with the classification of fire for which the extinguisher is rated. The following rating criteria are used:

  o For extinguishers rated for Class A fires, the rating number indicates relative effectiveness: the higher the number, the more effective the extinguisher. The minimum recommended rating for extinguishers rated for Class A fires is 2A.

  o For extinguishers rated for Class B fires, the rating number represents the average size (in square ft) of the fire the extinguisher could put out.

  o No number is used for extinguishers rated for Class C fires, because Class C fires are essentially either Class A or B fires involving energized electrical wiring and equipment.

Hazard Classifications

- The materials in a building or area present hazards of varying potential. These hazards are classified as follows:

  o Light or low hazard - A room or area where, considering the amount of combustible material or flammable liquids present, fires of small size should be anticipated (for example, change trailers, toilet trailers, and general storage).

  o Ordinary or moderate hazard - A location where, considering the amount of combustibles or flammable liquids present, fires of moderate size should be anticipated (for example, temporary construction offices and most shops).

  o Extra or high hazard - A location where, considering the amount of combustibles or flammable liquids present, fires of severe magnitude should be anticipated (for example, carpenter shops and storage areas for flammable liquids and lumber).

All fire extinguishers shall be UL listed.
• Building and Occupancy Protection
  - Requirements for fire extinguisher protection are divided into two categories: building protection and occupancy hazard protection. Provide for extinguishing equipment to protect both the building structure (if it is combustible) and the occupancy hazards inside it.
    - Building protection - For building protection, provide fire extinguishers rated for Class A fires or greater, as required by applicable building codes.
    - Occupancy protection - For protection against occupancy hazards, provide fire extinguishers rated for Class A, B, C, or other fire potential as appropriate. Requirements may vary from section to section of a single building. Determine the occupancy hazards, as well as the proper ratings of necessary fire extinguishers, of each room or section. Table F-1 in 29 CFR 1926.150 may be used as a guide for selecting the appropriate portable fire extinguishers.

• Extinguisher Placement
  - Placement - Place extinguishers in conspicuous locations, along normal paths of travel, and near exits. If the extinguishers are not readily visible, use wall markings, signs, or lights to identify their locations.
  - Accessibility - Extinguishers shall be readily accessible. Keep the space in front of and below extinguishers clear at all times. The floor area beneath extinguishers may be marked as a reminder to keep the area clear.
  - Supports - Hang extinguishers on hangers, brackets, or other equipment furnished by the manufacturer, or place them on shelves. If an extinguisher weighs less than 40 lb (18.1 kg), the top of the extinguisher shall not be more than 5 ft (1.5 m) above the floor. If it weighs more than 40 lb (18.1 kg), it shall not be more than 3.5 ft (1.1 m) above the floor. The clearance between the bottom of the extinguisher and the floor shall never be less than 4 in. (10.2 cm).

• Inspection
  - Properly trained personnel shall inspect extinguishers at least monthly. The monthly inspection shall include the following items at a minimum:
    - Location (Is the extinguisher in its designated place?).
    - Rating (Is it adequate for the occupancy hazards in the area?).
    - Access (Is it unobstructed?).
• Visibility (Is it conspicuous? Are wall markings, signs, or lights in place to direct people to its location?).

• Operating instructions on the nameplate (Are the instructions legible? Do they face outward?).

• Seals (Are the seals unbroken?).

• Tamper indicators (Are the tamper indicators intact?).

• Fullness (Can the fullness be determined by reading the gauge indicator or by weighing or hefting the extinguisher?).

• Physical condition (Is the extinguisher free from corrosion, leaks, and clogs?).

  – Attach inspection tags to each extinguisher indicating the dates of purchase, inspection, testing, and recharging, as well as the initials of the inspector. In addition to the tag, a colored tape may be used to indicate that an extinguisher has been inspected.

• Testing and Maintenance

  – Establish periodic testing programs to ensure that extinguishers are in proper operating condition. Only properly trained personnel, preferably fire extinguisher vendors shall maintain extinguishers.

  – At the conclusion of testing or maintenance work, attach a tag to the extinguisher showing the date and the signature of the person who performed the service.

• Testing Intervals

  – Annually - Each year, recharge foam extinguishers and weigh others according to the manufacturers’ instructions. Inspect the body, hose, and nozzle of the extinguisher, and examine the dry powder.

  NOTE

  Testing is not necessary for stored pressure units unless a loss of pressure or other conditions indicate need; however, units mounted in vehicles or otherwise subject to mechanical packing shall have their powder examined.

  – Every 5 years - Every 5 years, test the pressure parts of all extinguishers except Halon 1301 extinguishers; dry-chemical extinguishers with brazed-brass, mild steel, or aluminum shells; and dry-powder extinguishers for metal fires.
- Every 6 years - Every 6 years, empty dry-chemical, stored-pressure extinguishers and examine working parts for operability.

- Every 12 years - Every 12 years, test the pressure parts of Halon 1301 extinguishers; dry-chemical extinguishers with braised-brass, mild steel, and aluminum shells; and dry-powder extinguishers for metal fires.

4.1.3 Water Supply

A temporary or permanent water supply (sufficient volume, duration, and pressure) required to properly operate the firefighting equipment shall be made available as soon as combustible materials accumulate.

- Where underground water mains are to be provided, they shall be installed, completed, and made available for use as soon as practicable.

- Fire Hose and Connections
  - One hundred feet or less, of 1.5 in. hose, with a nozzle capable of discharging water at 25 gal or more per minute, may be substituted for a fire extinguisher rated not more than 2A 20BC in the designated area, provided the hose line can reach all points in the area.

  - If fire hose connections are not compatible with local firefighting equipment, adapters or equivalent shall be provided, to permit connections.

  - During demolition involving combustible materials, charged hose lines supplied by hydrants, water trucks with pumps or equivalent shall be made available.

- Fixed Firefighting Equipment
  - Sprinkler Protection
    - If the facility being constructed includes the installation of automatic sprinkler protection, the installation of sprinklers shall closely follow the construction and be placed into service as soon as practicable.

    - During demolition or alterations, existing automatic sprinkler installations shall be retained in service as long as reasonable. Only authorized persons shall permit the operation of sprinkler control valves. Modification of sprinkler systems to permit alterations or additional demolition shall be expedited so that the automatic protection may be returned to service as quickly as possible. Sprinkler control valves shall be checked daily, at close of work, to ascertain that the protection is in service.
– Standpipes

  o In all structures requiring standpipes or where standpipes exist in structures being altered, they shall be maintained to always be ready for fire-protection use. Conspicuously marked standpipes shall be provided with connections on the outside of the structure (at the street level). There shall be at least one standard hose outlet at each floor.

– Fire Alarm Devices

  o An alarm system, for example, telephone system, siren, and so forth, shall be established to alert employees on the site and the local fire department of an emergency.

  o The alarm code and reporting instructions shall be conspicuously posted at phones and at all employee entrances.

– Fire Cutoffs

  o Firewalls and exit stairways required for the completed buildings shall be given construction priority. Fire doors, with automatic closing devices, shall be hung on openings as soon as practicable.

  o Fire cutoffs shall be retained in buildings undergoing alterations or demolition until operations necessitate their removal.

  • Maintenance, inspection, and testing of installed fixed firefighting equipment shall be in accordance with NFPA Codes, Title 29 CFR 1910.158 (Stand Pipe and Hose Systems), Title 29 CFR 1910.159 (Automatic Sprinkler Systems), and any applicable manufacturer recommendations.

4.2 Fire Prevention

4.2.1 Ignition Hazards

  • Electrical wiring and equipment for light, heat, or power purposes shall be properly installed.

  • Internal combustion powered equipment shall be located with the exhausts positioned away from combustible materials. When the exhausts are piped outside the building under construction, a clearance of at least 6 in. shall be maintained between piping and combustible material.
• Smoking is prohibited at or in vicinity of operations that constitute a fire hazard, areas shall be conspicuously posted: NO SMOKING OR OPEN FLAME.

• Portable, battery-powered lighting equipment, used in connection with the storage, handling, or use of flammable gases or liquids shall be approved for the hazardous locations.

• The nozzle of air, inert gas, and steam lines or holes, used in the cleaning or ventilation of tanks and vessels containing hazardous concentrations of flammable gases or vapors, shall be bonded to the tank or vessel shell. Bonding devices shall not be attached or detached while in hazardous concentrations of flammable gases or vapors.

4.2.2 Temporary Buildings

• Temporary buildings shall not be erected where the location adversely affects any means of employee exit.

• Temporary buildings located within another building or structure shall be of noncombustible construction or combustible construction having a fire-resistance rating of not less than 1 hour.

• Temporary buildings located other than inside another building and not used for the storage, handling, or use of flammable or combustible liquids, flammable gases, explosives, or blasting agents, or similar hazardous occupancies shall be located at a distance of not less than 10 ft from another building or structure. Groups of temporary buildings, not exceeding 2,000 square ft in aggregate, shall, for the purpose of this section, be considered a single temporary building.

4.2.3 Open Yard Storage

• Combustible materials shall be stored with regard to the stability of piles and in no case higher than 10 ft.

• Driveways between and around combustible storage piles shall be at least 15 ft wide and maintained free of accumulations of rubbish, equipment, or other articles or materials. Driveways shall be spaced to produce a maximum grid system unit of 50 ft by 150 ft.

• The entire storage site shall be kept free from accumulations of unnecessary, combustible materials. Weeds and grass shall be maintained, and procedures shall be established for periodic cleanup of the entire area.

• The method of piling combustible materials shall be solid and in orderly, regular piles. No combustible material shall be stored outdoors within 10 ft of a building or structure.
• Portable fire-extinguishing equipment, suitable for the fire hazard involved, shall be provided at convenient, conspicuously accessible locations in the yard area. Portable fire extinguishers, rated not less than 2A 20BC, shall be placed to assure maximum travel distance to the nearest unit shall not exceed 100 ft.

4.2.4 Indoor Storage

• Storage shall not obstruct, or adversely affect, means of exit.

• Materials shall be stored, handled, and piled with regard to their fire characteristics.

• Noncompatible materials, which may create a fire hazard, shall be segregated by a barrier having a fire resistance of at least 1 hour.

• Materials shall be piled to minimize the spread of fire internally and to permit convenient access for firefighting. Stable piling shall be maintained at all times. Aisle space shall be maintained to safely accommodate the widest vehicle used within the building for firefighting purposes.

• Clearance of at least 36 in. shall be maintained between the top level of the stored material and the sprinkler deflectors.

• Clearance shall be maintained around lights and heating units to prevent ignition of combustible materials.

• A clearance of 24 in. shall be maintained around the fire doors path of travel, unless a barricade is provided, in which case no clearance is needed. Material shall not be stored within 36 in. of a fire door.

4.3 Flammable and Combustible Liquids

4.3.1 General Requirements

• Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. Approved metal safety cans shall be used for the handling and use of flammable liquids in quantities greater than 1 gal. This requirement shall not apply to those flammable liquid materials that are highly viscous (extremely hard to pour), which may be used and handled in original shipping containers. For quantities of 1 gal or less, only the original container or approved metal safety cans shall be used for storage, use, and handling of flammable liquids.

• Flammable or combustible liquids shall not be stored in areas used for exits, stairways, or normally used for the safe passage of employees.
• Methods to be employed for the storage, handling, and use of flammable liquids shall be included in the site-specific safety and health plan submitted by the contractor.

4.3.2 Indoor Storage of Flammable and Combustible Liquids

• No more than 25 gal of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.

• Quantities of flammable and combustible liquid in excess of 25 gal shall be stored in an acceptable or approved cabinet meeting the following requirements.
  – Acceptable wooden storage cabinets shall be constructed in the following manner, or equivalent: The bottom, sides, and top shall be constructed of an exterior grade plywood at least 1 in. in thickness which shall not break down or delaminate under standard fire test conditions. Joints shall be rabbeted and shall be fastened in two directions with flathead wood screws. When more than one door is used, there shall be a rabbeted overlap of not less than 1 in. Steel hinges shall be mounted in such a manner as to not lose their holding capacity due to loosening or burning out of the screws when subjected to fire. Such cabinets shall be painted inside and out with fire-retardant paint.
  – Approved metal storage cabinets are acceptable.
  – Cabinets shall be labeled in conspicuous lettering, FLAMMABLE - NO FIRE OR SPARK PRODUCING MATERIALS.
  – Storage cabinets shall not be located in stairways or at building exit points.

• Any one storage cabinet shall not store more than 60 gal of flammable or 120 gal of combustible liquids. A single storage area may contain no more than three such cabinets. Quantities in excess of this limit shall be stored in an inside storage room.

• Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use.
  – Where an automatic extinguishing system is provided, the system shall be designed and installed in an approved manner. Openings to other rooms or building shall be provided with noncombustible liquid-tight raised sills or ramps at least 4 in. below the surrounding floor. Openings shall be provided with approved self-closing fire doors. The room shall be liquid-tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench inside of the room, which drains to a safe location. Where other portions of the building or other buildings are exposed, windows shall be protected per the standard for fire doors and windows, NFPA No. 80, for class E and F openings. Wood of at least 1-in. nominal thickness may be used for shelving, racks, dunnage, scuff boards, floor overlay, and similar installations.
- Materials that will react with water and create a fire hazard shall not be stored in the same room with flammable or combustible liquids.

- Storage in inside storage rooms shall comply with Exhibit 12.2 (Table F-2 of 29 CFR 1926.152).

- Electrical wiring and equipment located in inside storage rooms shall be approved for Class 1, Division 1, Hazardous location in accordance with the National Electrical Code.

- Inside storage rooms shall be provided with gravity or a mechanical exhausting system. The system shall commence not more than 12 in. above the floor and be designed to provide for a complete change of air within the room at least 6 times per hour. If a mechanical exhausting system is used, a switch located outside of the storage room door shall control it. The same switch shall operate the ventilating equipment and any lighting fixtures. Where gravity ventilation is provided, the fresh air intake, as well as the exhausting outlet from the room, shall be on the exterior of the building in which the room is located.

- In every inside storage room there shall be maintained one clear aisle, at least 3 ft wide. Containers over 30-gal capacity shall not be stacked one upon the other.

- Flammable and combustible liquids, in excess of that permitted in inside storage rooms, shall be stored outside of the building in accordance with 12.5 C.

4.3.3 Storage Outside Buildings

- Storage of containers (not more than 60 gal each) shall not exceed 1,100 gal in any one pile or area. Piles or groups of containers shall be separated by a 5-ft clearance. Piles or groups of containers shall not be nearer than 20 ft to a building.

- A 12-ft wide access way to permit approach of fire control shall be maintained within 200 ft of each pile of containers.

- The storage area shall be graded in a manner to divert possible spills away from buildings/other exposures, or be surrounded by a curb/earthen dike tall enough to impound the total gal of liquids stored within the earthen dike. When curbs or dikes are used, provisions shall be made for draining off accumulations of ground or rainwater, or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.
• Outdoor Portable Tank Storage
  – Portable tanks shall not be nearer than 20 ft from any building. A 5-ft clear area having a combined capacity in excess of 2,200 gal shall separate two or more portable tanks, grouped together.
  – A 12-ft wide access way to permit approach of fire control apparatus shall be maintained within 200 ft of each portable tank.

• Storage areas shall be kept free of weeds, debris, and other combustible material not necessary to the storage.

• Portable tanks not exceeding 660 gal shall be provided with emergency venting and other devices, as required by Chapter III and IV of NFPA 30, The Flammable and Combustible Liquids Code.

• Portable tanks in excess of 660 gal shall have emergency venting and other devices (required by Chapters II and III of the Flammable and Combustible Liquids Code, NFPA 30).

• Flammable liquids will not be stored in direct sunlight or in any area where there is the potential for radiant heating.

4.3.4 Fire Control for Flammable or Combustible Liquids Storage

• At least one portable fire extinguisher, having a rating of not less than 2A 20BC, shall be located outside of, but not more than 10 ft from the door opening into any room used for storage of more than 60 gal of flammable or combustible liquids.

• At least one portable fire extinguisher having a rating of no less than 2A 20BC shall be located no less than 25 ft, no more than 75 ft, from any flammable-liquid storage area located outside.

• When sprinklers are provided, they shall be installed in accordance with the Standard for the Installation of Sprinkler System, NFPA 13.

• At least one portable fire extinguisher having a rating of not less than 2A 20BC shall be provided on tank trucks or other vehicles used for transporting and/or dispensing of flammable or combustible liquids.

4.3.5 Dispensing Liquids

• Areas in which flammable or combustible liquids are transferred at one time, in quantities greater than 5 gal from one tank or container to another tank or container shall be separated from other operations by 25 ft distance or by construction having a fire resistance of at least 1 hour. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided to
maintain the concentration of flammable vapor at or below 10 percent of the lower flammable limit.

- Transfer of flammable liquids from one container to another shall be done only when containers are electrically interconnected (bonded).

- Flammable or combustible liquids shall be drained from or transferred into vessels, containers, or tanks within a building or outside only through a closed piping system; from safety cans, by means of a device drawing through the top; or from a container, or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring by means of air pressure on the container of portable tanks is prohibited.

- The dispensing units shall be protected against collision damage.

- Dispensing devices and nozzles for flammable liquids shall be of an approved type.

4.3.6 Handling Liquids at Point of Final Use

- Flammable liquids shall be kept in closed containers when not actually in use.

- Leakage or spillage of flammable or combustible liquids shall be disposed of promptly and safely.

- Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 ft of the operation, unless conditions warrant greater clearance.

4.3.7 Service and Refueling Areas

- Flammable or combustible liquids shall be stored in approved closed containers, in storage tanks located above ground, or in above-ground portable tanks.

- The tank truck shall comply with the requirements covered in the Standard for Tank Vehicles for Flammable and Combustible Liquids, NFPA No. 385-1966.

- The dispensing hose shall be of an approved type.

- The dispensing nozzle shall be an approved automatic closing type without a latch-open device.

- Clearly identified and easily accessible switch(es) shall be provided at a location remote from the dispensing devices to shut off the power to all dispensing devices in the event of an emergency.

- Heating equipment of an approved type may be installed in the lubrication or service area where there is no dispensing or transferring of flammable liquids, provided the
bottom of the heating unit is at least 18 in. above the floor and is protected from physical damage.

- Heating equipment installed in lubrication or service areas, where flammable liquids are dispensed, shall be of any approved type for gauges, and shall be installed at least 8 ft above the floor.

- There shall be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable or combustible liquids.

- Conspicuous and legible signs prohibiting smoking shall be posted.

- The motors of equipment being fueled shall be shut off during the fueling operation.

- Each service or fueling area shall be provided with at least one fire extinguisher having a rating of not less than 2A 20BC located so that an extinguisher shall be within 75 ft of each pump, dispenser, underground fill pipe opening, and lubrication or service area.

4.4 Liquid Petroleum Gas (LP Gas)

4.4.1 Equipment and Systems

- Each system shall have containers, valves, connectors, manifold valve assemblies, and regulators of an approved type for use with LP gas.

- Cylinders shall meet the Department of Transportation identification specification requirements.

- Welding on LP gas containers is prohibited.

- Valves, fittings, and accessories connected directly to the container, including primary shutoff valves, shall have a rated working pressure of at least 250 psig and shall be of material and design suitable for LP gas service.

- Connections to containers, except safety relief connections, liquid level gauging devices, and plugged openings, shall have shutoff valves located as close to the container as practicable.

- Containers and vaporizers shall be provided with one or more approved safety relief valve or device. These valves shall be arranged to afford free vent to the outer air with discharge not less than 5 ft horizontally away from any opening into a building below such discharge.

- Shutoff valves shall not be installed between the safety relief device and the container, or the equipment or piping to which the safety relief device is connected,
except that a shutoff valve may be used where the arrangement of this valve is the type that full required capacity flow through the safety relief device is always afforded.

- Container safety relief devices and regulator relief vents shall be located not less than 5 ft in any direction from an air opening into sealed combustion system appliances or mechanical ventilation air intakes.

4.4.2 Dispensing

- Filling of fuel containers for trucks or motor vehicles from bulk storage containers shall be performed not less than 10 ft from the nearest masonry-walled building, or not less than 25 ft from the nearest building or other construction and, in any event, not less than 25 ft from any building opening.

- Filling of portable containers or containers mounted on skids from storage containers shall be performed not less than 50 ft from the nearest building.

4.4.3 Requirements for Appliances

- LP gas-consuming appliances shall be of the approved type.

- Any appliance that was originally manufactured for operation with a gaseous fuel other than LP gas, and is in good condition, may be used with LP gas only after it is properly converted, adapted, and tested for performance with LP gas before the appliance is placed into use.

4.4.4 Containers and Regulating Equipment Installed Outside of Buildings or Structures

Containers shall be upright upon firm foundations or otherwise firmly secured. A flexible connection or special fitting shall guard against the possible effect of settling on the outlet piping.

4.4.5 Containers and Equipment Used Inside of Building or Structures

- When operational requirements make use of portable containers necessary and their location outside of building or structures is impracticable, containers and equipment shall be permitted to be used inside of buildings or structures in accordance with paragraphs 2 through 11 below.

- “Containers in Use” means connected for use.

- Systems using containers having a water capacity greater than 2½ lb (nominal 1-lb LP gas capacity) shall be equipped with excess flow valves. Such excess flow
valves shall be either integral with the container valves or in the connections to the container valve outlets.

- Regulators shall be either directly connected to the container valves or to manifold connected to the container valves. The regulator shall be suitable for use with LP gas. Manifold pressure regulator inlets shall be designed for at least 250-psig service pressure.

- Valves on containers having water capacity greater than 50 lb (nominal 20-lb LP gas capacity) shall be protected from damage while in use or storage.

- Aluminum piping or tubing shall not be used.

- Hoses shall be designed for a working pressure of at least 250 psig. Design, construction, and performance of hose and hose connections shall have their suitability determined by listing a nationally recognized testing agency. The hose length shall be long enough to permit compliance with spacing provisions of paragraphs 1 through 13 herein without kinking or straining, or causing hose to be so close to a burner as to be damaged by heat.

- Portable heaters shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot if used, in the event of flame failure. Such heaters, having output of above 50,000 BTU per hour, shall be equipped with either a pilot, which must be lighted and proved before the main burner can be turned on, or an electrical ignition system.

  **NOTE**

  The provisions of this subparagraph do not apply to portable heaters under 7,500 BTU per hour input when used with containers having a maximum water capacity of 2½ lb.

- Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters.

- Containers, regulating equipment, manifolds, piping, and tubing shall be located to minimize exposure to high temperatures and physical damage.

- Containers having a water capacity greater than 2½ lb (nominal 1-lb LP gas capacity) connected for use shall stand on a firm and substantially level surface and, when necessary, shall be secured in an upright position.

- The maximum water capacity of individual containers shall be 245 lb (nominal 100-lb LP gas capacity).

- Temporary heaters (other than integral heater-container units) shall be located at least 6 ft from any LP gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard, provided they are designed and installed to prevent direct or radiant heat application.
from the heater onto the containers. Blower and radiant-type heaters shall not be
directed toward any LP gas container within 20 ft.

- When two or more heater-container units, of either the integral or nonintegral type,
  are located in an unpartitioned area on the same floor, the container(s) of each unit
  shall be separated from the container(s) of any other unit by at least 20 ft.

- When heaters are connected to containers for use in an unpartitioned area on the
  same floor, the total water capacity of containers, manifold together for connection to
  a heater(s), shall not be greater than 735 lb (nominal 300-lb LP gas capacity). Such
  manifolds shall be separated by at least 20 ft.

- Storage of containers in reserve shall be maintained in accordance with paragraphs
  10 and 11.

4.4.6 Multiple Container Systems

- Valves in the assembly of multiple container systems shall be arranged to allow
  replacement of containers to be made without shutting off the flow of gas in the
  system. This provision is not to be construed as requiring an automatic changeover
  device.

- Heaters shall be equipped with an approved regulator in the supply line between the
  fuel cylinder and the heater unit. Cylinder connectors shall be provided with an
  excess flow valve to minimize the flow of gas in the event the fuel line becomes
  ruptured.

- Regulators and low-pressure relief devices shall be rigidly attached to the cylinder
  valves, cylinders, supporting standards, the building walls, or otherwise rigidly
  secured, and shall be installed or protected from the elements.

4.4.7 Storage of LPG Containers

- Storage of LP gas within buildings is prohibited.

- Storage outside of buildings, for containers awaiting use, shall be located away from
  the nearest building or group of buildings, in accordance with the following:
    - 0 ft for 500 lb or less.
    - 10 ft for 501 to 6,000 lb.
    - 20 ft for 6,001 to 10,000 lb.
    - 25 ft for over 10,000 lb.
- Containers shall be in a suitable ventilated enclosure or otherwise protected against tampering.

- Storage locations shall be provided with at least one approved portable fire extinguisher having a rating of not less than 2A 20BC.

4.5 Temporary Heating Devices

The T&PS construction site manager shall approve all temporary heating devices used onsite. Open flame burn barrels, burning scrap wood piles, and so forth are prohibited.

4.5.1 Ventilation

- Fresh air shall be supplied in sufficient quantities to maintain the health and safety of employees. Where natural means of fresh air supply are inadequate, mechanical ventilation shall be provided.

- Heaters used in confined spaces require special care be taken to provide sufficient ventilation in order to ensure proper combustion, maintain the health and safety of workmen, and limit temperature rise in the area.

4.5.2 Clearance and Mounting

- Temporary heating devices shall be installed to provide clearance to combustible materials not less than the amount shown in the following table.

- Temporary heating devices, which are listed for installation with lesser clearance than specified in the table, must be installed in accordance with the manufacturer’s specifications.

- MINIMUM CLEARANCE (in.)

<table>
<thead>
<tr>
<th>Heating Appliances</th>
<th>Sides</th>
<th>Rear</th>
<th>Chimney Connector</th>
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<tr>
<td>Room heater, circulating type</td>
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<tr>
<td>Room heater, radiant type</td>
<td>36</td>
<td>36</td>
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- Heaters not suitable for use on wood floors shall not be set directly upon them or other combustible materials. When such heaters are used, they shall rest on suitable heat-insulating material or at least 1-in. concrete, or equivalent. The insulating material shall extend beyond the heater 2 ft or more in all directions.
• Heaters used near combustible tarpaulins, canvas, or similar coverings shall be located at least 10 ft from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

4.5.3 Stability

Heaters, when in use, shall be set horizontally level, unless otherwise permitted by the manufacturer’s instructions.

4.5.4 Solid-Fuel Salamanders

Solid-fuel salamanders are prohibited.

4.5.5 Oil-Fired Salamanders

• Flammable liquid-fired heaters shall be equipped with a primary safety control to stop the flow of fuel in the event of flame failure. Barometric or gravity oil feed shall not be considered a primary safety control.

• Heaters designed for barometric or gravity oil feed shall be used only with integral tanks.

• Heaters specifically designed and approved for use with separate supply tanks may be directly connected for gravity feed, or an automatic pump, from a supply tank.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager-Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0  
09/13/2016  
Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts  
Remarks:  
Issued. This standard supersedes E&CS procedure SH-3, Fire Protection and Prevention.

Rev. 1  
05/09/2017  
Approved by Bruce Long and Bill Boyd  
Reviewed by Project Safety Leadership Team  
Revised by Bill Batts  
Remarks:  
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019  
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Policies

SH-4A

Environmental Vision and Policy

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<th></th>
<th>Rev. 0</th>
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<td>Construction Safety Leadership Team</td>
<td>Construction Safety Leadership Team</td>
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<tr>
<td>Approved By</td>
<td>Don Gaddy</td>
<td>Will Taylor</td>
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</table>
1.0 PURPOSE

This policy ensures all Technical and Project Solutions (T&PS) employees and contractors understand the Southern Company Environmental Vision and Policy as stated below.

2.0 VISION

We affirm the importance of protecting the environment and making wise use of our natural resources. We will set and achieve environmental goals that are in concert with other goals needed to further the well-being of society.

3.0 POLICY

It is the policy of Southern Company to conduct its business in a manner that protects the environment by:

- Meeting or surpassing all environmental laws, regulations, and permit requirements and verifying this commitment through environmental auditing.
- Seeking to ensure that environmental laws, regulations, and permit requirements are based on sound science and cost-effective technology.
- Pursuing opportunities to enhance the quality of the environment.
- Promoting public and employee understanding of environmental issues and the company’s environmental activities.
- Establishing company and organizational goals and implementation plans.
- Ensuring that employees are aware of their individual roles and responsibility in implementation of this environmental policy.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-4B

Spill Prevention, Control, and Countermeasures Plans

<table>
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</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3  
   1.1 Purpose ............................................................................................................ 3  
   1.2 Scope .............................................................................................................. 3  

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3  
   2.1 Definitions ........................................................................................................ 3  
   2.2 References ...................................................................................................... 3  

3.0 RESPONSIBILITY .................................................................................................. 3  
   3.1 Construction Site Manager ............................................................................. 3  
   3.2 Startup Manager ............................................................................................ 4  
   3.3 Contractor Site Manager (Third-Party Contract Management and Engineering,  
       Procurement, and Construction (EPC) Contractors) ........................................... 4  
   3.4 Contractors .................................................................................................... 4  

4.0 STANDARD ........................................................................................................... 4  
   4.1 General ............................................................................................................. 4  
   4.2 Spill Response for Small-Scale Spills ............................................................... 5  

5.0 KEY CONTACT .................................................................................................... 5  

6.0 QUALITY RECORDS ............................................................................................ 5  

7.0 ATTACHMENTS .................................................................................................. 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements related to the prevention of any discharge of oil, fuels, or chemicals from a Technical and Project Solutions (T&PS) project into navigable waters or adjoining shorelines.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2References

- EPA Section Chief
  Oil Planning and Response Section
  U.S. Environmental Protection Agency
  E-mail: ospills@epa.gov

- 40 CFR 112, Oil pollution prevention.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.2 **Startup Manager**

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **General**

T&PS shall consult with the appropriate operating company’s environmental affairs department to determine if a spill prevention, control, and countermeasures (SPCC) plan or addendum to an existing plan is needed. If so, the appropriate operating company’s environmental affairs department will lead the development of the plan or addendum.

- A SPCC plan must be prepared by all site/facilities that meet the following criteria:
  - The facility is nontransportation related.
  - The facility has an aggregate storage capacity greater than 1,320 gal or a total underground storage capacity greater than 42,000 gal.
  - There is a reasonable expectation of a discharge to navigable waters or adjoining shorelines.

- The regulations require the SPCC plan be written by the owner or operator of the facility or their authorized environmental consultant, engineer, or scientist. T&PS under special circumstances might require contractors to produce a SPCC plan.

- T&PS site management shall:
– Ensure compliance with the SPCC plan.
– Ensure precautions are taken to minimize the likelihood of spills.
– Ensure appropriate personnel are trained in the requirements of the site’s SPCC plan.
– Ensure a spill response plan is in place and appropriate cleanup materials are available.

4.2 Spill Response for Small-Scale Spills

All projects shall consult with the appropriate operating company’s environmental affairs department to help develop a site-specific plan for the quick response and cleanup of small-scale spills. At a minimum, the plan shall address:

• Storage of bulk containers of oils, fuels, and chemicals.
• Identification of potential spills and hazards produced.
• A spill-response team.
• Selection, storage, and transportation of cleanup materials.
• Disposal of contaminated materials.

The project spill response plan shall be evaluated annually or if a failure in the system occurs.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

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**Rev. 0**
09/13/2016

Remarks:
Issued. This standard supersedes E&CS procedure SH-4B, Spill Prevention, Control, and Countermeasures (SPCC) Plans.

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**Rev. 1**
05/09/2017

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

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05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-4C

Storm-Water Management

<table>
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<tr>
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<td>Project Support</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ................................................................. 3
  1.1 Purpose ................................................................................. 3
  1.2 Scope .................................................................................. 3

2.0 DEFINITIONS AND REFERENCES .................................................. 3
  2.1 Definitions ............................................................................ 3
  2.2 References ........................................................................... 3

3.0 RESPONSIBILITY ........................................................................ 3
  3.1 Construction Site Manager ..................................................... 3
  3.2 Startup Manager ................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ................. 4
  3.4 Contractors .......................................................................... 4

4.0 STANDARD ................................................................................ 4
  4.1 Requirements ........................................................................ 4
  4.2 Erosion and Sedimentation Control Plans for LDA of Less Than One Acre .... 5
  4.3 NPDES General Permit for LDA of Greater Than One Acre ................. 5
  4.4 Erosion, Sediment, and Pollution Control Plans (ES&PCP) ..................... 6
  4.5 Comprehensive Monitoring Program (CMP) .................................... 6

5.0 KEY CONTACT ........................................................................... 6

6.0 QUALITY RECORDS .................................................................... 6

7.0 ATTACHMENTS .......................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for storm water discharges from Technical and Project Solutions (T&PS) projects in accordance with permit requirements issued by the U.S. Environmental Protection Agency, state, local, and appropriate governing agencies. These requirements apply to all land disturbance activities (LDA). This standard also applies to dedicated portable concrete and/or asphalt plants located on or adjacent to a construction site/facility.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References


3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and
monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

T&PS shall consult with the appropriate operating company’s environmental affairs department during the engineering phase of every construction project that has the potential for land disturbing activities and develop a site-specific storm water management program.

The site-specific storm water management program shall incorporate:

- Erosion and sedimentation control (E&SC) plans for land disturbing activities of less than 1 acre.

- NPDES (National Pollutant Discharge Elimination System) general permit and erosion, sediment, and pollution control plans (ES&PCP) for:
  - Land disturbing activities of greater than 1 acre, or
  - Land disturbing activities of less than 1 acre that are a part of a larger overall development that is more than 1 acre, or
– Linear projects (25 times longer than its width) that disturb greater than 1 total acre.

- Comprehensive monitoring program (CMP).

T&PS project management shall ensure that all requirements contained in the site-specific storm water management program are implemented.

4.2 Erosion and Sedimentation Control Plans for LDA of Less Than One Acre

T&PS shall consult with the appropriate operating company’s environmental affairs department and develop erosion and sedimentation control plans that are incorporated into engineering designs and project specifications.

The erosion and sedimentation control plans may include requirements such as:

- Stripping of vegetation, regrading, and other development activities shall be conducted in such a manner to minimize erosion.

- Minimize disturbed areas and duration of exposure.

- Use temporary vegetation or mulching to protect exposed critical areas.

- Install permanent vegetation and structural erosion control measures.

- Use debris basins, sediment basins, silt traps or similar measures to trap sediment in runoff water until the disturbed area is stabilized.

- Use bridges and culverts to convey grading equipment across flowing streams.

- Adjacent to any state waters, retain an undisturbed natural vegetation buffer of 25 ft measured from the stream banks.

4.3 NPDES General Permit for LDA of Greater Than One Acre

- Each state has jurisdiction over the NPDES general permit for storm water discharges associated with construction activities that disturb more than 1 acre of land. Compliance will incorporate sound conservation and engineering practices to minimize erosion and sediment deposits into the waters of the state. This general permit does not address storm water discharges from industrial activities or discharges from point sources that are subject to an existing NPDES permit.

- T&PS is responsible for ensuring that all required erosion, sediment, and pollution control plans (ES&PCP), permits, notice of intents (NOI), inspections, sampling, reporting, recordkeeping, notice of terminations (NOT), and so forth are complied with based on specific state and local requirements for the extent of land disturbing
activities. Contractors may be asked to assist with one or more of these requirements.

4.4 Erosion, Sediment, and Pollution Control Plans (ES&PCP)

- T&PS shall consult with the appropriate operating company’s environmental affairs department and develop a site-specific erosion, sediment, and pollution control plan (ES&PCP) as required by the NPDES general permit and state or local regulations.

- The ES&PCP shall be prepared according to the specific requirements listed in the NPDES general permit.

4.5 Comprehensive Monitoring Program (CMP)

T&PS shall consult with the appropriate operating company’s environmental affairs department and develop a site-specific comprehensive monitoring program (CMP) that establishes procedures to collect and analyze storm water runoff turbidity samples from the receiving stream(s) or from individual storm water outfalls. The program shall be prepared before any LDA.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-4C, Storm-Water Management.

Rev. 1
05/09/2017

Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3

1.1 Purpose .................................................................................................................................. 3

1.2 Scope ....................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................................... 3

2.1 Definitions ................................................................................................................................. 3

2.2 References ............................................................................................................................... 3

3.0 RESPONSIBILITY ..................................................................................................................... 3

3.1 Construction Site Manager ..................................................................................................... 3

3.2 Startup Manager ...................................................................................................................... 3

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ............................................................................. 4

3.4 Contractors ............................................................................................................................. 4

4.0 STANDARD ............................................................................................................................ 4

4.1 Requirements .......................................................................................................................... 4

4.2 Preconstruction Air Permits ................................................................................................... 4

4.3 Open Burning .......................................................................................................................... 5

4.4 Asbestos/Demolition ................................................................................................................. 5

4.5 Fugitive Emissions ................................................................................................................... 5

4.6 FAA Requirements .................................................................................................................. 5

5.0 KEY CONTACT ....................................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................................. 6

7.0 ATTACHMENTS ....................................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements to address the control of air emissions on Technical and Project Solutions (T&PS) projects in accordance with applicable air-related environmental regulatory requirements.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 Requirements

T&PS shall consult with the appropriate operating company’s environmental affairs department during the engineering phase of every construction project that has the potential for air-related regulatory requirements to develop a site-specific air program management plan. At a minimum, the plan shall address the following issues:

- Preconstruction air permits.
- Open burning.
- Asbestos/demolition.
- Fugitive emissions.
- U.S. Federal Aviation Administration (FAA) requirements.

4.2 Preconstruction Air Permits

At the earliest possible stage of a proposed project, a determination must be made as to whether or not a preconstruction air permit will be required. If required, an application for a preconstruction permit must be submitted to the regulatory agencies. Construction cannot begin until this permit is issued from the agency. This process normally requires several months. Examples of projects that have required preconstruction air permits are the new combined cycle generating units and the SCRs that are being installed at coal-fired units.
T&PS is responsible for ensuring that all required preconstruction air permits are obtained prior to the commencement of any construction activity and for compliance with permit requirements.

4.3 Open Burning

State and local agencies restrict open burning and may require permits prior to the burning of materials from the clearing of land for construction. In very limited circumstances, open burning may be allowed. During some periods of the year, opening burning may be completely banned. When open burning is allowed, the use of a wind curtain or other restrictions may apply.

T&PS is responsible for ensuring that all required open-burning permits are obtained prior to the burning of construction clearing materials and for compliance with permit requirements.

4.4 Asbestos/Demolition

State and local agencies require notification 10 working days prior to the demolition of structures that may be located on property that will be used in construction. If asbestos is present in a structure, notification and removal will be required in strict accordance with regulations. Proper training and certification is required for all persons that sample and determine asbestos content. Contractors that remove and dispose of asbestos-containing material must be certified and trained.

T&PS is responsible for ensuring that all demolition and asbestos removal is conducted as required by appropriate regulations.

4.5 Fugitive Emissions

Any air-borne material transported beyond the property line of the construction site would be considered fugitive emissions. State and local agencies regulate fugitive emissions. The most common source of fugitive emissions from a construction site is dust from traffic. Reasonable measures such as wetting the roads must be taken to minimize fugitive emissions.

T&PS is responsible for ensuring compliance with all fugitive emissions regulations.

4.6 FAA Requirements

The FAA regulates the use of equipment and structures that exceed specified heights. Notification to FAA is required and an aeronautical study must be conducted prior to the erection of the equipment or construction of these structures. This study may require several weeks to complete.
T&PS is responsible for ensuring compliance with all FAA requirements.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Remarks:
Issued. This standard supersedes E&CS procedure SH-4D, Air Programs Management.

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Rev. 1
05/09/2017

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-4E

Waste Management

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<td>Project Services</td>
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<tr>
<td></td>
<td>Project Support</td>
</tr>
</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3

1.1 Purpose ................................................................................................................. 3

1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3

2.1 Definitions .............................................................................................................. 3

2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 3

3.1 Construction Site Manager .................................................................................... 3

3.2 Startup Manager .................................................................................................... 3

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4

3.4 Contractors ............................................................................................................ 4

4.0 STANDARD............................................................................................................... 4

4.1 Requirements ........................................................................................................ 4

4.2 Nonhazardous Solid Waste ................................................................................... 4

4.3 Hazardous Waste .................................................................................................. 5

4.4 Used Oil and Petroleum Products .......................................................................... 5

5.0 KEY CONTACT ......................................................................................................... 6

6.0 QUALITY RECORDS ................................................................................................ 6

7.0 ATTACHMENTS ....................................................................................................... 6
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements regarding the proper identification, handling, storage, and disposal/recycling of hazardous and nonhazardous waste on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor's site-specific safety plans.

4.0 STANDARD

4.1 Requirements

- T&PS shall not cause or allow to be released any hazardous wastes or toxic substances and/or any other waste, pollution, noxious gases or substances, or any other substances in violation of applicable federal, state, or local laws, rules, and regulations in connection with the construction activities.

- T&PS shall consult with the appropriate operating company's environmental affairs department during the engineering phase and prior to construction to develop a site-specific waste management plan. The plan shall address requirements for the proper identification, handling, storage, and disposal/recycling of nonhazardous and hazardous waste generated from construction activities.

4.2 Nonhazardous Solid Waste

- State and local agencies have certain control over the management, disposal, and/or recycling of all nonhazardous solid waste and excess materials that are either brought onsite or generated as a result of construction activities. The site-specific waste management plan shall describe how to handle and dispose of this waste stream during construction.

- Contractors are responsible for the management and timely disposal and/or recycling of all nonhazardous waste and excess materials that the contractor brought onsite or generated as a result of their construction activities; unless otherwise specified in the contract.

- Contractors shall supply and maintain appropriate numbers and sizes of nonhazardous waste containers. Containers shall be kept covered. The locations of
bulk solid waste containers (such as rolloffs or dumpsters) shall be approved in advance by T&PS site management.

- T&PS is responsible for ensuring compliance with the site-specific waste management plan.

4.3 Hazardous Waste

- Federal and state regulations cover the generation, handling, storage, and disposal of any hazardous waste generated at a facility. Furthermore, if the project is located at an existing facility, any waste generated onsite is counted as being generated for the entire facility and may not be separated. No hazardous or potentially harmful waste generated by contractors shall be allowed to enter the normal waste streams of either T&PS or the operating company. Specific project contract documents shall specify the party (company or contractor) that is responsible for hazardous waste management. Additionally, the operating company will provide acceptable vendors to handle any waste stream generated requiring disposal.

- When Southern Company Generation is responsible for hazardous waste disposal, the contractor is responsible to properly package the hazardous waste in accordance with applicable laws, rules, and regulations.

- When the contractor is responsible for hazardous waste disposal, the contractor shall package and dispose of the waste as directed by Generation.

- Hazardous or potentially harmful waste materials shall not be mixed with nonhazardous waste materials.

- Appropriate hazardous waste storage areas shall be established and maintained as needed.

- Hazardous and potentially harmful wastes shall be placed in proper containers, properly labeled, and stored in the hazardous waste storage area. Filled containers shall be removed from the project and properly disposed of in a timely manner with required documentation and record keeping.

- T&PS is responsible for ensuring compliance with the site-specific waste management plan.

4.4 Used Oil and Petroleum Products

State and local agencies have regulations regarding the management of used oil and other petroleum products, as well as oily waste and debris generated. Appropriate storage areas, acceptable collection devices, and timely removal from the site of these materials must be adhered to. Additionally, spill prevention, control, and countermeasure (SPCC) requirements must be met.
T&PS is responsible for ensuring that all oil products and oily waste generated are handled and disposed of properly in accordance with the site-specific waste management plan.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager–Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
## Attachment A - Historical Summary of Changes

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Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-4F

Environmental Assessment and Remediation

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</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 4
  3.1 Construction Site Manager .................................................................................... 4
  3.2 Startup Manager .................................................................................................... 4
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ........................................................................... 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD............................................................................................................... 4
  4.1 General Requirements ........................................................................................... 4
  4.2 Training Requirements .......................................................................................... 5
  4.3 Assessment and Remediation In Energized Substations/Switchyards ................... 6
  4.4 Underground Storage Tank Removal ................................................................. 7

5.0 KEY CONTACT ......................................................................................................... 7

6.0 QUALITY RECORDS ................................................................................................ 7

7.0 ATTACHMENTS ....................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for the safe performance of environmental assessment and remediation operations for Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

- T&PS procedure SH-2A-17, Excavation and Trenching
- Environmental, Health, and Safety standard SH-S-2C-13, Drilling Equipment.
- EH&S Procedures, Standards, and Guidelines library in Playbook 2.0.

NOTE

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General Requirements

- Prior to beginning any environmental assessment or remediation project, the T&PS construction site manager shall confer with environmental, health, and safety (EH&S) and:
  - Perform a preliminary site evaluation to identify specific site hazards and determine the appropriate safety and health controls needed to protect employees from the identified hazards.
– Prepare a written site-specific health and safety plan for the project.
– Prepare a site-specific comprehensive work plan for the project.

• All work shall be performed in compliance with the site-specific health and safety plan and applicable procedures, standards, and guidelines in the T&PS Construction EH&S Policy and Procedure Manual.

• All drilling and excavation work shall be performed in compliance with EH&S standard SH-S-2C-13, Drilling Equipment, and T&PS procedure SH-2A-17, Excavation and Trenching.

4.2 Training Requirements

Numerous training requirements specific to environmental assessment and remediation operations must be met. These requirements are in addition to other EH&S training needs. T&PS shall ensure all involved employees have met the training requirements. Training requirements include:

• The remediation project supervisor shall have successfully completed an approved 40-hour hazardous waste operations course and shall have a minimum of 3 days supervised field experience, plus an additional 8 hours of specialized training.

• All general site employees shall have successfully completed an approved (40) hour hazardous waste operations course and shall have a minimum of 3 days of supervised field experience.

• All employees who are onsite only occasionally for a specific limited task and are unlikely to be exposed to hazardous substances over permissible exposure limits, and all employees who are onsite regularly but work in areas that have been determined not to have the potential for exposure over permissible exposure limits shall have successfully completed an approved 24-hour hazardous waste operations course and shall have a minimum of 1 day of supervised field experience.

• All employees shall successfully complete an approved 8-hour hazardous waste operations refresher course annually.

• All employees shall receive appropriate training on the site-specific health and safety plan.

• Job briefings with all personnel involved shall be conducted and documented at the beginning of each shift and for each significant daily job change. At a minimum, the following aspects of the job shall be covered during job briefings:
  – Hazards associated with the job.
  – Work procedures involved.
  – Special precautions.
  – Hazardous energy controls.
– Personal protective equipment requirement.

4.3 Assessment and Remediation in Energized Substations/Switchyards

- When environmental assessment or remediation work is performed in energized or potentially energized substations or switchyards, all personnel involved shall receive comprehensive substation safety training prior to beginning operations and shall adhere to these additional requirements.

- All assessment and remediation work shall be coordinated with the appropriate operating company’s transmission maintenance supervision to ensure compliance with operating requirements and request assistance of a transmission maintenance employee while planning and performing any drilling or excavation operations. A review of substation drawings and survey of the site shall be conducted with the operating company’s transmission maintenance assistance during the project planning phase to identify any known underground cables, conduit, pipes, or other structures.

- An operating company’s transmission maintenance representative shall be present at all times when excavations are being made that can damage the existing grounding grid or that are in close proximity to structures or underground cables to ensure the safety of personnel and equipment.

- The appropriate operating company’s transmission maintenance center shall be notified prior to each daily entrance to the substation. During this notification, a request for an R switch shall be made to ensure that switches will not automatically reclose if tripped.

- Equipment and vehicles shall be driven into substations using extreme caution. Equipment shall be parked away from structures whenever practical. Flagmen shall be deployed whenever vehicles or equipment with an obstructed view to the rear must be backed into or out of position.

- Wheel chocks shall be placed on the downhill side of all equipment that is parked on a slope.

- All personnel performing remediation activities while the substation is energized shall wear approved rubber boots or shoe covers.

- All equipment that can reach into or potentially be placed within the minimum approach distance of an energized overhead conductor, substation buss, or equipment, and all drilling or excavating equipment shall be grounded to the existing grounding grid using a 4/0 grounding cable with clamps attached at each end. The grounding cable shall be clamped to the frame or to a stirrup or stud that is welded to the frame of the equipment and then attached to the grounding grid.
• No personnel or equipment shall be placed within the below-listed minimum approach distances of energized conductors unless expressly authorized and supervised by a representative of the operating company’s transmission maintenance center to follow minimum approach distances for qualified electricians.
  
  – 10 ft for voltages up to 50 kV.
  – 10 ft plus 4 in. per 10 kV over 50 kV.
  
  Examples: 115 kV = 12 ft 2 in.; 230 kV = 16 ft; 500 kV = 25 ft.

• When conditions require drilling or excavating in areas where there is the potential for accidental contact with underground utilities, all personnel performing manual digging operations shall wear approved low-voltage insulating gloves in addition to rubber boots or overshoes.

• If the existing grounding grid or underground cables are damaged, employees and equipment shall be kept clear of them until they are assessed by an authorized transmission maintenance employee and determined to be safe.

• All long-handled tools, such as shovels and rakes, shall be equipped with fiberglass handles whenever possible and shall be carried below shoulder level with handles in the horizontal position.

4.4 Underground Storage Tank Removal

• T&PS site managers and supervisors shall confer with EH&S prior to performing operations to remove underground storage tanks (UST).

• Removal of USTs shall be performed in compliance with the appropriate operating company’s EH&S procedures, standards, or guidelines and applicable procedures, standards, or guidelines in the T&PS Construction EH&S Policy and Procedure Manual.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.
7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
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Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-4G

Herbicides and Pesticides

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3
  1.1 Purpose .................................................................................................................. 3
  1.2 Scope .................................................................................................................. 3

2.0 DEFINITIONS AND REFERENCES ........................................................................ 3
  2.1 Definitions ............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY .................................................................................................... 3
  3.1 Construction Site Manager .................................................................................. 3
  3.2 Startup Manager .................................................................................................. 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) ............................................ 4
  3.4 Contractors ........................................................................................................... 4

4.0 STANDARD ............................................................................................................. 4
  4.1 Requirements ........................................................................................................ 4
  4.2 Herbicide and Pesticide Usage ............................................................................. 4

5.0 KEY CONTACT ....................................................................................................... 5

6.0 QUALITY RECORDS ................................................................................................. 5

7.0 ATTACHMENTS ....................................................................................................... 5
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements related to the application of herbicides and pesticides at Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

None.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

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3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **Requirements**

- T&PS site management shall consult with environmental, health, and safety (EH&S) and/or the appropriate operating company’s environmental affairs department to determine approved products prior to allowing herbicides or pesticides to be brought onto or applied on the project.

- T&PS site managers shall ensure that all project applications of herbicides and pesticides comply with appropriate regulations and appropriate company procedures, standards, and guidelines.

4.2 **Herbicide and Pesticide Usage**

- Federal and state regulations mandate herbicides and pesticides be handled and applied only by authorized personnel with verifiable training, certification, and/or licensing as required by federal, state, or local regulations for the particular substance to be used.

- Adjacent and surrounding areas and personnel shall be protected from potential airborne concentrations, overspray, and/or runoff. Also containers and excess product shall be properly stored and/or promptly removed from the project upon completion of the application.

- T&PS, in conjunction with the appropriate operating company department, is responsible for ensuring that all required usage and handling requirements are adhered to per the regulations.
5.0    KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0    QUALITY RECORDS

None.

7.0    ATTACHMENTS

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</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3  
1.1 Purpose .................................................................................................................. 3  
1.2 Scope ...................................................................................................................... 3  

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3  
2.1 Definitions .............................................................................................................. 3  
2.2 References ............................................................................................................ 3  

3.0 RESPONSIBILITY ..................................................................................................... 3  
3.1 Construction Site Manager .................................................................................... 3  
3.2 Startup Manager .................................................................................................... 3  
3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .................................................................................... 4  
3.4 Contractors ............................................................................................................ 4  

4.0 STANDARD............................................................................................................... 4  
4.1 General .................................................................................................................. 4  
4.2 Floor Cleaning ....................................................................................................... 5  
4.3 Foot Wear .............................................................................................................. 5  
4.4 Office Machines, Equipment, and Tools .................................................................... 5  
4.5 File Cabinets ......................................................................................................... 6  
4.6 Passageways and Aisles ....................................................................................... 6  
4.7 Electrical ................................................................................................................ 6  
4.8 Materials Storage .................................................................................................. 7  
4.9 Temporary Construction Facilities .......................................................................... 7  
4.10 Fire Safety Requirements ...................................................................................... 7  

5.0 KEY CONTACT ......................................................................................................... 9  

6.0 QUALITY RECORDS ................................................................................................ 9  

7.0 ATTACHMENTS ....................................................................................................... 9
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safely working in offices on Technical and Project Solutions (T&PS) projects.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

• ANSI Z41-1991
• ASTM F 2413

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring
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3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 STANDARD

4.1 General

- Sit properly in chairs at all times. Do not tilt back in straight chairs or lean to the extreme in swivel chairs. Do not overreach while seated.

- Do not engage in any horseplay, fighting, or other acts that could endanger personnel.

- Use ladders or other safe supports to reach material on high shelves or similar locations. Do not use boxes, crates, chairs, or similar items to gain access to high shelves.

- Use the handles provided on file cabinets, drawers, doors, and other closing items to prevent fingers being caught in pinch points.

- Move large boxes or bundles of supplies with a handtruck, or unpack and deliver in smaller parcels. Serious strains often result from improper handling of boxes and bundles of office supplies, ledgers, portable filing cases, and office machines. Do not carry so many articles that your view is obstructed. When in doubt, it is much better to make several trips. Always use good lifting technique:
  - Plan ahead, lift and test the load, and do not hurry.
  - Ask for help if you decide the load is too heavy or awkward.
– Establish firm footing by keeping your feet approximately shoulder-width apart and by pointing your toes out. Separating your feet will give a solid base of support.
– Bend at your knees, not at your waist.
– Tighten your stomach muscles.
– Lift with your legs (strongest muscles in the body) and not your back.
– Keep the load close to your body.
– Avoid twisting your body, and always attempt to keep your toes pointed in the direction you want to move.

- Do not run in the building except in extreme emergencies.
- While walking in corridors, keep to the right and avoid reading documents.
- While ascending or descending stairs, use handrails, keep to the right and ascend or descend one step at a time. When required to carry items up or down stairs, ensure one hand is free at all times to grip handrail.

4.2 Floor Cleaning

- Floor cleaning schedules should be determined with consideration given to peak hours and traffic patterns.
- The drying time for the area being cleaned should also be considered when establishing the floor cleaning schedule.
- Appropriate signage shall be used to redirect pedestrians during cleaning operations.

4.3 Foot Wear

- Workers are required to wear foot wear appropriate for the type of work to be performed. Where a danger of foot injuries exists because of falling or rolling objects, workers are required to wear safety-toed shoes that comply with ANSI Z41-1991 or ASTM F 2413 requirements.
- Open-toed shoes, sandals, and high-heeled shoes are not appropriate for the industrial work environment and shall not be worn.

4.4 Office Machines, Equipment, and Tools

- Heavy objects shall be placed far enough away from edges of tables or desks so they will not fall or be knocked off accidentally.
- Machines shall be turned off and unplugged prior to any service or repair.
• When not in use, paper cutters shall have the blade in the down and locked position.

• Paper shredders shall be used by trained personnel only. The shredder shall be unplugged prior to the removal of jammed material.

• Scissors and other sharp instruments shall be properly stored to prevent accidental injury. Do not store loose razor blades and unprotected Exacto knives in desk drawers.

• If refrigerators are provided, they shall be cleaned on a weekly basis.

4.5 File Cabinets

• Drawers shall not be overloaded. Load cabinets from the bottom to the top and arrange the contents so that the load is evenly distributed.

• To prevent cabinets from tipping over, only one drawer shall be open at a time.

• File drawers shall not be left open and unattended.

4.6 Passageways and Aisles

• A minimum width of 3 ft shall be established for aisles. Obstructions such as wastebaskets, telephone and electrical cords, low tables, and office equipment must be kept where they do not present tripping hazards.

• Doors shall not open into travel paths. Always open doors slowly to avoid striking anyone on the other side.

4.7 Electrical

• Clear access to circuit breaker panels shall be maintained at all times.

• Circuit breakers shall be clearly labeled as to function.

• Do not unplug electrical cords by pulling on the cord.

• Electric cords shall not be routed across aisles or passageways unless the cords are covered.
4.8 Materials Storage

- Secure storage racks or shelves to walls or other substantial supports unless they are designed to be freestanding under load.

- Material stored on the top of racks or shelves shall be a minimum of 18 in. from the ceiling, light fixtures, light bulbs, and sprinkler heads.

4.9 Temporary Construction Facilities

- Trailers and other temporary structures used as field offices, to house personnel, or for storage shall be anchored with rods and cables or by steel straps to ground anchors. The anchor system shall be designed to withstand winds and must meet applicable state or local standards for anchoring mobile trailer homes.

- Office areas are exempt from hardhat and safety-glasses regulations unless personnel are performing tasks for which hardhats and safety glasses are required.

- Safe means of access and egress such as nonskid ramps and suitable stairs with adequate landings shall be provided.

4.10 Fire Safety Requirements

- Each office is responsible for developing and implementing processes to address fire-safety requirements set forth in this standard.

- All personnel must be instructed and required to follow basic office fire-safety principles set forth for their area.

- No office space shall be occupied without a fire-safety review.

4.10.1 Fire Safety Requirements for Building Exits

The following fire-safety features are required for exits:

- An exit shall be provided from every floor and every building.

- Exit stairways shall not be used for storage or for any other activity that compromises their use as an exit (for example, used as electric cable raceways or as pathways for heating, air conditioning, or ventilation system ducts).

- Doors in exits shall swing in the direction of exit travel.

- Doors shall not be locked, chained, or barred shut.
• Doors shall be arranged to be readily opened from the side from which egress is made when the building is occupied. Latches or other fastening devices shall be provided with a knob, handle, panic bar, or other simple releasing device.

• Every exit shall be marked by a sign readily visible from any direction of access to the exit. Access to exits shall be marked by readily visible signs in all cases where the exit or the way to reach it is not immediately visible to occupants.

4.10.2 Extinguishing Systems and Equipment

• Fire extinguishers shall be strategically located with no more than 75 ft (25 m) travel distance from any point to an extinguisher.

• They shall be well maintained, have unobstructed access, and their location shall be clearly marked by signs readily visible from any direction.

• Multipurpose dry chemical (ABC) extinguishers are required; however, the number, size, type, and location of extinguishers should meet the specific fire-protection needs of various areas of offices.

4.10.3 Temporary Buildings, Outbuildings, and Office Trailers

Temporary buildings, outbuildings, and office trailers that are classified as office occupancy space shall have fire safety plans. They shall conform to the requirements of national, state, and local codes and site codes and regulations, as well as the requirements of this standard.

• Exits - Two means of exit are required when the building size, shape, and/or equipment or furniture layout causes the possibility of a fire cutting off the single means of exit and trapping personnel.

• Flammability of Materials - Give special consideration to the flammability of construction materials and/or furnishings and their placement with regard to the heating system and other heat-producing equipment. For example, curtains and furniture should not be placed close to wall-mounted and wall-recessed electric heaters.

4.10.4 Fire Prevention Practices

• Do not store flammable or combustible paints, thinners, and maintenance materials in general office areas. Provide approved flammable liquid storage cabinets in maintenance storage areas for these items.

• Do not store combustible materials in rooms or closets used for electrical controls, or telephone wiring or switching.
• All electrical equipment shall be UL approved by an accredited testing agency and should be inspected before first use and periodically thereafter.

5.0 KEY CONTACT

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 QUALITY RECORDS

None.

7.0 ATTACHMENTS

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued. This standard supersedes E&CS procedure SH-5A, Safe Work Practices in Offices.

Rev. 1
05/09/2017
Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-5B

Travel Safety

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</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ........................................................................................... 3
  1.1 Purpose ................................................................................................................. 3
  1.2 Scope .................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................... 3
  2.1 Definitions .............................................................................................................. 3
  2.2 References ............................................................................................................ 3

3.0 RESPONSIBILITY ..................................................................................................... 3
  3.1 Construction Site Manager .................................................................................... 3
  3.2 Startup Manager .................................................................................................... 3
  3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors) .............................................. 4
  3.4 Contractors ............................................................................................................ 4

4.0 STANDARD ............................................................................................................... 4
  4.1 General .................................................................................................................. 4
  4.2 Automobile Safety ................................................................................................. 5
  4.3 Hotel and Motel Safety ........................................................................................... 8

5.0 KEY CONTACT ......................................................................................................... 8

6.0 QUALITY RECORDS ............................................................................................... 8

7.0 ATTACHMENTS ....................................................................................................... 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements for safe travel and lodging for Technical and Project Solutions (T&PS) personnel on company business.

1.2 Scope

This standard applies to all T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

None.

2.2 References

SCS Generation Safety and Health: Accident and Illness Reporting webpage.

3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.
3.3 **Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)**

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor's site-specific safety plans.

3.4 **Contractors**

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.

4.0 **STANDARD**

4.1 **General**

Protecting yourself involves more than just physical self-defense skills; it also involves knowing how to avoid trouble.

- Be aware of what is going on around you.
- Do not walk alone at night unless absolutely necessary.
- Use well-lighted streets and pathways.
- Park as close to your destination as possible. Try to park in a well-lighted area.
- When leaving your vehicle, lock all doors and lock valuables in the trunk or out of sight.
- If possible, avoid parking next to vans. Assailants sometimes hide inside or underneath vans.
- Personal vehicles used for company business shall meet the general requirements of this procedure. Motorcycles are prohibited for company travel purposes. Personnel operating vehicles must have a valid driver's license and have liability insurance consistent with the appropriate operating company’s requirements and state laws. The company assumes no responsibility for losses or damages to private vehicles or to the contents thereof.
- If your vehicle becomes disabled, pull well off to the side of the road, turn on your emergency flashers, and raise the hood (the universal sign of distress). If you have a cell phone call and request assistance. Stay in the vehicle with the doors locked.
Wait for police or a tow truck. If a stranger stops to offer help, ask them to summon police. Do not accept a ride from a stranger, and do not start out on foot. Do not pick up hitchhikers. Never pick up motorists whose vehicles are disabled; use your cell phone to call for assistance.

- Cell phone use shall comply with applicable state and local regulations.

For additional programs on personal safety, local police departments are usually willing to be guest speakers and to provide information about local programs.

### 4.2 Automobile Safety

Automobile safety applies to rental, company-owned or -leased vehicles, and personal vehicles used on company business.

- Drive in a safe and courteous manner, using defensive driving techniques. Personnel who drive company-owned or -leased vehicles should attend a defensive driving course.
- Do not drive unless you are alert, rested, and free of medication or other substances that might affect your judgment or driving skills.
- Obey all traffic signs, laws, rules, and regulations.
- Wear restraints at all times, whether you are a driver or a passenger. The driver shall not move the vehicle until all passengers are properly secured.
- Before operating the vehicle, make sure it is mechanically sound and properly equipped with safety restraints. Verify condition and operation of safety belts, lights and turn signals, mirrors, horn, spare tire, jack, door locks, tires, brakes, and wipers. Ensure a fire extinguisher is available on those vehicles where required.
- If an accident occurs, report or call local law enforcement and the rental agency, if applicable. Subsequent to the accident, call your supervisor as soon as possible and report the accident to your T&PS safety coordinator or the T&PS safety manager.

Listed below are additional reporting requirements for motor vehicle accidents involving motor vehicles owned by operating companies, accidents involving fatalities, serious accidents, and rental vehicles. This information may also be found at the Southern Company Generation Safety and Health intranet site at [http://safety-health.southernco.com/generation/scs/accident-illness-reporting.html](http://safety-health.southernco.com/generation/scs/accident-illness-reporting.html).

#### 4.2.1 Requirements for SCS Employees Working in Alabama

- Report the accident to your supervisor. If the accident involves fatalities or serious injuries, a report must be called into SCS Risk Management (205-257-6510).
• Contact APC Risk Services if the vehicle is owned by APC. For accidents in the southern part of the state, call 334-206-4601. Call 205-716-4601 for accidents in the northern part of the state.

• Complete a copy of the SCS Vehicle Accident Report form and send copies to SCS Safety and Health-West, c/o APC Safety and Health (7th Avenue Annex, APC CHQ) and to SCS Risk Management (15N-8367, APC CHQ, Birmingham).

• If the accident occurs at a Southern Nuclear operated facility, a copy of the report must also be forwarded to Southern Nuclear Safety and Health (Bin B018, Building 40, Inverness, Birmingham).

• Notify the rental agency of any accident in a rental vehicle and complete any forms required by the rental company and notify SCS Risk Management.

• For accidents involving a vehicle rented using a VISA Corporate Card, notify VISA at 1-800-VISA-911.

• Notify your insurance carrier if the accident involves your personal vehicle.

NOTE

The State of Alabama requires an SR13 form be submitted to the state on any vehicle accident involving personal injury or property damage exceeding $250. It is the driver's responsibility to complete and submit this form.

4.2.2 Requirements for SCS Employees Working in Florida

• Report the accident to Gulf Power Company’s Security Department at 904-444-6156.

• Report the accident to your supervisor. If the accident involves fatalities or serious injuries, a report must be called into SCS Risk Management (404-506-0701).

• Complete a copy of the Gulf Power Vehicle Safety Report form (Form No. 300336) and send copies to Gulf Power Corporate Safety, and SCS Safety and Health-West, c/o APC Safety and Health (7th Avenue Annex, APC CHQ).

• If the accident involves a rental vehicle, notify the rental company of the accident and complete any forms as required by the rental company.

• For accidents involving a vehicle rented using a VISA Corporate Card, notify VISA at 1-800-VISA-911.

• Notify your insurance carrier if the accident involves your personal vehicle.
4.2.3 **Requirements for SCS Employees Working in Georgia**

- Report the accident to your supervisor and immediately to Worker's Compensation (404-526-3600) in accordance with the Worker's Compensation Handbook. If the accident involves serious injuries or fatalities, a report must be called in to SCS Risk Management (404-506-0701).

- Contact GPC Risk Management if the vehicle is owned by GPC.

- Complete a copy of the SCS Vehicle Accident Report form and send copies to SCS Safety and Health-East (Bin 10170, Building 333, Atlanta), and also to SCS Risk Management (Bin 920, 270 Peachtree, Atlanta).

- If the accident occurs at a Southern Nuclear operated facility, a copy of the report must also be forwarded to Southern Nuclear Safety and Health (Bin B018, Building 40, Inverness, Birmingham).

- Notify the rental agency of any accident in a rental vehicle and complete any forms as required by the rental company, and notify SCS Risk Management.

- For accidents involving a vehicle rented using a corporate VISA card, notify VISA at 1-800-VISA-911.

- Notify your insurance carrier if the accident involves your personal vehicle.

4.2.4 **Requirements for SCS Employees Working in Mississippi**

- Report the accident to your supervisor. If the accident involves fatalities or serious injuries, a report must be called into SCS Risk Management (404-506-0701) and MPC Risk Management (8-794-4311).

  **NOTE**

  Weekends and after normal business hours, MPC Risk Management can be contacted by entering pager number 1-800-999-6710 with I.D. number 9991963.

- Complete a copy of the MPC Vehicle Accident Report form and send copies to MPC Risk Management (Corporate Training Center), SCS Safety and Health-West c/o APC Safety and Health (7th Avenue Annex, APC CHQ) and to SCS Risk Management (Bin 920, 270 Peachtree, Atlanta).

- If the vehicle is a rental, notify the rental car company of the accident and complete any forms as required by the rental company.

- Notify your Corporate VISA card representative at 1-800-VISA-911 if a corporate card was used to rent the vehicle.
• If the accident involves a personal vehicle, notify your insurance carrier.

**NOTE**

The State of Mississippi requires a form be submitted to the state on any vehicle accident involving personal injury or property damage exceeding $250. It is the driver's responsibility to complete and submit this form.

4.3 **Hotel and Motel Safety**

• Select reputable accommodations.

• After checking in to the hotel or motel, familiarize yourself with the safety and emergency procedures applicable to the establishment. Learn escape routes ahead of time. Heavy smoke may make finding these difficult during an emergency.

• When you retire for the evening, use reasonable precautions in case of fire or evacuation.

5.0 **KEY CONTACT**

For questions about the content and implementation of this standard, contact the manager—Construction Safety and Health.

6.0 **QUALITY RECORDS**

None.

7.0 **ATTACHMENTS**

Attachment A, Historical Summary of Changes.
Attachment A - Historical Summary of Changes

Rev. 0
09/13/2016

Remarks:
Issued. This standard supersedes E&CS procedure SH-5B, Travel Safety.

Rev. 1
05/09/2017

Remarks:
Added reference and link to accident and illness reporting web page (2.2). Revised 3.0, Responsibility, to reflect updated E&CS contract strategy. Corrected position title (5.0).

05/15/2019
Organization name updated.
Southern Company Operations

Technical and Project Solutions

Environmental, Health, and Safety Standards

SH-S-6

Ash Basins

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<td>Bill Boyd</td>
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<td>Robin Hurst</td>
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</tbody>
</table>
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................... 3  
   1.1 Purpose ................................................................................................................................. 3  
   1.2 Scope .................................................................................................................................. 3  

2.0 DEFINITIONS AND REFERENCES ....................................................................................... 3  
   2.1 Definitions ............................................................................................................................. 3  
   2.2 References ............................................................................................................................ 3  

3.0 RESPONSIBILITY ................................................................................................................. 4  
   3.1 Construction Site Manager ................................................................................................. 4  
   3.2 Startup Manager .................................................................................................................. 4  
   3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, 
       Procurement, and Construction (EPC) Contractors) ............................................................. 4  
   3.4 Contractors .......................................................................................................................... 4  

4.0 STANDARD .......................................................................................................................... 5  
   4.1 General .................................................................................................................................. 5  
   4.2 Planning ................................................................................................................................. 5  
   4.3 Emergency Action Plans .................................................................................................... 5  
   4.4 Site Supervision and Competent Person(s) ....................................................................... 7  
   4.5 Earth-Moving Equipment ................................................................................................... 7  
   4.6 Ground Conditions ............................................................................................................. 9  
   4.7 Working Over or Near Water ............................................................................................. 10  
   4.8 Environmental Requirements ........................................................................................... 10  
   4.9 Occupational Health ........................................................................................................ 10  
   4.10 Wildlife ............................................................................................................................... 11  
   4.11 Training .............................................................................................................................. 11  

5.0 KEY CONTACT .................................................................................................................... 12  

6.0 QUALITY RECORDS ......................................................................................................... 13  

7.0 ATTACHMENTS ............................................................................................................... 13
1.0 PURPOSE AND SCOPE

1.1 Purpose

This standard provides requirements and best practices for the safe execution of ash basin remediation on Technical and Project Solutions (T&PS) coal closure projects.

1.2 Scope

This guideline applies to T&PS project-assigned personnel and contractors whose contract document includes this standard by attachment, inclusion, or reference.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**competent person** – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate these conditions. The individual must be knowledgeable in the requirements in the OSHA standards. Both training and/or experience are factors of consideration for competent person designation.

2.2 References

- T&PS Environmental, Health, and Safety Manual:
  - EH&S Procedures, Standards, and Guidelines library in Playbook 2.0
  - T&PS Project EH&S Policy and Procedure Manual

  NOTE


- SH-2A-17, Excavation and Trenching
- SH-2C-01, Qualifying Equipment Operators
- SH-G-2C-12, Extricating Stuck Equipment
- SH-S-1H, Contract Safety and Health Management
- SH-S-1N, Planning and Hazard Analysis
- SH-S-2A-25, Working Over or Near Water
- SH-S-2B-01 Personal Protective Equipment
- SH-S-2B-07, Personal Floatation Devices
- SH-S-2B-09, Respiratory Protection
- SH-S-2C-12, Earth-Moving Equipment
3.0 RESPONSIBILITY

3.1 Construction Site Manager

The T&PS construction site manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved in construction activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.2 Startup Manager

The T&PS startup manager is responsible for implementing and ensuring compliance with this standard for T&PS personnel involved with startup activities and monitoring contractor compliance with the requirements of this standard for activities that fall under his or her scope.

3.3 Contractor Site Manager (Third-Party Contract Management and Engineering, Procurement, and Construction (EPC) Contractors)

Site managers for third-party contract management or engineering, procurement, and construction (EPC) contractors are responsible for ensuring contractors under their management meet the minimum requirements established by this standard as part of the contractor’s site-specific safety plans.

3.4 Contractors

Contractors working on T&PS construction projects are responsible for implementing and ensuring compliance with the minimum requirements established by this standard as a part of the contractor’s site-specific safety plans.
4.0 STANDARD

4.1 General

Prior to beginning work, contractors performing work on Southern Company projects shall submit a detailed site-specific safety plan to the T&PS construction site manager for review and approval.

4.2 Planning

Contractors will develop a work plan that includes the following:

- Identify roles, responsibilities, and key personnel for the main construction and field engineering activities.
- Summarize the applicable geotechnical engineering reports, design drawings, and specifications that are applicable to the development of the ash basin closure means and methods.
- Provide site-specific material selection and placement criteria.
- Develop work plans for the safe loading, unloading, storage, and transport of liner rolls.
- Develop stop-work decision trees for a variety of construction and field monitoring activities related to wet ash.
- Establish procedures for the use of monitoring equipment and the criteria used to inform equipment operators and site management of potential problem conditions.
- Provide criteria for addressing changes in site conditions and/or identifying when work plan updates are required.

Contractors shall plan all work activities in accordance with the requirements found in SH-S-1N, Planning and Hazard Analysis.

Contractors shall use form 1N.2, JSA Supplement – Specialty Work/High Risk Work, and form 1N.3, JSA for Ash Basin Work, as needed.

4.3 Emergency Action Plans

The T&PS construction site manager shall ensure a site-specific emergency action plan (EAP) has been developed for T&PS personnel on the project.

Contractors shall develop a site-specific EAP for their personnel. Contractors may, with agreement from site management, use the inclement weather portion of the T&PS site EAP for their personnel.
The contractor’s EAP may be subject to specific plant requirements.

The contractor’s EAP shall include:

- A plan for inclement weather including, but not limited to, hurricane, flash flooding, lightning, severe storms, and tornadoes. The plan shall include:
  - Weather monitoring, responsible person(s), distances for action, shelter, and site evacuation. Storm shelters shall meet the requirements found in FEMA DR 1679 RA2.
  - A method of communicating weather alarms to personnel, such as radio, LINC phone, or other approved method. If the site is located outside the alarm coverage of the parent facility, outdoor audio and/or visual alarms are recommended and will be evaluated by site management for feasibility.

- Fire.

- Medical emergency, including the closest hospital and appropriate emergency numbers.

- Chemical release, including anhydrous ammonia and chlorine.

- Rescue of personnel who become trapped in wet ash, including:
  - Alternative methods of exiting the cab of trapped equipment.
  - Placement of rescue devices at regular intervals, including types of rescue devices, specific locations or distance intervals, and the testing and inspection of rescue devices.
  - Rescue equipment for working over or near water. See SH-S-2A-25, Working Over or Near Water.
  - Training of rescue personnel including familiarization of risk and properties of both wet and dry ash.

  NOTE

Due to the nature of wet ash, boats, skiffs, or typical motorized equipment may be insufficient in a rescue situation. Amphibious vehicles (swamp buggies) are one type of equipment that may be effective in certain situations.

Personnel shall train to the EAP in accordance with regulatory requirements.

Emergency drills shall occur at not less than 6-month intervals.

Rescue services other than a facility’s emergency rescue team (ERT) must be reviewed and approved by T&PS site management. Site visits for the purposes of training rescue personnel shall be coordinated with T&PS site management.

If third-party services are used for rescue, work will stop if units are unavailable to respond unless secondary services are available.
When emergency personnel are responding to an active emergency such as medical or fire, all vehicle operations on access roads shall stop until the all-clear signal is given. If the response involves the ash basin operations area, all equipment shall also stop until emergency personnel are clear of the operations area.

**NOTE**

Depending on the layout of the site, shutdowns during an active emergency may involve the entire site to ensure proper access and egress of emergency vehicles and personnel.

Contractor plans, submitted as part of their site-specific safety plan, will be subject to review and approval by T&PS site management.

### 4.4 Site Supervision and Competent Person(s)

Contractors shall submit to the T&PS construction site manager the resume and qualification documentation for competent person(s) and supervisory personnel assigned to the project. The required documentation shall be submitted through PIMS. The purchaser reserves the right to reject any proposed personnel for those positions.

Contractors shall maintain a current list of competent person(s). The list shall be provided to the Southern Company EH&S site lead on a monthly basis.

A competent person(s) shall be required for the following, if part of contractor’s scope:

- Ground conditions.
- Trenching and excavation.
- Equipment.
- Rigging.
- Fall protection.
- Arsenic.
- Asbestos.
- Blasting operations.
- Chain hoists, jacks, and lever hoists.
- Cranes.
- Forklift operations.
- Grinders (bench, pedestal, and portable).
- Lead.
- Pile driving.
- Scaffolding.
- Silica.
- Steel erection.
- Tunneling, coffer dams, and caissons.
- Demolition.

### 4.5 Earth-Moving Equipment

All earth-moving equipment shall be maintained in a safe condition at all times. Daily preshift inspections are required on all equipment. Any defects noted will be documented and corrected as soon as practical. Inoperable safety devices are sufficient cause to remove the equipment from service until such time as the equipment is repaired. Examples of safety devices include:

- Horns.
- Mirrors.
- Signal lights.
• Backup alarms.
• Proximity warning devices or backup cameras when part of the contractor’s man-on-the-ground process.

Contractors shall develop a man-on-the-ground process to ensure the safety of personnel working on foot or in small motorized equipment such as buggies. See doc 6.3, Man-on-the-Ground Sample Program.

Personnel shall not approach moving equipment unless a positive means of alerting the operator has been made and the equipment has stopped.

Operators will be trained and qualified in accordance with SH-2C-01, Qualifying Equipment Operators. In addition to the requirements found in SH-2C-01, operator training will include the nature of wet and dry ash and how to recognize potential hazards associated with it. Contractors shall submit their training material to the T&PS construction site manager for review and approval.

Contractors shall develop a procedure for extricating stuck equipment. See SH-G-2C-12, Extricating Stuck Equipment, for guidance.

Access roads within the bounds of an ash basin shall be constructed based on PE-approved designs for specific ash basin conditions. Where geosynthetics are used, the computations shall be based on the specifications provided by the manufacturer. Designs or computations shall be submitted to the T&PS construction site manager for review a minimum of 15 days, or as otherwise agreed to, prior to the beginning of construction.

Access roads within the bounds of an ash basin shall be maintained to meet PE-approved designs or geosynthetics manufacturer’s specifications. Appropriate signage shall be displayed as needed to indicate routes of travel.

Access road construction in soft/wet areas will be performed only by experienced operators and workers.

Operations within the bounds of the ash basin or where an engulfment, entrapment, or liquefaction hazard is present should take place within 200 ft of access roads for rescue purposes.

Equipment within the bounds of the ash basin shall not be left running at idle unnecessarily as the vibrations can lead to liquefaction of the ash.

Vibratory equipment (smooth drum rollers, sheep-foot rollers, and so forth) shall have vibratory elements disabled.

In case of unacceptable ground conditions, work shall stop immediately in such locations until conditions have been deemed acceptable by the competent person.

Break areas, port-a-johns, and fuel storage areas shall be protected from moving equipment through the use of jersey barriers or equivalent, or set back sufficiently far
from routes of travel as to minimize the risk. Access roadways near excavations or steep slopes will likewise be protected.

In the event of night-time operations, lighting and/or reflective signage will be used to identify travel routes, intersections, pedestrian crossings, or any other area where personnel could be at risk from vehicular traffic.

During winter months or when there is a risk of freezing temperatures, ash shall not be preloaded and shall not be left in the truck bed overnight.

No dumping equipment shall move with a dump bed or tarpaulin system in the raised position. Contractors shall develop a system to alert operators when the bed is in a raised position.

Dump beds shall be monitored for the accumulation of wet ash, which could present a rollover hazard.

When not in use, equipment shall be parked on level and stable ground with the parking brakes set and wheels chocked with a purpose-designed device.

While equipment or any other motorized equipment is in motion, the driver shall not use a hand-held two-way radio, a LINC phone, or a cell phone. For equipment operations that require two-way radio contact while in motion, a hands-free headset is acceptable.

Over-the-road tractors operating on public roadways shall comply with all state, local, and U.S. Department of Transportation regulations found in 49 CFR. The contractor shall notify project management within 1 business day of any citations received by his or her operators or of any public complaints of which they are aware.

See SH-S-2C-12, Earth-Moving Equipment, for additional requirements.

4.6 Ground Conditions

Contractors shall monitor and document ground conditions as required. A competent person(s) shall be designated to inspect work areas on a regular basis. The frequency and methods of inspection shall be determined based on the environmental conditions, types and amount of equipment operating, and any engineering requirements. Pore wells shall be monitored for pore pressure as required if used.

NOTE

Monitoring of ground conditions is of critical importance on ash basin remediation projects. Hazards include liquefaction, slumping, cave-in or collapse of excavations, stuck equipment, or trapped personnel. The contractor shall have a method of immediate notification to craft workers when work should stop.
4.7 Working Over or Near Water

See SH-S-2A-25, Working Over or Near Water, and SH-S-2B-07, Personal Floatation Devices, for requirements related to working in proximity to water and the associated personal floatation devices (PFDs) that are required.

See note at 4.3, Emergency Action Plans, when selecting rescue equipment for personnel working over or near water.

4.8 Environmental Requirements

Contractors shall meet all federal, state, local, and Southern Company requirements for environmental protection. This requirement shall include a comprehensive plan for dust suppression and fugitive dust control, both onsite and for offsite ash handling operations, if part of the contractor’s scope.

Contractors shall develop a spill prevention control and countermeasures (SPCC) plan and a storm water management plan (if part of the contractor’s scope). The developed plan(s) shall be included in the contractor’s site-specific safety plan and subject to review and approval by the construction site management and/or the relevant operating company environmental affairs specialist. See SH-S-4B, Spill Prevention, Control, and Countermeasures Plans, and SH-4C, Storm-Water Management, for further information.

Spill kits of sufficient size and quantity shall be positioned at fueling areas or in areas where the potential for fuel spill is the greatest. Spill kits shall be maintained and inspected on a regular basis.

4.9 Occupational Health

In the site-specific safety plan, each contractor shall include an occupation health program that meets all regulatory requirements. Occupational health programs shall include but are not limited to:

- Inorganic arsenic.
- Silica.
- Other heavy metals known to be present in coal combustion by-products.
- Respirable dust.
- Heat/cold stress management.

The location(s) of portable wash stations (hand wash and/or showers) shall be specified in the safety plan.

A safety data sheet (SDS) shall be made available to the contractor for the coal ash that is part of his or her scope of work.

Contractors are responsible for performing exposure determinations for all methods of exposure (inhalation, contact, and ingestion) and obtaining personnel sampling data, as required to meet regulatory requirements. The contractor’s plan shall account for
changing conditions as the work progresses. Contractors shall maintain records as required.

A safety data sheet (SDS) shall be made available to the contractor for the coal ash that is part of his or her scope of work.

For contract compliance purposes, the purchaser may request to review the contractors' sampling results.

At a minimum, the following information shall be provided for each sample collected:

- Sample date.
- Employee name.
- Company and job title.
- Job tasks performed during sampling.
- Any applicable work conditions, including environmental conditions.
- Sample duration.
- Air sampling pump calibration values.
- Pre- and post-calibration values.
- Use of respirators or other control methods (ventilation, wet methods, etc.).
- Analytical results.

Contractors shall provide immediate notification to the purchaser if any sampling results meet or exceed the action level for the sampled substance. Additionally, contractors shall provide plans to mitigate the hazard(s) to ensure compliance with relevant standards. The contractor is responsible for amending the site-specific safety plan to reflect the change(s).

See SH-S-2D-05, Arsenic; SH-S-2D-06, Silica; and SH-S-2B-09, Respiratory Protection, for further requirements.

4.10 Wildlife

Contractors will develop a plan to address encountering dangerous wildlife such as, but not limited to, venomous snakes, alligators, or any other wildlife that can be a threat to the safety of workers. Only trained and licensed third-party or state/local authorities may capture or remove wildlife from the work areas.

4.11 Training

Contractors shall provide training to meet all regulatory requirements and site access requirements.

In addition to the above, contractors shall train operators on the following:

- Comprehensive training on the specific hazards associated with both wet and dry ash and the tools and methods used to monitor and make safety assessments related to the conditions of the ash.
- Ash-pond-specific general awareness orientation at the time of hire.
• Evacuation and/or rescue plans specific to the ash basin locations.
• Man-on-the-ground process.
• Stop-work authority.

Contractors may use third-party training providers to provide ash basin specific training. In that event, the contractor shall submit the training material for review to the T&PS construction site manager prior to mobilization.

Contractors who develop and use their own training will provide the training at the time of employee mobilization to the site. The contractor shall submit their training to the T&PS construction site manager for review prior to mobilization. An example training template shall be made available to contractors for informational purposes only.

Visitors and vendors who have reason to be within the bounds of an ash basin shall be escorted at all times and shall receive a briefing on the hazards associated with the work, the area they will be located, and the site EAP, except when unescorted access is needed. In those cases, the contractor shall provide a full orientation. The contractor is responsible for communicating this requirement to his or her visitors and vendors.

After personnel are trained, the contractor shall issue the worker a card that indicates training dates and is maintained on his or her person while onsite. Hardhat stickers that indicate training are also recommended and may be required at certain sites for specific training such as anhydrous ammonia awareness.

Contractors shall maintain a training matrix. At a minimum, the matrix shall include the following information:

• Employee name.
• Date of hire.
• Date of last drug test.
• Date of orientation training (or update training.)
• Specific equipment and date of training.
• Specialty training and date of training (for example, OSHA 30 hr or CPR/first aid).
• Specialty PPE authorized and date of training (for example, respirator type and size).

Contractors shall keep the training matrix current and make it available for review, upon request.

The contractor shall submit all training materials to T&PS construction site management for review and approval.

5.0 KEY CONTACT

For questions regarding the content or implementation of this standard, contact the manager—Construction Safety and Health.
6.0 QUALITY RECORDS

Quality records shall be retained in accordance with the Southern Company record retention schedule.

7.0 ATTACHMENTS

- Attachment A, Historical Summary of Changes
Attachment A, Historical Summary of Changes

Rev. 0
10/18/2017

Approved by Bruce Long and Bill Boyd
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Issued.

Rev. 1
06/28/2018

Approved by Bill Boyd and Robin Hurst
Reviewed by Project Safety Leadership Team
Revised by Bill Batts

Remarks:
Revised 4.5, Earth-Moving Equipment, to clarify and strengthen requirements. Added requirement for SDS and specified information to be provided for exposure sampling (4.9, Occupational Health).
Revised 4.11, Training.

05/15/2019
Organization name updated.
Employees were in the process of removing a section of formwork from the east side of the Steam Turbine operating deck. They had one form section left to remove.

A supervisor informed a carpenter foreman to use the proper rigging when removing the form section from the wall. The supervisor stated the foreman elected to connect the slings to the whaler system instead of using the proper rigging brackets. The foreman and two workers were on top of the turbine operating deck and had pried the section of formwork loose from the concrete surface. When the crane operator started to lift the formwork away from the wall, onlookers noticed it was hung on a small section of platform that led from the plywood deck at the base of the operating deck over to the stair tower.

Instead of letting the crane operator attempt to move the form away from the platform and the stair tower, the foreman climbed over the top of the form at the north end and climbed down the form diagonally on the outside to the lower south end of the formwork section where it was hung on the platform. He then kicked the platform loose which in turn freed the formwork section allowing it to immediately swing out away from the operating deck with him hanging onto it. Because the lift was in tension the formwork swung out and the north end of the formwork section swung back into the east face of the operating deck.

The rigging tore loose from the south end and he lost his grip and fell 35 ft to the front deck of the crane. The accident was then compounded when other employees attempted to move the injured foreman.

Contributing factors to the accident:
The foreman:
- Failed to use his training and follow safe work practices for elevated work.
- Was not wearing fall protection gear.
- Climbed onto a suspended load.
- Did not follow rigging instructions given to him by the supervisor.
- Was moved prior to trained professionals arriving at the scene to administer the injuries. No attempt should have been made to move the foreman.

Preventative measures:
- The OSHA requirements and company safety policy for working in elevated locations will be reviewed with all onsite employees.
- Any employee who fails to follow the 100 percent tie off policy in elevated work areas will be terminated immediately.
- The lifelines will be repositioned atop the steam turbine operating deck to allow for 100 percent tie off during the completion of remaining finish work.
- Prior to the start of each day’s work assignment, all employees will receive instructions on what is required of them to safely perform the work tasks for the day.
- The crane operator is empowered to stop any and all lifts, which in his or her mind are considered unsafe.
- It will be reiterated on all existing and future projects that one never puts oneself in a suspended load.

Lessons Learned:
- Follow all instructions and policies.
- Always follow safe work practices.
- Wear appropriate gear.
- Never move an injured employee when help can be called.
Unused scaffolding can still be of service on a construction site. Consider using scaffolding as safety plus barricades in highly congested work areas. These barricades are equipped with safety access gates and prove to be an excellent protection for workers and equipment. Highly visible and easy to install, scaffolding makes a stable safety device in high winds or other conditions.
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<th></th>
<th>Effectiveness</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
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<tbody>
<tr>
<td>1.1</td>
<td>Corporate Leadership participates in the safety program</td>
<td>Meets Requirement</td>
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<td>1.2</td>
<td>Site has established mission statement which includes objectives for safety</td>
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<td>1.3</td>
<td>Senior Site Leadership allocates adequate budget for safety needs</td>
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<td>1.4</td>
<td>Site Leadership requires Lead and Coordinator participation in safety process</td>
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<td>1.5</td>
<td>Safety is part of performance review of all levels of SCS site management</td>
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<td>1.6</td>
<td>Weekly safety meetings are held with Leads, Coordinators and contractors</td>
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<td>1.7</td>
<td>Site Leadership conducts incident reviews</td>
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<td>1.8</td>
<td>Policy statements and responsibility are communicated to site staff</td>
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<td>1.9</td>
<td>Construction/start up site manager participate in required weekly inspections</td>
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<td>1.10</td>
<td>Construction/start up site manager actively promotes safety in the field</td>
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<td>1.11</td>
<td>SCS site management maintains a corrective action log</td>
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<td>1.12</td>
<td>SCS has qualified and adequate EHS coverage</td>
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<td>1.13</td>
<td>PIMS access provided to contractor</td>
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<td>1.14</td>
<td>Established metrics in place and communicated to site staff</td>
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<td>1.15</td>
<td>Feedback for improvements is solicited from SCS site staff</td>
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<td>1.16</td>
<td>SCS staff is aware of goals and present performance</td>
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<td>1.17</td>
<td>Site specific goals are established and communicated (housekeeping audits, weekly inspections, step observations, training)</td>
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<tr>
<td>1.18</td>
<td>Are contractors aware of goals and present project performance</td>
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<td>1.19</td>
<td>Awareness tools, banners, posters, bulletin boards are utilized to include STEP</td>
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<td>1.20</td>
<td>All meetings start with a safety discussion or topic</td>
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<td>1.21</td>
<td>SCS site management promotes celebration of milestone achievements</td>
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<td>1.22</td>
<td>Pre-planning for safety is performed by SCS project and site management</td>
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<tr>
<td>1.23</td>
<td>Signed Project Security Rules acknowledgements are up to date and on file</td>
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<tr>
<td>1.24</td>
<td>All Contractor orientation checklists (chapter IV Rev 9/14) are executed and filed</td>
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<td>1.25</td>
<td>Project EHS Plan Checklist is up to date</td>
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<td>1.26</td>
<td>Emergency Action Plan: Written plan, alarm system, evacuation routes</td>
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<td>1.27</td>
<td>OSHA log -300 current and correct</td>
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<td>1.28</td>
<td>Hazard Communication: Written program, training, inventory list, SDS's</td>
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<td>1.29</td>
<td>Confined space inventory list and activity log are current</td>
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<td>1.30</td>
<td>Pre Task Planning tools are used by SCS when necessary</td>
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<td>1.31</td>
<td>Contractor Pre Task Planning tools are reviewed and acknowledged by SCS</td>
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<td>1.32</td>
<td>Erosion control and post-rain event inspection conducted and documented</td>
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<td>1.33</td>
<td>Regularity Agency Inspection: Written site specific procedure</td>
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<td>1.34</td>
<td>All contractors SSSP have been reviewed SCS Site Management</td>
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<td>1.35</td>
<td>Safety Implementation Plan: Written, site specific</td>
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<td>1.36</td>
<td>SCS staff are trained in planning for safety</td>
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<td>1.37</td>
<td>The T&amp;P S.T.E.P. BBS process is fully implemented and sustained</td>
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<td>1.38</td>
<td>Individual goals are established and participation compared/reported monthly</td>
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<td>1.39</td>
<td>Project Goals include data review, corrective action and communication plans</td>
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<td>1.40</td>
<td>Management STEP Sustainability Review meetings held and documented monthly</td>
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<tbody>
<tr>
<td>1.42</td>
<td>SCS observers promote conversation with craft in the field</td>
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<td>1.43</td>
<td>Observation results are communicated to contractors</td>
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<td>1.44</td>
<td>Observed trends are used to communicate areas of improvement</td>
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<tr>
<td>2. Contractor Leadership Commitment and Involvement</td>
<td>Meets Requirement</td>
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<tr>
<td>2.1 Corporate Leadership participates in the safety program</td>
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<td>2.2 Site Leadership sets objectives for safety</td>
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<td>2.4 Safety is part of performance review of supervisor and crew leader</td>
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<td>2.5 Weekly meetings are held with supervisors with safety on the agenda</td>
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<tr>
<td>2.6 Senior Site Leadership reviews serious incidents</td>
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<td>2.7 Senior Site Leadership attends weekly safety meetings</td>
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<td>2.8 Senior Site Leadership participates in inspections</td>
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<td>2.9 Senior Site Leadership actively promotes safety in the field</td>
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<tr>
<td>2.10 All levels of Leadership correct unsafe acts or conditions</td>
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<tr>
<td>2.11 Senior Site Leadership sets safety goals</td>
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<tr>
<td>2.12 Contractor has qualified and adequate EHS coverage</td>
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<td>2.13 Does contractor have appropriate access to PIMS</td>
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<tr>
<td>3. Contractor Goal Setting and Communications</td>
<td>Meets Requirement</td>
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<td>--------------------------------------------</td>
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<tr>
<td>3.1 Site specific goals are established and communicated (housekeeping audits, weekly inspections, step observations, training)</td>
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<tr>
<td>3.2 Objectives are set to meet goals</td>
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<td>3.3 Project specific performance metrics in place and publicly tracked</td>
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<td>3.4 Feedback for improvements is solicited from contractor supervision</td>
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<tr>
<td>3.5 Corporate Safety values statement communicated</td>
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<td>3.6 Supervision is aware of goals and present performance</td>
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<td>3.7 Workers are aware of goals and present performance</td>
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<td>3.8 Awareness tools, banners, posters, bulletin boards are utilized</td>
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<td>3.9 All meetings start with a safety discussion or topic</td>
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<td>3.10 Safety Recognition System utilized when goals are met</td>
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### 4. Contractor Pre-planning for jobsite safety

#### Administrative

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<tr>
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<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
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<tr>
<td>4.1</td>
<td>Pre-planning for safety is performed by Proj.Mgr and site supervisors</td>
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<td>Contractor #1</td>
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<tr>
<td>4.2</td>
<td>Checklist is used by the supervisor to assure all exposures are considered</td>
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<td>4.3</td>
<td>Pre task plans are prepared for preplanning safety for each assigned work task</td>
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<tr>
<td>4.4</td>
<td>Pre task plans are reviewed with workers, signed by each, at work location</td>
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<td>4.5</td>
<td>All work activity performed under contractor's control is covered in the contractor's submitted and reviewed SSSP</td>
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<td>4.6</td>
<td>Proj.Mgr: Makes subs aware of serious safety hazards prior to start of work</td>
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<td>4.7</td>
<td>Contractor provided all subcontractor's CSQQs for SCS management for review and approval prior to their mobilization</td>
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<tr>
<td>4.8</td>
<td>Review JSA’s in the work area for accuracy and participation</td>
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<td>4.9</td>
<td>Safety equipment is provided and precautions are taken prior to job start</td>
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### 5. New Employee Orientation

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<th>Administrative</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1</strong> Formal Orientation Program: new hires or transferred employees to include safety requirements, major exposures, PPE training, project security rules- Written test provided</td>
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<td><strong>5.2</strong> Emergency Action Plan is covered</td>
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<td><strong>5.3</strong> Employees receive copy of written safety rules and acknowledgement of rules</td>
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<td><strong>5.4</strong> Orientation includes requirement for reporting all incidents</td>
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<td><strong>5.5</strong> Site specific hazards and requirements are reviewed with employees before work begins</td>
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<td><strong>5.6</strong> Hazard recognition and avoidance training is provided to all employees</td>
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<td><strong>5.7</strong> Non-authorized employee training on SCG-SH-0200 is provided to all employees</td>
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<td><strong>5.8</strong> Employees are trained on Pre Task Planning for tool use.</td>
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<p>| 5.9 Attend new employee orientation on/off site relating to site specific safety plan. | | | | | | |</p>
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<tr>
<th></th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Procedures are concise and easy to understand</td>
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<tr>
<td>6.2</td>
<td>Procedures are readily available to all personnel on project</td>
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<tr>
<td>6.3</td>
<td>Procedures are updated on a regular basis</td>
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<tr>
<td>6.4</td>
<td>Safety requirements are enforced equally among all employees</td>
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<tr>
<td>6.5</td>
<td>Disciplinary actions are documented</td>
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<td>6.6</td>
<td>New hire drug testing</td>
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<td>6.7</td>
<td>Random drug testing</td>
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<td>6.8</td>
<td>Post incident drug testing</td>
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<tr>
<td>6.9</td>
<td>Reasonable for cause drug testing</td>
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<tr>
<td>6.10</td>
<td>Six month drug testing</td>
<td></td>
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</tbody>
</table>
7.1 Formal weekly inspections are made by designated contractor personnel
7.2 Critical exposures based on the job, have been identified and are inspected
7.3 The site inspections are documented
7.4 Supervisor follows-up on corrective action
7.5 Inspections are reviewed with employees
7.6 Contractor corporate safety audits performed and written report forwarded to SCS
7.7 Erosion control and post-rain event inspection conducted and documented
7.8 Written site specific procedure to handle regulatory compliance inspection
7.9 Ladder, power tools, fall protection are inspected
7.10 Walk and inspect silt fences for condition
<table>
<thead>
<tr>
<th>8. Incident Investigation SH-1J</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Accidents including near misses are investigated by the immediate supervisor</td>
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<td>8.2 Project has camera available for incident photos</td>
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<tr>
<td>8.3 Incidents involving injuries are investigated, root cause process utilized</td>
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<tr>
<td>8.4 Incidents involving &quot;near hits&quot; are investigated</td>
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<tr>
<td>8.5 Preventative measures are put in place to prevent recurrence</td>
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<tr>
<td>8.6 Learnings from site incident investigations are shared both internally/externally</td>
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</table>
### 9. Safety Meetings

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>Safety meetings are held weekly and documented with contractors and subs</td>
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<tr>
<td>9.2</td>
<td>Specific safety topics are utilized for weekly safety meetings.</td>
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<tr>
<td>9.3</td>
<td>Weekly meetings are held with supervisors where safety is on the agenda</td>
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<td>9.4</td>
<td>Incidents and housekeeping are reviewed at safety meetings</td>
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</table>

### Field

<p>| 9.5 | Attend all SCS daily, weekly and monthly meetings held during review timeframe. |  |  |  |  |  |  |
| 9.6 | Attend contractors safety meeting as scheduled. |  |  |  |  |  |  |</p>
<table>
<thead>
<tr>
<th></th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>Safety Manual: Current and on jobsite, including Site Specific Safety Plan</td>
<td></td>
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<tr>
<td>10.2</td>
<td>Written site SPCC Plan: documented training</td>
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<tr>
<td>10.3</td>
<td>Competent Persons List and current by area of expertise</td>
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<tr>
<td>10.4</td>
<td>Emergency Action Plan: Written plan, alarm system, evacuation routes</td>
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<tr>
<td>10.5</td>
<td>OSHA log -300 current and correct</td>
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<tr>
<td>10.6</td>
<td>Hazard Communication: Written program, training, inventory list, SDS’s</td>
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<td>10.7</td>
<td>Environmental Best Management Practices implemented, documented training</td>
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<tr>
<td>10.8</td>
<td>Regularity Agency Inspection: Written site specific procedure</td>
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<tr>
<td>10.9</td>
<td>Supervisors Training: minimum training requirements met for supervisor role</td>
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</tbody>
</table>

**Administrative**

- Meets Requirement
- Improvement Opportunity
- Corrective Action Needed
- SCS
- Contractor #1
- Contractor #2
- Contractor #3

**Field**

- Proper Federal posters displayed
- Proper State posters displayed
- Emergency gathering point location posted
- Emergency phone numbers are posted
### 11. Injuries and Injury Management

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1 First aid, CPR- and AED-trained personnel are available onsite (SH-1O-4.1)</td>
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<tr>
<td>11.2 Injured employees are accompanied to Dr by member of management</td>
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<td>11.3 Contractor has established occupational clinic or panel of physicians</td>
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<td>11.4 Injuries are treated at the site when appropriate</td>
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<td>11.5 Contractor has provided injury case management process to SCS site management</td>
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<td>11.6 Supervisors are aware of medical status of employees actively treating</td>
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<tr>
<td>11.7 Injuries are managed to closure</td>
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<tr>
<td>11.8 Contractor maintains up-to-date injury records</td>
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<tr>
<td>11.9 Blood Borne Pathogens: Written plan with elements in place and utilized</td>
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<tr>
<td>11.10 Incident notification process in place and followed. Accident reports forwarded including WC 1st report and ICR (SH-1J.1 or SH-1J.2)</td>
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</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Meets Requirement</th>
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<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.11 First aid supplies are on-site that meet SH-1O.1</td>
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<tr>
<td>11.12 AED is available on-site with proper inspections and supplemental supplies</td>
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</tbody>
</table>
### 12. Employee Involvement

<table>
<thead>
<tr>
<th></th>
<th>Meets Requirement</th>
<th>Improvement</th>
<th>Corrective Action</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1</td>
<td>Jobsite inspections by employees at all levels</td>
<td></td>
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<tr>
<td>12.2</td>
<td>Unsafe condition reporting by employees</td>
<td></td>
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<tr>
<td>12.3</td>
<td>All level of employees are encouraged to provide feedback on safety</td>
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<tr>
<td>12.4</td>
<td>All employees are empowered to stop unsafe work</td>
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<tr>
<td>12.5</td>
<td>Safety suggestion program or boxes are available to all personnel</td>
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<tr>
<td>12.6</td>
<td>Safety Committees established, active, and craft participate at all levels</td>
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<tr>
<td>12.7</td>
<td>Employee perception survey of leadership commitment and involvement as well as employee engagement</td>
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<tr>
<td>12.8</td>
<td>Craft employees actively participate in creating JPSAs</td>
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<tr>
<td>12.9</td>
<td>Craft employees actively participate in safety meetings</td>
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</tbody>
</table>

### Field

- 12.7: Employee perception survey of leadership commitment and involvement as well as employee engagement.
- 12.8: Craft employees actively participate in creating JPSAs.
- 12.9: Craft employees actively participate in safety meetings.
13. Behavior Based Safety

<table>
<thead>
<tr>
<th>Administrative</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1</td>
<td>The T&amp;PS S.T.E.P. BBS process is fully implemented and sustained</td>
<td></td>
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<tr>
<td>13.2</td>
<td>Individual Goals are established and participation compared/reported monthly</td>
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<tr>
<td>13.3</td>
<td>plan in place to communicate trends/findings to all levels of Project employees</td>
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<tr>
<td>13.4</td>
<td>Management STEP Sustainability Review meetings held and documented monthly</td>
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<tr>
<td>13.5</td>
<td>Contractors are fully participating in the STEP 2.0 process</td>
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<tr>
<th>Field</th>
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<tbody>
<tr>
<td>13.6</td>
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<tr>
<td>13.7</td>
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<tr>
<td>13.8</td>
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</table>
## 14. Fire Protection

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>Portable extinguishers inspected monthly and inspection documented</td>
<td></td>
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<tr>
<td>14.2</td>
<td>Local fire authority contacted, informed of chemical inventory, rescue need, and capabilities discussed. Invite for site visits</td>
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<td></td>
<td>Adequate number of portable fire extinguishers provided</td>
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<tr>
<td></td>
<td>Portable fire extinguishers located at each floor/stairways</td>
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<td></td>
<td>At least a minimum 20lb, extinguisher 50' from fuel dispensing area</td>
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<td></td>
<td>Access to extinguisher and other fire protection equipment kept clear</td>
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<td></td>
<td>Portable extinguisher locations properly marked</td>
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<td></td>
<td>Indoor flammable liquid storage &lt;25 gallons or in approved cabinet</td>
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<td></td>
<td>Flammable/chemical storage areas properly posted with correct signage</td>
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<td></td>
<td>LPG containers not stored inside</td>
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<td></td>
<td>Flammable and combustible storage tanks grounded and bonded</td>
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<td></td>
<td>Containment berm/dikes provided at storage and/or dispensing areas</td>
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<tr>
<td></td>
<td>Flammable and combustible storage tanks protected from traffic</td>
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<td></td>
<td>Oxygen and gas cylinder stored separated 20 ft or 1-hr rated fire wall</td>
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## 15. Cranes, Equipments and Rigging

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<tr>
<th>Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
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<td>No.</td>
<td>Description</td>
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<tr>
<td>15.1</td>
<td>Site Specific Crane Use Plan</td>
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<tr>
<td>15.2</td>
<td>Site has method in place to review and maintain crane documentation</td>
<td></td>
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<tr>
<td>15.3</td>
<td>Operators are trained, certified, and licensed for assigned crane(s)</td>
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<tr>
<td>15.4</td>
<td>Rigger qualifications verified</td>
<td></td>
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<tr>
<td>15.5</td>
<td>Signal persons qualifications verified</td>
<td></td>
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<tr>
<td>15.6</td>
<td>All cranes receive documented annual inspections by a qualified 3rd party</td>
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<td>15.7</td>
<td>All cranes receive documented monthly inspections by a competent person</td>
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<tr>
<td>15.8</td>
<td>All cranes receive documented daily inspections by a competent person</td>
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<tr>
<td>15.9</td>
<td>Critical lift plans completed and submitted to for review</td>
<td></td>
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<tr>
<td>15.10</td>
<td>Monthly Rigging inspection logs are maintained</td>
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<td>15.11</td>
<td>Operators are trained and certified for the specific make and model as configured</td>
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<td>15.12</td>
<td>Non Critical lift planning is documented</td>
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<tr>
<td>15.13</td>
<td>Daily inspection performed and defects promptly corrected</td>
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<tr>
<td>15.14</td>
<td>All cranes have required operational aids installed and operational</td>
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<tr>
<td>15.15</td>
<td>All postings, hazard warnings, and instruction conspicuously posted</td>
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<tr>
<td>15.16</td>
<td>Load charts are available in all crane cabs which meets mfg requirements</td>
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<tr>
<td>15.17</td>
<td>Rigging in good service condition and safe practices utilized</td>
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<tr>
<td>15.18</td>
<td>All rigging and material handling equipment labeled with capacity</td>
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<tr>
<td>15.19</td>
<td>Required power line clearances maintained at all times (20' or Table A)</td>
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<tr>
<td>15.20</td>
<td>Swing radius is properly barricaded to prevent access</td>
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<tr>
<td>15.21</td>
<td>Windows are free of visible defects</td>
<td></td>
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<tr>
<td>15.22</td>
<td>All crane assembly done under supervision of authorized A/D director</td>
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<tr>
<td>15.23</td>
<td>All cranes have positive acting anti-two block devices installed and operational</td>
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<tr>
<td>15.24</td>
<td>All telescopic boom trucks are of low boom mount type with 360 degree operator visibility and no physical access to area between front/rear tires</td>
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<tr>
<td>15.25</td>
<td>Seatbelts provided and used with ROP structures</td>
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<tr>
<td>15.26</td>
<td>Horn is operational</td>
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<tr>
<td>15.27</td>
<td>Back up alarm is operational</td>
<td></td>
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<tr>
<td>15.28</td>
<td>Safe operational speeds are maintained</td>
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<tr>
<td>15.29</td>
<td>Material and/or employees are properly transported</td>
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<tr>
<td>Administrative</td>
<td>Field</td>
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<tr>
<td>16.1 Weekly housekeeping assessments (Field) documented</td>
<td>16.5 Project work areas are clean and free of excess trash, debris, or material</td>
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<tr>
<td>16.2 Quarterly office housekeeping audits documented</td>
<td>16.6 Provisions have been made for trash collection and disposal</td>
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<tr>
<td>16.3 Corrective Actions Log: updated and maintained</td>
<td>16.7 Trash receptacles are provided in work areas and at water kegs</td>
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<tr>
<td>16.4 Proper vermin, insect, and weed controls in place</td>
<td>16.8 Scrap lumber is free of protruding nails and other puncture hazards</td>
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<td></td>
<td>16.9 Scrap lumber, pipes, blocks, etc. properly stacked and stored</td>
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<td></td>
<td>16.10 Storage racks are stable and in good condition</td>
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<td></td>
<td>16.11 Electrical cords, hoses, weld leads, etc. elevated 7' or out of walkways</td>
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<td></td>
<td>16.12 Designated smoke area cigarette butt cans regularly cleaned out</td>
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<td></td>
<td>16.13 Elevated work areas are maintained clear of debris</td>
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<td></td>
<td>16.14 Housekeeping is planned into the task and reviewed on JPSA</td>
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<td></td>
<td>16.15 Project does not allow glass containers in work areas and none observed</td>
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<td></td>
<td>16.16 Adequate toilet facilities, including hand wash, provided and maintained</td>
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<td></td>
<td>16.17 Eating areas properly separated from contaminants and kept clean</td>
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<td></td>
<td>16.18 All exposed rebar protected with approved caps or guards</td>
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<td></td>
<td></td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
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<td>17.1</td>
<td>Scaffold users trained by a qualified person</td>
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<td>17.2</td>
<td>Scaffold Competent person designated</td>
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<td>17.3</td>
<td>A formal ladder inspection is performed at least quarterly and documented</td>
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<tr>
<td>17.4</td>
<td>Ladder user training conducted and documented</td>
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<td>17.5</td>
<td>Aerial lift: make/model documented training for all users</td>
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<td>17.6</td>
<td>Overhead Access Restrictions permits maintained</td>
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<tr>
<td>17.7</td>
<td>Written procedure available to safely free stuck aerial lift baskets</td>
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<td>17.8</td>
<td>Scaffolds designed to heavy duty loads, users know load capacity</td>
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<tr>
<td>17.9</td>
<td>Scaffold Builders/Competent Person aware of intended use/loads</td>
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<tr>
<td>17.10</td>
<td>Scaffolds inspected, tagged, and signed-off by Competent Person prior to use</td>
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<tr>
<td>17.11</td>
<td>Scaffolds constructed as complete as possible, good access/egress</td>
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<tr>
<td>17.12</td>
<td>All scaffolds on a firm base, level, and plumb, as complete as possible</td>
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<tr>
<td>17.13</td>
<td>Ladders used properly, 3 point contact maintained at all times</td>
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<tr>
<td>17.14</td>
<td>All manufactured ladders are extra-heavy-duty Type 1A</td>
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<tr>
<td>17.15</td>
<td>Handrails always used instead of plastic barricade ribbon as required</td>
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<tr>
<td>17.16</td>
<td>Suspended scaffolds inspected prior to use, includes anchor system</td>
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<tr>
<td>17.17</td>
<td>Independent lifelines used on all suspended scaffolds</td>
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<tr>
<td>17.18</td>
<td>Minimum of 20&quot; clearance on platforms at door entrances</td>
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<tr>
<td>17.19</td>
<td>Handrails provided for stairs of 4 or more risers</td>
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<tr>
<td>17.20</td>
<td>Stairways and ladders clear of trip hazards</td>
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<tr>
<td>17.21</td>
<td>Overhead Access Restrictions signage and protective measures in place</td>
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<td></td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed Alert</td>
<td>SCS</td>
<td>Contractor #1</td>
<td>Contractor #2</td>
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<tr>
<td>18.1</td>
<td>Electrical Testing Equipment: documented training for qualified users</td>
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<tr>
<td>18.2</td>
<td>Temporary power distribution is designed or reviewed by elec. engineer and documented</td>
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<tr>
<td>18.3</td>
<td>Temporary electrical buried cable are labeled and documented on site plan</td>
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<tr>
<td>18.4</td>
<td>GFCI's are inspected, tested and documented per manufacturers' recommendations</td>
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<td>18.5</td>
<td>Electrical sources are adequate, properly marked voltage amount</td>
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<tr>
<td>18.6</td>
<td>Electrical control panels and breakers labeled as to what they control</td>
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<tr>
<td>18.7</td>
<td>Adequate clearance is maintained at control panels, cabinets, and disconnects</td>
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<tr>
<td>18.8</td>
<td>All electrical panels, switches, outlets, junctions are properly guarded</td>
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<tr>
<td>18.9</td>
<td>Employees are properly trained and/or certified for high voltage work</td>
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<td>18.10</td>
<td>High voltage PPE is provided and properly inspected</td>
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<tr>
<td>18.11</td>
<td>All temporary electrical is GFCI protected</td>
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<tr>
<td>18.12</td>
<td>Cords are inspected, approved type (SO/SJO), and free of defects</td>
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<tr>
<td>18.13</td>
<td>Electrical cords are suspended with nonconductive material</td>
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<tr>
<td>18.14</td>
<td>Temporary lighting is available, installed where needed, and approved type</td>
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<tr>
<td>18.15</td>
<td>All above ground cables carrying greater than 220v installed in metal conduit or interlocked armor cable and clearly identified</td>
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<tr>
<td>18.16</td>
<td>Lights are properly guarded</td>
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<td></td>
<td></td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
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<tr>
<td><strong>19. Tools</strong></td>
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<tr>
<td>19.1</td>
<td>Tool inspections are documented</td>
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<td>19.2</td>
<td>Removal and repair of all tools documented</td>
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<tr>
<td>19.3</td>
<td>Tool users are properly trained and qualified, training is documented</td>
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<td>19.4</td>
<td>Powder Actuated Tools: users are certified and documented</td>
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<tr>
<td>19.5</td>
<td>The right tools are available for the task</td>
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<td>19.6</td>
<td>Tools are kept in good operational condition</td>
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<td>19.7</td>
<td>The use of pocketknives is prohibited</td>
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<td>19.8</td>
<td>Tools are properly stored when not in use</td>
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<tr>
<td>19.9</td>
<td>Power tools have proper guards and are in place when in use</td>
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<td>19.10</td>
<td>Bench grinders have properly spaced tool rests</td>
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<td>19.11</td>
<td>PPE signs are posted at bench grinders</td>
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<td>19.12</td>
<td>Wheels on grinders are properly dressed</td>
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<td>19.13</td>
<td>Discs for grinders are compatible and properly matched for RPM ratings</td>
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<td>19.14</td>
<td>Where required tools are secured or anchored to prevent displacement</td>
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<td>19.15</td>
<td>Powder actuated tools are used per manufacturer recommendations</td>
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<tr>
<td>19.16</td>
<td>Powder actuated tools, cartridges, and issuance is properly controlled</td>
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<td>19.17</td>
<td>Defective tools are promptly removed from service</td>
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<tr>
<td>19.18</td>
<td>PPE is identified and used for all tool applications</td>
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<td>19.19</td>
<td>Excess flow valves are in use on all air compressors, air receivers and manifolds</td>
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<tr>
<td>19.20</td>
<td>All connections on air hoses and pipes secured to prevent displacement</td>
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<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
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<td>20.1</td>
<td>Excavation/Trenching Plan: Written plan, rescue, documented training</td>
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<td>20.2</td>
<td>Competent Person for excavations identified and documented</td>
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<td>20.3</td>
<td>Excavation permit system utilized</td>
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<td>20.4</td>
<td>Methodology of soil classification documented</td>
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<td>50.5</td>
<td>Daily entry inspection performed and documented including adverse weather</td>
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<td>20.6</td>
<td>Spoil dirt at least 2 feet back from edge</td>
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<td>20.7</td>
<td>Proper slope or shoring installed</td>
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<td>20.8</td>
<td>Trench boxes of approved type</td>
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<td>20.9</td>
<td>Adequate number and type of access/egress points provided</td>
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<td>20.10</td>
<td>Protection from falls into excavations installed</td>
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<tr>
<td>21. Steel Erection/ Demolition</td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
<td>Contractor #2</td>
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<tr>
<td>21.1 Site Specific Steel Erection Plan</td>
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<tr>
<td>21.2 Demolition Plan developed by P.E. and documented</td>
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<tr>
<td>21.3 Engineering survey for demolition operation is documented</td>
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<td>21.4 Regulatory permits in place</td>
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<td>21.5 Changes to anchor bolts are documented and submitted to steel erectors</td>
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<td>21.6 Steel erection competent person and qualified rigger are identified</td>
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<td>21.7 Safety net inspections are documented</td>
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<td>21.8 75% concrete strength breaks documented prior to steel erection</td>
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<td>21.9 Multi-lift rigging assembly by qualified rigger</td>
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<td>21.10 Access restricted to erection area or overhead protection provided</td>
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<td>21.11 Designated Controlling Contractor ensures access/egress</td>
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<td>21.12 Barricades and warning signs in use</td>
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<td>21.13 Verify all open holes/handrail removal processes are being utilized</td>
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<td>21.14 Adequate laydown yards and storage of structural steel is provided</td>
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<td>21.15 All structural members will have 2 bolts per connection wrench tight prior to release of member from crane</td>
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<td>21.16 Overhead areas kept free of loose materials and debris</td>
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## 22. Personal Protective Equipment

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<tr>
<th>Administrative</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
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<tbody>
<tr>
<td>22.1 Respiratory Protection Program: Written program, documented training</td>
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<td>22.2 Workers using respirators are trained, medically cleared, and fit tested</td>
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<td>22.3 PPE assessment documented for scope of work</td>
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| Field                                                                 |                   |                         |                          |     |               |               |               |
| 22.4 Adequate supplies of PPE is on site, issued, and used as required       |                   |                         |                          |     |               |               |               |
| 22.5 Head protection areas designated and use of soft weld caps restricted   |                   |                         |                          |     |               |               |               |
| 22.6 Hard hats and suspensions in good condition                             |                   |                         |                          |     |               |               |               |
| 22.7 Eye hazards identified and appropriate eye protection worn              |                   |                         |                          |     |               |               |               |
| 22.8 ANSI approved safety glasses worn by all personnel in field work areas  |                   |                         |                          |     |               |               |               |
| 22.9 Approved side shields (hard, attached) required and used               |                   |                         |                          |     |               |               |               |
| 22.10 Lens cleaning stations readily available                               |                   |                         |                          |     |               |               |               |
| 22.11 Hearing protection is available, with several types to choose from, and used |                   |                         |                          |     |               |               |               |
| 22.12 High noise areas and activities are identified, posted for hearing protection required |                   |                         |                          |     |               |               |               |
| 22.13 Substantial foot ware required and worn                                |                   |                         |                          |     |               |               |               |
| 22.14 Toe guards worn for significant hazards i.e. tamping or other high hazards to feet |                   |                         |                          |     |               |               |               |
| 22.15 Hand hazards identified and appropriate gloves worn                    |                   |                         |                          |     |               |               |               |
| 22.16 Kevlar gloves used for use of knives or handling of sharp objects     |                   |                         |                          |     |               |               |               |
## 23. Fall Protection

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<th></th>
<th>Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed</th>
<th>SCS</th>
<th>Contractor #1</th>
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<tr>
<td>23.1</td>
<td>Fall Protection Plan: Site specific, rescue plan, documented training</td>
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<td>23.2</td>
<td>Fall Protection Competent Person(s) designated by employers</td>
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<td>23.3</td>
<td>100% Positive Fall Protection enforced at 6' potential fall exposure</td>
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<td>23.4</td>
<td>Open hole/handrail removal permit process documented and utilized</td>
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<td>23.5</td>
<td>Fall protection equipment inspected and documented monthly</td>
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<td>23.6</td>
<td>Horizontal lifelines are engineered and installed properly with calculations available</td>
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<tr>
<td>23.7</td>
<td>All personal fall protection equipment is employer owned/issued</td>
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<tr>
<td>23.8</td>
<td>Guardrails installed properly using adequate materials</td>
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<td>23.9</td>
<td>Wire rope guardrails maintained tight with ≤3” deflection and visibly marked</td>
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<td>23.10</td>
<td>Hole covers are adequate strength, secured and marked</td>
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<tr>
<td>23.11</td>
<td>Safety nets are installed properly, unobstructed, maintained and cleaned</td>
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<td>23.12</td>
<td>Horizontal lifelines installed and used as designed</td>
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<td>23.13</td>
<td>Personal fall protection equipment is adequate and properly used</td>
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<td>23.14</td>
<td>Fall protection harnesses are properly fitted for employees</td>
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<td>23.15</td>
<td>Lanyards are double leg shock absorbing type with proper snaphooks</td>
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<td>23.16</td>
<td>Compatible connections to adequate anchor points maintained</td>
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<tr>
<td>23.17</td>
<td>Harnesses anchored to allow ≤6 ft free fall and cannot strike lower level</td>
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<td>23.18</td>
<td>Large snap hook limited to scaffold builders during erecting or dismantling only</td>
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<td>23.19</td>
<td>Personal fall protection equipment is properly stored</td>
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<td></td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed Alert</td>
<td>SCS</td>
<td>Contractor #1</td>
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<td><strong>24. Hazardous Energy Control</strong></td>
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<td>24.1</td>
<td>LOTO Program: Implemented plan, documented training</td>
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<td><strong>24.2</strong></td>
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<td>24.2</td>
<td>LOTO documentation is available and adequate</td>
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<td><strong>24.3</strong></td>
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<td>24.3</td>
<td>Adequate T&amp;PS Employees are trained as sub-Clearance Holders for contractors</td>
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<td><strong>24.4</strong></td>
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<td>24.4</td>
<td>Contractor employees are trained in Clearance Awareness and documented</td>
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<td><strong>24.5</strong></td>
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<td>24.5</td>
<td>Supplemental Rosters are accurate and being utilized properly</td>
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<td><strong>24.6</strong></td>
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<td>24.6</td>
<td>Startup and Testing Personnel accurately utilize Clearance Procedure 0200</td>
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<td><strong>24.7</strong></td>
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<td>24.7</td>
<td>clearance instructions are available in the field</td>
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<td><strong>24.8</strong></td>
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<td>24.8</td>
<td>walkthroughs are performed with the contractors to assure adequate clearance for scope of work</td>
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<td><strong>24.9</strong></td>
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<td>24.9</td>
<td>employees working under a clearance are signed on to the appropriate roster</td>
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<td><strong>24.10</strong></td>
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<td>24.10</td>
<td>Locks and other locking mechanisms are available and used</td>
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<tr>
<td>25. Confined Space Entry</td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
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<td>25.1</td>
<td>Confined Space Entry: Written program, documented training, entry permit and logs, rescue plan</td>
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<td>25.2</td>
<td>Entry permits are accurate and maintained</td>
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<td>25.3</td>
<td>Permit to non-permit reclassification processes are used properly</td>
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<td>25.4</td>
<td>Atmospheric monitoring equipment is available, calibrated and maintained</td>
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<td>25.5</td>
<td>Atmospheric testing personnel are adequately trained</td>
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<tr>
<td>25.6</td>
<td>Training is provided for T&amp;PS employees entering under a contractor program</td>
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<td>25.7</td>
<td>Confined space inventory list and activity log are current</td>
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<td>25.8</td>
<td>Attendants are properly placed at entry of permitted confined space</td>
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<tr>
<td>25.9</td>
<td>Entrant log is maintained and accurate at active permitted confined space</td>
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<td>25.10</td>
<td>Non attended entry points are barricaded to prevent access</td>
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<td>25.11</td>
<td>Reclassification spaces have proper reclassification tags with required monitoring data up to date</td>
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<td>25.12</td>
<td>Confined spaces are identified and adequately marked (signs)</td>
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<td>26. Startup and Testing Operations</td>
<td>Meets Requirement</td>
<td>Improvement Opportunity</td>
<td>Corrective Action Needed</td>
<td>SCS</td>
<td>Contractor #1</td>
<td>Contractor #2</td>
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<tr>
<td>26.1 Adequate start up and testing procedures are in place</td>
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<td>26.2 Responsibilities are clearly identified and communicated</td>
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<td>26.3 Startup and Testing personnel are adequately trained</td>
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<td>26.4 Single point of contact is identified for status changes</td>
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<td>26.5 Process is in place for notification of status changes (system/area/process)</td>
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<td>26.6 Planning outlines for energizing and de-energizing electrical equipment are executed and documented SH 2E-04</td>
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<td>26.7 Line Breaking evaluation, documented training</td>
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Field

| 26.8 Regular reviews of start up plans for the day are communicated | | | | | | | |
| 26.9 Equipment turned over to startup, care and control are tagged accordingly | | | | | | | |
| 26.10 Exclusion zones communicated and clearly identified with signs and barricades | | | | | | | |
## 27. Welding, Burning, and Hot Work

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<thead>
<tr>
<th></th>
<th></th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
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<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
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<tbody>
<tr>
<td>27.1</td>
<td>Hotwork permits maintained for 30 days</td>
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<td>27.2</td>
<td>Firewatch training documented</td>
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<td>27.3</td>
<td>Exposure monitoring for exotic metals are documented and available</td>
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### Administrative

**Field**

<p>| 27.4 | Work performed under a current Hot Work Permit |                     |                          |                               |     |              |              |              |
| 27.5 | Weld screens used where possible, i.e. walkways, stairs, etc. |                     |                          |                               |     |              |              |              |
| 27.7 | Weld rod properly stored, disposed of, removed from electrode when not in use |                     |                          |                               |     |              |              |              |
| 27.8 | Weld cables inspected, undamaged, properly suspended, not in walkways |                     |                          |                               |     |              |              |              |
| 27.9 | Weld tigs are properly insulated |                     |                          |                               |     |              |              |              |
| 27.10 | Weld machines are adequately grounded |                     |                          |                               |     |              |              |              |
| 27.11 | Strikers are used to light torches |                     |                          |                               |     |              |              |              |
| 27.12 | Torch gauges are in good condition |                     |                          |                               |     |              |              |              |
| 27.13 | Gas Cylinders properly labeled, valved off and capped when not in use |                     |                          |                               |     |              |              |              |
| 27.14 | Gas cylinder bottles properly stored and secured |                     |                          |                               |     |              |              |              |
| 27.15 | Oxygen and gas cylinders protected by flash arrestors at tank and torch |                     |                          |                               |     |              |              |              |
| 27.16 | Weld slag and sparks are properly contained, combustibles removed from area |                     |                          |                               |     |              |              |              |
| 27.17 | Portable fire extinguisher is provided and readily available for hot work |                     |                          |                               |     |              |              |              |
| 27.18 | Trained Firewatches posted in critical areas/operations |                     |                          |                               |     |              |              |              |
| 27.19 | Firewatches clearly identified |                     |                          |                               |     |              |              |              |
| 27.20 | All work areas well ventilated, including weld operations |                     |                          |                               |     |              |              |              |</p>
<table>
<thead>
<tr>
<th>Item #</th>
<th>Comments</th>
</tr>
</thead>
</table>

28.1 Workers are trained in proper lifting techniques

28.2 Danger and other warning devices posted in dual language

28.3 Accident prevention signs and proper barricades for hazards utilized

28.4 A written barricade procedure has been established
<table>
<thead>
<tr>
<th>24. Hazardous Energy Control</th>
<th>Meets Requirement</th>
<th>Improvement Opportunity</th>
<th>Corrective Action Needed Alert</th>
<th>SCS</th>
<th>Contractor #1</th>
<th>Contractor #2</th>
<th>Contractor #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.1 LOTO Program: Implemented plan, documented training</td>
<td></td>
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<tr>
<td>24.2 LOTO documentation is available and adequate</td>
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<tr>
<td>24.3 Adequate T&amp;PS Employees are trained as sub-Clearance Holders for contractors</td>
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</tr>
<tr>
<td>24.4 Contractor employees are trained in Clearance Awareness and documented</td>
<td></td>
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<tr>
<td>24.5 Supplemental Rosters are accurate and being utilized properly</td>
<td></td>
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<tr>
<td>24.6 Start Up &amp; Testing Personnel accurately utilize Clearance Procedure 0200</td>
<td></td>
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</tbody>
</table>

**Administrative**

| 24.7 Clearance instructions are available in the field |                  |                         |                                |     |                |               |               |
| 24.8 Walkdowns are performed with the contractors to assure adequate clearance for scope of work |                  |                         |                                |     |                |               |               |
| 24.9 Employees working under a clearance are signed on to the appropriate roster |                  |                         |                                |     |                |               |               |
| 24.10 Locks and other locking mechanisms are available & used |                  |                         |                                |     |                |               |               |

**Field**

<table>
<thead>
<tr>
<th>24.7</th>
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<tbody>
<tr>
<td>clearance instructions are available in the field</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>24.8</th>
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</thead>
<tbody>
<tr>
<td>walkdowns are performed with the contractors to assure adequate clearance for scope of work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24.9</th>
</tr>
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<tbody>
<tr>
<td>employees working under a clearance are signed on to the appropriate roster</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24.10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locks and other locking mechanisms are available &amp; used</td>
</tr>
<tr>
<td><strong>25. Confined Space Entry</strong></td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>25.1</strong> Confined Space Entry: Written program, documented training, entry permit &amp; logs. Rescue Plan</td>
</tr>
<tr>
<td><strong>25.2</strong> Entry Permits are accurate &amp; maintained</td>
</tr>
<tr>
<td><strong>25.3</strong> Permit to non-permit reclassification processes are used properly</td>
</tr>
<tr>
<td><strong>25.4</strong> Atmospheric monitoring equipment is available, calibrated and maintained</td>
</tr>
<tr>
<td><strong>25.5</strong> Atmospheric testing personnel are adequately trained</td>
</tr>
<tr>
<td><strong>25.6</strong> Training is provided for T&amp;PS employees entering under a contractor program</td>
</tr>
<tr>
<td><strong>25.7</strong> Confined space inventory list and activity log are current</td>
</tr>
<tr>
<td><strong>25.8</strong> Attendants are properly placed at entry of permitted confined space</td>
</tr>
<tr>
<td><strong>25.9</strong> Entrant log is maintained and accurate at active permitted confined space</td>
</tr>
<tr>
<td><strong>25.10</strong> Non attended entry points are barricaded to prevent access</td>
</tr>
<tr>
<td><strong>25.11</strong> Reclassification spaces have proper reclassification tags with required monitoring data up to date</td>
</tr>
<tr>
<td><strong>25.12</strong> Confined spaces are identified and adequately marked (signs)</td>
</tr>
<tr>
<td>26. Start Up &amp; Testing Operations</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>26.1 Adequate start up and testing procedures are in place</td>
</tr>
<tr>
<td>26.2 Responsibilities are clearly identified and communicated</td>
</tr>
<tr>
<td>26.3 Start up &amp; Testing personnel are adequately trained</td>
</tr>
<tr>
<td>26.4 Single point of contact is identified for status changes</td>
</tr>
<tr>
<td>26.5 Process is in place for notification of status changes (system/area/process)</td>
</tr>
<tr>
<td>26.6 Planning outlines for energizing and de-energizing electrical equipment are executed and documented SH 2E-04</td>
</tr>
<tr>
<td>26.7 Line Breaking evaluation, documented training</td>
</tr>
<tr>
<td>26.8 Regular reviews of start up plans for the day are communicated</td>
</tr>
<tr>
<td>26.9 Equipment turned over to startup, care and control are tagged accordingly</td>
</tr>
<tr>
<td>26.10 Exclusion zones communicated and clearly identified with signs and barricades</td>
</tr>
<tr>
<td>Requirement</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
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<tr>
<td><strong>Administrative</strong></td>
</tr>
<tr>
<td>27.1 Hotwork permits maintained for 30 days</td>
</tr>
<tr>
<td>27.2 Firewatch training documented</td>
</tr>
<tr>
<td>27.3 Exposure monitoring for exotic metals are documented and available</td>
</tr>
<tr>
<td><strong>Field</strong></td>
</tr>
<tr>
<td>27.4 Work performed under a current Hot Work Permit</td>
</tr>
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<td>27.19 Firewatches clearly identified</td>
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<td>27.20 All work areas well ventilated, including weld operations</td>
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<td>28.1</td>
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<td>28.4</td>
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### Additional Comments and Explanations

<table>
<thead>
<tr>
<th>Item #</th>
<th>Comments</th>
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<tbody>
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</table>
Form 1H.1, Contractor Safety Qualification
Questionnaire: Environmental, Health, and Safety (EHS) Record and Information

Company: ________________________________

Company name: ____________________________________________
Address: ____________________________________________
Point of contact: ___________________________
Phone / Fax: ____________________________________________
Signature: ____________________________________________
Date: ____________________________________________

This form must be executed by contractor’s officer (or similar company representative) with authority to bind the company.

1. Has your company received any OSHA citations within the last 5 years? YES ☐ NO ☐

If YES, attach copies to this form.

2a. List your firm’s Experience Modification Rate (EMR) for the past three consecutive years.

<table>
<thead>
<tr>
<th>Year</th>
<th>EMR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

2b. The Contractor/bidder shall obtain and provide as a part of the bid a signed and dated letter from the appropriate Workers’ Compensation carrier stating that the EMR listed for the three (3) years in question 2a is correct. Additionally, the rating page from the National Commission of Compensation Insurers report should be attached. Failure of bidder to provide requested documentation may disqualify bidder from competing in the bidding process. Those Contractors who are self-insured must attach a letter signed by an officer of their company stating that they are self-insured and do not have an EMR.

3a. How often are accident reports (OSHA 300) and report summaries sent to the following:

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Monthly</th>
<th>Quarterly</th>
<th>Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>President of firm</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Safety director</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other</td>
<td>☐</td>
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</tbody>
</table>

3b. Explain the reporting structure for the individuals listed above (that is, how many direct reports does the safety director have? What is the title and/or position of the individual who the safety director reports to?).

____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________
4a. Use your last three (consecutive) years of OSHA No. 300 Log data to fill in the following:

<table>
<thead>
<tr>
<th>NAICS Code: ___________________</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of OSHA recordable cases:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of transfer and restricted cases:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of lost workday cases:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of lost workdays:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of fatalities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee hours worked each year:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4b. Complete the following rate information based upon current year-to-date numbers taken from your firm’s OSHA No. 300 log, as well as for your last three consecutive years. (Refer to question 4a for calculation purposes.)

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSHA Recordable Incident Rate:</td>
<td></td>
<td></td>
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<tr>
<td>DART Rate:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lost Workday Rate:</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Rate Calculation Formula:**

\[
\text{Rate} = \frac{\text{Number of Cases} \times 200,000}{\text{Total Hours Worked Per Year}}
\]

5. Does your firm have a written Company Safety Policy (or similar purpose document) signed by a company officer?

6. Does your firm have a written Hazard Communication Program?

Explain any NO responses to questions 5 and 6 (attach additional pages if needed):

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

7. Identify by name and title the person within your firm directly responsible for the firm’s Safety Program Management:

   Name: _________________________
   Title: _________________________
   Phone: _________________________

8. How often do you hold site toolbox safety (or similar purpose) meetings for field teams?

   Daily [ ] Explain:
   Weekly [ ]
### Monthly

- [ ]

- [ ]

- [ ]

- [ ]

### 9. Do you have a safety orientation program for new hires?

If YES, does it include instruction on the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>a. Your company's safety policy, rules, and procedures</td>
<td></td>
</tr>
<tr>
<td>b. Head Protection</td>
<td></td>
</tr>
<tr>
<td>c. Eye Protection</td>
<td></td>
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<tr>
<td>d. Hearing Protection</td>
<td></td>
</tr>
<tr>
<td>e. Respiratory Protection</td>
<td></td>
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<tr>
<td>f. Fall Protection (Competent Person Training Required)</td>
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</tr>
<tr>
<td>g. Scaffolding/Work Platform (Competent Person Training Required)</td>
<td></td>
</tr>
<tr>
<td>h. Perimeter Guarding/Floor, Wall, and Roof Openings</td>
<td></td>
</tr>
<tr>
<td>i. Housekeeping</td>
<td></td>
</tr>
<tr>
<td>j. Fire Protection</td>
<td></td>
</tr>
<tr>
<td>k. First-Aid Facilities</td>
<td></td>
</tr>
<tr>
<td>l. Emergency procedures - Rescue/Evacuation</td>
<td></td>
</tr>
<tr>
<td>m. Toxic Substances</td>
<td></td>
</tr>
<tr>
<td>n. Trenching and Excavation (Competent Person Training Required)</td>
<td></td>
</tr>
<tr>
<td>o. Signs, Barricades, Flagging</td>
<td></td>
</tr>
<tr>
<td>p. Electrical Safety, Lockout/Tagout Procedures</td>
<td></td>
</tr>
<tr>
<td>q. Rigging and Crane Safety (Competent Person Training Required)</td>
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<tr>
<td>r. Hazard Recognition</td>
<td></td>
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<tr>
<td>s. Confined Space Entry (Competent Person Training Required)</td>
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<tr>
<td>t. Hazard Communication (and Safety Data Sheets)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</thead>
</table>

### 10. Do you have a safety orientation program for newly hired or promoted supervisors?

If YES, does it include instruction on the following:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>a. Safe Work Practice</td>
<td></td>
</tr>
<tr>
<td>b. Methods of Safety Supervision</td>
<td></td>
</tr>
<tr>
<td>c. Toolbox Safety Meeting (or similar purpose meeting)</td>
<td></td>
</tr>
<tr>
<td>d. Emergency Procedures</td>
<td></td>
</tr>
<tr>
<td>e. First-Aid Facilities</td>
<td></td>
</tr>
<tr>
<td>f. Accident Investigation</td>
<td></td>
</tr>
<tr>
<td>g. Fire Protection and Prevention</td>
<td></td>
</tr>
<tr>
<td>h. New Worker Orientation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

### 11. Does your company have a substance abuse program?

If YES, how long has this program been in place? ____ years

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

### 12. Do you require and verify that your employees and any lower tier contractors that you hire conduct and document hazard assessments for high-risk jobs/tasks to ensure hazards, risks, and mitigation measures are identified before the commencement of work?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

### 13. Describe how you will communicate and enforce regulatory and Southern Company safety requirements applicable to your employees and lower tier contractors that you bring on site to support
14. What is your process to verify that your employees and lower tier contractors that you hire to support the project have the required experience, qualifications, training, and PPE/equipment to perform the scope of work safely?

15. Does your company investigate all incident types for process improvement and learning opportunities?  
   Yes ☐  No ☐

16. What is your process to investigate and implement corrective measures to address safety issues or serious safety incidents, including those involving lower tier contractors that you hire for the project?

17. How are supervisors held accountable for safety performance?

18. Use the space below to provide additional relevant information regarding your company's environmental, health, and safety programs:

Contractor agrees to use the above criteria when selecting lower tier contractors. Contractor shall maintain records of all such evaluations and make them available for review by Southern Company when requested.
Company Representative(s) shall review with the Contractor’s site management all site-specific and Contract-specific safety, health, and environmental requirements that are applicable to the Contractor’s scope of work as defined in the written contract. It is the Contractor’s responsibility to convey this information to all of the Contractor’s employees and subcontractors. Contractor site management must acknowledge receipt and understanding of the safety, health, and environmental requirements by signing this checklist.

This checklist shall be used to assure basic safety, health, and environmental issues are covered. Any additional project-specific issues should be added in the space provided. Check each item that is discussed with the Contractor’s representative. If the item is not checked, that item is not applicable to the work being performed.

<table>
<thead>
<tr>
<th>1. Personal Protection Equipment</th>
<th>□ Head protection</th>
<th>□ Traffic vests</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Eye and face protection</td>
<td>□ Respiratory protection</td>
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</tr>
<tr>
<td>□ Foot protection</td>
<td>□ FR / Basic work clothing</td>
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<tr>
<td>□ Hand protection</td>
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<tr>
<th>2. General Safety</th>
<th>□ Housekeeping</th>
<th>□ Grinders – Pedestal, bench, and portable</th>
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<tbody>
<tr>
<td>□ Sanitation</td>
<td>□ Hazardous energy control and clearance procedure</td>
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<td>□ Illumination</td>
<td>□ Clearance awareness training</td>
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<td>□ Materials storage and handling</td>
<td>□ Excavation and trenching</td>
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<td>□ Signs and barricades</td>
<td>□ Blasting operations</td>
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<td>□ Ladders</td>
<td>□ Confined space entry</td>
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<td>□ Scaffolds</td>
<td>□ Compressed gas cylinders</td>
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<tr>
<td>□ Manlifts – Use and training</td>
<td>□ Welding, cutting, or heating</td>
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<tr>
<td>□ Fall protection – 100 percent</td>
<td>□ Transporting personnel</td>
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<td>□ Steel erection</td>
<td>□ Working over or near water</td>
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<td>□ Rigging and lift plans</td>
<td>□ Demolition operations</td>
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<td>□ Crane-suspended work platforms</td>
<td>□ Atmospheric monitoring</td>
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<td>□ Chain and lever hoists, jacks</td>
<td>□ Diving operations</td>
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<td>□ Power tools</td>
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<th>3. Major Equipment</th>
<th>□ Mobile cranes</th>
<th>□ Elevators</th>
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<tr>
<td>□ Forklift operations</td>
<td>□ Overhead cranes</td>
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<td>□ Earth-moving equipment</td>
<td>□ Vehicles, carts, and gators</td>
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<td>□ Aerial lifts and bucket trucks</td>
<td>□ Welding and portable generator</td>
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<th>4. Occupational Health</th>
<th>□ Hearing conservation</th>
<th>□ Silica</th>
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<td>□ Hazard communication program</td>
<td>□ Asbestos</td>
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<td>□ Bloodborne pathogens</td>
<td>□ Abrasive blasting</td>
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<td>□ Lead paint abatement</td>
<td>□ Industrial radiography</td>
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<td>□ Inorganic arsenic</td>
<td>□ Safety Data Sheets (SDS)</td>
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<td>□ Hexavalent chromium</td>
<td>□ Combustible dust safety</td>
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<th>5. Fire Protection and Prevention</th>
<th>□ General requirements</th>
<th>□ Flammable/combustible material storage</th>
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<tr>
<td>□ Fire extinguishers</td>
<td>□ Fire watch</td>
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<td>□ Fire watch</td>
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</tbody>
</table>
6. Emergency Procedures and Alarms
- [ ] Fire
- [ ] Chemical release
- [ ] Spill
- [ ] PSM-covered processes
- [ ] Injuries/illnesses
- [ ] Weather-related emergencies
- [ ] Security

7. Environmental Protection
- [ ] Spill prevention, control, and countermeasures plans (SPCC)
- [ ] Storm-water management
- [ ] Used oil and petroleum products
- [ ] Hazardous waste
- [ ] Nonhazardous waste
- [ ] Herbicides and pesticides
- [ ] Water discharges
- [ ] Air emissions
- [ ] Chemical approval and inventory

8. Miscellaneous Issues
- [ ] Eating in the plant
- [ ] First aid/Medical facilities
- [ ] Reporting occupational injuries, illnesses, and incidents
- [ ] Smoking
- [ ] Job safety analysis
- [ ] Site hazards
- [ ] Non-English speaking employees
- [ ] Safety violations
- [ ] Corrective actions
- [ ] Regulatory agency visits
- [ ] Use of company tools/equipment

9. Electrical Safety
- [ ] Work on or near energized electrical circuits
- [ ] Ground fault circuit interrupter (GFCI)
- [ ] Mobile equipment near electric and process lines
- [ ] Nominal voltages of lines and equipment
- [ ] Maximum switching-transient voltages
- [ ] Presence of induced voltages
- [ ] Presence of protective grounds and conductors
- [ ] Locations of circuits, equipment, electric supply lines, communication lines and fire protective services
- [ ] Condition of protective grounds and equipment grounding conductors
- [ ] Condition of poles
- [ ] Environmental conditions relating to safety
- [ ] Design and operation information of installation necessary to make the required assessments
- [ ] Wiring
- [ ] ARC flash program

10. General Compliance Issues
- [ ] Equal Employment Opportunity
- [ ] Workplace free of harassment work
- [ ] Unauthorized aliens
- [ ] Drugs and alcohol
- [ ] Workplace threats and violence

11. Other Issues
- [ ] ________________________________
- [ ] ________________________________

I have received a review and acknowledge the information transfer of the site-specific and contract-specific compliance, safety, health, and environmental requirements checked above. I understand these Southern Company expectations, and I will ensure these requirements are communicated prior to work activity to all of my contract workers/representatives and all of the representatives of my subcontractors.

________________________________________  ____________________________  ____________
Contractor Site Manager                                     Company Name                                     Date

________________________________________  ____________________________  ____________
Southern Company Representative                           Date
NOTE to Southern Company representative conducting the review: The following talking points provide a summary of the most important aspects for each safety topic. However, these talking points are not a substitute for reading and understanding of the relevant procedures, standards, and guidelines in the T&PS Construction EH&S Policy and Procedure Manual.

<table>
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<th>YES</th>
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<tr>
<td><strong>PERSONAL PROTECTION EQUIPMENT</strong></td>
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<tr>
<td>The Contractor shall be responsible for selecting and providing for its employees' personal protective equipment as may be required and/or approved by applicable regulations.</td>
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**Head protection:** Must be worn at all times inside or outside where injury can occur from falling/moving objects or low-hanging obstructions. Hardhats must meet OSHA/ANSI minimum standards. Per Southern Company requirements (T&PS standard SH-S-2B-02), all personnel must wear hardhats with the bill facing forward per manufacturer’s recommendations. No wearing of hardhats backwards.

**Eye and face protection:** Safety glasses that meet ANSI Z-87.1 requirements must be worn in all areas of the project. Administrative areas are exempt, unless construction or maintenance work is being performed. Safety glasses must have rigid side shields. Slip-on, flexible plastic side shields are not allowed. Visitor spectacles, conforming to ANSI Z-87.1, worn over prescription glasses are acceptable. A full-face shield over approved safety glasses is required for all grinding, abrasive cutting operations, or any other operation that generates high-speed particles.

**Foot protection:** Hard-soled, heavy leather safety-toed boots or shoes meeting ANSI Z41-1991 must be worn in all areas of the project, except administrative areas. Metatarsal guards shall be worn by employees operating hand vibratory tampers, jackhammers, and similar operations with a potential for serious foot injuries.

**Hand protection:** Contractors shall produce a glove matrix that identifies the style of glove and conditions each are used in. Contractor shall maintain sufficient stock of identified gloves.
- Leather or cut-resistant gloves are required when handling sheet metal, rough or unfinished lumber, metal bands, and other materials likely to cause hand injuries.
- Cut-resistant gloves must be worn when handling or using sharp instruments, tools, or equipment that could cause lacerations if hand contact would occur (for example, knives, razors, handsaws).
- Impact-resistant gloves must be worn when performing activities that expose hands and fingers to crushing injuries.

**Traffic vests:** High visibility clothing meeting ANSI Class II requirements must be worn when working near or on any county or state highway, roadway, or interstate. In addition, traffic vests may be required in all areas of the project based on site-specific requirements. All Areas - □ Yes □ No

**Respiratory protection:** When effective engineering controls are not feasible or while they are being instituted, appropriate respiratory protection shall be provided by the contractor and used by its employees. Each contractor using respiratory protection shall develop and implement a written respiratory protection plan for the specific respiratory hazards of each site/facility where respirators are used. The written plan shall be administered by a suitably trained program administrator who is qualified to recognize, evaluate, and determine appropriate controls for respiratory hazards in the workplace. Contractors are responsible for performing exposure determinations for their own employees.
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<th>YES</th>
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<tr>
<td><strong>Basic work clothing</strong> must be of 100-percent cotton or natural fiber construction. Clothing with full-length trousers and shirts that cover the shoulders are minimum requirements at all T&amp;PS projects. At certain times, the nature of the job or local requirements may necessitate the wearing of full-length sleeves. When long sleeves are not required, sleeves shall be a minimum of 4 in. in length. Perforated or mesh shirts or trousers are prohibited.</td>
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**Special Note:** Clothing that is offensive in any nature will not be tolerated, nor will the display of offensive material such as stickers on lunch boxes, pictures, or clothing. Such display could result in removal or termination from the site.

**FR/Basic work clothing:** All personnel working on T&PS projects who are performing work that has the potential to expose them to the hazard of flames or electric arcs shall wear clothing made of 100-percent cotton, other natural fibers, or flame-retardant (FR) materials.

### 2. GENERAL SAFETY

**Housekeeping:** Housekeeping is a fundamental and necessary activity on all projects and is the responsibility of every individual working on the project. Contractors shall keep all work areas neat and orderly. Work areas, passageways and stairways, and other areas shall be kept free of debris and materials. Food and beverages shall be consumed in designated areas only. Where water kegs are provided, a proper paper cup waste receptacle shall be provided and must be used. Waste paper cup receptacles shall be emptied daily. Work areas shall be cleaned as often as necessary to eliminate tripping and fire hazards. Particular attention shall be focused on the area around scaffolds, ladders, ramps, stairs, and electrical and mechanical equipment. Tools and loose materials shall also be removed if a hazard is created. See T&PS standard SH-S-2A-01, Housekeeping, for additional requirements.

**Sanitation:** Restroom facilities must be kept clean, and portable toilets cleaned at regular intervals to promote healthy hygiene habits. Toilets shall be provided based on the minimum requirements listed in T&PS standard SH-S-2A-02, Sanitation. At least one hand-washing station will be required per location of portable toilets.

**Illumination:** During operations beyond normal daylight periods or in indoor areas, sufficient artificial light sources such as plug-in light systems, stadium-type light poles, or portable power light systems shall be provided to illuminate work and travel areas. Lighting shall meet the requirements of ANSI A11.1. See table in T&PS standard SH-S-2A-03, Illumination.

**Materials Storage and Handling:**
- Both temporary and permanent storage shall be neat and orderly. When planning material storage, a minimum of 36 in. of clearance shall be allowed under sprinkler heads. Automatic sprinkler controls and electrical panel boxes shall be kept free and unobstructed.
- There shall be a 3-ft unobstructed access way to fire hoses and extinguishers. Clear access to emergency exits and aisles shall be maintained. Areas immediately outside emergency exits shall be left clear for egress.
- All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling, or collapse.
- Maximum safe load limits of elevated floors within buildings and structures shall be conspicuously posted in all storage areas. Maximum safe loads shall not be exceeded.
- Aisles and passageways shall be kept clear to provide for the free and safe movement of material handling equipment or employees. Such areas shall be kept in good repair.
- One person shall not be allowed to manually lift more than 50 lb of material at one time. If a load exceeds 50 lb, either mechanical help or help from other employees is required.
### Signs and Barricades:
See T&PS standard SH-S-2A-05, Signs and Barricades, or SCO-SH-0900, Barricades, as applicable.
The following procedures shall be followed in roping-off, barricading, or safe guarding hazardous areas, operations, or pieces of equipment such as:
- **Working Overhead** – Where working overhead creates a hazard to passers-by due to the possibility of falling material or tools. The affected areas shall be barricaded with barricade tape and a person stationed in the area to ensure unauthorized personnel do not enter the area.
- **Overhead Material Handling** – When using cranes to handle material while over doorways, roads, etc. The affected areas shall be barricaded with barricade tape and a person stationed in the area to ensure unauthorized personnel do not enter the area.
- **Yellow Barricade Tape** – This color barricade tape may be crossed if the hazard noted on the barricade tag is fully understood and caution is taken when entering area.
- **Red Barricade Tape** – This color barricade may not be crossed unless entry is granted by supervision governing work in barricaded area.
- **Yellow-Magenta** – Restricted Access – Work area holds radioactive material or is conducting industrial radiography.
- **Protective (rigid) barricades** shall consist of a guard rail system meeting the requirements of 29 CFR 1926.502(b).

*Contact information shall be included on barricade tags.*

### Ladders:
Ladders shall be maintained in good condition at all times, the joint between the step and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play. Ladders shall be inspected quarterly (documented) by a competent person (contract may specify shorter interval) and those ladders with defects shall be withdrawn from service for repair or destruction and tagged or marked as DANGEROUS - DO NOT USE. Use of ladders shall comply with 29 CFR 1910.25(d) and 29 CFR 1926.1053 and T&PS standard SH-S-2A-06, Ladders and Stairways. Metal portable ladders are strictly prohibited.

### Scaffolds:
Scaffolds shall be erected to comply with OSHA 29 CFR 1926.450 and T&PS standard SH-2A-07, Scaffold Safety. Scaffolds shall be inspected before the start of each shift by the contractor’s competent person. If the contractor is using the CORE contractor’s scaffolding, the contractor shall sign the CORE contractor’s waiver prior to use. Communicate with the CORE contractor for more information.

### Fall Protection:
Shall comply with 29 CFR 1926 Subpart M and T&PS standard SH-2A-08, Fall Protection. The fall protection program shall first address methods to engineer fall hazards from work activities. When engineering controls are not feasible, the fall protection program shall address such methods as the use of personal fall arrest equipment.

100-percent tie-off above ___ ft

Snap hooks and/or carabineers shall be of the double-action, self-locking-type at a minimum.

Snap hooks and/or carabineers with a throat opening greater than 25/32 in. can be used on Southern Company T&PS projects for scaffold erection and dismantling operations with an approved SH-1K procedure deviation request.

### Steel Erection:
Steel erection shall comply with 29 CFR 1926 Subpart R and T&PS standard SH-S-2A-09, Steel Erection. Structural stability shall be maintained at all times during the erection process. A qualified rigger shall inspect the rigging prior to each shift in accordance with 29 CFR 1926.251.
### Rigging and Lifting

Rigging and lifting shall comply with 29 CFR 1926.251 and T&PS procedure SH-2A-10, Rigging and Lift Plans.

A qualified rigger shall inspect the rigging prior to each shift. Rated capacities shall not be exceeded at any time. Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to employees. Tag lines shall be used where possible. Personnel are not permitted under a suspended load. All rigging shall be performed by a qualified rigger or under the direct supervision of a qualified rigger.

Critical lifts are defined as:
- 75 percent or greater of the crane’s rated capacity based on configuration.
- Any lift of 25 tons or greater.
- Any lift that requires two or more cranes.
- Other criteria may apply based on site-specific requirements.

Critical lifts plans must be submitted within a reasonable time (____ days) to allow review by the Purchaser. Critical lift plans shall be stamped by a P.E. from the state in which the lift will occur. The Purchaser reserves the right to review and reject any critical lift plan for cause.

Noncritical lifts must be planned and documented as specified in SH-2A-10, Rigging and Lift Plans.

### Crane-Suspended Work Platforms

Shall comply with 29 CFR 1926 Subpart CC. The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite through alternate means is not possible. Hoisting of the personnel platform shall be in a slow, controlled, cautious manner with no sudden movements. Freefall is prohibited. Employees occupying the personnel platform shall use a fall-protection harness system with a lanyard appropriately attached to the lower load block or to a structural member within the personnel platform capable of supporting a fall impact for employees using the anchorage. See T&PS procedure SH-2C-11, Crane-Suspended Personnel Platforms, for further information, requirements, and permits.

### Chain and Lever Hoists and Jacks

Should be inspected before use and rated for the weight of the load being lifted or moved. See T&PS standard SH-S-2A-12, Chains, Slings, and Miscellaneous Rigging Accessories, for further information.

### Power Tools

Power tools should be inspected before use. Power cords should be in good condition with no damaged or exposed wiring and hooked to GFCI. Employees should be properly trained in the use of these tools.

Power tools shall be equipped with a positive pressure switch (deadman switch) and shall not be equipped with a locking mechanism that allows use without maintaining pressure on the switch. See T&PS standard SH-S-2A-14, Power Tools, for further information.

### Grinders - Pedestal, Bench, and Portable

Grinders must have shields installed, lighting if needed, and tool rest properly set from grinding media. Grinding of materials not rated for the particular wheel is prohibited. Portable grinder handles must be intact per manufacturer’s requirements. Guards shall be in place at all times.

### Hazardous Energy Control (Lockout / Tag out (LOTO))

0200 Clearance/0201 LOTO Procedures to prevent hazardous energy releases from sources including electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other sources in machines and equipment shall be followed. See 29 CFR 1910.147, 29 CFR 1910.269, and T&PS standard SH-S-2E-08, Hazardous Energy Control. This facility currently uses SCG-SH-0200 / SCG-SH-0201 (circle one).
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<tr>
<td><strong>Clearance/LOTO Awareness Training</strong> (Lockout / Tag out (LOTO)): 0200 Clearance/0201 LOTO Training. The contractor is responsible for communicating the procedure to the contractors. This information is located on the external Southern Company website for Suppliers &gt; Generating Plant Access Requirements &gt; Safety Orientation Requirements for Generation Contractors. Contract Administrators must review the 0200 Clearance/0201 LOTO awareness with the contractor representative before work begins to ensure understanding. 29 CFR 1910.147, 29 CFR 1910.269, and SH-S-2E-08, Hazardous Energy Control.</td>
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<td><strong>Excavation and Trenching</strong>: Shall comply with 29 CFR 1926 Subpart P.</td>
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<td><strong>Blasting Operations</strong>: Blasting operations shall strictly comply with T&amp;PS standard SH-S-2A-19, Blasting Operations. A detailed site-specific plan for blasting shall be submitted prior to any blasting operations. This plan shall include:</td>
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<td>• Training of employees in handling, transporting, loading, and detonating explosives, and inspecting the blast area post-detonation.</td>
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<td>• Ordering, receiving, and storage of explosives.</td>
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<td>• Disposing of old or damaged explosives.</td>
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<td>• Safety of all employees in the area of the blast and mucking operations.</td>
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<td>• Heavy equipment safety.</td>
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<td><strong>Confined Space</strong>: The Contractor shall comply with the requirements of the OSHA regulation governing work to be performed in confined spaces, including the requirement that the contractor develop a permit space program meeting the requirements of 29 CFR 1926 subpart AA and T&amp;PS procedure SH-2A-33, Safe Work Procedures for Confined Spaces.</td>
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<td>If the space is permitted, what is the rescue plan for the contractors?</td>
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<td><strong>Compressed Gas Cylinders</strong>: All gas cylinders must be clearly labeled. Do not remove valve protection cap until ready to use, secure cylinders properly (wire or chains), store in an upright position separating nonflammable from flammable gas, and never transport acetylene in the horizontal position. See T&amp;PS standard SH-S-2A-23, Compressed Gas Cylinders, for additional information and requirements.</td>
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<td><strong>Welding, Cutting, Heating (Hot Work)</strong>: OSHA 29 CFR 1910.252 (a) on Fire Prevention and Protection. The Contractor’s hot work procedure shall include, but not be limited to:</td>
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<td>• The issuance and posting by the Contractor’s supervision of hot work permits.</td>
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<td>• The posting of fire watches, as applicable.</td>
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<td>• The maintenance of logs indicating the issuance, posting, and disposition of each hot work permit issued.</td>
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<tr>
<td><strong>Transporting Personnel</strong>: No riding on tailgates, sides of trucks, equipment, etc. Seat belts are required at all times.</td>
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<td>If busses are used to transport personnel, the driver shall be licensed with the appropriate class vehicle operator’s license valid for use on the public roadways, and meet any additional site or government requirements. See T&amp;PS standard SH-S-2A-24, Transporting Personnel.</td>
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<td><strong>Working Over or Near Water</strong>: Life-saving floatation devices must be worn at all times. Safety lines and body harnesses should be used as determined by the job scope. Throwable devices attached to lifelines are required, especially when working out of a boat. All floatation devices must be U.S. Coast Guard-approved. 90-ft line. See T&amp;PS standard SH-S-2A-25, Working Over or Near Water.</td>
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### 3. MAJOR EQUIPMENT

**Major Equipment:** Contractor employees shall receive make- and model-specific training for all mobile equipment / cranes per the requirements found in T&PS procedure SH-2C-01, Qualifying Equipment Operators.

**Mobile Crane, Overhead Crane, Gantry Crane, Forklifts, Earthmoving Equipment, Aerial Lifts, Bucket Trucks, Elevators:** Contractors must be certified and trained to operate equipment. All the requirements per OSHA 29 CFR 1926 Subpart CC and SH-2C-01, Qualifying Equipment Operators, shall be followed.

**Powered Hoists:** Contractors must be certified and trained to operate equipment. Operators shall be trained and qualified per the requirements of ASME B30.7.

**Vehicles, Carts, and Gators:** Contractors must operate these in accordance with the manufacturer’s standards. If equipped with seatbelts, they must be worn at all times. A valid driver’s license from a state or territory of the United States is also required.

**Welding and Portable Generator:** Contractors must be trained to safely operate welders and generators per the manufacturer’s requirements.

### 4. OCCUPATIONAL HEALTH

**Hearing Conservation:** All contractors must wear proper hearing protection in required areas. Contractors are also responsible for performing exposure determinations to determine the level of hearing protection required for their employees and the specific work areas / activities that will require it.

**HAZCOM Program:** As part of the site-specific safety plan, the Contractor will include a HazCom program as well as a copy of its HazCom training.

- All chemicals brought on site must be properly labeled at all times. The label should include the name of the hazardous product as it appears on the SDS, appropriate hazard warning; and name and address of the manufacturer, distributor or other responsible party. No labels on original containers will be altered or defaced in any manner. If labels are removed, defaced, or illegible, the container must be immediately marked with the required information. Any container into which a hazardous chemical is transferred must be labeled with the identity and hazard warnings. The label may take any form provided it is legible and contains the identity of the hazardous chemical and appropriate hazard warnings.
- All chemicals must be approved prior to being brought on site. Submit all required information to T&PS site management.

**Bloodborne pathogens** procedures per 29 CFR 1910.1030.

**Lead Paint Abatement:** Contractors shall notify the T&PS construction site manager of all activity associated with lead. All work must meet regulations concerning sampling, atmospheric monitoring, respiratory protection, disposal, and so forth.
**Inorganic Arsenic**: Contractors shall be informed that an inorganic arsenic exposure hazard may exist in certain areas of the plant. In the event a contractor performs work in those areas where there is a potential risk of exposure to arsenic, they shall abide by OSHA regulations 29 CFR 1910.1018 and SCG-SH-2105, Inorganic Arsenic.

**Hexavalent Chromium**: Contractors shall be responsible for exposure determinations based on work activity that may produce a hexavalent chromium hazard. If hazard exits, contractor shall notify the T&PS construction site manager or designer.

**Silica**: All contractors shall be informed that a silica exposure hazard may exist during common workplace operations involving cutting, sawing, drilling, and crushing of concrete, brick, block, rock, and stone products (such as in construction work). Operations using sand products (such as glass manufacturing, foundries, and sand blasting) can result in worker inhalation of small (respirable) crystalline silica particles from the air. All contractors shall control dust during these activities.

**Asbestos**: All contractors shall be informed that an asbestos exposure hazard may exist in certain areas of the plant. Asbestos may be present as siding, TSI, or floor tiling. All abatement activities must be coordinated through the T&PS construction site manager.

**Abrasive Blasting**: All contractors shall control dust during abrasive blasting using engineering and administrative controls. Workers engaged in abrasive blasting shall wear all required PPE during this activity.

**Industrial Radiography**: All contractors shall follow OSHA 1910.1096 for this standard.

**Safety Data Sheets**: Must be provided PRIOR to chemicals being brought on site. All chemicals must be approved for use. A SDS for site chemicals/products is available through our EH&S Department.

**Combustible Dust Safety**: A combustible dust explosion hazard may exist in a fossil fuel power plant. Maintain good housekeeping in all areas and follow smoking regulations and policies. Contractors with hazardous chemicals (including combustible dusts) in their workplaces are required to comply with 29 CFR 1910.1200, Hazard Communication. This requirement includes having labels on containers of hazardous chemicals, using safety data sheets, and providing employee training.

### 5. FIRE PROTECTION

- Fire extinguishers, fire hoses, and fire extinguishers are located throughout the plant.
- **Fire Watch** must be established when welding / cutting
- **Flammable / Combustible Material Storage**: All flammable/combustible materials must be approved for usage on site as well as storage of these products. They shall be stored in flammable equipment cabinets.
- **Hot Work Permits** are required. Fire watch is a must. Fire blankets must protect areas where sparks or hot metal could fall and create a fire hazard. The best fire protection and prevention program is good housekeeping.

### 6. EMERGENCY PROCEDURES AND ALARMS

- **Fire**: Everyone working on site is responsible for reporting fire emergencies. On detecting a fire emergency, get out of danger and report fire location to the appropriate control room operator. The control room operator will activate the fire emergency alarm and summon the plant Emergency Response Team.
- **Spill or chemical release**: Contractors shall take all measures necessary to eliminate chemical releases or spills. In the event of a release or spill, the contractors shall immediately notify the contractor administrator.

- ______ has anhydrous ammonia onsite. In case of emergencies, remain in contact with your plant contact. You are not allowed to enter these areas without proper training.
- The contractor shall ensure each contract employee is instructed in the known potential fire, explosion, or toxic release hazards and the emergency action plan.
- If equipment (forklift, cranes, etc.) is used in conjunction with a covered process, training must be submitted to Compliance prior to working in / on area.
YES | N/A
--- | ---

**Injuries / Illnesses:** Contractors shall immediately notify the T&PS construction site manager or designee of any recordable injury or potential serious hazard to personnel on the job site. An initial report (form 1J.1) is required within 24 hours. A full investigation report, if required, will be submitted within 7 days of the incident. See T&PS standard SH-S-1J, Incident Investigation, for more information.

**Weather-Related:** In the event of significant weather events, contractors shall follow the instructions of contract administrator. Plant alarms for inside safe refuge are sounded when outside threatening weather is approaching.

**Security:** Security is available 24/7. They can be reached at _____________. Report any suspicious activity to Security immediately.

**Emergency Evacuation Plans:** Below are the alarm tones with the respective action to take. Periodic evacuation drills are performed for all personnel on site, including contractors. If you have any questions about an alarm, contact your contract administrator.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wail</td>
<td>Fire</td>
</tr>
<tr>
<td>Alternate Steady</td>
<td>Inside Evacuations</td>
</tr>
<tr>
<td>Steady</td>
<td>Outside Evacuations</td>
</tr>
<tr>
<td>Westminster</td>
<td>All Clear</td>
</tr>
</tbody>
</table>

### 7. ENVIRONMENTAL PROTECTION

**SPCC**

Immediately notify the T&PS construction site manager or designee of any spills.

- Eliminate sources of ignition: open flames, smoking materials, sparking tools, electrical sparks, gasoline engines, etc.
- Ventilate the area.
- Stop the source of the spill: shut off equipment, close valve, set container upright, plug leak, etc.
- Contain the spill!
- Build a dike or berm using absorbent materials.
- If material is leaking from a 55-gallon drum, pump the oil into a drum in good condition. If spill is moving rapidly over a large area and cannot be contained, give first priority to protecting drains and waterways.

Contractors shall maintain adequate spill control and cleanup materials.

**Storm Water Management** – All contractor activities must use Best Management Practices (BMPs) in order to prevent storm water contamination. BMPs include, but are not limited to, eliminating debris from lay down areas that could potentially enter storm water runoff and ensuring sound conservation and engineering practices to prevent or minimize erosion and resultant sedimentation in association with all company land-disturbing activities.

**Used Oil and Petroleum Products - MANAGEMENT OF USED OIL DRUMS**

Contractors who need to store used oil or collect used oil shall notify the T&PS construction site manager.

- Filling the drum: Never completely fill a drum. Leave at least 2 in. for expansion.
- Labeling: When oil is first placed in drums, stencil or label the drums USED OIL. A USED MOTOR OIL label may be used. Contact the Compliance team for labels.
- When a drum is full, contact Compliance for more information on proper storage.

**Hazardous Waste:** If you deal with hazardous materials, or use products that may become a hazardous waste, notify the T&PS construction site manager or designee immediately.

**Nonhazardous Waste:** All nonhazardous waste should be disposed of in the designated roll-offs or compactors. Waste shall not be allowed to accumulate above the sides of the container.
<table>
<thead>
<tr>
<th>YES</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Herbicides and Pesticides:</strong> Use of any herbicides/pesticides requires approval from the facility prior to use.</td>
<td></td>
</tr>
<tr>
<td><strong>Water Discharges:</strong> Contractors are not allowed to pour/put anything in the plant’s drains, ponds, and so forth.</td>
<td></td>
</tr>
<tr>
<td><strong>Air Emissions:</strong> Fugitive emissions from various plant maintenance activities (such as construction, demolition, or blasting) must be kept to a minimum in order to remain in compliance with the plant’s Title V Acid Rain Permit. All issues of fugitive emissions will be addressed immediately. Notify compliance before any work that could result in fugitive emissions is started.</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical Approval and Inventory:</strong> All chemicals shall be approved by compliance PRIOR to coming on plant site.</td>
<td></td>
</tr>
<tr>
<td><strong>Migratory Bird/Avian Protection:</strong> Pursuant to Section 703 of Title 16 of the United States Code prohibits the taking, killing, or possession of any migratory bird. Notify compliance if you find a bird either captured or dead or a nest for any bird. Compliance will determine what action to take.</td>
<td></td>
</tr>
</tbody>
</table>

### 8. MISCELLANEOUS ISSUES

**Eating in the Plant:** Must be in an approved and sanitary break area. No smoking in these areas.

**First Aid / Medical Facilities:**
- _____ provided
- _____ not provided. The contractor shall maintain adequate first aid supplies.

**Smokeless Tobacco Use and Smoking:**
- Per state law, smoking is not permitted within 25 ft of any building entrance or door nor over any grating surfaces or inside company facilities.
- Smokers are not permitted to discard smoking materials in areas other than the designated containers.
- Designated smoking areas are identified throughout the plant or site.
- Smokeless tobacco users must provide their own sealed containers, and the containers shall be sealed when discarded. Expectorating (spitting) anywhere other than a sealed container is not permitted on plant site.

**Job Safety Analysis:** A job safety analysis (JSA) shall be performed prior to all job tasks and when conditions change. Form 1N.1 may be used. This form is provided both in English and Spanish. For ash basin remediation work, use form 1N.3, JSA for Ash Basin Work.

**Site Hazards:** Inform contractors of the following:
- Watch for trains at railroad crossings.
- Some pipes and lines may contain high pressure water and steam.
- Employees and contractors crossing the roads.
- Traffic.

**Non-English Speaking Employees:** Contractor is required to provide an English-speaking representative for non-English speaking contractor employees and its subcontractors. The representative must have the ability to communicate with and translate the foreign language of all non-English speaking employees to communicate vital information about the work site, work description training required by applicable law, regulations, and safety and health requirements. Contractor shall translate all work instructions, procedures, JSA, or other document needed to provide proper safe work instruction into the language of non-English speaking workers.
<table>
<thead>
<tr>
<th>YES</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety Violations:</strong> If we observe a contract employee violating a site safety or regulatory rule that poses imminent danger to themselves, our employees, or our facilities, we will stop the activity and contact the Contractor supervision to request corrective action. If the nature of the violation does not impose imminent danger, the Company employee observing the violation should notify the Company’s contract administrator, compliance personnel, or other supervision. The Contract Administrator or his representative will then notify Contractor management and request corrective action.</td>
<td></td>
</tr>
<tr>
<td><strong>Corrective Actions:</strong> If you have a safety incident, accident, or equipment failure, a corrective action report must be completed and submitted to the T&amp;PS construction site manager or designee.</td>
<td></td>
</tr>
<tr>
<td><strong>Regulatory Agency Visits:</strong> Regulatory agencies will be held at the gate until approved for entry by the T&amp;PS construction site manager or designee. If you have been contacted by an agency, you shall report the contact to the T&amp;PS construction site manager immediately.</td>
<td></td>
</tr>
<tr>
<td><strong>Tools/Equipment:</strong> Contractor shall inspect all tools/equipment before and after use for proper operation. Tools found to be in need of repair shall be reported immediately. The employee shall be properly trained in its use. The contractor and contractor employee shall be required to indemnify the plant for any injury or damage arising out of the loan.</td>
<td></td>
</tr>
<tr>
<td><strong>9. ELECTRICAL SAFETY</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Work On or Near Energized Circuits:</strong> Only trained and qualified persons may perform work on or near exposed and energized electrical conductors or circuit parts.</td>
<td></td>
</tr>
<tr>
<td><strong>Ground Fault Circuit Interrupter:</strong> A ground-fault occurs when there is a break in the low-resistance grounding path from a tool or electrical system. Follow the requirements per OSHA. GFCIs shall be used to protect contractors and employees. See T&amp;PS standard SH-S-2E-03, Ground Fault Protection.</td>
<td></td>
</tr>
<tr>
<td><strong>Mobile Equipment Near Electric and Process Lines:</strong> All equipment used near electrical and process lines shall have a designated spotter to ensure lines and electrical equipment are not damaged.</td>
<td></td>
</tr>
<tr>
<td><strong>Nominal Voltages of Lines and Equipment:</strong> Communicate equipment is labeled on name plates to identify nominal voltages. Contact engineering for any equipment not properly labeled to obtain information to safely perform work activity.</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum switching-transient voltages:</strong> For any electrical work activity beyond the high-side disconnect, contact Transmission or Technical Services SME for guidance. Hazards associated with transient voltages within other plant activities are covered in the SCG-SH-0210, Arc Flash Program.</td>
<td></td>
</tr>
<tr>
<td><strong>Presence of Induced Voltages:</strong> Verify absence of voltage prior to performing work by following the SCG-SH-0200 Clearance Program or by following minimum approach distances as outlined in Section O.</td>
<td></td>
</tr>
<tr>
<td><strong>Presence of protective grounds and conductors:</strong> Reference SCG-SH-0200, Generation Clearance Procedure, for information on TPGs based on scope of work. Contact engineering for specific design requirements/drawing or contact Technical Services if information is required to safely perform work activity.</td>
<td></td>
</tr>
<tr>
<td><strong>Locations of circuits, equipment, electrical supply lines, communication lines, and fire protective services:</strong> Contact engineering for any applicable drawings or information not provided in scope of work to safely perform work activity.</td>
<td></td>
</tr>
<tr>
<td><strong>Condition of protective grounds</strong> and equipment grounding conductors: Grounds must be maintained according to regulations.</td>
<td></td>
</tr>
<tr>
<td><strong>Condition of poles:</strong> Wooden poles shall be inspected prior climbing OSHA 1910.269 App D.</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental conditions relating to safety:</strong> See section 7, Environmental Protection, of this checklist.</td>
<td></td>
</tr>
</tbody>
</table>
### Wiring
All temporary electrical installations shall comply with the National Electrical Code (NFPA No. 70) or, if OSHA Regulations Part 1926 Sub-Part, exceed the requirements of the NEC, the requirements of OSHA shall govern. All cables over 220 V shall be installed in conduit or interlocked armor cable. Power cables that are spliced shall have the appropriate splice including insulation at least to the integrity of the original insulation. Where applicable, no temporary power cables shall be run in walkways, stairways, or aisleways. If necessary, temporary power cables shall be suspended at least 7 ft overhead.

### ARC Flash Program
Cover SCG-SH-0210, Arc Flash Protection, as applicable to scope of work.

## 10. GENERAL COMPLIANCE ISSUES

### Equal Employment Opportunity
Southern Company will not tolerate discrimination of any type recruitment, hiring, training, transfers, promotions, pay, discipline, termination, or other factors such as sex, color or race, national origin, age, religion, disability, or veteran's status.

### Work Place Free of Harassment
Southern Company prohibits any acts of harassment on the basis of race, gender, sexual orientation, color, religion, age, national origin, disability, or veteran status. The company will not permit conduct whether intentional or unintentional, occurring between employees or between an employee and contractor, client, customer, or other nonemployee that creates an intimidating, hostile, or offensive working environment.

### Unauthorized Aliens
Southern Company supports the laws prohibiting unlawful immigration-related employment practices.

### Drugs and Alcohol
It is the policy of the Southern Company to provide a safe and healthy work environment free from the effects of drug and alcohol abuse. All employees and contract workers should report for work alert and fit for duty and avoid involvement with drugs or alcohol usage that could compromise fitness for duty or the ability to work safely.

### Work Place Threats and Violence
It is Southern Company’s policy to provide a safe and secure workplace. Acts or threats of physical violence, including intimidation, harassment, and/or coercion, that involve or affect the Company or that occur on Company property, WILL NOT BE TOLERATED.

## 11. OTHER ISSUES
Discuss any other safety, health and environmental issues relating to the scope of work that are not identified in the checklist and note on the checklist what was covered.
SAFETY NONCONFORMANCE REPORT (SNCR)

<table>
<thead>
<tr>
<th>PLANT</th>
<th>REPORTED BY</th>
<th>DATE</th>
<th>SNCR NUMBER</th>
<th>PRIORITY</th>
<th>MEDIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACTOR</td>
<td>CONTRACT NUMBER</td>
<td>PROJECT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description of nonconformance (include exact location, detailed description of physical circumstances, hardhat sticker color(s) and number(s), and actions of contractor personnel, and all relevant information)

Contractor description of corrective action taken (include changes made to physical facilities and procedures, disciplinary actions, and other relevant information)

<table>
<thead>
<tr>
<th>CONTRACTOR DESIGNEE</th>
<th>DATE</th>
</tr>
</thead>
</table>

| SOUTHERN COMPANY ACCEPTANCE BY | DATE |

<table>
<thead>
<tr>
<th>COMMENTS</th>
</tr>
</thead>
</table>
Form 1H.4, Contractor Performance Evaluation

Plant: ___________________________  Project: ___________________________

<table>
<thead>
<tr>
<th>Contractor number</th>
<th>Subcontractors (if any)</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Job superintendent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion date</td>
<td>Estimated</td>
</tr>
<tr>
<td></td>
<td>Actual</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Price</th>
<th>Original</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Final</td>
</tr>
</tbody>
</table>

Do you recommend that the contractor be considered for future work?

<table>
<thead>
<tr>
<th>Description</th>
<th>Excellent</th>
<th>Good</th>
<th>*Fair</th>
<th>*Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall management of work</td>
<td></td>
<td></td>
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<tr>
<td>Quality of work</td>
<td></td>
<td></td>
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<tr>
<td>Construction method and techniques</td>
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<tr>
<td>Ability to man job</td>
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<tr>
<td>Labor relations</td>
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<tr>
<td>Worker attitudes</td>
<td></td>
<td></td>
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<tr>
<td>Supervision – quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervision – quantity</td>
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<tr>
<td>Home office support</td>
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<tr>
<td>Control of subcontractors</td>
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<tr>
<td>Cooperation with other contractors and A/Es</td>
<td></td>
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<tr>
<td>Communications with owner</td>
<td></td>
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<tr>
<td>Compliance with contract specifications</td>
<td></td>
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<tr>
<td>Attitude with correcting errors</td>
<td></td>
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<tr>
<td>Responsiveness to owner’s requests</td>
<td></td>
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<tr>
<td>Equipment availability</td>
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<tr>
<td>Tool supply</td>
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<tr>
<td>Invoicing methods</td>
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<tr>
<td>Job cleanliness and orderliness</td>
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<tr>
<td>Cost control</td>
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<tr>
<td>Scheduling control</td>
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<tr>
<td>Quality control</td>
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<tr>
<td>Safety program</td>
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<tr>
<td>Compliance with contract safety requirements</td>
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<tr>
<td>Regarding safety issues, overall degree of cooperation and responsiveness</td>
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<tr>
<td>Environmental stewardship</td>
<td></td>
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</tr>
</tbody>
</table>

-Give specific details in Comments box.
### Incident and Injury Experience

<table>
<thead>
<tr>
<th></th>
<th>No. of labors worked</th>
<th>No. of recordable cases*</th>
<th>No. of significant events*</th>
</tr>
</thead>
</table>

### Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahead of schedule</td>
<td>Less than estimated</td>
</tr>
<tr>
<td>On schedule</td>
<td>As estimated</td>
</tr>
<tr>
<td>Longer than schedule</td>
<td>Over estimate</td>
</tr>
<tr>
<td>Substantially longer than schedule</td>
<td>Substantially over estimate</td>
</tr>
</tbody>
</table>

### Extras

<table>
<thead>
<tr>
<th>Extras</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Reasonable requests:</th>
<th>Excessive requests*</th>
</tr>
</thead>
</table>

### Comments

*Give specific details in Comments box.*

---

Prepared by: ___________________________

Job title: ___________________________

Plant: ___________________________

Date: ___________________________
Form 1H.5, Contractor Site-Specific Safety Plan Review

Instructions: This form is to be used as a record of the review of a contractor’s site-specific safety plan (SSSP) submittal. Reviewers are to review the submitted plan against the requirements of the T&PS Construction EH&S Policy and Procedure Manual and the contractor’s work scope.

- If a component of the plan meets all requirements, check the PROCEED box.
- If the component substantially meets but deficiencies will not prevent initial start of work, check PROCEED. SEE COMMENTS.
- If a component does not meet the requirements, check DO NOT PROCEED. SEE COMMENTS.

If deficiencies are indicated, the form will be returned to the contractor to address the comments in the appropriate section. The contractor shall make the appropriate revisions and resubmit those sections. Reviewer will verify the corrections have been made.

When the reviewer determines the contractor’s SSSP meets the requirements set forth, this completed form will be forwarded to the T&PS construction site manager for final review and approval.

Contractor: ____________________________  
Date of Submittal: ________________________  
Project: ________________________________

<table>
<thead>
<tr>
<th>SSSP Component</th>
<th>Required</th>
<th>Review Status</th>
<th>Reviewer</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization chart showing relation of EH&amp;S</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Project Personnel Qualifications / Resumes</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific EHS Policy</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Emergency Action Plan</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Hazcom Plan</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Description / Risk Analysis / Pretask Planning JRAs</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EHS Training</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident Notification / Injury Case Management</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incident Investigation / Event Learning</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific PPE Requirements, Glove Matric, Eyewear Matrix</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSSP Component</td>
<td>Required Y/N</td>
<td>Review Status</td>
<td>Reviewer</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>--------------</td>
<td>----------------------------------------------------</td>
<td>----------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Site-Specific Barricade Procedure</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tool and Equipment Inspection Program</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane, Derrick, and Powered Hoist inspection</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>program</td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment Operator Qualification Program</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Prevention / Fall Protection</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel Erection Plan</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Confined Space Entry</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific EH&amp;S Assessments</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Housekeeping</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavation and Trenching</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Hazardous Energy Control –</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction LOTO</td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Ash Basin Plan</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site-Specific Man-on-the-Ground Plan</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other :</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other :</td>
<td>□ Yes</td>
<td>□ Proceed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ No</td>
<td>□ Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Do Not Proceed. See comments.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
T&PS Site Safety Review
Contractor Site Specific Safety Plan meets all requirements: □ Yes  □ No
Additional Comments: ______________________________________________________________
___________________________________________________________________________

Resubmittal (if required)
The resubmitted SSSP corrects areas previously identified as deficient: □ Yes  □ No  □ N/A

________________________  ________________________  ________________________
Printed Name                  Signature                  Date

Construction Site Manager’s Approval to Proceed

________________________  ________________________  ________________________
Printed Name                  Signature                  Date
This matrix is provided as an example only. Southern Company does not endorse any particular brand of glove.

<table>
<thead>
<tr>
<th>Gloves Description</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Welding Glove</td>
<td>Stick Welding and Hot Work, No Cut Level and NO Impact Protection</td>
</tr>
<tr>
<td>Mig Welding Glove</td>
<td>Mig Welding and Hot Work, No Cut Level and NO Impact Protection</td>
</tr>
<tr>
<td>TIG Welding Glove</td>
<td>TIG Welding and Hot Work, No Cut Level and NO Impact Protection</td>
</tr>
<tr>
<td>Kong Rigger Grip</td>
<td>Rigging, Iron Work, Boilermaker, Cut level 5 with Impact Protection</td>
</tr>
<tr>
<td><strong>Glove Description</strong></td>
<td><strong>Task</strong></td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Westchester</td>
<td>General Work Glove and Rigging NO HOT WORK Cut level 4 with Impact Protection</td>
</tr>
<tr>
<td>Jack Glove</td>
<td>General Work Glove and Rigging NO HOT WORK Cut level 4 with Impact Protection</td>
</tr>
<tr>
<td>Posi Grip</td>
<td>Threading Condit, Uni-Strut, All Thread, Inspecting Wire Rope Cable, IW/BM Bolt-Up NO HOT WORK Cut level 4 with NO Impact Protection</td>
</tr>
<tr>
<td>Posi Grip</td>
<td>Light Tasks such as dressing electrical cabinets NO HOT WORK Cut level 2 with NO impact protection</td>
</tr>
</tbody>
</table>
# Form 1J.1, Initial Communication of Injury, Illness, or Incident

Red highlighted fields require data entry. For interactive features, open this document with Adobe Acrobat Reader or Professional version.

<table>
<thead>
<tr>
<th>Project</th>
<th>Prime Contractor</th>
<th>Subcontractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Date</td>
<td>Time Occurred</td>
<td>a.m. □ p.m. □</td>
</tr>
<tr>
<td>Date Reported</td>
<td>Time Reported</td>
<td>a.m. □ p.m. □</td>
</tr>
<tr>
<td>Day of Week</td>
<td>Temperature</td>
<td>Conditions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee Name - Last</th>
<th>First</th>
<th>Hardhat No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Age</td>
<td>Date of Hire</td>
</tr>
<tr>
<td>Job Classification</td>
<td>Craft</td>
<td>Years experience in skilled craft</td>
</tr>
<tr>
<td>Home address</td>
<td>Contractor foreman</td>
<td>General foreman</td>
</tr>
<tr>
<td>Southern Company coordinator</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>Body Part(s)</th>
<th>Left □ Right □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanism of Injury</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment given</td>
<td>(ice, heat, adhesive bandage, etc.)</td>
<td>Enter N/A if not applicable</td>
</tr>
<tr>
<td>Location/Where did the incident occur?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was the hazard identified prior to this incident?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If Yes, who discovered and reported it (name and company)?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe what happened

List any equipment and/or property that was damaged, if any.
Enter N/A if this does not apply

Description of damage.
Enter N/A if this does not apply.

Form revised 05-15-2019
Is the incident’s primary cause due to a behavior or a condition?

Causal factors (Choose up to four)

- Causal Factor #1 (Choose an item)
- Causal Factor #2 (Choose an item)
- Causal Factor #3 (Choose an item)
- Causal Factor #4 (Choose an item)

Notifications made by:

Incident investigation by

Notified of incident
1.
Notified of incident
2.
Notified of incident
3.
Notified of incident
4.
Others, if needed

Did the employee need additional medical attention offsite?  Yes ☐  No ☐  N/A ☐

If Yes, explain.

Attach additional pages if needed.

Immediate actions taken to prevent recurrence.

Additional information

Attach additional pages if needed.

Signature required if this form is used as a final report for minor incidents (with prior T&PS site management review and approval).

NOTE: This is an initial report of injury, illness, near miss or damage. Findings, root cause, and final corrective action taken are not required until the full investigation report (form 1.J.2) is complete, unless this report deemed as final with consent of site management.

1. Initial Communication Reports are due within 24 hours of an incident. Include JSA(s) and photographs, if available.
2. Investigation reports, root cause, and final corrective action taken are due within 7 days of an incident.
3. Supporting documentation (statements, training records, certifications, and so forth) are due with the investigation report.

List attachments

Use the following naming convention for electronic versions: 1.J.1 MMDDYYYY_Contractor abbreviation_employee lastname
### Form 1J.2, Injury, Illness, or Incident Analysis Report

Entry required for all form fields. If field doesn't apply, enter N/A. For interactive features, open this form in Adobe Acrobat Reader or Professional version.

<table>
<thead>
<tr>
<th>Project</th>
<th>Prime Contractor</th>
<th>Subcontractor</th>
<th>Classify Incident</th>
<th>Project Type</th>
<th>Labor Type</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Incident Date</th>
<th>Time Occurred</th>
<th>a.m. □ p.m. □</th>
<th>Date Reported</th>
<th>Time Reported</th>
<th>a.m. □ p.m. □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day of Week</td>
<td>Temperature</td>
<td>Conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee Name - Last</th>
<th>First</th>
<th>Hardhat No.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age</th>
<th>Date Hired</th>
<th>Days on Site</th>
<th>No. of Days Since Last Day Off</th>
<th>Job Classification</th>
<th>Craft</th>
<th>Home Local if Union</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years experience in skilled craft</th>
<th>Years experience in construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Home address</th>
<th>Contractor foreman</th>
<th>General foreman</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Southern Company coordinator | |
|------------------------------||

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>Body Part(s)</th>
<th>Left □ Right □</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury Mechanism</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Treatment given (ice, heat, adhesive bandage, etc.) | |
|-----------------------------------------------------||

| Location of Incident (Be precise. Use elevations, column lines, etc.) | |
|---------------------------------------------------------------------||

| Describe what happened (in sequence of events) | |
|-------------------------------------------------||

<table>
<thead>
<tr>
<th>Did employee need additional attention offsite?</th>
<th>Yes □ No □ N/A □</th>
</tr>
</thead>
</table>

| If YES, explain. | |
|-------------------||

<table>
<thead>
<tr>
<th>Were there witness(s)?</th>
<th>Yes □ No □ N/A □</th>
</tr>
</thead>
</table>

| If YES, give names of witness(s) | |
|---------------------------------||

<table>
<thead>
<tr>
<th>Was any equipment and/or property damaged?</th>
<th>Yes □ No □ N/A □</th>
</tr>
</thead>
</table>

| If YES, list damaged items with serial/unit number. | |
|-----------------------------------------------------||

| Description of damage | |
|-----------------------||

Form revised 10-11-2017
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has THIS employee performed THIS task in the last 6 months?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was there a JSA for this task?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there a procedure for this task?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the procedure / JSA identify this hazard?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the employee have the knowledge and/or training to perform the task?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, what training or how was knowledge gained?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were permits used for this task?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, list permits used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>List relevant PPE that was NOT used or failed to protect the individual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>List tools and/or equipment used for this task.</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If NO, explain why the tool was used in this manner.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are these the appropriate tools for the job (wrench not used as a hammer)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, list permits used.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was there any indication something was about to go wrong?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If YES, explain.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What would employee do differently next time?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What would management do differently next time?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If this was an identified hazard, who discovered and reported it (name and company)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>List any other pertinent information.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Hazards / Mitigation / Recognition (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>No JSA performed</td>
<td>d.</td>
</tr>
<tr>
<td>b.</td>
<td>Unaware of job hazard</td>
<td>e.</td>
</tr>
<tr>
<td>c.</td>
<td>Hazard not recognized by supervisor</td>
<td>f.</td>
</tr>
<tr>
<td>g.</td>
<td>Hazard created in course of work</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Planning (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>No planning performed</td>
<td>e.</td>
</tr>
<tr>
<td>b.</td>
<td>Insufficient planning</td>
<td>f.</td>
</tr>
<tr>
<td>c.</td>
<td>Planning not appropriate for task</td>
<td>g.</td>
</tr>
<tr>
<td>d.</td>
<td>Circumstances different</td>
<td>i.</td>
</tr>
<tr>
<td>h.</td>
<td>Procedure not followed</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Communication (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Inadequate between workers</td>
<td>d.</td>
</tr>
<tr>
<td>b.</td>
<td>Inadequate between workers and supervision</td>
<td>e.</td>
</tr>
<tr>
<td>c.</td>
<td>Conditions changed without proper communication</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Facility / Tools / Equipment (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Faulty</td>
<td>f.</td>
</tr>
<tr>
<td>b.</td>
<td>Poor or faulty design</td>
<td>g.</td>
</tr>
<tr>
<td>c.</td>
<td>Wrong for the task</td>
<td>h.</td>
</tr>
<tr>
<td>d.</td>
<td>No preventive maintenance and/or inspection</td>
<td>i.</td>
</tr>
<tr>
<td>e.</td>
<td>Improper use</td>
<td>j.</td>
</tr>
<tr>
<td>k.</td>
<td>Unsecured against movement</td>
<td></td>
</tr>
<tr>
<td>l.</td>
<td>Close clearance/congestion</td>
<td></td>
</tr>
<tr>
<td>m.</td>
<td>Protruding object</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.
### Training (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. No training given</td>
<td>c. Circumstances not addressed in training</td>
</tr>
<tr>
<td></td>
<td>b. Training not effective</td>
<td>d. Significant delay between training and task</td>
</tr>
<tr>
<td></td>
<td>e. Need for training not recognized</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Management (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Unqualified personnel assigned to task</td>
<td>d. Schedule or cost priority implied</td>
</tr>
<tr>
<td></td>
<td>b. Failure to detect and/or correct deficiencies</td>
<td>e. Inadequate supervision</td>
</tr>
<tr>
<td></td>
<td>c. Responsibility and/or accountability not understood</td>
<td>f. Inadequate administrative controls</td>
</tr>
<tr>
<td></td>
<td>g. Misalignment between management’s and worker’s perception of unacceptable</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Behavior (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Influenced by distraction</td>
<td>e. Influence of substance and/or intoxicant</td>
</tr>
<tr>
<td></td>
<td>b. Inattention to hazard</td>
<td>f. Tried to avoid extra effort</td>
</tr>
<tr>
<td></td>
<td>c. Tried to gain or save time</td>
<td>g. Influence of emotion</td>
</tr>
<tr>
<td></td>
<td>d. Operating at an unsafe speed</td>
<td>h. Improper position and/or posture</td>
</tr>
<tr>
<td></td>
<td>i. Habit intrusion</td>
<td>j. Pattern of deviations</td>
</tr>
<tr>
<td></td>
<td>k. Overconfidence</td>
<td></td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.

### Other (Check all that apply)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Influence of fatigue</td>
<td>c. Theft, tampering, sabotage, and/or vandalism</td>
</tr>
<tr>
<td></td>
<td>b. Environmental conditions</td>
<td>d. Hazardous attire</td>
</tr>
</tbody>
</table>

List letter and explain for each item selected.
Apparent Causes (Look at the “why” explanations for causal factor items checked in the previous section and develop up to three cause statements.)

<table>
<thead>
<tr>
<th>Cause #1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause #2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cause #3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Develop corrective actions for the causes and/or contributing factors identified on previous pages. Ensure they meet the SMART criteria (Specific, Measurable, Action oriented, Realistic, and Time specific)

<table>
<thead>
<tr>
<th>Required Actions</th>
<th>Responsible Party</th>
<th>Target Completion</th>
<th>Actual Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Was the behavior intended?

- **YES**
  - Were the consequences intended?
    - **YES**
      - Were restrictions communicated and clearly understood?
        - **YES**
          - Did the employee have medical restrictions?
            - **YES**
              - Did the employee knowingly violate a requirement?
                - **YES**
                  - Did the employee pass the substitution test*?
                    - **YES**
                      - Corrective measures indicated
                        - **CONCLUSION**
                    - **NO**
                      - System-induced error or blameless error
                        - **CONCLUSION**
                - **NO**
                  - System-induced sabotage
                    - **CONCLUSION**
          - **NO**
            - Possible intentional violation
              - **CONCLUSION**
        - **NO**
          - Intentional sabotage
            - **CONCLUSION**
    - **NO**
      - Did the employee have medical restrictions?
        - **YES**
          - Did the employee knowingly violate a requirement?
            - **YES**
              - Did the employee pass the substitution test*?
                - **YES**
                  - Corrective measures indicated
                    - **CONCLUSION**
                - **NO**
                  - System-induced error or blameless error
                    - **CONCLUSION**
            - **NO**
              - System-induced sabotage
                - **CONCLUSION**
        - **NO**
          - Possible intentional violation
            - **CONCLUSION**

For guidance in completing the Culpability Matrix, see SH-1J, Incident Analysis, attachment A, Human Performance Culpability Matrix Guidelines.

*Would an employee with similar training and experience make the same choice?*
Pages 7 and 8 are to be completed only if the incident resulted in injury.

<table>
<thead>
<tr>
<th>Classification:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First Aid</td>
<td>Recordable</td>
<td>Recordable</td>
<td>Recordable</td>
<td>Recordable</td>
</tr>
<tr>
<td>(Other)</td>
<td>(DART-R)</td>
<td>(DART-L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Work Related</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Justification:**

1. **Exception Applies** *(29 CFR 1904.5(b)(2)(i) thru (ix))*
   - Reference the applicable paragraph in your explanation.
   - **Explanation:** (Limit 375 characters. Use additional pages if needed)

2. Events or exposure in the work environment did **NOT** cause or contribute to the resulting condition. *(29 CFR 1904.5(b)(3))*
   - **Explanation:** (Limit 375 characters. Use additional pages if needed)

3. Event or exposure in the work environment did **NOT** significantly aggravate a preexisting injury or illness. *(29 CFR 1904.5(b)(4)(i) thru (iv))*
   - **Explanation**:

4. Injury or illness resulted **SOLELY** from a non-work-related event or exposure that occurred outside the work environment. *(29 CFR 1904.5(b)(5))*
   - **Explanation**:

**Is this a New case?** *(29 CFR 1904.6)*

If No, Explain:
### Recording Criteria (29 CFR 1904.7)

<table>
<thead>
<tr>
<th></th>
<th>Check applicable section(s) and explain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>1. Days Away from Work or (DART-L) “Lost Time Injury” (29 CFR 1904.7(b)(3))</strong></td>
</tr>
<tr>
<td></td>
<td>a. Days Away from work were <strong>NOT</strong> recommended by a licensed health care professional (29 CFR 1904.7(b)(3))</td>
</tr>
<tr>
<td></td>
<td>b. Recommended Days Away were <strong>NOT</strong> taken based upon a more authoritative physician’s opinion. (29 CFR 1904.7(b)(3)(ii))</td>
</tr>
<tr>
<td></td>
<td><strong>Explain:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> All recommended days-away must be recorded regardless of work schedule, vacation, or holidays (29 CFR 1904.7(b)(3)(iii) thru (vi))</td>
</tr>
<tr>
<td></td>
<td><strong>2. Restricted Duty (DART-R) (29 CFR 1904.7(b)(4))</strong></td>
</tr>
<tr>
<td></td>
<td>a. Restrictions from performing one or more routine work functions beyond the day of injury were <strong>NOT</strong> imposed by the employer. (29 CFR 1904.7(b)(4)(i)(A))</td>
</tr>
<tr>
<td></td>
<td>b. Restrictions from performing one or more routine work functions beyond the day of injury were <strong>NOT</strong> recommended by licensed health care professional (29 CFR 1904.7(b)(4)(i)(B))</td>
</tr>
<tr>
<td></td>
<td><strong>Explain:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> For recordkeeping purposes, an employee’s routine functions are those work activities the employee regularly performs at least once per week. (29 CFR 1904.7(b)(4)(ii))</td>
</tr>
<tr>
<td></td>
<td><strong>3. Medical Treatment Beyond First Aid (Recordable-Other) (29 CFR 1904.7(b)(5))</strong></td>
</tr>
<tr>
<td></td>
<td>a. Employee did <strong>NOT</strong> receive treatment from a licensed health care professional beyond observation, counseling, or had diagnostic procedures (29 CFR 1904.7(b)(5)(i)(A) and (B))</td>
</tr>
<tr>
<td></td>
<td>b. Employee did <strong>NOT</strong> receive treatment beyond first aid (29 CFR 1904.7(b)(5)(i)(C))</td>
</tr>
<tr>
<td></td>
<td><strong>Explain:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>NOTE:</strong> First-aid classification is specifically limited to the treatments listed (29 CFR 1904.7(b)(5)(ii)). Any treatment rendered not otherwise listed must be recorded (29 CFR 1904.7(b)(5)(iii)).</td>
</tr>
<tr>
<td></td>
<td><strong>4. Employee did <strong>NOT</strong> lose consciousness (29 CFR 1904.7(b)(6))</strong></td>
</tr>
<tr>
<td></td>
<td><strong>5. Employee was <strong>NOT</strong> diagnosed with a significant injury or illness (29 CFR 1904.7(b)(7))</strong></td>
</tr>
</tbody>
</table>
Use drop down selector next to each item to select the appropriate action.

<table>
<thead>
<tr>
<th>Use safer materials and/or supplies</th>
<th>Discipline to employee(s) involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve illumination</td>
<td>Preventive instruction to other employees</td>
</tr>
<tr>
<td>Improve ventilation</td>
<td>Require protective equipment</td>
</tr>
<tr>
<td>Install or revise safety guard or device</td>
<td>Eliminate congestion</td>
</tr>
<tr>
<td>Job reassignment of employee</td>
<td>Improve design and/or construction</td>
</tr>
<tr>
<td>Repair or replace equipment</td>
<td>Revise job safety briefing (JSB)</td>
</tr>
<tr>
<td>Improved storage or arrangement</td>
<td>Mandatory pretask instruction</td>
</tr>
<tr>
<td>Improved enforcement</td>
<td>Improved inspection procedure</td>
</tr>
<tr>
<td>Revise procedure</td>
<td>Improved cleanup process</td>
</tr>
<tr>
<td>Retraining of employee(s) involved</td>
<td>Corrections other than those listed</td>
</tr>
<tr>
<td>Warning to employee(s) involved</td>
<td></td>
</tr>
</tbody>
</table>

What system weakness(s) contributed to this event?

Has the system weakness(s) been properly addressed in the corrective actions?  Yes [ ]  NO [ ]

Comments:

Analysis end date: ____________________________

Analysis Leader: ____________________________  Analysis Leader Signature: ____________________________

Site Manager: ____________________________  Site Manager Signature: ____________________________

Safety Representative: ____________________________  Safety Representative Signature: ____________________________
Form 1K.1, Procedure and Standard Deviation Request

<table>
<thead>
<tr>
<th>Date</th>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of Request</th>
<th>Requestor/Company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procedure or Standard to be deviated from (EH&amp;S number and title. For example, SH-S-2A-28, Demolition Operations)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for Request</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measures to be implemented to ensure safety (Attach additional pages if needed.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Approvals**

**Contractor-originated request**

<table>
<thead>
<tr>
<th>Requestor</th>
<th>Name (printed)</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requestor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Manager</td>
<td>Name (printed)</td>
<td>Signature</td>
</tr>
<tr>
<td>Corporate Manager</td>
<td>Name (printed)</td>
<td>Signature</td>
</tr>
</tbody>
</table>

**Southern Company approval**

<table>
<thead>
<tr>
<th>Project Manager</th>
<th>Name (printed)</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction or Startup Manager</td>
<td>Name (printed)</td>
<td>Signature</td>
</tr>
<tr>
<td>Site EH&amp;S Coordinator</td>
<td>Name (printed)</td>
<td>Signature</td>
</tr>
<tr>
<td>Regional Safety and Health Manager</td>
<td>Name (printed)</td>
<td>Signature</td>
</tr>
</tbody>
</table>
General Information:
1. Circle the hazards associated with this task.
   - Strains/Sprains
   - Pinch Points
   - Slips/Trips
   - Fall - Burns
   - Drowning
   - Asbestos
   - Lead
   - Organic Matter
   - Impaired Vision
   - Communication
   - Sharp Edges
   - Noise
   - Atmosphere
   - Electric Shock
   - Rigging
   - Stored Energy

List any additional hazards ________________________________

Has the work area been walked down and have all crewmembers been informed of the hazards associated with the task? ☐ Yes ☐ No

2. Is there proper access and egress provided to the work area? ☐ Yes ☐ No

3. What are the body positioning and ergonomic concerns?

4. Has it been verified that the correct equipment will be worked on? ☐ Yes ☐ No ☐ N/A

Tools and Equipment:
5. User inspection is required on all tools, ladders, electrical cords, rigging, scaffolds and safety equipment. Have all employees been informed that this is required? ☐ Yes ☐ No ☐ N/A

Crane / Hoists:
6. Is crane/hoist inspection current? ☐ Yes ☐ No ☐ N/A
7. Is the area below properly barricaded? ☐ Yes ☐ No ☐ N/A

Housekeeping Requirements:
8. Has a material storage/fab area been identified? ☐ Yes ☐ No ☐ N/A
9. Is the work area clean and ready to start work? ☐ Yes ☐ No ☐ N/A
10. Are adequate trash receptacles available? ☐ Yes ☐ No ☐ N/A

Scaffolds/Ladders:
11. Ensure scaffolds have been inspected prior to access. Are there any concerns with the scaffold? ☐ Yes ☐ No ☐ N/A
    What is the proper type ladder for this task? ________

Asbestos / Lead / Silica Concerns:
12. Are there asbestos, lead, or silica concerns associated with the task? ☐ Yes ☐ No
    If yes, what are the concerns? ________________________________

Fall Protection:
13. Are fall protection systems needed for this task? ☐ Yes ☐ No ☐ N/A
    Explain (i.e. static lines, barricades, hole covers, 100% tie off, etc.)

Fire Protection:
14. Has work area been inspected for flammable or combustible hazards? i.e. PRB Coal ☐ Yes ☐ No ☐ N/A
15. Have flammable or combustibles been removed from the hotwork area and stored properly? ☐ Yes ☐ No ☐ N/A
16. Has a hotwork permit been issued for this task? ☐ Yes ☐ No ☐ N/A
17. What are surrounding hazards/unsafe conditions?
18. Are fire extinguishers required? ☐ Yes ☐ No ☐ N/A
   If Yes, are they properly placed? ☐ Yes ☐ No ☐ N/A

Is there proper access and egress provided to the work area? ☐ Yes ☐ No ☐ N/A

Is crane/hoist inspection current? ☐ Yes ☐ No ☐ N/A

Is the area below properly barricaded? ☐ Yes ☐ No ☐ N/A

What are the body positioning and ergonomic concerns? ________________________________

Has it been verified that the correct equipment will be worked on? ☐ Yes ☐ No ☐ N/A

What are the body positioning and ergonomic concerns? ________________________________

Pre-Task Planning

Risk calculator

- Is a clearance or LOTO required for this task? ☐ Yes ☐ No
  - Clearance/LOTO Number __________

- What is the most recent incident / near hit here? __________

- What’s the most likely incident today? __________

- What positive controls do we have? __________

- What’s the worst thing that can happen today? __________

- What safety ideas do you have that will make this task safer?

- Do all crewmembers understand their right and responsibilities under the SST Stop Work Authority? ☐ Yes ☐ No

Emergency evacuation area / Assembly area: ________________________________

Return to the Safety Department upon completion of this task.

Management Participation

Name: ________________________________

Participation to occur as personnel are available.

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Form 1N.1EN - Job Safety Analysis
Updated 05/15/2019
The JSA is an integral part to proper task planning. It will be used by management and supervision to reduce safety incidents.
- JSAs will be completed daily for each task by the responsible foreman or supervisor of the work.
- All sections related to work pre-planning must be completed.
- Each crew member involved in this task must sign the JSA.
- The JSA must be posted in an obvious place at the work area throughout the duration of the task.
- A post-job debrief will be conducted as part of the JSA process.
- The JSA will be given to site management at completion of the task.

### Post JSA Debrief

1. What went well today?

2. What did not go well today? Did an injury or unplanned incident occur? ☐ Yes ☐ No
   If Yes, describe: ________________________________
   ____________________________________________

3. Was it reported to the safety department? ☐ Yes ☐ No

4. What almost went bad today?

5. What did we do to control it? ____________________
   ____________________________________________

6. Is the work area clean and free from debris from the day’s work? ☐ Yes ☐ No

7. Have barricades been removed or if still needed, are they properly erected and tagged? ☐ Yes ☐ No

8. What safety ideas do you have?

9. Was Stop Work Authority used today? ☐ Yes ☐ No
   If Yes, Describe: ______________________________
   ____________________________________________

### PPE Required

<table>
<thead>
<tr>
<th>PPE Required</th>
<th>Yes</th>
<th>No</th>
<th>Type (Specify Specific PPE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Head</td>
<td></td>
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<td></td>
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<tr>
<td>Foot</td>
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<td></td>
</tr>
<tr>
<td>Hand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coveralls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respirator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Retardant Clothing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Certifications/Competent Persons Required

| Crane Operator          |     |    |                            |
| Forklift Operator       |     |    |                            |
| JLG / Scissor lift / etc.| | |                            |
| Mobile Equipment Operator| | |                            |
| Powder-Actuated Tool User| | |                            |
| Excavations             |     |    |                            |
| Qualified Rigger / Lift Dir | | |                            |
| Demolition              |     |    |                            |

### Procedures/Permits Required

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energized Work</td>
<td>Confined Space</td>
</tr>
<tr>
<td>Clearance / LOTO</td>
<td>Crane Lift</td>
</tr>
<tr>
<td>Excavation</td>
<td>Line Break/Hot Tap</td>
</tr>
<tr>
<td>Scaffold - OAR</td>
<td>Switchyard</td>
</tr>
<tr>
<td>Hot Work</td>
<td>Open Hole / Grating Removal</td>
</tr>
<tr>
<td>Hot Work-PRB Area</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Reviewed By:**

General Foreman: ____________________________

Reviews to be performed as personnel are available and are recommended daily.
Información General

1. Haga un círculo alrededor de la palabra que representa un riesgo relacionado con el trabajo.

2. Agregue otros riesgos adicionales ________________________________

3. ¿Se le ha informado a todo el personal acerca de los riesgos asociados con el trabajo? ☐ Sí ☐ No ☐ N/A

4. ¿Hay áreas de acceso y salida en la zona de trabajo? ☐ Sí ☐ No ☐ N/A

5. ¿Cuál es la atención que se le da durante horas de trabajo a la postura del cuerpo y ergonomía? ________________________________

6. ¿Se ha verificado que el trabajo es en el correcto equipo? ☐ Sí ☐ No ☐ N/A

Herramientas y Conjunto Instrumental

7. ¿Se requiere la inspección por el usuario de todas las herramientas, escaleras, extensiones eléctricas, utensilios, andamios y equipos de seguridad. Se le ha informado a todos los empleados de este requerimiento? ☐ Sí ☐ No ☐ N/A

Malacate

8. ¿Está la inspección de malacate actual? ☐ Sí ☐ No ☐ N/A

9. ¿Está la area baja resguardada correctamente? ☐ Sí ☐ No ☐ N/A

Requerimientos Domiciliarios

10. ¿Se han identificado espacios para almacenamiento de material y para trabajos de fabricación con metales (corte y ensamble de metales)? ☐ Sí ☐ No ☐ N/A

11. ¿Está el área laboral limpia y lista para el trabajo? ☐ Sí ☐ No ☐ N/A

12. ¿Hay canecas de basura disponibles para su uso? ☐ Sí ☐ No ☐ N/A

Andamiajes / Escaleras

10. Asegúrese que el andamio se haya inspeccionado antes de su uso. ☐ Sí ☐ No ☐ N/A

11. ¿Hay alguna preocupación con los andamios? ☐ Sí ☐ No ☐ N/A

12. ¿Cuál es la escalera apropiada para la labor? ________________________________

Asbestos / Plomo

13. ¿Hay algún preocupación de exposición a plomo o asbestos en el trabajo? ☐ Sí ☐ No ☐ N/A

¿Si en caso, cuál es la preocupación? ________________________________

Protección para Evitar Caídas

14. ¿Se necesitan medidas preventivas para las caídas en este trabajo? ☐ Sí ☐ No ☐ N/A

15. Explique (por ejemplo, líneas eléctricas, barricadas, cubreburos, sistemas de prevención de caídas (100% conectase)) ________________________________

Protección contra Incendio

16. ¿Ha sido inspeccionado el área de trabajo por sustancias inflamables (como el carbon PRB)? ☐ Sí ☐ No ☐ N/A

17. ¿Se ha conseguido un permiso para este tipo de trabajo candidente? ☐ Sí ☐ No ☐ N/A

18. ¿Son necesarios los extinguidores de fuego? ☐ Sí ☐ No ☐ N/A

¿Si en caso, estan apropiadamente localizados y accesibles? ☐ Sí ☐ No ☐ N/A

Análisis de Riesgos

<table>
<thead>
<tr>
<th>Probabilidad</th>
<th>Impacto</th>
<th>Nivel de Riesgo / Acción</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rara vez</td>
<td>Catastrófico</td>
<td>MUY ALTO - DEJAR TRABAJO</td>
</tr>
<tr>
<td>Rara vez</td>
<td>Principal</td>
<td>ALTO - PEDIR AYUDA</td>
</tr>
<tr>
<td>Rara vez</td>
<td>Significativa</td>
<td>MEDIO - AGREGAR CONTROL</td>
</tr>
<tr>
<td>Rara vez</td>
<td>Graves</td>
<td>BAJO - ACCIÓN RETARDADA</td>
</tr>
<tr>
<td>Rara vez</td>
<td>Menor</td>
<td>MUY BAJO - 1 - PROCEDER</td>
</tr>
</tbody>
</table>

- ¿Es necesaria una autorización para llevar a cabo un Análisis de Seguridad de Trabajo? ☐ Sí ☐ No ☐ N/A
- * Cuál es el Número de la Autorización ________________
- ¿Cuál ha sido el mas reciente incidente/ o estar en un tris? ________________________________
- ¿Que incidente podría pasar hoy? ________________________________
- ¿Que controles de detection de riesgos tenemos? ________________________________
- ¿Qué es lo peor que le puede pasar hoy? ________________________________
- ¿Qué ideas de seguridad tiene usted que puedan hacer el trabajo mas seguro? ________________________________

Administración Participante

Nombre ________________________________

Participar como personal disponible

SEGURIDAD A TRAVÉS DE LA PARTICIPACIÓN DE TODOS

Formulario 1N.1SP Análisis de la seguridad en el trabajo  Actualizado el 05/15/2019
El Análisis de Seguridad de Trabajo (AST) es parte integral en el planeamiento laboral. Se usará en el manejo y supervisión para reducir los riesgos en el trabajo.

- El AST se completará diariamente para cada trabajo
- Todas las secciones relacionadas con la planificación previa del trabajo deben estar completas.
- Cada trabajador que participe en la labor debe firmar el AST
- El AST debe ser fijado en un lugar visible durante la duración del trabajo.
- Una revisión de cuentas al final del trabajo se llevará a cabo como parte del proceso del AST
- El AST se le entregará al jefe de sección al final de la

<table>
<thead>
<tr>
<th>PPE Requiere</th>
<th>Sí</th>
<th>No</th>
<th>Clase</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protección contra caídas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ojos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cara</td>
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<td>Cabeza</td>
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<td>Manos</td>
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<tr>
<td>Audición</td>
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<tr>
<td>Overol</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Respirador</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ropa retardante de fuego</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Otros</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Otros</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Rendir Cuentas después del AST

1. ¿Lo que salió bien hoy? ______________________________
2. ¿Lo que salió mal hoy? ¿Ocurrió algún incidente traumático inesperado? 
   Sí ☐ No
   Si en caso, descíbalo ________________________________
3. ¿Se informó al Departamento de Seguridad? ☐ Sí ☐ No
4. ¿Lo que casi salió mal hoy? ____________________________
5. ¿Qué hicimos para evitarlo? ____________________________
6. ¿Está el área de trabajo limpia y libre de residuos del día de labor? ____________________________
7. ¿Se han removido las barricadas; o si es que todavía se necesitan están correctamente construidas y etiquetadas? ☐ Sí ☐ No
8. ¿Qué ideas de seguridad tiene usted?__________________________

### Pasos de la Tarea

<table>
<thead>
<tr>
<th>Certificaciones/Personas Competentes</th>
<th>NOMBRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operador de Grúa</td>
<td></td>
</tr>
<tr>
<td>Operador de Elevador de Carga</td>
<td></td>
</tr>
<tr>
<td>JLG / Elevador de Tijera / etc.</td>
<td></td>
</tr>
<tr>
<td>Operador de Equipo Móvil</td>
<td></td>
</tr>
<tr>
<td>Pistola de Ramset</td>
<td></td>
</tr>
<tr>
<td>Excavación Persona Competentes</td>
<td></td>
</tr>
<tr>
<td>Calificado aparejador</td>
<td></td>
</tr>
<tr>
<td>Otros</td>
<td></td>
</tr>
<tr>
<td>Otros</td>
<td></td>
</tr>
</tbody>
</table>

### REVISADO POR

<table>
<thead>
<tr>
<th>Capataz General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS Coordinador</td>
<td></td>
</tr>
</tbody>
</table>
### Form 1N.2, JSA Supplement: Specialty Work/High Risk Work

<table>
<thead>
<tr>
<th>Company: ____________________________</th>
</tr>
</thead>
</table>

#### Contractor / Company name

<table>
<thead>
<tr>
<th>Work Scope</th>
</tr>
</thead>
</table>

#### Contractor Management or designee

<table>
<thead>
<tr>
<th>Contractor Safety Representative</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Plant or work site</th>
</tr>
</thead>
</table>

#### Clearance/Permits Needed/General Concerns

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a written procedure for this task? If yes, have procedure readily available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have all crewmembers received all necessary training for this task?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is a deviation from a standard procedure required for this task?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is an excavation permit required?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is an exposed electrical (hot work) permit needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is a switchyard entry permit needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will welding, cutting, and/or burning take place in hazardous area?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will you be working around anhydrous ammonia, chlorine, hydrogen, or similar substances?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is a line break permit needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are safety data sheets needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is hazardous energy control in the form of a plant clearance or construction LOTO needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is additional lighting needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is falling object protection needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are specialty tools / training needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is specialized PPE required?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance/Permits Needed/General Concerns</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>Is a traffic control plan needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the task involves a confined space, is extraction equipment needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the task involves a confined space, is advance ERT notification needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is respiratory equipment and/or ventilation needed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the task involves a crane(s), what is its distance from power lines? Are they deenergized?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the task involves crane(s), is a critical lift plan needed? If so, attach to this form.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the task electrical involving switchyard work? If so, attach permit.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical – Scaffold needed - clearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental – Asbestos / lead / silica/ arsenic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold – Engineered drawings required?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold – Suspended – training / inspections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the task involve diving operations?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the task involve blasting operations?</td>
<td></td>
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<tr>
<td>Other -</td>
<td></td>
<td></td>
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<tr>
<td>Other -</td>
<td></td>
<td></td>
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<tr>
<td>Other -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional Comments / Controls:

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
General Information:
1. Circle the hazards associated with this task.
   Strains/Sprains - Pinch Points - Slips/Trips - Personnel Rescue
   - Ground Conditions - Communication – Working around
   Heavy Equipment – Noise- Atmosphere - Electric Shock -
   Rigging - Stored Energy
List any additional Hazards ______________________________________________________

2. Have all crew-members been informed of the hazards associated with today’s work?  □ Yes □ No □ N/A
3. Is there proper access and egress provided to the work area?  □ Yes □ No □ N/A
4. Are the safe zones properly identified and protected from equipment?  □ Yes □ No □ N/A
5. Is everyone knowledgeable in the “Man on the Ground” process?  □ Yes □ No □ N/A

Tools and Equipment:
6. User inspection is required on all tools, ladders, electrical cords, rigging, scaffolds, mobile equipment and safety equipment. Have all employees been informed that this is required?  □ Yes □ No □ N/A

Heavy Equipment:
7. Daily Inspections performed?  □ Yes □ No □ N/A
8. Haul routes properly identified?  □ Yes □ No □ N/A
9. All Safety aids operational?  □ Yes □ No □ N/A
10. Extricating Stuck Equipment process known and in place?  □ Yes □ No □ N/A

Ground Conditions
11. The competent person for ground conditions is inspecting frequently?  □ Yes □ No □ N/A
12. Haul roads are being maintained and are safe to operate on for the day?  □ Yes □ No □ N/A
13. Crewmembers have been trained on the nature and hazards associated with ash (wet/dry)?  □ Yes □ No □ N/A

Inorganic Arsenic / Silica / Dust
14. Are there any inorganic arsenic or silica concerns associated with today’s work?  □ Yes □ No □ N/A
15. Are dust control measures in place?  □ Yes □ No □ N/A

Fall Protection:
16. Are fall protection systems needed for this task?  □ Yes □ No □ N/A
   Explain (i.e. static lines, barricades, hole covers, 100% tie off, etc.) ____________________________________________________________

Fire Protection:
17. Are fire extinguishers present on all equipment and suitable extinguishers available at all fueling locations?  □ Yes □ No □ N/A

Housekeeping Requirements:
18. Is the work area clean and ready to start work?  □ Yes □ No □ N/A
19. Are material storage areas or laydown yards properly □ Yes □ No □ N/A

Personnel Rescue:
20. Personnel rescue plans in place and communicated to all crew-members?  □ Yes □ No □ N/A
21. Personnel rescue equipment (life rings, throw ropes, mats, etc.) are pre-placed appropriately?  □ Yes □ No □ N/A

Specialty or High Risk work?  □ Yes □ No

If yes, attach JSA Supplement

Emergency evacuation area / Assembly area:

Return to the Safety Department upon completion of this task.

Management Participation
Name: ________________________________________________________________

Form 1N.3, JSA for Ash Basin Work
Form updated 04-18-2017
The JSA is an integral part to proper task planning. It will be used by management and supervision to reduce safety incidents.
- JSA’s will be completed daily for each task.
- The JSA must be completed in its entirety.
- Each crew member involved in this task must sign the JSA.
- The JSA must be posted in an obvious place throughout the duration of the task.
- A post job debrief will be conducted as part of the JSA process.
- The JSA will be given to site management at completion of the task.

### PPE Required

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Flotation Device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hearing</td>
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<tr>
<td>Coveralls</td>
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<tr>
<td>Respirator</td>
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<td></td>
</tr>
<tr>
<td>Fall Protection</td>
<td></td>
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</tbody>
</table>

### Certifications/Competent Persons Required

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Equipment Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forklift Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JLG/Scissorlift/etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane Operator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excavations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualified Rigger</td>
<td></td>
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</tr>
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</table>

### Procedures/Permits Required

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confined Space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crane Lift</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energized Work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line Break/Hot Tap</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaffold - OAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchyard</td>
<td></td>
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<tr>
<td>Hot Work</td>
<td></td>
<td></td>
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<tr>
<td>Grating Removal</td>
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<td></td>
</tr>
<tr>
<td>Hot Work-PRB Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Post JSA Debrief

1. What went well today?
   ____________________________________________________________
   ____________________________________________________________

2. What went bad today? Did an injury or unplanned incident occur?  □ Yes □ No
   If yes, describe ___________________________________________

3. Was it reported to the safety department?  □ Yes □ No

4. What almost went bad today?
   ____________________________________________________________

5. What did we do to control it?
   ____________________________________________________________

6. Is the work area clean and free from debris from the day’s work?  □ Yes □ No

7. Have barricades been removed or if still needed, are they properly erected and tagged?  □ Yes □ No

8. What safety ideas do you have?
   ____________________________________________________________

### Reviewed By:

General Foreman: __________________________

SCS Coordinator: __________________________
### Equipment and Instruments

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 each</td>
<td>Blood pressure monitor with X-large cuff</td>
</tr>
<tr>
<td>1 each</td>
<td>Stethoscope</td>
</tr>
<tr>
<td>1 each</td>
<td>Digital thermometer with extra covers</td>
</tr>
<tr>
<td>1 each</td>
<td>Magnifying lamp</td>
</tr>
<tr>
<td>1 each</td>
<td>Optivisor</td>
</tr>
<tr>
<td>1 each</td>
<td>Nail drill</td>
</tr>
<tr>
<td>1 each</td>
<td>8-in. medic scissors</td>
</tr>
<tr>
<td>1 each</td>
<td>Forceps tweezers</td>
</tr>
<tr>
<td>1 each</td>
<td>Splinter removal kit</td>
</tr>
<tr>
<td>1 each</td>
<td>Pen lights</td>
</tr>
<tr>
<td>1 each</td>
<td>Wool blanket</td>
</tr>
<tr>
<td>1 each</td>
<td>Ring cutter</td>
</tr>
<tr>
<td>1 each</td>
<td>Wash basin</td>
</tr>
<tr>
<td>1 each</td>
<td>Waste receptacle</td>
</tr>
<tr>
<td>1 each</td>
<td>Emesis basin (disposable)</td>
</tr>
<tr>
<td>1 each</td>
<td>Automated external defibrillator</td>
</tr>
</tbody>
</table>

### Consumable Supplies

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 box</td>
<td>Exam gloves (L/XL)</td>
</tr>
<tr>
<td>1 box</td>
<td>Sterile cotton tip applicators</td>
</tr>
<tr>
<td>1 box</td>
<td>Sterile Telfa nonstick pad bandages, 2x3 in.</td>
</tr>
<tr>
<td>1 box</td>
<td>Sterile Telfa nonstick pad bandages, 4x4 in.</td>
</tr>
<tr>
<td>1 box</td>
<td>Sterile gauze wrap, 4 in.</td>
</tr>
<tr>
<td>1 package</td>
<td>Sterile bulk trauma dressing</td>
</tr>
<tr>
<td>1 box each</td>
<td>Coban dressing, 2-, 3-, and 4-in.</td>
</tr>
<tr>
<td>3 each</td>
<td>Elastic bandages (Ace-type), 2- and 4-in.</td>
</tr>
<tr>
<td>1 box</td>
<td>Coverlet knuckle bandages</td>
</tr>
<tr>
<td>1 box</td>
<td>Coverlet 1-in. bandage strips</td>
</tr>
<tr>
<td>1 box</td>
<td>Alcohol prep pads</td>
</tr>
<tr>
<td>1 box</td>
<td>Cotton balls</td>
</tr>
<tr>
<td>6 each</td>
<td>Chemical ice packs</td>
</tr>
<tr>
<td>Item Description</td>
<td>Quantity</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Adhesive tape, 1- and 3-in.</td>
<td>1 each</td>
</tr>
<tr>
<td>Betadine scrub solution</td>
<td>1 each</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>1 each</td>
</tr>
<tr>
<td>Antibiotic ointment</td>
<td>1 each</td>
</tr>
<tr>
<td>Ibuprofen tablets</td>
<td>1 box</td>
</tr>
<tr>
<td>Aspirin tablets</td>
<td>1 box</td>
</tr>
<tr>
<td>Acetaminophen tablets</td>
<td>1 box</td>
</tr>
<tr>
<td>Hydrocortisone ointment</td>
<td>1 tube</td>
</tr>
<tr>
<td>Sterile eyewash solution (4-oz squirt tip bottle)</td>
<td>12 each</td>
</tr>
<tr>
<td>Sterile buffered solution (16-oz bottle)</td>
<td>1 each</td>
</tr>
<tr>
<td>Red biohazard waste bags</td>
<td>3 each</td>
</tr>
<tr>
<td>CPR masks (disposable)</td>
<td>3 each</td>
</tr>
<tr>
<td>Bloodborne pathogen spill response kit</td>
<td>1 each</td>
</tr>
<tr>
<td>Analgesic muscle rub (1 tube)</td>
<td>1 each</td>
</tr>
<tr>
<td>Burn gel (4-oz bottle)</td>
<td>1 each</td>
</tr>
</tbody>
</table>

**Miscellaneous Items**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spine board</td>
<td></td>
</tr>
<tr>
<td>Folding cot and mattress with disposable pillow and sheets</td>
<td></td>
</tr>
<tr>
<td>* Long and short spine immobilization board</td>
<td></td>
</tr>
<tr>
<td>* Glucometer (blood sugar monitor)</td>
<td></td>
</tr>
<tr>
<td>* Medical oxygen delivery system</td>
<td></td>
</tr>
<tr>
<td>* Ambu resuscitation bag</td>
<td></td>
</tr>
<tr>
<td>* Assorted sizes of cervical collars</td>
<td></td>
</tr>
</tbody>
</table>

* Depends upon the qualifications of the onsite medical personnel with Corporate Safety review.
Form 2A-06.1, Ladder Inspection Form

Company: ____________________________________________________________

<table>
<thead>
<tr>
<th>Date</th>
<th>Ladder Info</th>
<th>Step Ladders</th>
<th>Extension Ladders</th>
<th>Inspection Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Loose steps or rungs</td>
<td>Loose nails, bolts</td>
<td>Damage / worn side rails</td>
<td>Broken, split rungs</td>
</tr>
<tr>
<td>Inspector</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Project</td>
<td></td>
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</tr>
</tbody>
</table>

Please mark the check box for S for satisfactory or U for unsatisfactory

<table>
<thead>
<tr>
<th>Ladder ID No.</th>
<th>S</th>
<th>U</th>
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<th>S</th>
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</tbody>
</table>

Note corrective actions and initial.

Comments
Company: _____________________________

The back of green tags and yellow tags shall include the following text. This scaffold has been inspected and approved for use on date(s) as indicated below:

<table>
<thead>
<tr>
<th>Date Inspected</th>
<th>Signed by Competent Person</th>
<th>Date Inspected</th>
<th>Competent Person (signature)</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Form 2A-07.1 (Green)  
Form 2A-07.2 (Yellow)  
Form 2A-07.3 (Red)
Form 2A-07.4, Scaffold Inspection Checklist

Company: ____________________

Questions are based on 29 CFR 1926.451: a (capacity), subpart b (platform construction), subpart c (criteria for supported scaffolds), subpart e (access), subpart f (use), subpart g (fall protection), subpart h (falling object protection) 1926.452: subpart b (tube and coupler scaffolds), subpart c (fabricated frame scaffolds), subpart w (mobile scaffolds) and the Non Mandatory Appendices. The number following the question tells you where to look for the OSHA regulation pertaining to the question.

### 1926.451 General Requirements

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Has the scaffold been constructed and loaded in accordance with the design of a qualified person with a safety factor of 4-to-1? (a 1 and a 6)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td><strong>Has the scaffold platform been fully planked with less than 1 in. between planks or between planks and the uprights? (b 1 i)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where the employer can demonstrate the necessity, is the gap between the last plank and the uprights less than 9 1/2 in.? (b 1 ii)</strong></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Are all platforms at least 18 in. wide? (b 2)</strong></td>
<td></td>
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<tr>
<td><strong>Are platforms that are less than 18 in. protected by guardrail systems, or will all employees have personal fall arrest systems? (b 2 ii)</strong></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td><strong>Are open sides of scaffold less than 14 in. from the face of the work? (b 3)</strong></td>
<td></td>
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<tr>
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<tr>
<td><strong>Where open sides of scaffolds are more than 14 in., will fall protection systems be used by all employees? (b 3)</strong></td>
<td></td>
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<tr>
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<tr>
<td><strong>For scaffolds that will be used for lathing and plastering, is the platform less than 18 in. from the face of the work? (b 3 ii)</strong></td>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td><strong>Are all platform units cleated, restrained by hooks or equivalent means, or extending over the center line of their supports by at least 6 in.? (b 4)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>Are platforms of 10 ft or less extending over their end supports no more than 12 in.? (b 5 i)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where platforms of 10 ft or less extend more than 12 in., have guardrails been installed to block access to the overhang? (b 5 i)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Are platforms of 10 ft or more extending over their end supports no more than 18 in.? (b 5 ii)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where platforms of 10 ft or more extend more than 18 in., have guardrails been installed to block access to the overhang? (b 5 ii)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Are abutted planks resting on separate support surfaces? (b 6)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Where planks are overlapped are they lapped over the supports? (b7)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Are planks overlapped at least 12 in., nailed together or otherwise secured? (b7)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Are planks that rest on the bearer at other than a 90-degree angle laid first? (b 8)</strong></td>
<td></td>
</tr>
</tbody>
</table>
Are the top and bottom surfaces of the plank visible and free from paint and other opaque finishes? (b 9)  

If scaffold components of different manufacturers are used, do they fit together without force and has a competent person determined that they are safe for use? (b 1 0)

Has the use of dissimilar metals (if any) been evaluated by a competent person? (b 1 1)

**THE FOLLOWING QUESTIONS ARE FROM SUBPART C 1926.451 (c)**

Does the scaffold conform to the 4-to-1 base-to-height ratio requirement? (c 1 i)

Scaffolds that do not meet the 4-to-1 base-to-height ratio must be secured to the structure by use of ties (to include ties, guyng, bracing, or equivalent means) as follows:

Has the tie been installed at a horizontal member that supports the inner and outer legs? (c 1 i)

Has the first vertical tie been installed at a height less than 4 times the minimum base dimension? (c 1 ii)

Have vertical ties been repeated every 20 ft or less for scaffolds that are 3 ft or less in width? (c 1 ii)

Have vertical ties been repeated every 26 ft or less for scaffolds wider than 3 ft? (c 1 ii)

Is the vertical distance from the top tie to the top of the scaffold less than the 4-to-1 minimum base dimension? (c 1 ii)

Are ties installed at each end of the scaffold and at horizontal distances not to exceed 30 ft? (c 1 ii)

Where eccentric loads are imposed, have ties been installed to counteract these loads? (c 1 iii)

Are scaffolds erected on adequate firm footings? (c 2)

Are footings capable of supporting 4 times the intended load without settling? (c 2)

Is scaffold plumb and braced to prevent swaying or displacement? (c 3)

**THE FOLLOWING QUESTIONS APPLY TO ACCESS FROM 1926.451(e)**

Has safe access been provided for all scaffold platforms that are more than 2 ft above or below the point of access? (e 1)

Have cross braces been prohibited as a means of access? (e 1)

Are ladders positioned so as not to tip the scaffold? (e 2 i)
Form 2A-07.4, Scaffold Inspection Checklist

Is the bottom rung less than 24 in. above the supporting surface? (e 2 ii)  
Yes ☐ No ☐

Are rest platforms installed every 35 ft vertically? (e 2 iii)  
Yes ☐ No ☐

**THE FOLLOWING APPLIES TO HOOK-ON AND ATTACHABLE LADDERS**

Are the ladders specifically designed for use with the type of scaffold used?  
(f 1)  
Yes ☐ No ☐

Do the ladders have a minimum rung length of 11 1/2 in.? (e 2 v)  
Yes ☐ No ☐

If used, do portable ladders (extension or free-standing) meet the specific requirements of 1926, subpart X?  
Yes ☐ No ☐

Is the rung spacing uniform and no more than 16 3/4 in. between rungs? (e 6 iv)  
Yes ☐ No ☐

**THE FOLLOWING APPLIES TO LADDER RUNGS BUILT INTO THE FRAME**

Integral prefabricated scaffold access frames shall conform to the following:

Was the frame designed and built to be used as an access ladder? (e 6 i)  
Yes ☐ No ☐

Are the rungs at least 8 in. in length? (e 6 ii)  
Yes ☐ No ☐

Are rungs uniformly spaced within each frame section? (e 6 iv)  
Yes ☐ No ☐

Are rest platforms provided every 35 ft? (e 6 v)  
Yes ☐ No ☐

Is the distance between the rungs less than 16 3/4 in.? (e 6 vi)  
Yes ☐ No ☐

Do rungs and steps of ladders line up vertically between the rest decks? (e 7)  
Yes ☐ No ☐

Is direct access from other structures prohibited when that distance is more than 24 in. vertically or 14 in. horizontally? (e 8)  
Yes ☐ No ☐

**THE FOLLOWING APPLIES TO SCAFFOLD USE FROM 1926.451(F)**

Are scaffolds and components loaded beyond their rated capacities? (f 1)  
Yes ☐ No ☐

Is the use of shore or lean-to scaffolds prohibited? (f 2)  
Yes ☐ No ☐

Has any damaged part of the scaffold been repaired, replaced, or removed as required? (f 4)  
Yes ☐ No ☐

Do scaffolds and any conductive material handled on them observe the proper clearances from power lines? (f 6) REFER TO DISTANCES AS SHOWN IN 1925.451(F)(6)  
Yes ☐ No ☐

Have slippery conditions been removed? (f 8)  
Yes ☐ No ☐

If storms or high winds are present, has a competent person been consulted and wind screens or personal fall arrest used? (f 12)  
Yes ☐ No ☐
### Scaffold Inspection Checklist

**Form 2A-07.4, Scaffold Inspection Checklist**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are tools, material, and debris removed from scaffold to prevent an accumulation? (f 13)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have provisions to prevent platforms from deflecting more than 1/60(^{th}) of the span been made? (f 16)</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**THE FOLLOWING APPLIES TO FALL PROTECTION 1926.451 (g)**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have applicable provisions been made to comply with 1926.451 section (g)?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Guardrail systems used to comply with section (g) shall conform as follows:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are guardrails and midrails installed on all open sides and open ends of the platform? (g 4 i)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are guardrails installed at 36 to 45 in. in height? (g 4 ii)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>When mesh or screens are installed, do they extend from the top of the guardrail to the platform? (g 4 v)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Does the entire guardrail system meet the strength requirements as stated in 1926.451 (g) (4)(vii, viii, and ix)?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**THE FOLLOWING APPLIES TO FALLING OBJECT PROTECTION 1926.451 (h)**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have falling object hazards been eliminated according to 1926.451 (h)?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have toeboards been installed to prevent falling objects? (h 2 ii)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Where required, have screens been installed to protect employees from falling objects? (h 2 iii)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are toeboards at least 3 1/2 in. in height? (h 4 ii)</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**THE FOLLOWING APPLIES TO TUBE AND COUPLER SCAFFOLDS 1926.452 (b)**

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is X-bracing installed on the ends of the scaffold and every third set of posts horizontally and every fourth runner vertically? (b 2)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are ties installed at the bearer level? (b 2)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Is longitudinal bracing installed at a 45-degree angle on both faces of the scaffold? (b 3)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Does the longitudinal bracing extend from the first (left hand) post to the extreme top of the scaffold? (b 3)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>If the scaffold is longer than five posts, is a new line of bracing begun at every fifth post? (b 3)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Is bracing installed as close as is possible to the node point? (b 3)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Are the bearers attached to both posts and does the inboard coupler rest on the runner coupler? (b 5)</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
If bearers are attached to the runners, is the bearer as close as possible to the posts? (b 5)

Do the ends of the bearer tube have full contact within the clamp? (b 6)

Are runners installed on the inside and outside of the scaffold at level heights? (b 7)

If outside runners are left out, are there midrails and guardrails above and below the point where the runner would have been? (b 7)

Are runners interlocked and coupled to each post? (b 8)

Are the bottom runners as close to the base as possible? (b 8)

Do light- and medium-duty scaffolds have posts, runners, bearers, and braces of 2-in.-OD steel tubing? Appendix A, table (b) (NOTE: need exception to site rules)

Are posts on light-duty scaffolds spaced no more than 4 ft apart by 10 ft along the length of the scaffold? Appendix A, table (b) (NOTE: Need exception to site rules)

Are posts on medium-duty scaffolds spaced no more than 4 ft apart by 7 ft along the length of the scaffold? Appendix A, table (b) (NOTE: Need exception to site rules)

Is the maximum vertical runner spacing of 6 ft 6 in.? Appendix A, table (b)

If the maximum number of planked levels, working levels, or height exceed those shown in table b, are drawings done by a registered professional engineer? Appendix A(2), table (b)

1926.452 (c) Fabricated frame scaffolds

Are frames secured by braces, which secure the vertical members laterally? (c 2)

Do the braces automatically square and align the frames? (c 2)

Are all brace connections secured? (c 2)

Are frames joined together by coupling pins or equivalent means? (c 3)

Where uplift may occur, are the frames locked together? (c 4)

Has the use of side brackets and their impact on the overall scaffold been fully evaluated? (b 5 i, ii, and iii)

Have scaffolds over 125 ft in height been constructed and loaded according to design of a registered professional engineer? (b 6)

1926.452 (w) mobile scaffolds

Are frames secured by braces that secure the vertical members laterally? (w 1)
### Form 2A-07.4, Scaffold Inspection Checklist

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the braces automatically square and align the frames? (w 1)</td>
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<tr>
<td>Are all brace connections secured? (w 1)</td>
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<tr>
<td>Do scaffolds constructed of tube and clamps meet the requirements of that type of scaffold? (w 1 i)</td>
<td></td>
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</tr>
<tr>
<td>Do scaffolds constructed of frame scaffolding meet the requirements of that type of scaffold? (w 1 ii)</td>
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<td></td>
</tr>
<tr>
<td>Are casters locked during use? (w 2)</td>
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</tr>
<tr>
<td>Is the manual force used to move the scaffold applied as close to the base as possible? (w 3)</td>
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<tr>
<td>Are scaffolds stabilized to prevent tipping during movement? (w 5)</td>
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</tr>
<tr>
<td>Are casters pinned into the frames or adjustment screws? (w 9)</td>
<td></td>
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</tbody>
</table>
The inspections listed below are to be performed by the PE of record for scaffold design or his or her designee.

<table>
<thead>
<tr>
<th>Plant:</th>
<th>Location:</th>
<th>WO No.:</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Erection Phase</th>
<th>Inspection Requirements</th>
<th>Inspected By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Scaffold complete</td>
<td>The scaffolding system is completely installed as required by the PE-stamped drawing with no deficiencies and is ready for use (Green Tag)</td>
<td></td>
</tr>
<tr>
<td>2 Scaffolding system modified</td>
<td>PE-approved modifications to the scaffolding system have been completed as required by revised PE-stamped drawing with no deficiencies and is ready for use (Green Tag)</td>
<td></td>
</tr>
</tbody>
</table>

**Inspector’s Comments**

<table>
<thead>
<tr>
<th>Item</th>
<th>Note deficiencies and corrective action required (for urgency of recommended action, see chart below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

**Level of Urgency**

<table>
<thead>
<tr>
<th>Level</th>
<th>Tag</th>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red Tag</td>
<td>DO NOT USE</td>
<td>Do not use scaffold until corrective actions and/or repairs are completed for all deficiencies.</td>
</tr>
<tr>
<td>2</td>
<td>Yellow Tag</td>
<td>RESTRICTED USE</td>
<td>Fall protection required for all personnel who access the scaffold.</td>
</tr>
<tr>
<td>3</td>
<td>Green Tag</td>
<td>READY FOR USE</td>
<td>No deficiencies.</td>
</tr>
</tbody>
</table>

**CAUTION: Reinspect scaffolding system after any repairs or modification.**

By signing below, Contractor hereby certifies that (1) inspection or reinspection of the scaffolding has been performed, and (2) all corrective action required to correct deficiencies in the scaffolding has been taken, and (3) the scaffolding meets the requirements of the engineering drawing and is ready for safe use.

Scaffold Competent Person

Date

Contractor Representative

Date
This checklist is to be completed by the Southern Generation responsible person. In the chart below, each area identified by an item number will require the name and initials of the responsible person in the appropriate column.

<table>
<thead>
<tr>
<th>Item</th>
<th>*Responsible Person (print)</th>
<th>Task</th>
<th>Initials</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Develop contracting strategy (include in prime package or contract direct).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Identify qualified contractors/subcontractors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>At the prebid or prework meeting, discuss in detail the work scope and SH-2A-07, Scaffold Safety, including engineered scaffold inspection requirements, with contractor qualified and scaffold competent persons or PE.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Two weeks prior to installation, obtain PE-stamped engineered drawings and scaffold qualified and scaffold competent persons qualifications from the erection contractor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>**Identify the project evaluation team and review engineered drawings to familiarize team members with the work scope.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Meet with contractor scaffold qualified and scaffold competent persons, approval prior to any Southern Company designated person use of scaffolding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Conduct preinspection job safety briefing to review drawing and any information relevant to the particular brand or type scaffold used. Require the scaffold erection crew’s scaffold qualified and scaffold competent persons to attend.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Determine who is responsible from contractor for initial tagging and per-shift scaffold inspections for each phase of the project.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Review the tagging system requirements with the appointed scaffold competent persons.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The responsible person is the Southern Company Generation employee with responsibility for projects requiring engineered scaffold. At a minimum, the responsible person shall have completed scaffold user training, SHIPS # 017343.

** The evaluation team shall consist of scaffold competent persons representing Southern Company, the contractor, and the company contracted to erect the scaffold.

This completed form shall be maintained on plant site for 3 years.
Form 2A-07.6, Scaffold Overhead and Access Restrictions (OAR) Permit

This form should be used with SH-2A-07, Scaffold Safety, attachment B, Scaffold Overhead and Access Restrictions Permit Flowchart.

<table>
<thead>
<tr>
<th>Scaffold Requester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
</tr>
<tr>
<td>Location of Scaffold</td>
</tr>
<tr>
<td>Purpose of Scaffold</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nature of Obstruction</th>
<th>Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Low overhead (continuous)</td>
<td>A. Flagging</td>
</tr>
<tr>
<td>2. Narrow walkway (continuous)</td>
<td>B. Signage</td>
</tr>
<tr>
<td>3. Protrusion overhead</td>
<td>C. Padding</td>
</tr>
<tr>
<td>4. Protrusion - Horizontal</td>
<td>D. Marking</td>
</tr>
<tr>
<td>5. Protrusion - Stepover</td>
<td>E. Barricade</td>
</tr>
<tr>
<td>6. Protrusion - Trip hazard</td>
<td>F. Communication</td>
</tr>
<tr>
<td>7. Protrusion - Impalement</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>List nature of obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
</tr>
<tr>
<td>#</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Circle one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

1.0 Alternative means of access, such as aerial lift or suspension scaffold, is not feasible.

2.0 Will scaffold cause obstruction to an access or egress? 

2.1 If yes, document nature of hazard, controls, and communication methods on reverse side of this permit.

3.0 Will other obstruction be created? (vertical clearance less than 6 ft 8 in., horizontal clearance less than 1 ft 6 in.) Any intrusion into the minimum envelope requires corrective measures.

3.1 If yes, document nature of hazard, controls, and communication methods on reverse side of this permit.

4.0 Is there an alternate route identified around obstruction?

4.1 If yes, document path of travel and communication methods on reverse side of this permit.

5.0 Is there an obstruction created in the path of travel?

5.1 If yes, document nature of hazard, controls, and communication methods on reverse side of this permit.

6.0 Will the scaffold create an obstruction for vehicle traffic, for example, rescue and fire-fighting equipment?

6.1 If yes, what plans are in place to allow for the access of emergency equipment? Describe on the back of this permit.
This form should be used with SH-2A-07, Scaffold Safety, attachment B, Scaffold Overhead and Access Restrictions Permit Flowchart.

<table>
<thead>
<tr>
<th>Required</th>
<th>Position</th>
<th>Print</th>
<th>Sign</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Scaffold Competent Person</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Scaffold Foreman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Craft Foreman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Southern Company Discipline Coordinator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Southern Company Discipline Lead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Reviewed by Assistant Site Manager (Technical)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Plant [name]
[name] Project
Fall Protection Program

Issued [date]
# Contents

1.0 PURPOSE AND SCOPE .................................................................................................. 3
2.0 GOAL .......................................................................................................................... 3
3.0 DEFINITIONS ............................................................................................................. 3
4.0 TYPES OF FALL PROTECTION SYSTEMS .............................................................. 5
5.0 FALL PROTECTION LOCATIONS ............................................................................. 6
6.0 FALL PROTECTION GUIDELINES – OPTIONS ........................................................ 7
   6.1 Engineering Controls ............................................................................................. 7
   6.2 Guardrails .............................................................................................................. 7
   6.3 Personal Fall Protection Systems ......................................................................... 7
   6.4 Calculating Total Fall Distance .............................................................................. 8
   6.5 Engineered Lifeline ................................................................................................ 8
7.0 INSPECTION OF FALL PROTECTION SYSTEMS .................................................... 8
   7.1 Full Body Harnesses ............................................................................................. 8
   7.2 Lanyards/Shock-Absorbing Lanyards ................................................................. 9
   7.3 Snaphooks ............................................................................................................ 9
   7.4 Self-Retracting Lanyards/Lifelines ....................................................................... 9
   7.5 Tie-Off Adapters/Anchorages ............................................................................. 10
   7.6 Articulating Manlift/Scissor Lift .......................................................................... 10
   7.7 Horizontal Lifelines ............................................................................................ 10
   7.8 Guardrails ............................................................................................................ 11
8.0 STORAGE AND MAINTENANCE OF FALL PROTECTION EQUIPMENT .......... 11
9.0 TRAINING ................................................................................................................. 11
10.0 ENFORCEMENT ...................................................................................................... 12
11.0 RESCUE PROCEDURES ....................................................................................... 12
   11.1 Rescue Methods/Options of Fallen Personnel ................................................... 12
   11.2 Communication Issues ...................................................................................... 12
12.0 FALL INVESTIGATION .......................................................................................... 13
13.0 PROGRAM EVALUATION ....................................................................................... 13
14.0 ATTACHMENTS ....................................................................................................... 13
1.0 PURPOSE AND SCOPE

The purpose of this fall protection program is to establish guidelines to protect all personnel on Technical and Project Solutions (T&PS) projects engaged in outdoor or indoor work activities that expose them to potential falls from elevations.

The scope of this fall protection program includes all personnel or agents of [company name], in particular the personnel engaged in work activities that expose them to falls from heights of 4 ft or higher.

2.0 GOAL

The goal of this fall protection program is to prevent the occurrence of falls from elevations of 4 ft or higher. This goal shall be accomplished through effective education, engineering and administrative controls, the use of fall protection systems, and enforcement of the program. This fall protection program will be continually improved upon to prevent all falls from occurring.

3.0 DEFINITIONS

anchor point – A secure point of attachment for lifelines, lanyards, or deceleration devices. An anchor point shall be capable of supporting at least 5,000 lb (3,600 lb if engineered/certified by a qualified person) per person and shall be independent of any anchorage being used to support or suspend platforms.

authorized person – A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or jobsite (building maintenance, roof repair, and so forth).

competent person – A person capable of identifying existing and predictable hazards in the surroundings or working conditions that are hazardous or dangerous to personnel. A competent person has the authority to take prompt corrective action to eliminate such hazards.

connector – A device used to couple (connect) parts of the personal fall arrest system.

deceleration device – Any mechanism, such as a rope grab, rip-stitch lanyard, a specially woven lanyard, tearing or deforming lanyard, or automatic self-retracting lifeline or lanyard, that serves to dissipate a substantial amount of energy during a fall arrest.

deceleration distance – The additional vertical distance a falling person travels before stopping, excluding lifeline elongation and free-fall distance, from the point at which the deceleration device begins to operate. The deceleration distance is measured as the distance between the location of a person’s body harness attachment point at the moment of activation of the deceleration device during a fall, and the location of that attachment point after the person comes to a full stop.
free fall – The act of falling before a personal fall arrest system begins to apply force to arrest the fall.

free-fall distance – The vertical displacement of the fall arrest attachment point on the person’s body harness between the onset of the fall and just before the system begins to apply force to arrest the fall. Free-fall distance must not exceed 6 ft. This distance excludes deceleration distance and lifeline/lanyard elongation distance.

full body harness – Webbing and/or straps secured about a person’s body in a manner that will distribute the fall arrest forces over the thighs, pelvis, waist, chest, and shoulders. A full body harness will include a means for attaching it to other components of a personal fall arrest system, preferably at the shoulders.

guardrail system – A barrier erected to prevent personnel from falling to lower levels. This system includes a toeboard, midrail, and top rail able to withstand 200 lb of force applied in any direction.

lanyard – A flexible line of rope or strap that has self-locking snap hook connectors at each end for connecting to body harnesses, deceleration devices, and anchor points.

leading edge – The edge of a floor, roof, or other walking/working surface that changes location as additional floor, roof, and so forth, is placed or constructed. A leading edge is considered an unprotected side or edge when not under active construction.

lifeline – A component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline). The lifeline serves as a means for connecting other components of a personal fall arrest system to the anchorage.

low slope roof – A roof having a slope of less than or equal to 4-in-12 (vertical to horizontal). A roof with approximately a 19.5-degree slope or less.

personal fall arrest system – A system used to arrest (catch) a person in a fall from a working level. It consists of an anchorage location, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or any combination of these items.

qualified person – An individual, who by possession of a recognized degree, certificate, or professional standing or who by extensive knowledge, training, and experience has successfully demonstrated his or her ability to solve or resolve problems relating to the subject matter, work, or project.

rope grab – A deceleration device that travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest a person’s fall.

roof work – The hoisting, storage, installation, repair, and removal of materials or equipment on the roof.

safety monitoring system – A safety system in which a competent person is responsible for recognizing and warning personnel of fall hazards. All other fall protection systems must be deemed not feasible (through a feasibility study or review) to select and/or use a safety monitoring system. The use of this system
is specifically **PROHIBITED** on Southern Company Generation (Generation) construction projects.

**snaphook** – A connector composed of a hook-shaped member with a closed keeper that can be opened to permit the hook to receive an object and when released, automatically closes to retain the object. Snaphooks must be self-closing with a self-locking keeper that remains closed and locked until unlocked and pressed open for connection or disconnection, thus preventing the opportunity for the object to roll out of the snaphook.

**steep slope roof** – A roof having a slope greater than 4-in-12 (vertical to horizontal). A roof with a slope greater than 19.5 degrees.

**toeboard** – A low protective barrier that will prevent the fall of materials and equipment to lower levels, usually 4 in. or greater in height.

**total fall distance** – The maximum vertical change in distance from the bottom of an individual’s feet at the onset of a fall to the position of the feet after the fall is arrested. The total fall distance includes the free-fall distance and the deceleration distance. Total fall distance = total length of shock absorbing lanyard + height of the person + location distance of the D-ring from the work surface or platform.

**unprotected sides and edges** – Any side or edge of a walking or working surface (for example, floor, roof, ramp, or runway) where there is no guardrail at least 39 in. high.

**warning line system** – A barrier erected on a roof to warn personnel that they are approaching an unprotected roof side or edge designating an area in which work can be conducted without the use of guardrails, personal fall arrest systems, or safety nets to protect personnel in the area. A warning line system shall be used on any roof greater than 50 ft wide and in conjunction with a safety monitor only where the other forms of fall protection have been deemed infeasible to use. The use of this system is specifically **PROHIBITED** on Generation construction projects.

### 4.0 TYPES OF FALL PROTECTION SYSTEMS

- An articulating manlift provided with a restraint system and full body harness to an anchor point below the waist (preferably at the floor level).

- Guardrail with a toeboard, midrail, and toprail.

- Personal fall arrest systems:
  - Anchor points (rated at 5,000 lb per person).
  - Full body harness.
  - Restraint line or lanyard.
  - Retractable lanyard.
  - Rope grabs.
  - Connectors (self-locking snaphooks).
• Engineered lifelines.
• Warning lines.
• Safety nets.
• Safety monitor systems are specifically prohibited on the Plant [plant name] [project name].

Appropriate fall protection will be determined based on the task (job) to be performed.

5.0 FALL PROTECTION LOCATIONS

Fall protection is required when a worker has the potential to fall 4 ft or more. [construction company name] has identified the following places concerning fall protection:

• All flat and low-sloped roof locations.
• All exterior and interior equipment platforms, catwalks, antennas/towers, and similar features.
• All exterior and interior fixed ladders above 20 ft.
• All mezzanine and balcony edges.
• All open excavations or pits.
• All tasks requiring use of the articulating manlifts and scissor lifts.
• All tasks requiring personnel to lean outside the vertical rails of ladders (for example, painting, stairwell light bulb replacement, or bolt up).
• Scaffolding erection 4 ft in height or greater.
• Steel erection 4 ft in height or greater.
• Mezzanine/catwalk areas. When a person must step outside the catwalk, additional fall protection (that is, 6-ft lanyard to full body harness, self-retracting lanyard, or rope grab system) shall be used.
6.0 FALL PROTECTION GUIDELINES – OPTIONS

6.1 Engineering Controls

When feasible, engineering controls should always be the first option for fall protection (for example, use a telescoping arm when changing a light bulb or relocate valves at ground level to avoid sending workers to heights to change them). In extremely hazardous areas, supervisors should consider using mechanical equipment to do the work.

6.2 Guardrails

On all projects, guardrails made from steel, wood, and wire rope only shall be acceptable. All guardrail systems shall comply with the current U.S. Occupational Safety and Health Administration (OSHA) standards (that is, include a 42-in. high top rail, a midrail, and a toeboard that can withstand 200 lb of force in any direction). These guardrails shall be placed in the following areas if needed or feasible based on job location or requirements:

- On all open-sided floors.
- Around all open excavations or pits.
- On leading edges of roofs or mezzanines.

6.3 Personal Fall Protection Systems

On all projects, all personnel who are required to wear a personal fall arrest or restraint system shall follow these guidelines:

- A full body harness shall be used at all times.
- Only shock-absorbing lanyards or retractable lanyards are to be used so as to minimize impact forces on the body.
- Only nylon rope or nylon straps with locking snap hooks are to be used for restraints. Large “pelican”- or “rebar”-type snap hooks are prohibited.
- All lanyards shall have self-locking snap hooks.
- Before each use, personnel shall inspect all personal fall arrest equipment. Any harness showing deterioration, bends, damage, impacts, and/or excessive wear shall be removed from service.

The maximum free-fall distance shall not exceed 6 ft. Consideration must be given to the total fall distance. The following factors can affect total fall distance:

- Length of connecting means (that is, lanyard, carabiners, snap hooks, and so forth).
- Position and height of anchorage relative to work platform/area (above the person’s head whenever possible).
• Position of attachment and D-ring slide on the full body harness.
• Deployment of shock absorber (maximum 32 in.).
• Movement in the lifeline.
• Initial position of worker before free fall occurs (that is, whether the person will be sitting, standing, and so forth).

6.4 Calculating Total Fall Distance
Always allow a minimum of 4 ft of clearance above the ground, equipment, and so forth, at the end of the fall from the fall arrest point.

6.5 Engineered Lifeline
Lifeline systems shall be designed and approved by an engineer or qualified person.

Lifeline systems shall be engineered to have appropriate anchorages, strength of line designed to hold [X] number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen person(s) suspended until a rescue can occur.

7.0 INSPECTION OF FALL PROTECTION SYSTEMS
The following criteria shall be used to maintain all equipment in good working condition:

7.1 Full Body Harnesses
• Before each use, personnel shall inspect each full body harness:
  – Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
  – Verify there are no torn, frayed, or broken fibers, pulled stitches, or frayed edges anywhere on the harness.
  – Examine the D-ring for excessive wear, pits, deterioration, or cracks.
  – Verify that buckles are not deformed, cracked, and that they operate correctly.
  – Check to see that each grommet (if present) is secure and not deformed from abuse or a fall.
  – The harness should never have additional punched holes.
  – All rivets should be tight and not deformed.
  – Check tongue/straps for excessive wear from repeated buckling.

• A fall protection competent person shall complete a monthly inspection of all harnesses and documentation will be maintained (see appendix A, Full Body Harness Inspection Checklist).
To protect harnesses from damage, they shall be stored hanging in an enclosed cabinet or placed in a fall protection gang box.

All harnesses involved in a fall shall be destroyed.

### 7.2 Lanyards/Shock-Absorbing Lanyards

- Before each use, personnel shall inspect each lanyard/shock-absorbing lanyard:
  - Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches, and excessive wear.
  - Inspect the snap hooks for distortions in the hook, locks, and eye.
  - Check carabiner for excessive wear, distortion, and lock operation.
  - Ensure that all locking mechanisms seat and lock properly.
  - Once locked, the locking mechanism should prevent the hook from opening.
  - Visually inspect the shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
  - Verify that points where the lanyard attaches to the snap hooks are free of defects.

- A competent person shall complete a monthly inspection of all lanyards and documentation will be maintained (see appendix B, Lanyard Inspection Checklist).

- To protect lanyards from damage, they shall be stored hanging in an enclosed cabinet or placed in a fall protection gang box.

- All lanyards involved in a fall shall be destroyed.

### 7.3 Snap hooks

- Before each use, personnel shall inspect all snap hooks:
  - Inspect each snap hook for any distortions of the hook or eye.
  - Verify there are no cracks or pitted surfaces.
  - Verify that the keeper latch is not bent, distorted, or obstructed.
  - Verify that the keeper latch seats into the nose without binding.
  - Verify that the keeper spring securely closes the keeper latch.
  - Test the locking mechanism to verify that the keeper latch locks properly.

- A fall protection competent person shall complete an annual inspection of all snap hooks and documentation will be maintained (see appendix C, Snap hooks/Carabiners Inspection Checklist).

- All snap hooks involved in a fall shall be destroyed.

- **Large “pelican”- or “rebar”-style snap hooks are prohibited for fall arrest.**

### 7.4 Self-Retracting Lanyards/Lifelines

- Before each use, personnel shall inspect self-retracting lanyards/lifelines:
– Visually inspect the body to ensure there is no physical damage.
– Make sure all nuts and rivets are tight.
– Make sure the entire length of the nylon strap/wire rope is free from any cuts, burns, abrasions, kinks, knots, broken stitches/strands, or excessive wear.
– Verify that the lanyard retracts freely.
– Test the unit by pulling sharply on the lanyard/lifeline to verify that the locking mechanism is operating correctly.
– If the manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.

- A fall protection competent person shall conduct a monthly inspection of all self-retracting lanyards/lifelines, and documentation will be maintained (see appendix D, Self-Retracting Lanyard/Lifeline Inspection Checklist).
- The fall protection competent person shall service self-retracting lanyards/lifelines per manufacturer specifications (usually 1 to 2 years).
- The fall protection competent person shall inspect self-retracting lanyards and lifelines for proper function after every fall.

7.5 Tie-Off Adapters/Anchorages

- Personnel shall inspect tie-off adapters/anchorages for integrity and attachment to a solid surface.
- A fall protection competent person shall complete an annual inspection of all tie-offs and anchorages, and documentation shall be maintained.
- All tie-offs and anchorages shall be destroyed after a fall.

7.6 Articulating Manlift/Scissor Lift

- Personnel shall inspect the articulating manlift/scissor lift before each use.
- Personnel shall inspect and service as needed per manufacturer guidelines. Manlift, scissors lifts, and safety nets shall be inspected at the beginning of each shift in use. Structural integrity of the manlift basket shall be checked per the same schedule.
- A fall protection competent person shall complete an annual inspection of the manlift basket, and documentation shall be maintained.

7.7 Horizontal Lifelines

- Personnel shall inspect horizontal lifelines before each use for structural integrity of line and anchors.
• The fall competent person shall inspect horizontal lifelines at the beginning of each shift and after any circumstance bringing the integrity of the system into question (fall, damage, relocation, and so forth).

• A fall protection competent person shall complete a monthly inspection.

7.8 Guardrails

• The fall protection competent person shall inspect temporary guardrail systems.

• Each week, the fall protection competent person shall conduct a complete structural inspection of temporary guardrail systems.

• Annually the fall protection competent person shall conduct a complete structural inspection of permanent guardrail systems. In addition, a fall protection competent person shall inspect permanent guardrail systems based on conditions/controls present.

8.0 STORAGE AND MAINTENANCE OF FALL PROTECTION EQUIPMENT

• Fall protection equipment shall be stored in a manner that prevents damage to the equipment. Never store personal fall arrest equipment in the bottom of a toolbox, on the ground, or outdoors exposed to the elements (such as sun, rain, or snow).

• Hang equipment in a manner that retains its shape in a cool, dry location.

• Always follow manufacturer recommendations for inspections.

• Clean with a mild nonabrasive soap, and hang to dry. Never force dry or use strong detergents in cleaning.

• Never store equipment near excessive heat, chemicals, moisture, or sunlight.

• Never store in an area with exposures to fumes or corrosive elements.

• Avoid dirt or other types of build-up on equipment.

• Never use this equipment for any purpose other than personal fall arrest.

• After any piece of fall protection equipment is involved in a fall, remove equipment from service immediately.

9.0 TRAINING

Document the attendance of all trainees (see appendix E, Safety Training Record).
All personnel engaged in fall protection will be trained and have the knowledge to:

- Recognize the fall hazards of/on their job sites.
- Understand the hazards associated with working near fall hazards.
- Work safely in hazardous areas by using appropriate fall protection measures.
- Understand and follow all components of this fall protection program.
- Identify and understand the enforceable OSHA and ANSI standards as well as the site-specific requirements that pertain to fall protection.

10.0 ENFORCEMENT

- All personnel are subject to discipline.
- Documentation of any violations will be kept in the person’s personnel file.

11.0 RESCUE PROCEDURES

11.1 Rescue Methods/Options of Fallen Personnel

In the unlikely event that a fall arrest occurs onsite, personnel using an articulating manlift, man basket, or ladders, where feasible, shall rescue all imperiled personnel. Local emergency services may be called as an alternative.

11.2 Communication Issues

In the event of a fall, the following people shall be notified as soon as possible.

- Rescue personnel (that is, the site’s Emergency Response Team).
- Manager/supervisor.
- Safety manager
- Fire department and emergency medical services, if necessary.

At the beginning of any work activity where fall protection is an issue, rescue plans shall be identified and discussed with all personnel as part of the job safety briefing (JSB). The general foreman and foreman with the help of the Safety Department shall develop the rescue plan(s).
All personnel involved in a fall arrest or fall shall be sent immediately for a medical evaluation to determine the extent of injuries.

12.0 FALL INVESTIGATION

All fall investigations shall be conducted by the supervision of those involved, [company name] project management, and T&PS Project Safety and Health.

The following documentation shall be completed as part of the fall investigation:

- Interviews with staff and witnesses.
- Personnel injury/accident report.
- Supervisor injury/accident report.
- Investigation report addressing the root causes and corrective actions of the incident.

13.0 PROGRAM EVALUATION

This fall protection program shall be evaluated periodically to determine its effectiveness. The following criteria shall be used to evaluate its performance:

- Accident reports.
- Number of accidents.
- Management/staff compliance with program components.
- Periodic onsite audits.
- Staff feedback and interviews.

14.0 ATTACHMENTS

- Appendix A, Full Body Harness Inspection Checklist.
- Appendix B, Lanyard Inspection Checklist.
- Appendix C, Snaphooks/Carabiners Inspection Checklist.
- Appendix D, Self-Retracting Lanyard/Lifeline Inspection Checklist.
- Appendix E, Safety Training Record.
## Appendix A – Full Body Harness Inspection Checklist

<table>
<thead>
<tr>
<th>General Factors</th>
<th>Accepted/Rejected</th>
<th>Supportive Details/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Hardware:</strong> Includes D-rings, buckles, keepers, and back pads. Inspect for damage, distortion, sharp edges, burrs, cracks, and corrosion.</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td><strong>2. Webbing:</strong> Inspect for cuts, burns, tears, abrasions, frays, excessive soiling, and discoloration.</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td><strong>3. Stitching:</strong> Inspect for pulled or cut stitches.</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td><strong>4. Labels:</strong> Inspect, making certain all labels are securely held in place and are legible.</td>
<td>Accepted</td>
<td></td>
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<td></td>
<td>Rejected</td>
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<tr>
<td><strong>5. Other:</strong></td>
<td>Accepted</td>
<td></td>
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<td></td>
<td>Rejected</td>
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<tr>
<td><strong>6. Other:</strong></td>
<td>Accepted</td>
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<td></td>
<td>Rejected</td>
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</tbody>
</table>

**Overall Disposition**

| Accepted/Rejected |  |
|-------------------|  |
| **Inspected By:** |   |
| **Date Inspected:** |   |
Appendix B – Lanyard Inspection Checklist

<table>
<thead>
<tr>
<th>Lanyard Model/Name:</th>
<th>Serial Number:</th>
<th>Lot Number:</th>
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<tr>
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<table>
<thead>
<tr>
<th>Date of Manufacture:</th>
<th>Date of Purchase:</th>
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<th>Comments:</th>
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<table>
<thead>
<tr>
<th>General Factors</th>
<th>Accepted/Rejected</th>
<th>Supportive Details/Comments</th>
</tr>
</thead>
</table>

| 1. **Hardware:** Includes snaphooks, carabiners, adjusters, keepers, thimbles, and D-rings. Inspect for damage, distortion, sharp edges, burrs, cracks, corrosion, and proper operation. | Accepted | Rejected |
| 2. **Webbing:** Inspect for cuts, burns, tears, abrasions, frays, excessive soiling, and discoloration. | Accepted | Rejected |
| 3. **Stitching:** Inspect for pulled or cut stitches | Accepted | Rejected |
| 4. **Synthetic Rope:** Inspect for pulled or cut yarns, burns, abrasions, knots, excessive soiling, and discoloration. | Accepted | Rejected |
| 5. **Energy Absorbing Component:** Inspect for elongation, tears, and excessive soiling. | Accepted | Rejected |
| 6. **Labels:** Inspect, making certain all labels are securely held in place and are legible. | Accepted | Rejected |

<table>
<thead>
<tr>
<th>Overall Disposition</th>
<th>Inspected By:</th>
<th>Date Inspected:</th>
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<th>Inspected By:</th>
<th>Date Inspected:</th>
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# Appendix C – Snaphooks/Carabiners Inspection Checklist

<table>
<thead>
<tr>
<th>Hook/Carabiner Model/Name</th>
<th>Serial Number:</th>
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<th>Date of Manufacture:</th>
<th>Date of Purchase:</th>
<th>Comments:</th>
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</table>

## General Factors

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<th>General Factors</th>
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<th>Supportive Details/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Physical Damage:</strong> Inspect for cracks, sharp edges, burrs, deformities, and locking operations.</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td><strong>Excessive Corrosion:</strong> Inspect for corrosion, which affects the operation and/or the strength.</td>
<td>Accepted</td>
<td></td>
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<tr>
<td></td>
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<td>Rejected</td>
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<tr>
<td>3.</td>
<td><strong>Markings:</strong> Inspect and make certain marking(s) are legible.</td>
<td>Accepted</td>
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<td></td>
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<td>Rejected</td>
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<tr>
<td>4.</td>
<td>Other:</td>
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<tr>
<td>5.</td>
<td>Other:</td>
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<tr>
<td>6.</td>
<td>Other:</td>
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**Overall Disposition:**

<table>
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<tr>
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<th>Rejected</th>
<th>Inspected By:</th>
<th>Date</th>
<th>Inspected:</th>
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</thead>
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*Project __________  Plant __________*

*Fall Protection Program 16 of 18*
Appendix D – Self-Retracting Lanyard/Lifeline Inspection Checklist

<table>
<thead>
<tr>
<th>General Factors</th>
<th>Accepted/Rejected</th>
<th>Supportive Details/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Impact Indicator</strong>: Inspect indicator for activation (rupture of red stitching, elongated indicator, etc.).</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rejected</td>
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</tr>
<tr>
<td>2. <strong>Screws/Fasteners</strong>: Inspect for damage and make certain all screws and fasteners are tight.</td>
<td>Accepted</td>
<td></td>
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<tr>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td>3. <strong>Housing</strong>: Inspect for distortion, cracks, and other damage. Inspect anchoring loop for distortion or damage.</td>
<td>Accepted</td>
<td></td>
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<td></td>
<td>Rejected</td>
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<tr>
<td>4. <strong>Lanyard/Lifeline</strong>: Inspect for cuts, burns, tears, abrasion, frays, excessive soiling, and discoloration. (See impact indicator section.)</td>
<td>Accepted</td>
<td></td>
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<td></td>
<td>Rejected</td>
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<tr>
<td>5. <strong>Locking Action</strong>: Inspect for proper lock-up of brake mechanism.</td>
<td>Accepted</td>
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<td>Rejected</td>
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<tr>
<td>6. <strong>Retraction/Extension</strong>: Inspect spring tension by pulling lanyard out fully and allowing to retract fully (lifeline must be taut with no slack).</td>
<td>Accepted</td>
<td></td>
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<tr>
<td></td>
<td>Rejected</td>
<td></td>
</tr>
<tr>
<td>7. <strong>Hooks/Carabiners</strong>: Inspect for physical damage, corrosion, proper orientation, and markings.</td>
<td>Accepted</td>
<td></td>
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<tr>
<td></td>
<td>Rejected</td>
<td></td>
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<tr>
<td>8. <strong>Labels</strong>: Inspect, making certain all labels are securely held in place and are legible.</td>
<td>Accepted</td>
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<td></td>
<td>Rejected</td>
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</table>

**Overall Disposition:**

- Accepted
- Rejected

**Inspected By:**

**Date Inspected:**
Appendix E – Safety Training Record

Training Topic: 
Instructor Name: 
Date of Training: 

<table>
<thead>
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<th>Name</th>
<th>Bureau/Location</th>
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<tbody>
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<tr>
<td>SIGNATURES</td>
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<td></td>
</tr>
<tr>
<td>Completed by: ___________________________ Date: ______</td>
<td></td>
</tr>
<tr>
<td>[John Doe – Company Name] Safety Manager</td>
<td></td>
</tr>
</tbody>
</table>

| Reviewed by: ___________________________ Date: ______ |
| [Tom Jones – Company Name] Project Manager |
CONTENTS

SIGNATURES

PROJECT IDENTIFICATION AND INFORMATION

1.0 Scope of Work
2.0 Affected Areas
   2.1 Footings, Piers, Walls, and Anchor Bolts
   2.2 Notification of Commencement of Steel Erection
   2.3 Site Layout
   2.4 Equipment
3.0 Training Certification/Documentation
4.0 Hazardous Nonroutine Tasks
5.0 Sequence of Erection Activity
   5.1 Structural Steel Precutage
   5.2 Unit [No.] Steel Erection
6.0 Controls to Prevent Falls from Heights
   6.1 Fabricated Work Platforms
   6.2 Aerial Work Platforms (AWPs)
   6.3 Temporary Working Platforms
   6.4 Crane-Suspended Work Platforms
   6.5 Fall Prevention Systems
   6.6 Fall Arrest Systems
   6.7 Edge Protective Systems
   6.8 Fall Protection Covers
   6.9 Emergency Recovery
   6.10 Falling Objects
   6.11 Tool Lanyards
   6.12 Securing the Load
   6.13 Containment Sheeting
   6.14 Toeboards
   6.15 Exclusion Zones
   6.16 Debris Nets
   6.17 Grating Installation
   6.18 Grating, Q-Decking, and Roofing

ATTACHMENTS

- Attachment A, Crane Operator List.
- Attachment B, JHAs and JSAs.
- Attachment C, Sketch of Scrubber Area.
- Attachment D, Sketch of Large Crane Placement.
PREFACE

This plan states ways [company name] will manage exposure to the risk of injury or death to workers during steel construction for [project name] at Plant [name].

The primary risks to the health and safety of workers involved in steel erection work are falls from heights, falling objects, or collapse of the structure due to inadequate or improper erection sequencing. Risk management, vital in the control of workplace health and safety, is a logical and systematic approach that can result in a reduction in the incidence of injury and illness.

The control measures contained in this plan shall be followed in order to address these risks and shall be implemented in priority order, known as the “hierarchy of control.”

The primary task of this plan is to determine whether the risk can be eliminated. Where eliminating a risk is not possible, a less hazardous method shall be used. If substituting a less hazardous method is not possible, consideration should be given to each of the other controls:

- Isolation and/or engineering controls.
- Administrative controls.
- The use of personal protective equipment (PPE).

These methods shall be considered in turn, starting with substitution and working down to the use of PPE, until a control or combination of controls is identified that can achieve the required reduction in risk.

The planning of work has been developed in accordance with the drawings, and specifications and the requirements of 29 CFR 1926, subpart R, Steel Erection, and but also the additional requirements laid out in T&PS Construction Environmental, Health, and Safety (EH&S) Policies and Procedures Manual standard SH-S-2A-09, Steel Erection.
## PROJECT IDENTIFICATION AND INFORMATION

[COMPANY NAME]

**[Plant Name]** Steel Erection Plan and Checklist

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
<td>xxxx xxxxxx xxxxxxxxxxxxxxxxxxxxxx</td>
</tr>
<tr>
<td>Project Number</td>
<td>1234567</td>
</tr>
<tr>
<td>Date</td>
<td>mm/dd/yyyy</td>
</tr>
<tr>
<td>Erector</td>
<td>[Company Name]</td>
</tr>
<tr>
<td>Project Engineer</td>
<td>John Doe</td>
</tr>
<tr>
<td>Competent Person</td>
<td>XXXXXXXX/[Title]</td>
</tr>
<tr>
<td>Crane Operator</td>
<td>[can be attached as a list as appendix A, Crane Operator List]</td>
</tr>
<tr>
<td>Qualified Rigger</td>
<td>XXXXX XXXXXXX/[Title]</td>
</tr>
</tbody>
</table>

...
1.0 SCOPE

This plan will cover preoutage, outage, and the remainder of steel erection for the [project name; example: FGD Desulphurization Project, Units 3 and 4] at Plant [name] located in [city, state]. The attached JHAs and JSAs are also part of this plan.

2.0 AFFECTED AREAS

- The duct laydown/fab yard is located south [adjust directions as needed] of Unit(s) [No(s).] The 21,000 and 4100 cranes will be moved from this area to the roadway located south of ID fans [No(s).] Material for the job will be transported by tractor/trailer from the south or east laydown areas where it will be staged until needed. Steelwork is also located in the east laydown located across railroad in the limestone storage area, as well as the south end of the craft parking lot. The materials contained in these areas are for utility bridge, ball mill areas, duct, structural steel duct support, and the remainder of the miscellaneous steel work for the FGD project. These components will be installed in the scrubber project area as noted in the attached drawing. The transportation of these materials will be coordinated with Southern Company Generation (Generation) during the weekly contractor’s meeting to minimize impact to other contractors and plant operations.

- Units [No(s).] ID fans, and roadway south of fans. Steel and stair towers will be moved from staging area and into place using 21,000 crane.

2.1 Footings, Piers, Walls, and Anchor Bolts

1. Has concrete reached 75 percent of sufficient strength? ☑Yes ☐No

2. Proof of strength:
   - ASTM test method result. ☐Yes ☑No
   - Engineer verification. ☑Yes ☐No

3. Were anchor bolts repaired, replaced, or modified? ☐Yes ☑No

4. Was erector notified in writing? ☑Yes ☐No

As project progresses and additional areas are released, all pertinent documentation will be requested from Southern Company before steel erection activities may begin.

2.2 Notification of Commencement of Steel Erection

Was written notification given to the steel erector? ☑Yes ☐No

2.3 Site Layout

1. Has controlling contractor provided adequate access to site? ☑Yes ☐No
2. Is laydown area firm, properly graded, well drained, and accessible? ☑Yes ☐No

Laydown and fabrication areas will be maintained by [company name].

2.4 Equipment

To include 21000 crawler, 4100 crawler, 90T Terex, 165 demag, 100T Terex, air compressors, truck and floats, aerial lifts, personnel suspended platforms, and forklifts. Other equipment may be used or substituted; revisions will be made as needed. The Manitowoc 21000 will initially be located on the north side of Units [No(s).] stack between the ID fans; 165 demag on the south side of Units [No(s).] stack between precipitators; Manitowoc 4100 will be used in fabrication and laydown areas to support fabrication and loading operations.

Will critical lifts be performed? ☑Yes ☐No

Are lift permits attached for critical lifts? ☐Yes ☑No

Every effort will be made to submit critical lift plans 15 days prior to the lift according to Generation requirements for their review and concurrence.

3.0 TRAINING CERTIFICATION/DOCUMENTATION

1. Are all personnel properly trained for performing steel erection activities including this plan? ☑Yes ☐No

2. Are all personnel properly trained for the use of fall protection system? ☑Yes ☐No

3. Documentation of training available upon request? ☑Yes ☐No

4. Will fall protection systems be designed by a qualified person? ☑Yes ☐No

5. Is a competent person onsite at all times? ☑Yes ☐No

List of qualified and competent persons:

- Qualified person for site erection plan: ___ John Doe
- Qualified person for fall protection system design: John Doe
- Qualified rigger: XXXXXX/ IW General Foreman
- Crane operator: ___ See appendix A, Crane Operator List
- Crane inspector: ___ Operator Foreman XXXXXX
- Fall protection competent person: ___ Safety Sam
4.0 HAZARDOUS NONROUTINE TASKS

1. Are job safety analyses (JSA) performed on all nonroutine hazardous tasks? ☑Yes ☐No
2. JSAs attached? ☑Yes ☐No
3. Is any asbestos-containing materials involved? ☐Yes ☑No
4. Do any lead contamination issues exist? ☐Yes ☑No

CAUTION

During construction, if any asbestos or lead issues are encountered, Southern Company Generation management shall be notified immediately, and an appropriately trained contractor shall be used to remediate any contamination.

5.0 SEQUENCE OF STEEL ERECTION ACTIVITY

An in-depth sequence of events for the preoutage and outage has been initially provided below. Additional sequences for steel erection will be discussed with client in the weekly contractor's meeting before work begins. The sequence of events will be provided in the project schedule updates transmitted to Southern Company Generation. This method is the most efficient way due to the dynamic nature of construction and the necessary coordination activities among client, contractors, and startup personnel. The project schedule is a living document that will guide all these activities among the different parties involved.

5.1 Structural Steel Preoutage

5.1.1 Modify Steel Base/Cover Plates (ID Fan) [mm/dd/yyyy] to [mm/dd/yyyy]

Installation of strap plates and base plates will occur. We will also be grinding paint from the edges of the pieces in order to obtain a proper weld. This activity was a change that is documented as Field Change Notice 001. Also, due to a piece size bust on the base plates and strap plates, Field Change Notice 002 was submitted. FCN 002 includes Evans construction cutting concrete from around the piers, to be replaced after the strap plates are installed. It also includes machining of base plates in order to account for the translation and rotation of some of the columns off their center.

5.1.2 Install Support Steel

a. Column Extensions [mm/dd/yyyy] to [mm/dd/yyyy]

Install column extensions on columns.
b. Beef up Support Steel Beams (ID Fan)  

[mm/dd/yyyy] to [mm/dd/yyyy]

Install WTs and beam stiffeners from FH line to FK line and from F3.9 to F7. Remove old diagonal bracing and install new bracing. One piece will be removed at a time and then replaced with a new diagonal.

c. Erect Skid Air Platform  

[mm/dd/yyyy] to [mm/dd/yyyy]

The platform located at the 778-ft elevation will be erected to serve as a platform for the seal air skid and hydraulic skid for service to the Unit [No.] damper. This work will also include installation of the grating and handrails.

d. Set Columns on Extended steel  

[mm/dd/yyyy] to [mm/dd/yyyy]

Angle clips will be installed on the FK line for the new support steel. Cover plates and five column extensions on FL and FM lines will be installed.

e. Erect Elevation 811 Damper Support  

[mm/dd/yyyy] to [mm/dd/yyyy]

The 811-ft elevation damper support steel will be installed. Some of this support steel will be installed preoutage and some outage as indicated in the provided drawings.

f. Tie-in Steel Elevation 811 to Columns  

[mm/dd/yyyy] to [mm/dd/yyyy]

Installation of three columns on the FL line and two columns on the FM line will take place. The beams and bracing will be installed parallel with this action in order to provide support. Also the beams and bracing between the new columns and the existing steel north of the FL line will be installed during FL column installation.

g. Erect E1 Columns  

[mm/dd/yyyy] to [mm/dd/yyyy]

Columns at E1, F1/EJ will be installed. This activity will be paralleled with actions 2i, Erect E2 Columns, and 2j, Erect E1-E2 Bracing.

h. Stair Tower at Damper  

[mm/dd/yyyy] to [mm/dd/yyyy]

The stair tower will be prefabricated in the east laydown yard between [date] and [date], then transported by a gold-hopper and lifted into place using the 21000. (We may have to stick-build the stair tower depending on lifting angles and obstructions in a lifting path of the prefabricated stair tower.)

i. Erect E2 Columns  

[mm/dd/yyyy] to [mm/dd/yyyy]

Columns at E2, FM/EJ will be installed. This activity will be paralleled with actions 2g, Erect E1 Columns, and 2j, Erect E1-E2 Bracing.
j. Erect E1-E2 Bracing [mm/dd/yyyy] to [mm/dd/yyyy]

Beams and bracing will be installed in parallel with this activity up to the first splice. Then beams and bracing will be installed up to the top of steel. This activity will parallel with actions 2g, Erect E1 Columns, and 2i, Erect E2 Columns.

k. Stair Tower E2 [mm/dd/yyyy] to [mm/dd/yyyy]

Stair-tower at E2 will be installed piece by piece. (The stringers will be left out from the ground up to the first elevation of steel in order for the crane and steel to pass through.) After the E1-E2 columns, beams, and bracing have been installed, the stringers will be added to the stair tower. This activity will occur between [mm/dd/yyyy] and [mm/dd/yyyy].

l. Erect E2-F Line Truss [mm/dd/yyyy] to [mm/dd/yyyy]

The truss section will be prefabricated in two sections. The first to be installed will be line F6.9 to E1. After it is installed, line F5 to E1 will be installed. Finally, the platforms from the E2 line to the diverter damper stair tower will be installed.

5.2 Unit [No(s).] Steel Erection

5.2.1 Install Support Steel

a. Unit [No(s).] FGD support steel

Structural and miscellaneous steel erection will start on the west end tying into the unit [No.] outage steel. It will then be erected toward the east to the booster fans. The columns, beams, and braces will be erected with the use of various cranes depending on the accessibility of equipment. The truss sections over the Unit [No.] precipitator will be erected in sections due to its configuration. A critical lift plan will be developed for the stair tower on the south side of the damper and any other critical lifts that might occur.

b. Utility bridge

The utility bridge will be preassembled in the laydown yard and hauled to its location for erection. This activity will consist of bents and truss sections with a few braces added after the bents are stood and trusses set. Lift plans will be submitted as required. The truss sections over the roads will be left out until all the large loads are transported to the absorber and stack area. The utility bridge passes over both new and existing equipment. Swing paths will be coordinated so that only a minimal amount of loads will be passed over such equipment.

c. Ball mill structure

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area.
d. Unit [No.] booster fan steel

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area.

e. Unit [No.] absorber support steel

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area. Coordination with Generation and other subcontractors will be of high importance for this structure. Access for personnel, cranes, and material will be preplanned and discussed with all parties prior to start of work.

f. Gypsum dewatering structure

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area.

g. Unit [No.] outage

Similar to the work performed for Unit [No.]. The cover plates will be added to the existing steel and bracing changed out. During the outage, the existing steel will be removed and new steel added for the new duct and damper support. Existing plant equipment consists of Unit [No.] precipitator and fans. Overhead work in these areas will be barricaded off, and any closure of plant access will be coordinated with Generation.

h. Unit [No.] absorber steel

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area. Coordination with Generation and other subcontractors will be of high importance for this structure. Access for personnel, cranes, and material will be preplanned and discussed with all parties prior to start of work.

i. Unit [No.] booster fan steel

The steel will be erected in individual pieces except for isolated sections that will be preassembled. Special precautions will be taken for the new plant equipment in this area.

6.0 CONTROLS TO PREVENT FALLS FROM HEIGHTS

The control measures to prevent death or injury from a fall will be in place before work commences. Persons carrying out steel erection work at a height of 4 ft or more may be exposed to the risk of death or injury from falling. Several control measures are
available in these circumstances, and more than one control measure may be necessary. Ground level prefabrication will also be considered as a fall prevention strategy. To reduce the need to work at heights, some alternative means of erection are:

- Construct as much of the steelwork as possible at ground level or from erected floor slabs or decks in the structure. This alternative has been taken into consideration during the planning of the work.

- Where possible, a lifting sling or device will be used to release from floor level by the use of long slings, remote release shackles, or other suitable devices.

- The use of fall-arrest harnesses is not the preferred control measure for persons working on steel construction as a harness does not actually prevent a fall from occurring. Wherever possible and practicable, the use of methods that reduce the risk of a person falling (for example, perimeter guardrail or aerial work platforms) will be selected.

Control measures that may prevent the risk of death or injury from falls from heights include:

- Work platforms.
- Fall prevention systems.
- Fall arrest systems.
- Edge protection systems.
- Fall protection covers.

6.1 Fabricated Work Platforms

These platforms can be used in many locations as they can be designed to fit a variety of beam and column configurations. A work platform will be secured against uplift or displacement to a structure and installed with edge protection systems. The area of the platform will be of a size and strength to carry the tools, materials, and persons required to work from it.

6.2 Aerial Work Platforms (AWPs)

An elevating work platform is a telescoping, scissor, or articulating device or any combination thereof used to position personnel, equipment, and materials at work locations, and to provide a working area for persons elevated by and working from the platform.

AWPs include scissor lifts, boom lifts, and truck-mounted AWPs (travel towers). AWPs are primarily designed so that a person can work at an elevated position, on a structure from within the confines of the AWP platform or basket.

AWPs are regularly used for steel construction. They provide an efficient access system and are preferable to other methods that involve the use of fall-arrest systems, because
they reduce the risk of a fall occurring. Both boom lifts and scissor lifts are used in steel erection.

AWPs are used as access for workers to help position steelwork as it is being lifted by a crane. They are also used by workers when installing and tightening bolts.

AWPs are not specifically designed for a person to move from the platform to gain access onto another elevated surface, although they are sometimes used in this application instead of other more conventional forms of access, such as scaffold stair access towers.

In some situations, AWPs may not be suitable for providing access/egress onto a roof or structure due to factors such as the following.

- The number of workers required to access the roof/structure may be in excess of what an AWP could safely transport in case of an emergency evacuation from the roof/structure.
- The platform of the AWP can move as the person gets in and out with the potential for the person to fall through the gap when the platform is beside the roof/structure.
- The AWP can be removed from the access area while persons are located at height leaving them stranded.
- The stability of the unit relies on firm and level ground, which is not the case on some construction sites due to environmental conditions.

In comparison with stair access, an AWP is not available for access at all times because it takes time to raise and lower persons. This issue becomes a greater problem when more workers are required to work on the roof or structure. When an AWP has been selected to provide access for workers onto a roof/structure, the system of access will include the following factors to ensure safe access:

- The AWP should not be used for any other purpose and should not be driven away from the building.
- The area around the AWP should be free of vehicular traffic.
- The ground condition should be suitable for the use of the AWP.
- The AWP should not be used near live electrical power lines.
- All operators of AWPs should be competent and have documented training.
- A competent person should be available at ground level to lower the platform in case of malfunction. However, in this situation, all personnel will be removed with the use of another AWP before using ground controls.
- When the AWP platform is raised so that it is next to the roof/structure edge, the gap between the landing and the platform should not exceed 4 in. The preferred method will be to land the platform/basket on structure if possible.
- The platform should be secured against sideways movement as necessary (that is, the platform should not move as workers get on and off, which may be more of an
issue with smaller AWPs). When securing the platform, use a restraint system that does not snag on the building when the platform is lowered.

Safe access and egress should be provided by either the use of a safety harness by workers, or a system that will prevent a worker entering or leaving the AWP from falling off or through the structure. The latter at a minimum will require the use of a double lanyard system.

All persons in boom-type and scissor-type AWPs shall wear a full body harness and a double energy-absorber-type lanyard attached to an anchorage point in the basket of the AWP.

In some situations, AWPs may be used to lift lighter steelwork (for example, purlins, girts, and bridging), where the AWP manufacturer states that this is an acceptable practice.

The following points should be noted when lifting steelwork with an AWP.

- Total load on the AWP including workers and materials must not exceed the rated capacity, sometimes referred to as safe working load (SWL), of the platform.
- Steelwork must not be loaded so that it will damage the AWP in any way or become imbalanced.
- Where an AWP is used to lift steel components, the steelwork should not be loaded onto the AWP guardrails, which may damage the guardrails or allow the steelwork to roll off the platform.
- The AWP must never be used to force the steelwork into place. Such action places excessive load on the unit.
- The working surface for the AWP must be level, firm, have clear access, and no stepup or stepdown from placement area.
- AWPs used for steel erection must be adequate for the intended use and the effects of wind loading must be considered.
- Workers in boom-type and scissor-type AWPs must use full body harness with a double energy-absorber-type lanyard attached to an anchorage point in the basket of the AWP.

6.3 Temporary Work Platforms

Temporary work platforms (angle wings) will be fitted to members at ground level before erection or lifted into position following the erection of steelwork.

6.4 Crane-Suspended Work Platforms

- The use of a crane or other similar hoisting equipment to hoist personnel is prohibited, unless the use of other means would be more hazardous or is not possible because of structural design or worksite conditions.
• The [Company Name] project manager and EH&S manager shall determine that there is not a safe alternative method to perform the needed work such as ladders, scaffold, and aerial lifts.

• After determining that a crane-suspended personnel platform is the only safe method of accomplishing the job, the following Generation forms shall be completed and transmitted to Generation for their review and concurrence:
  
  ✓ Evaluation of Alternate Lifting Methods.
  ✓ Rigging and Lift Plan.
  ✓ Authorization for the Use of a Suspended Personnel Platform.
  ✓ Appropriate daily crane inspection report (before making lift).

All the procedures, standards, and guidelines of Southern Company Generation T&PS Construction Environmental, Health, and Safety (EH&S) Policies and Procedures Manual, specifically procedure SH-2A-11, Crane-Suspended Personnel Platforms, shall be adhered to at all times. In the event of a conflict between owner, state, Federal, or local regulations, the most stringent will be followed.

6.5 Fall Prevention Systems

Personal fall prevention systems that prevent a person from falling are preferred over systems that arrest a person when the person has fallen. An example of a fall prevention system is a travel restraint device where a person is tethered to an anchorage point to restrain the person from reaching an unprotected edge. The anchorage points shall be capable of supporting the intended load.

6.6 Fall Arrest Systems

A fall arrest system is designed to arrest the fall of a person and consists of a full fall arrest harness connected to a lanyard assembly and attached to a fall arrest static line or an anchorage point where there is a risk of free fall. The use of fall arrest harnesses is not the preferred control measure for persons working on steel erection as these do not actually prevent a fall from occurring. Wherever possible and practicable, a method will be selected which reduces the risk of a person falling (for example, perimeter guardrail or AWPs).

The use of a fall arrest harness system has limitations:

• Because individual fall arrest anchorages require a capacity of at least 5,000 lb, locating or designing anchorage points that will have adequate capacity to resist fall-arrest loads can be difficult.

• Locating fall arrest anchorages points on beams during steel erection is not ideal because the beam is usually the highest part of the structure. As anchorage points generally cannot be located directly above head height, the distance a person falls will be greater.
Most manufacturers of fall arrest inertia reels state that the reel is to be located directly above head height, with the user working in a small arc below the device, which can rarely be achieved on steelwork.

In the event of a fall, the fall arrest line can sometimes come in contact with an edge and may fail in some situations.

The system requires substantial clearance distances below the working surface to ensure that the worker does not hit the ground or other obstruction prior to the fall being arrested.

The system requires high levels of training and supervision to ensure its safe use. It will also require the active participation and cooperation of users to operate effectively.

Ropes and lanyards can become entangled and snagged on obstructions, which can be a particular problem when a number of workers are on the work area.

It can be difficult to have an effective rescue procedure to ensure users are rescued before injury occurs without putting others at risk. Persons suspended in harnesses after falling can lose consciousness or suffer modified cardiac rhythm if not rescued promptly.

Even when a system is set up correctly, a person falling may be injured. The system does not prevent a fall from occurring; rather, it prevents the user, should he or she fall, from colliding with the ground or an obstruction underneath. The user may still receive some injury as a result of the fall due to factors such as:

- Swinging into an obstruction prior to the fall being arrested.
- Falling in an unusual manner (for example, sideways) so that the fall-arrest force is not transmitted to the body in the best possible manner.
- The harness not operating as designed because the user is in an irregular shape (for example, obese).

Fall protection may be provided by the use of fall arrest harnesses where other control measures cannot be used. Fall arrest harnesses, lanyards, and static lines provide a degree of fall protection, provided the following points are taken into account:

- All persons who may be exposed to the risk of falling, such as riggers, should be properly trained and supervised in the use of the equipment.
- All persons who may be exposed to the risk of falling, such as riggers using fall protection such as a fall arrest harness, should not work in isolation.
- A lanyard assembly should be as short as possible to minimize the pendulum effect should a person fall.
- The fall arrest anchorage point should be located so that the lanyard can be attached before the user moves into a position where he or she would be at risk from a fall. Anchorage points should have a force capacity of 5,000 lb.
- Traveling anchorages should also be located so that the lanyard can be attached to a traveling anchorage before the user moves into position.
• The components of a fall arrest system should be compatible. The use of noncompatible components could lead to ineffective equipment that presents a risk of the user being injured from a fall.

6.7 Edge Protective Systems

Temporary periphery guardrails when installed shall be used for the smallest possible time period only. Proper planning shall include the timely delivery and installation of the permanent guardrail system, if applicable.

6.8 Fall Protection Covers

All holes and openings, other than lift shafts and stairwells, will be protected to prevent persons falling. A fall protection cover is a protective structure placed over a hole or opening to prevent a person from falling through the hole or opening. A fall protection cover should be capable of supporting the impact of a person falling onto it. Covers shall be made of ¾-in. plywood or equivalent if one dimension of the opening is 18 in. or less, otherwise, 2-in. lumber or doubled ¾-in. plywood or equivalent is required. Covers shall be marked with the words HOLE COVER legible and clearly visible.

Where a fall protection cover is used on an opening, it should be secured against movement and should not be used as a working platform.

6.9 Emergency Recovery

An emergency recovery system shall be in place to quickly retrieve a fallen worker whenever a fall arrest harness is used. Persons with responsibilities should ensure that adequate training and supervision are provided to allow effective recovery when required.

Research indicates that persons wearing a fall arrest harness can lose consciousness or suffer modified cardiac rhythm in 2 to 12 minutes after a fall. The methods listed below will be used to accomplish emergency rescue by [Company Name] employees. In addition, these methods may also be supplemented by local EMS and Plant [name] Emergency Rescue Team.

- Self-rescue
- Personnel basket
- Hoist
- Emergency response team
- Stair tower
- Aerial lift
- Others________________

6.10 Falling Objects

Work activities such as working at heights and lifting loads over work areas are likely to produce falling objects. Work shall not commence until controls are put in place to prevent the risk of injury to workers and other persons from falling objects.
Control measures that shall be used to prevent falling objects and resultant injuries in steel construction are:

- Tool lanyards.
- Securing the load.
- Containment sheeting.
- Toeboards.
- Exclusion zones.
- Debris nets.

### 6.11 Tool Lanyards

A tool lanyard is a short rope or webbing used to secure tools and equipment to an anchorage point to reduce the risk of injury from a failing object. The tool lanyard may be attached to an anchorage point such as the person using the tool or around a column or beam.

A lanyard should be made from material such as synthetic fiber, natural fiber, or steel rope or webbing that will maintain the required strength and resistance to abrasion under harsh conditions. Consideration should be given to the length of rope or webbing used to secure a tool, especially if the tool is to be used near the edge of a working platform and if other persons are working below. For example, a tool lanyard attached at the wrist should have a length no longer than 24 in. This length will ensure that if the tool is dropped, the lanyard would not allow the tool to hit a person working below. The length of the lanyard should also be kept to a minimum to reduce the risk of the line snagging as the worker moves about.

For example, a rigger who is erecting steel may secure working tools to his or her body by a lanyard to prevent a person below from being hit by a dropped tool.

### 6.12 Securing the Load

Steelwork will be stored onsite in such a way that it cannot fall on workers or cause damage to equipment or plant property. Where steelwork is stacked, the stacks should be stable, and safe access will be available when workers are required to sling a load.

Where steelwork is strapped together, caution shall be exercised when releasing the strapping. The strapping may whip back and cause an injury, or the bundle can fall apart and injure workers.

Before lifting any steelwork, the qualified rigger will sling the load to be lifted and attach tag lines to the ends of the load. Crane operators and riggers will give audible warning with crane horn and portable air horns before lifting loads near persons.

When transferring lifts from a horizontal to a vertical position, care will be taken to avoid unrestrained movement of the lower end. The use of lifting beams may be necessary during lifting and positioning of some members to ensure member stability.
6.13 Containment Sheeting

If containment sheeting is used, it will be fixed to the perimeter of the structure or working surface to prevent a person or objects, such as building materials, from falling into an area accessed by persons at or near the workplace. The working surface/structure will be sheeted with one or more of the following materials:

- Timber or plywood.
- Metal or synthetic sheets.
- Metal or synthetic mesh.

Where containment sheeting is used, the sheeting will extend to a height that will prevent falling objects. When selecting containment sheeting, the following factors will be considered:

- Whether the sheeting is capable of supporting the loads to be imposed on it.
- Whether the sheeting is capable of containing materials and equipment, such as nuts, bolts, and tools.
- The likely forces that will be imposed on the structure from wind effects.

6.14 Toeboards

A toeboard is a vertical barrier that will be used to prevent the fall or displacement of tools or materials. Toeboards where necessary will be used to prevent objects falling into an area accessed by persons at or near a workplace. Toeboards may be constructed with timber or metal and will be securely fixed to the work surface and extended a nominal minimum of 4 in. above the work surface. The height of the toeboard should increase as the size and height of the materials or equipment stored near the edge increases. The gap between the toeboard and the work surface will not be greater than ¼ in.

6.15 Exclusion Zones

Proper flagging or barricades with suitable signage will be erected around the perimeter of an exclusion zone to exclude personnel from the area under which the riggers and connectors are erecting steelwork, reducing the risk of personnel being hit by falling objects.

6.16 Debris Nets

Where skeleton steel erection is in progress and other overhead protection methods are not feasible, debris nets shall be installed directly under any erection work being performed. The nets shall be capable of supporting the anticipated loads imposed on them by potential falling objects. **Debris nets are not for fall protection of employees.**
6.17 Grating Installation

- All leading edges of platforms, catwalks, and stair landings shall be protected by means of periphery wire rope cable guardrail or permanent guardrail systems. Temporary guardrail systems will be constructed of ½-in. wire rope cable secured with Crosby clamps.
- Fall protection will follow the [Company Name] fall protection plan and the work methodology contained in this steel erection plan.
- Handling and installation:
  - A hi line shall be installed with a grate block and chain fall affixed to the hi line to assist in installation of grating or,
  - When a hi line is not feasible, grating hooks shall be used to handle grating.
  - Grating shall be fastened by means of saddles and screws (furnished by fabricator). Pilot holes shall be drilled for self-threading screws and saddles installed per design. Any panel less than 6 ft requires a minimum of 4 clips. Panels larger than 6 ft require a minimum of 5 clips for every 6 ft of panel.

6.18 Grating, Q-Decking, and Roofing

- Q-decking: To be developed and submitted prior to installation.
- Roofing: To be developed and submitted prior to installation.

NOTE
At this stage of the project, not all documentation is available to design an adequate Q-decking plan for the ball mill area.

7.0 KEY CONTACT

8.0 QUALITY RECORDS

9.0 ATTACHMENTS

- Attachment A, Crane Operator List.
- Attachment B, JHAs and JSAs.
- Attachment C, Sketch of Scrubber Area.
- Attachment D, Sketch of Large Crane Placement.
### Attachment A – Crane Operator List

<table>
<thead>
<tr>
<th>NAME</th>
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</tbody>
</table>
Attachment B – JHAs and JSAs
Attachment C – Sketch of Steel Erection Area
Attachment D – Sketch of Large Crane Placement
Form 2A-10.1, Rigging and Lifting Plan
For Critical Lifts and Crane-Suspended Personnel Platform Lifts (Critical Lift)

Beam clamps as a below-the-hook rigging point shall be restricted by Southern Company Generation Projects and Construction except in rare cases when a Deviation Form has been properly completed and approved BEFORE the lifting operation. Contractors should have Deviation Forms developed and approved by Southern Company prior to implementation. See SH-1K Procedure and Standard Deviation Approval Process. The use of beam clamps as a below-the-hook rigging point on a load is prohibited unless specifically designed by the manufacturer and approved by Southern Company.

Location: ________________________________ Date of lift: ________________________________

Load description: ________________________________

Does this lift involve lifting personnel? ☐ yes ☐ no

Lift description:

**A. WEIGHT**

<table>
<thead>
<tr>
<th>Description</th>
<th>lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weight Empty (load or basket)</td>
<td></td>
</tr>
<tr>
<td>2. Weight of Headache Ball or block</td>
<td></td>
</tr>
<tr>
<td>3. Weight of Lifting Bar</td>
<td></td>
</tr>
<tr>
<td>4. Weight of Slings &amp; Shackles</td>
<td></td>
</tr>
<tr>
<td>5. Weight of Jib</td>
<td></td>
</tr>
<tr>
<td>6. Weight of Headache Ball on Jib</td>
<td></td>
</tr>
<tr>
<td>7. Weight of Cable (Load Fall)</td>
<td></td>
</tr>
<tr>
<td>8. Allowance for Unaccounted Material in Equipment (10% of weight)</td>
<td></td>
</tr>
<tr>
<td>9. No. of people lifted x 250</td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
</tr>
<tr>
<td>Total Weight</td>
<td></td>
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</tbody>
</table>

Source of Load Weight: ________________________________

(Name Plate, Drawings, Calculated)

Weights Verified By: ________________________________

**B. JIB**

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Erected  ☐  Stored ☐</td>
<td></td>
</tr>
<tr>
<td>1. Is Jib to be used? ☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>2. Length of Jib</td>
<td></td>
</tr>
<tr>
<td>3. Angle of Jib</td>
<td></td>
</tr>
<tr>
<td>4. Rated Capacity of Jib (From Chart)</td>
<td>☐ ☐</td>
</tr>
</tbody>
</table>

**C. CRANE PLACEMENT**

<table>
<thead>
<tr>
<th>Question</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Any Deviation from Smooth Solid Foundation in the Area?</td>
<td></td>
</tr>
<tr>
<td>2. Electrical Hazards in Area?</td>
<td></td>
</tr>
<tr>
<td>3. Obstacles or Obstructions to Lift or Swing?</td>
<td></td>
</tr>
<tr>
<td>4. Swing Direction and Degree (Boom Swing)?</td>
<td></td>
</tr>
</tbody>
</table>

**D. CABLE**

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Number of Parts of Cable</td>
<td></td>
</tr>
<tr>
<td>2. Size of Cable</td>
<td></td>
</tr>
</tbody>
</table>

**DI. SIZING OF SLINGS**

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sling Selection</td>
<td></td>
</tr>
<tr>
<td>a. Type of Arrangement</td>
<td></td>
</tr>
<tr>
<td>b. Number of Slings in Hook-up</td>
<td></td>
</tr>
<tr>
<td>c. Sling Length</td>
<td></td>
</tr>
<tr>
<td>d. Rated Capacity of Sling</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>2. Shackle Selection</td>
<td></td>
</tr>
<tr>
<td>a. Capacity (tons)</td>
<td></td>
</tr>
<tr>
<td>b. Shackle attached to load by:</td>
<td></td>
</tr>
<tr>
<td>c. Number of shackles</td>
<td></td>
</tr>
</tbody>
</table>
F. CRANE

1. Type of Crane ________________
2. Crane Capacity ________________ Tons
3. Lift Arrangement
   a. Max Distance-Center of Load to center pin of crane ________________ ft.
   b. Length of Boom ________________ ft.
   c. Angle of Boom at pick-up ________ degrees
   d. Angle of Boom at set ________ degrees
   e. Rated capacity of crane under most severe lifting conditions (From Chart)
      1. Over Rear ________ lbs
      2. Over Front ________ lbs
      3. Over Side ________ lbs
4. From chart – Rated capacity of the crane for the Lift
5. Max. Load on Crane ________ lbs.
6. Lift is of Crane’s Rated Capacity ________

G. PRE-LIFT CHECKLIST

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>
1. Matting Acceptable | | |
2. Outriggers fully extended | | |
3. Crane in good condition | | |
4. Swing Room | | |
5. Head Room Checked | | |
6. Max. Counterweights used | | |
7. Tag line used | | |
8. Experienced Operator | | |
9. Experienced Flagman (Designated) | | |
10. Experienced Rigger | | |
11. Load Chart in Crane | | |
12. Wind Conditions: ________________________
13. Crane Inspected By:: ________________________
14. Functional Test of Crane By: ________________________

SPECIAL INSTRUCTIONS OR RESTRICTIONS FOR CRANE, RIGGING, LIFT, ETC. ____________

DIAGRAM CRANE AND LOAD PLACEMENT

DIAGRAM RIGGINGS CONFIGURE

SIGNATURE OF JOB SUPERVISOR DATE SIGNATURE RIGGING SUPV. DATE

P.E. stamp and signature here (when required):
This form is intended as a prelift work planning aid. This form is to be completed and kept with the JSA for all noncritical lifts involving a crane and all noncritical lifts greater than 500 lb for drum hoists, chain hoists, lever hoists, and grip hoists or any lift involving beam clamps or plate clamps (plate dogs) regardless of the weight involved.

A. GENERAL (complete this section for all lifts)

<table>
<thead>
<tr>
<th>Project:</th>
<th>Date:</th>
<th>Form Completed by (printed name):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift Director (printed name):</td>
<td></td>
<td>Qualified Rigger (printed name):</td>
</tr>
</tbody>
</table>

All personnel involved in rigging qualified and trained in the use and limitations of rigging to be used? ☐ Yes ☐ No

All personnel involved in lift are aware of hazards and their specific duties related to this lift? ☐ Yes ☐ No

Method of load weight verification: __________________________________________________________________________

Verified by (Name): __________________________________________________________________________

All rigging and lifting equipment, including mounting points, have been inspected and documented? ☐ Yes ☐ No

Signal person meets qualification requirements listed in 29 CFR 1926.1428 and is documented? ☐ Yes ☐ No

Lifting device ☐ Crane (mobile) ☐ Crane (overhead) ☐ Crane (Tower) ☐ Crane (truck mounted) ☐ Hoist (chain, lever, grip, drum)

☐ Other __________________________________________________________________________

---

B1. Use This Section for Crane Lifts

1. Crane capacity as configured:
   1a. Boom Length ___________
   2. Weight of load to be lifted: ___________
   3. Weight of headache ball: ___________
   4. Spreader Bar: __________________________________________________________________________
   5. Slings: _________________________________________________________________________________
   6. Shackles: _______________________________________________________________________________
   7. Weight of Jib (☐ Erected ☐ Stored ☐ N/A): ___________
   8. Lifting Lugs: ___________________________________________________________________________
   10. Total Weight (add lines 2 through 9): ___________
   11. Radius: ________________________________________________________________________________
   12. Crane Capacity at Radius: ___________
   13. Percentage of load chart (line 10 divided by line 11): __________ %

Note: A total of 75% or greater will constitute a critical lift.

B2. Use This Section for Crane Lifts

1. Current annual inspection? ☐ Yes ☐ No
   2. Current daily inspection? ☐ Yes ☐ No
   3. Operator (☐ Crane specific qualification and documentation): ☐ Yes ☐ No
   4. Signaling method to be used: ☐ Hand ☐ Radio
   5. Set-up area / crane level? ☐ Yes ☐ No
   6. Ground conditions acceptable? ☐ Yes ☐ No
   7. Electrical hazards mitigated? ☐ Yes ☐ No
   8. Outrigger set / tires clear of ground? ☐ Yes ☐ No
   9. Mats in place? ☐ Yes ☐ No
   10. Max ground bearing pressure? __________
   11. GBP below crane mats? __________
   12. Is jib being used? ☐ Yes ☐ No
   13. Jib length? __________
   14. Degree of offset? __________
   15. D/d ratio of slings are acceptable? ☐ Yes ☐ No
   16. Load center of gravity (COG) identified? ☐ Yes ☐ No

---

C. Use This Section for Drum Hoist, Chain Hoist, Lever Hoist, Grip Hoist 500 lb to 49,999 lb or any lift involving beam clamps or plate clamps regardless of the weight involved.

1. Hoist inspection completed, documented, and satisfactory? ☐ Yes ☐ No
   2. Capacity of rigging attachment point has been verified sufficient to support the capacity of the hoist? ☐ Yes ☐ No
   3. Weight of all rigging on and below attachment point. __________ lb
   4. Weight of load __________ lb
   5. Lowest single capacity of all rigging used. __________ lb (shackle, sling, swivel hoist, etc.)
   6. Drum hoist rope size. __________ Capacity for single part. __________ lb
   7. Number of parts of line used on drum hoist. __________ Capacity with parts used? __________ lb ☐ N/A
   8. Drum hoist rope clear of all interferences? ☐ Yes ☐ No ☐ N/A ☐ Rope lubricated? ☐ N/A

Note: Rope must not contact obstruction during use. Adjust snatch block rigging for required clearances. ☐ Yes ☐ No ☐ N/A

9. Calculated distance from center line of drum hoist to fair lead sheave. __________ ft. __________ in. ☐ N/A

Note: Distance across drum hoist from inside of flange, to inside of flange multiplied by 19 in. will give the proper distance needed for line 9. Example – (20 in. drum) 20 in. x 19 in. = 380 in. / 12 in. = 31 ft.

---

D. Component WLL: (List rigging appliances used for all lifts)

1. Sling sizes / capacities:
   1a. Tension in slings at applied angles: __________________________________________________________________________
   2. Shackle sizes / WLL: __________________________________________________________________________
   3. Spreader Bar WLL: __________________________________________________________________________
   4. Miscellaneous Rigging WLL (list each): __________________________________________________________________________

Softeners shall be used at all areas applicable. Tag lines are required to control and maneuver loads. See reverse side for beam clamp usage requirements.

Any person involved in the lift has the right and obligation to stop the lift at any time if an unsafe condition is present or should an unsafe condition become apparent during the lift.
Noncritical
- Up to 4,999 lb involving cranes.
- From 500 lb to 4,999 lb for lifts involving hoists, lever hoists, or grip hoists.

Any one or more of the following characteristics:
- Load weights up to 4,999 lb.
- Multiple hoisting (noncrane) equipment is to be used for a common load.
- Repetitive lifts.

Noncritical
- 5,000 lb to 49,999 lb

Any one or more of the following characteristics:
- Load weights of 5,000 lb up to 49,999 lb.
- Multiple hoisting equipment is to be used for a common load.
- Two independent loads are lifted separately and are to be joined together while suspended from hoisting equipment.

Lift planning may be performed by rigging and lift supervisor and/or qualified rigger. See 4.4, Planning (Noncritical Lift).
- Prelift review meeting must be conducted by the qualified rigger, rigging and lift supervisor, or lift director. See 4.5, Prelift Meeting (Noncritical Lift).
- Execution of lift must be supervised and or directed by the rigging and lift supervisor or qualified rigger that has been designated by their employer as a lift director. See 4.6, Execution (Noncritical Lift).
- A post-lift meeting must be performed as prescribed. See 4.7, Post-Lift Actions (Noncritical Lift).

**NOTE** – The use of this form is not required for hand-rigging activities that involve drum hoists, chain hoists, lever hoists, and grip hoists for weights below 500 lb, unless the lift involves the use of a beam clamp or plate dog.

**GENERAL REQUIREMENTS**
All the following items shall be adhered to in all lifting activities regardless of applicable lift category (detailed above):
- All personnel involved shall be trained in the safe operation and inspection of all applicable lifting and rigging equipment.
- All pad eyes/lifting lugs shall be engineered to include application requirements (that is, weld amount, base metal requirement, etc.) and all pin holes (for shackles) shall be drilled. No other type method is acceptable.

**PLANNING AND SETUP OF LIFTING OPERATIONS**
*Beam clamps as a below-the-hook rigging point shall be restricted by Southern Company Generation Projects and Construction except in rare cases when a Deviation Form has been properly completed and approved BEFORE the lifting operation. Contractors should have Deviation Forms developed and approved by Southern Company prior to implementation. See SH-1K Procedure and Standard Deviation Approval Process. The use of beam clamps as a below-the-hook rigging point on a load is prohibited unless specifically designed by the manufacturer and approved by Southern Company.*

The lift director shall:
- Ensure load weight verification by vendor drawings, bill of lading documents, or reliable resource recognized as trustworthy by site management team.
- Identify the lifting activity and determine the scope of work and how to perform the lift.
- Ensure the risks associated with the scope of work have been assessed and documented for each risk (JSA).
- Ensure the steps taken to minimize or alleviate the risks associated with the task have been documented (JSA).
- Ensure lift plan identifies all required equipment to safely execute the plan.
- Noncritical Lift – Prelift Worksheet (form 2A-10.2) shall be filled out as required. (Final input to the worksheet shall be performed at the lift site with the lifting crew just prior to the lift taking place).
- All equipment involved in the lift will be fully inspected and documented.
- The lift team (crew) shall be briefed on the plan and how rigging arrangements are to be installed and configured.
- Ensure a final review with the qualified rigger to verify all rigging and arrangements are completed, per the plan.

**PRELIFT REVIEW MEETING**
Immediately prior to the lift, a prelift meeting will be conducted. All personnel involved with the lift shall attend and have full understanding of all aspects of the lift. Collective discussions should be used to verify understanding.
- Discuss in detail all hazards associated with the plan from the risk assessment and address accordingly (also to be documented as required on the pre-job safety document such as job safety analysis (JSA) or job safety briefing (JSB)).
- All lift personnel will be assigned and made aware of their roles and responsibilities in the lift plan.
- The prelift worksheet (form 2A-10.2) shall be completed for review and discussion with all personnel involved in the plan at this point.
- The pre-job safety document (JSA, JSB, etc.) shall document all hazards and safe work practices as the form is designed. NOTE: The prelift worksheet does not in any manner replace or serve as a substitute for the pre-job safety document.

**EXECUTION OF LIFT**
- Ensure documented inspection of all rigging equipment has been performed as required.
- When the lift begins, constant supervision shall be maintained. If, for any reason, the person supervising the lift must leave the area, the lift will stop and be made safe until the person supervising the lift returns or the supervision responsibilities are appropriately passed to another qualified person.
- During the lift, the person supervising the lift shall have no other duties that could distract his or her focus from the lift activities, progress, or involved personnel.
- If for any reason the lift plan must change, all work must stop. Notify the designated person responsible for planning for his or her review of the revision to the plan and document the change(s) on the prelift worksheet and pre-job safety document (JSA, JSB, etc.).
- Any person involved in the lift has the obligation to use Stop Work Authority to stop the lift at any point if he or she believes an unsafe condition exists or potentially may occur.

**POST-LIFT**
- Conduct a post-job debriefing, documenting lessons learned, risk assessments, and any noteworthy items applicable.
- Maintain lift plans and all other documents for future reference and as required by document retention schedules.
The managers and supervisors indicated on the attached lift plan have determined that it is necessary to use a suspended personnel hoisting platform. A prelift meeting was held on [date] to discuss the safe execution of a personnel lift at [location] for [task requiring the lift].

This meeting was attended by the undersigned.

**Site Manager:** __________________________

**Rigging Superintendent:** __________________________

**Operator:** __________________________

**Signal Person:** __________________________

**Person(s) to be lifted:** __________________________

**Others:**

<table>
<thead>
<tr>
<th>Test lift weight</th>
<th>Actual lift weight</th>
<th>Crane capacity at further most point of lift</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

Based upon the evaluation of alternate methods, [company name] has determined that it is necessary to use a personnel hoisting platform for the task described above. The evaluation, a formal lift plan, and the record of a prelift meeting have been provided.

Authorization for the use of the suspended personnel hoisting platform is hereby granted provided that the site manager ensures that the lift plan and all Federal, State, local, and client requirements are met.

**EH&S review:** __________________________

**Site manager:** __________________________

**Lift Weight Summary**
Prior to using a suspended personnel hoisting platform, T&PS and OSHA regulations require that all other methods be evaluated. If an alternate method is available and feasible, without regard to time and/or costs, that method shall be used. If no other method is available and feasible, a lifting plan must be developed and submitted (along with this evaluation) to the contractor's site manager and EH&S resource for authorization of the use of the suspended personnel hoisting platform.

Evaluate each of the methods listed below. If the method cannot be used, explain why:

Ladders:


Scaffolds:


Boom Lift(s):


Vertical (Scissor) Lift(s):


Other (s):


Company: ____________________
Form 2A-11.3, Suspended Personnel Platform Checklist

Company: ____________________________

<table>
<thead>
<tr>
<th>Date:</th>
<th>Competent Person:</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Crane Make:</th>
<th>Model:</th>
<th>Serial Number:</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>Equipment Number:</th>
<th>Hours:</th>
<th>Crane Capacity:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Crane Type:</th>
<th>Hydraulic:</th>
<th>Conventional:</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

(1.) CRANE REQUIREMENTS

Subcontractors and/or users must ensure all items in this checklist are satisfied, including compliance with all safety requirements prior to making a lift. All precautions and instructions on the decals attached to the crane and the platform must be strictly adhered to.

Circle Items “Yes” to verify compliance:

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Use of a suspended personnel platform is the safest and most practical way to accomplish the task.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>All crane inspections are current per ANSI B30.5 requirements.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>All hooks have a current inspection per ANSI B30.10 and have positive locking-type hook latches.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The correct load chart is with the crane and the operator is thoroughly familiar with all special notes and manufacturer recommendations given on the chart.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>All operational aids and safety devices in the crane are functioning, and the operator is fully versed in their operation.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The load lines have a 7:1 safety factor (10:1 when using non-spin rope). NOTE: This safety factor is achieved by a 50-percent derating of the crane load chart.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The crane is on firm footing and the crane outriggers are all the way out, down, and locked as applicable.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The crane is level within 1 percent (1 ft in 100 ft) and is on firm surface. NOTE: Stability of the footing will be verified during the full cycle of the operation test.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Means have been provided to enable the operator to ensure the crane is level.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>A firm, level surface has been prepared and designated as a “runway” or path of travel for the weight and configuration of the crane before used.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The crane counterweights are per manufacturer specification.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>All load lines are properly revved and laying properly on the drums.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>All drum hoists have full control load lowering. NOTE: Free fall is not to be used.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The boom is fully powered up and down, live boom is not to be used.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The boom angle and radius indicator works. NOTE: Measure radius with tape measure on conventional cranes.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The boom length indicator on telescoping booms is fully functional.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>The positive anti-two-block device is functioning properly. NOTE: A warning system alone does not suffice.</td>
</tr>
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</table>
## (2.) RIGGING REQUIREMENTS

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<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>Each bridle leg is connected to the master link or shackle in a way that ensures the load is evenly distributed between all the bridle legs.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All rigging, wire rope, shackles, rings, master links, and other rigging hardware have a minimum safety factor of 5:1. NOTE: When non-spin cable is used, a minimum safety factor of 10:1 is required.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All wire rope eye fittings are provided with thimbles.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All load hooks are closed with locking-type latches.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All rigging equipment for the suspended personnel platform is exclusively for that use only.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All rigging has been inspected for kinks or damage of any kind.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Shackle pins are of the nut-with-pin-retainer-type.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Separate wire rope sling connected to a shackle on the load line directly above the headache ball to the pad eye or shackled to hoisting platform.</td>
</tr>
</tbody>
</table>

## (3.) SUSPENDED PERSONNEL PLATFORM REQUIREMENTS

<p>| | | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>The basket has been designed with a 5:1 safety factor by a qualified engineer and welded by a qualified welder.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The suspension rigging system has been designed in such a way as to minimize tipping of the suspended personnel platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The maximum rated load and maximum capacity is posted on a permanently affixed plate on the suspended personnel platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The guardrail designed to enclose the platform is provided and is enclosed from the toeboard to the mid-rail.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Body harness anchorage is provided.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The access gate has been designed to open in and is positively prevented from swinging outward while the suspended personnel platform is in use.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The access gate must have a positive locking system to prevent accidental opening during operation.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The design allows enough headroom for personnel to stand upright.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>There are no rough edges on any suspended personnel platform surface.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>In addition to hardhats, overhead protection is provided when personnel are exposed to falling objects.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>A trial-lift meeting has been attended by the crane or derrick operator, signal person(s) (if necessary for the lift), personnel to be lifted, and the person responsible for the task to be performed.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Precautions have been taken to protect personnel from any special hazards in the area where the crane and suspended personnel platform will be operating; for example, power lines or areas where the suspended personnel platform will be out of the operator’s view.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Special precautions have been taken to protect personnel from electrical hazards. When the crane with a suspended personnel platform is working near electrical lines or devices, the minimum working clearances shall be at least twice those for material handling operations.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>A suspended personnel platform use authorization has been issued, dated, and properly signed for the task at hand.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The suspended personnel platform and rigging has been proof-tested to 125 percent of the platform rated capacity.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Description</td>
</tr>
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<tr>
<td></td>
<td></td>
<td>An unoccupied trial lift loaded to 125 percent of the platform-rated capacity has been performed and hoisted to each location where work is to be performed, or to any point where personnel are expected to enter or exit the platform. NOTE: The trial lift must be performed each time the crane is moved.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A post-trial-lift inspection of the crane has been carried out by a designated person.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The loading is less than 50 percent of the crane-rating chart for all work locations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The operator has determined that all systems, controls, and safety devices are activated and functioning properly and that no interferences exist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The suspended personnel platform has been hoisted a few inches and has been reinspected after the trial lift for any deficiencies.</td>
</tr>
<tr>
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<td></td>
<td>Prior to hoisting personnel, the suspended personnel platform has been hoisted a few inches to verify its hang level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The loading is less than 50 percent of the crane-rating chart for all work locations.</td>
</tr>
<tr>
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<td>The operator has determined that all systems, controls, and safety devices are activated and functioning properly and that no interferences exist.</td>
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<td></td>
<td>Prior to hoisting personnel, the suspended personnel platform has been hoisted a few inches to verify its hang level.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All hoist ropes are free of kinks.</td>
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<tr>
<td></td>
<td></td>
<td>Multipart lines are not twisted around each other.</td>
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<tr>
<td></td>
<td></td>
<td>The hook is centered over the load.</td>
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<tr>
<td></td>
<td></td>
<td>The hoist lines are laying properly on hoist drums and in the sheaves.</td>
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<tr>
<td></td>
<td></td>
<td>All post-trial-lift defects have been corrected.</td>
</tr>
<tr>
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<td></td>
<td>The crane-bearing surface has been rechecked and crane releveled as required.</td>
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<tr>
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<td></td>
<td>The crane safety components, dogs, pawls, brakes, etc., have been reinspected after the trial lift.</td>
</tr>
<tr>
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<td></td>
<td>Travel with the crane is not permitted except where all requirements are satisfied and where not to do so would endanger life.</td>
</tr>
<tr>
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<td></td>
<td>The operator has been advised that the load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs must be engaged when the occupied personnel platform is in a stationary working position.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The operator has been advised that the platform must be hoisted in a slow, controlled, cautious manner with no sudden movement of the crane, derrick, or platform.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personnel have been advised to perform tasks specified in the suspended personnel platform authorization only. NOTE: Only the number of personnel needed for the task at hand are allowed to be hoisted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised to keep all body parts inside the platform during raising. NOTE: This provision does not apply to an occupant of the platform performing the duties of a signal person.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised that they are not allowed to enter or exit the platform until it is secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised that they are not allowed to exit the platform before landing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised that taglines must be used unless their use would create an unsafe condition.</td>
</tr>
<tr>
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<td></td>
<td>The operator has been advised to remain at the controls at all times while the crane engine is running and the platform is occupied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised that platform use must be promptly discontinued if there is any indication of dangerous weather conditions or other impending danger.</td>
</tr>
<tr>
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<td></td>
<td>The operator is in constant contact by standard hand signals or voice communications during operation of crane and suspended personnel platform.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All personnel have been advised to remain in continuous sight of, or in direct communication with, the operator or signal person.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All personnel have been advised that the use of a radio is permissible when direct visual contact is not possible, or where the use of a signal person could create a greater hazard.</td>
</tr>
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</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All personnel occupying the platform have been advised to wear a personal fall-arrest harness system, with the lanyard appropriately attached to a structural member within the personnel platform capable of supporting the fall impact for personnel using the anchorage.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All personnel have been advised to wear a life vest when working over water.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Personnel have been advised to secure materials and tools to prevent displacement during the lift.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All personnel have been advised to load the suspended personnel platform evenly and to only carry tools and materials needed for the task at hand.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The operator and all personnel that will be using the platform have been advised that no other object may be lifted on any of the crane load lines while the platform is suspended.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>An audible and visual device has been provided to the personnel in the platform so they can signal for assistance in the event of an emergency.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Personnel have been advised to stand firmly on the floor of the platform and to not sit or climb on the edge of the platform or use planks, ladders, or other devices for attaining a work position.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>If welding is to be performed by personnel occupying the platform, the electrode must be protected from touching the metal components of the platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Any needed repairs to the crane or suspended personnel platform used only original manufacturer parts to ensure the new components are compatible with their original counterparts.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Care taken to prevent ropes, electrical cords, and hoses from becoming entangled in the platform when the platform is being moved.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Operator aids or interlocks have not been altered, modified, or disabled in any way.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The crane operator responsible for operating the cranes used for personnel handling is a thoroughly trained operator and has related experience operating the subject crane.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All manuals, operating instructions, and load charts provided have been read and understood by the operating personnel prior to starting the operation.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The operator has ensured the area surrounding the platform is clear of personnel and equipment before moving the platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Prior to the trial lift at each new location, a prelift meeting has been held, and is also held for any new worker assigned to the suspended personnel platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All deficiencies discovered in post-trial-lift inspection have been corrected.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>All personnel attending the prelift meeting signed the roster for the meeting.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Minimum of two workers are assigned to work from the suspended personnel platform.</td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>The trial-lift calculation sheet has been completed, signed, and dated.</td>
</tr>
</tbody>
</table>
### (4.) PERSONNEL PLATFORM WEIGHT CALCULATION SHEET

- Platform rated capacity
- 125-percent proof test
  
  **(NOTE: Suspended load for 5 minutes)**
- Number of occupants x 250 lb each
- Tools plus materials (weight) in platform
- Misc. weight not otherwise listed
- Tare weight of platform plus rigging
- Total occupied weight of platform
- Hoist line cable weight:
- Headache ball weight
- Load block weight
- Rooster sheave weight
- Effective JIB weight:
  
  (if hoisting on main load line)
- JIB weight stowed
- Misc. weight not otherwise listed
- Total load chart deductions
- Total weight, “W” (total load chart deductions plus)
- Total occupied weight of platform
- Capacity of crane at minimum radius
- Capacity of crane at platform work radius
- 50 percent of crane capacity at minimum radius
- 50 percent of crane capacity at platform working radius
- Total load, “W” divided by 50 percent crane rating = percent of de-rated capacity used

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<tr>
<th>Signature:</th>
<th>Title:</th>
<th>Date:</th>
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</thead>
</table>


### Monthly Sling/Choker Inspection Form

<table>
<thead>
<tr>
<th>Date</th>
<th>Wire Rope</th>
<th>Synthetic</th>
<th>Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No damaged wires</td>
<td>No &quot;red&quot; threads showing</td>
<td>No corrosion</td>
</tr>
<tr>
<td></td>
<td>No burn marks</td>
<td>No burn or chemical marks</td>
<td>Links not worn or cracked</td>
</tr>
<tr>
<td></td>
<td>No corrosion</td>
<td>Fittings not damaged</td>
<td>Label readable</td>
</tr>
<tr>
<td></td>
<td>No bird-caging</td>
<td>No heat damage</td>
<td>No heat damage</td>
</tr>
<tr>
<td></td>
<td>Fittings not damaged</td>
<td>LABEL is readable</td>
<td>Inspection Results:</td>
</tr>
<tr>
<td></td>
<td>No heat damage</td>
<td>No heat damage</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Comments** (note corrective actions and initial)

<table>
<thead>
<tr>
<th>Sling/Choker #</th>
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**Name of Inspector** ________________________________

**Company:** ________________________________
<table>
<thead>
<tr>
<th>Equipment number</th>
<th>Description</th>
<th>Forward Reverse</th>
<th>Safety Latches</th>
<th>Hooks</th>
<th>Front Wheel</th>
<th>Chain</th>
<th>Rated Capacity</th>
<th>Load Test</th>
<th>Condition</th>
<th>Remarks</th>
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Form 2A-15.1, Grinder Inspection Record (Bench and Portable)

<table>
<thead>
<tr>
<th>Date:</th>
<th>Project Name:</th>
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Inspector:

**Company:** ______________________________

<table>
<thead>
<tr>
<th>Bench Grinders</th>
<th>Guards in place</th>
<th>RPMs of wheel/grinder match</th>
<th>Power source in good repair</th>
<th>Other</th>
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</table>

**Bench Grinder**

<table>
<thead>
<tr>
<th>Stand is firmly attached</th>
<th>Guards are in place</th>
<th>Tool rest/wheel have 1/8-in. gap</th>
<th>RPMs of wheel/grinder match</th>
<th>Area protection provided</th>
<th>Inspection Results:</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
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**Grinder ID#**

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**Comments**

(Note corrective actions and initial)
Form 2A-17.1, Trenching and Excavation Permit

Company: ______________________________

Date: ________________ Time: ________________ Expiration Date: ________________

Job description (be specific): ___________________________________________________________________________________________

Location (be specific): ________________________________________________________________________________________________

- Yes □ No □ Have the individuals assigned to this task been trained in excavation safety?
- Yes □ No □ Have all drawings been obtained and reviewed from all applicable sources? (T&PS, plant, Distribution, contractor, subcontractor, other sources)
- Yes □ No □ Has “Call Before You Dig – 811” notification taken place per State/local requirements? If NO, explain ____________________________
- Yes □ No □ Will underground nondestructive discovery be done? (Example: hydro/vacuum excavation or ground penetrating radar) NOTE – Noncontact electrical testers will not detect the presence of energized electrical cables if the cables are shielded, encased in conduit, or use DC voltage. Be aware of the limitations of TIC tracing.
- Yes □ No □ Has a prejob meeting with all entities involved been done? (Example: Plant, Distribution, contractor, T&P)

Before Trenching and Excavating

- Yes □ No □ Soil Classification __________ Distance, in feet, to utilities, buildings, footings, or pilings. (A drawing or sketch must be attached to permit.)
- Yes □ No □ Type C __________ Distance, in feet, to sources of vibrations
- Yes □ No □ Type B __________ Have the owners of utilities been notified, if applicable?
- Yes □ No □ Type A __________ Has the ground been disturbed previously?
- Yes □ No □ Stable __________ List the allowable slope.

Indicate if the items below are: Necessary □ Adequate □ Available □

Personal protective equipment (be specific) ____________________________

Shoring materials __________

Signs, barricades __________

Machinery __________

List known obstructions: ____________________________________________

- Yes □ No □ Electrical __________
- Yes □ No □ Telephone __________
- Yes □ No □ Water __________
- Yes □ No □ Sewer __________
- Yes □ No □ Steam __________
- Yes □ No □ Concrete encasement __________
- Yes □ No □ Drain __________
- Yes □ No □ Process __________
- Yes □ No □ Footings __________
- Yes □ No □ Pilings __________
- Yes □ No □ Gas __________
- Yes □ No □ Fiber Optic __________
- Yes □ No □ Other (specify) ____________________________

Excavation method: __________

- Yes □ No □ Backhoe __________
- Yes □ No □ Ditchwitch __________
- Yes □ No □ Hand dig __________
- Yes □ No □ Track hoe __________
- Yes □ No □ Hydro-Excavation __________
- Yes □ No □ Other (specify) ____________________________

Precautions to be taken

- Yes □ No □ De-energize lines __________
- Yes □ No □ Ground tools __________
- Yes □ No □ Insulate equipment operator __________
- Yes □ No □ Lockout/Tagout __________
- Yes □ No □ Clearance __________
- Yes □ No □ Other (specify) ____________________________

Method of Hazardous Energy Control

(5CG-SH-0200)

Size of the excavation: Depth ______ Width ______ Length ______

Ensure the shoring and/or sloping remains adequate as excavation progresses.

- Yes □ No □ Are ground conditions changing, particularly after rainfall?
- Yes □ No □ Has the ground been disturbed previously?
- Yes □ No □ Has there been a change in vehicular and machinery operation patterns?
- Yes □ No □ Is water removal equipment needed?
- Yes □ No □ Are portable trench boxes or trench shields adequate?
- Yes □ No □ Is there a hazardous atmosphere potential? If YES, list hazard(s), control measures, and rescue provisions. ____________________________

Protective system used for excavation:

- Yes □ No □ Sloping __________
- Yes □ No □ Shoring __________
- Yes □ No □ Operable __________
- Yes □ No □ Predesigned shoring __________

- Yes □ No □ Indicate the shoring method used and applicable appendix: ____________________________

List atmospheric readings on form 2A-17.2, Excavation/Trenching Daily Inspection Form.

NOTE: Protection for excavations greater than 20-ft deep (shoring, benching, sloping designs) shall be developed by a registered professional engineer.

Signatures and Dates

<table>
<thead>
<tr>
<th>Excavation Competent Person</th>
<th>Client Representative (if applicable)</th>
<th>Job Supervisor</th>
<th>EH&amp;S Professional</th>
<th>Registered Professional Engineer (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature</td>
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<td>Date</td>
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<tr>
<td>Electrical Representative</td>
<td>Mechanical Representative</td>
<td>Equipment / Operator Representative</td>
<td>Field Engineer</td>
<td>Other (specify)</td>
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<td>Signature</td>
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FOR ALL EXCAVATION OPERATIONS EXCEPT HYDRO-EXCAVATION - PERMIT IS VOIDED AND WORK IS TO STOP IF AN UNKNOWN OR ABANDONED UTILITY IS ENCOUNTERED. WORK MAY CONTINUE WITH NEW PERMIT ONCE UNKNOWN ENCUMBERANCE IS IDENTIFIED AND A SAFE WORK PLAN IS IN PLACE. SEE SH-2E-08 FOR HAZARDOUS ENERGY CONTROL REQUIREMENTS WHEN ENCOUNTERING UNKNOWN OR BURIED UTILITIES.

Note: Each individual signing above is entitled to a copy of this permit, if desired.
**PROJECT NAME / LOCATION:**

**EXCAVATION LOCATION OR NUMBER:**

**EXCAVATION PURPOSE:**

<table>
<thead>
<tr>
<th>DIMENSIONS:</th>
<th>DEPTH =</th>
<th>Yes No</th>
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<tr>
<td>TOP = W L</td>
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<td>BOTTOM = W L</td>
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**HAZARDOUS CONDITIONS**

- Saturated soil / standing or seeping water
- Cracked or fissured wall(s)
- Bulging wall(s)
- Floor heaving
- Frozen soil
- Any soil sloughed off or caved in
- Vibration
- Depth greater than 5 ft

**PROTECTION METHODS:**

(Walls MUST be vertical—NO voids)

**PLACEMENT OF SPOILS AND EQUIPMENT**

- Spoils at least 2 ft from edge of trench
- Equipment at least 2 ft from edge
- Backhoe at end of trench
- Compressor, etc. at remote location

**SHORING**

- Timber
- Pneumatic
- Hydraulic
- Screw jacks
- Trench shield
- Other (specify)
- N/A

**ACCESS / EGRESS**

- Within 25 ft
- Ladder secured?
- Ladder extends 36 in. above the landing
- Access and egress adequate?

**UNEVEN, IRREGULAR WALLS**

**INSPECTIONS / TRAINING / RESCUE**

- Entrants trained.
- Rescue provisions verified.

**ENVIRONMENTAL CONDITIONS / ATMOSPHERIC READINGS**

- Any potential sources of air contaminants?
- Will periodic atmospheric checks be required?
- Air meter calibration current?

**DOCUMENT ATMOSPHERIC READINGS BELOW. USE ADDITIONAL SHEET IF NECESSARY**

<table>
<thead>
<tr>
<th>Oxygen</th>
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<th>Initials</th>
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**COMMENTS, PRECAUTIONS, OR CORRECTIVE ACTIONS TAKEN:**

**NOTE**

- Before workers enter the trench/excavation, all unsafe conditions must be corrected.
- If any hazardous conditions are observed while workers are in the trench/excavation, all workers must evacuate the trench/excavation immediately, and no one allowed to reenter until corrective action has been taken.
- After a substantial change in conditions such as a rainfall, the competent person should inspect the trench/excavation and execute a new inspection checklist.

**Competent Person Printed Name**

**Competent Person Signature**
### Section 1 General
(To be completed by foreman)

- **Date:**
- **Foreman Name:**
- **Contractor:**
- **Craft:**
- **Location:**

- **Nature of job:**
  - Can this work be done in another location or in a safer manner?
  - Is this HWP being issued for multiple crews?
    - If yes, list foreman’s name.
  - Is this work being conducted in a confined space?
    - If yes, additional reg. may apply.
    - Check with your safety representative.

### Section 2 Required Precautions Checklist
(To be completed by foreman)

- **Do you have available sprinklers, hoses, and extinguishers needed?**
- **Are they in working order?**
- **Hot work equipment is in good working order.**

### Requirements for within 25 ft of work:

- Flammable and combustible liquids, gases, combustible mat, oil and grease soaked or containing mat are removed.
- Explosive atmospheres are removed or safely contained.
  - *Use comments section to explain.*
- Explosive gas sources are secured and protected.
- Equipment is protected from damage.
- Provisions have been taken to contain sparks, slag.
- All equipment, material, flammables that cannot be removed are protected from damage and sources of ignition.
- Fire-resistant blankets are placed to contain sparks, slag.
- Tanks, vessels containing flammable or explosive or liquids or gases are isolated, purged, and lock-out, tag-out is complete.
- Proper fire extinguisher is present.
- If penetrating a wall, check blind side.

### Section 3 Permit Determination
(To be completed by foreman)

A permit and fire watch is required if any of the following conditions exist. Check all that apply.

- Inside any building
- In the boiler area and within 50 ft in all directions.
- Between and within 50 ft of the cooling towers.
- In all switchyards
- And within 35 ft of the following conditions
  - Flammable liquids in open or temporary containers.
  - Tanks or vessels containing explosive or combustible liquids or gases.
  - Potential for explosive atmosphere (gas monitor req.).
  - Sensitive equipment or flammable material that cannot be protected.
  - Other
- Work in any confined space.

**Fire extinguisher equipment required. No permit required.**

- Wood, accumulations of dust, grass, other combustibles.
- Fab areas outside designated locations.

Following completion of work, fire watch shall survey for:

- 30 min.
- Other ______

**Foreman signature**  ____________________________

Signature verifies survey of work area and precautions in place.

### Section 4 Fire Watch Checklist (initial each item)

**Survey:**

- Review checklists in sections 1 and 2. Are all items as stated?
- Are any hazardous conditions present which are not addressed?

**Fire watch duties:**

- Remain in work area while hot work is taking place.
- Monitor work area for time specified in section 2 following completion of work.

**Time hot work started:** ______ Time finished: ______

**Note problems or comments:**

- ____________________________

**Fire Watch Name** (print): ____________________________

**Fire Watch Signature:** ____________________________

Signature verifies completion of safe job and postwork survey.

---

**Section 5 Review and Approval – Southern Company Representative**

**Name:** ____________________________

**Signature:** ____________________________

**Date:** ____________________________

**Additional notes or req.:**

---

Form updated 05-09-2017
Form 2A-24.1, Vehicle Inspection Form

Make: __________ Model: __________ Unit No: ________ Week Ending: ____________

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Engine oil
- Lubrication
- Starting system
- Instruments (speedometer and temperature gauge)
- Cooling system (radiator)
- Air system
- Glass
- Mirrors (rearview and left outside)
- Defroster
- Brakes
- Steering system
- Tires
- Head lights
- Tail lights
- Brake lights
- Horn
- Windshield wipers
- Fire extinguisher
- Seatbelts
- Backup alarm
- Condition of vehicle body
- Other:

**Initials of inspector**

These items are to be checked prior to each shift’s use. Report ALL items in need of repair to the mechanics at the time of inspection. Return the completed sheet to the equipment superintendent at the end of the week.

**To be completed by the mechanic**

<table>
<thead>
<tr>
<th>Date reported</th>
<th>Repairs made:</th>
<th>Date repaired</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature of the equipment superintendent: ___________________________________________________________
Form 2A-28.1, Demolition Daily Checklist
To be completed by the competent person for demolition

Company: ____________________________

<table>
<thead>
<tr>
<th>Project:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location (be specific):</td>
<td></td>
</tr>
</tbody>
</table>

Type of demolition: ☐ Manual ☐ Mechanical ☐ Controlled Detonation ☐ Other: ____________________________

Competent person: ____________________________

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Engineering survey complete and on file that determines the condition of the framing, floors, walls, and possibility of unplanned collapse of any portion of the structure or adjacent structure where employees may be exposed. 29CFR 1926.850 (b)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>2. Work plan in place that identifies sequence of job steps, assesses known hazards and control measures to address these hazards.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>3. Building or structure cleared of ACM or other hazardous materials as required.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>4. All utilities (electrical, gas, water, etc.) identified and deenergized, relocated, or otherwise made safe.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>5. Are fire services provided?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>6. Are suspended floors safe for the loads?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>7. Are workers protected from falls by use of PFAs or engineering controls such as hole covers and rigid barricades for floor openings and wall openings?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>8. Any lifts associated with the work have been planned? Critical lifts have PE stamped drawing?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>9. Rigging equipment inspected before each use, serviceable, and proper rigging practices followed?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>10. Demolition tools and equipment being used safely?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>11. Is continuous inspection made by a competent person as work progresses to detect hazards from weakened or deteriorated floors, wall, or loosened material?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>12. Are planned drop areas barricaded and access controlled?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>13. Are emergency plans in place and workers trained?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
</tbody>
</table>
This form must be completed prior to any demolition activity.

Before employees start demolition operations, a competent person shall make an engineering survey of the structure to determine the condition of the framing, floors, walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed shall also be similarly checked. The employer shall have in writing evidence that such a survey has been performed. All electric, gas, water, steam, sewer, and other service lines shall be shut off, capped, air gapped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company that is involved shall be notified in advance.

<table>
<thead>
<tr>
<th>Project name:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competent person signature:</td>
<td>Location:</td>
</tr>
<tr>
<td>Job Contact:</td>
<td>Tel #:</td>
</tr>
<tr>
<td>Name of structure:</td>
<td>Year built:</td>
</tr>
<tr>
<td>Description of structure:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Length:</th>
<th>Width:</th>
<th>Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Foundation:</td>
<td>Walls:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Floors:</td>
<td>Roof:</td>
<td></td>
</tr>
</tbody>
</table>

Method of demolition:

Equipment to be used:

Disposal plan:

Has the structure been damaged by fire, flood, explosion, or other causes?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

Potential hazards (for example, collapse, structural failure, explosive material)?

Any unique site/structural conditions?
HAZARDOUS ENERGY

All electric, gas, water, sewer, or other utility should be shut off, capped, air-gapped, or controlled at or outside of structure before demolition work is started. If it is necessary to maintain power, water, or other utilities during demolition, such lines shall be temporarily relocated or protected. All workers shall be notified of any existing or relocated utility service.

<table>
<thead>
<tr>
<th>Did the structure use any of these utilities?</th>
<th>If YES, what is the operational state of the utility?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility</td>
<td>YES</td>
</tr>
<tr>
<td>Electrical power/lines?</td>
<td></td>
</tr>
<tr>
<td>Natural gas lines?</td>
<td></td>
</tr>
<tr>
<td>Water lines?</td>
<td></td>
</tr>
<tr>
<td>Sewer lines?</td>
<td></td>
</tr>
<tr>
<td>Fiber-optic cables?</td>
<td></td>
</tr>
<tr>
<td>Phone lines?</td>
<td></td>
</tr>
<tr>
<td>Telemetering lines?</td>
<td></td>
</tr>
<tr>
<td>Oxygen lines?</td>
<td></td>
</tr>
<tr>
<td>Other utility lines?</td>
<td></td>
</tr>
</tbody>
</table>

Underground Utilities

<table>
<thead>
<tr>
<th>Is there going to be any excavation work?</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have Utility Locator Services been notified (811)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are underground services marked?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CHEMICALS

Determine if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

<table>
<thead>
<tr>
<th>Are any of these hazards present?</th>
<th>If YES, what is the status the hazardous chemical/material?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard:</td>
<td>YES</td>
</tr>
<tr>
<td>Underground storage tanks (USTs)?</td>
<td></td>
</tr>
<tr>
<td>Vessels/storage tanks?</td>
<td></td>
</tr>
<tr>
<td>Process piping (chemical)?</td>
<td></td>
</tr>
<tr>
<td>Hydraulic piping/reservoirs?</td>
<td></td>
</tr>
</tbody>
</table>
### Are these chemical / environmental hazards present?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>If YES, what is the plan for removal of these materials? Give details on location and description of action taken or to be taken.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are asbestos-containing materials present?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Freon or other refrigerants?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead-containing materials?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCBs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury devices?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiation sources?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any additional hazardous materials?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PREEXISTING DAMAGE

When employees are required to work within a structure to be demolished that has been damaged by fire, flood, explosion, or other cause, the walls or floor shall be shored or braced.

<table>
<thead>
<tr>
<th>Hazard:</th>
<th>Location/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are any of these hazards present?</td>
<td>YES</td>
</tr>
<tr>
<td>Is there any preexisting structural damage?</td>
<td></td>
</tr>
<tr>
<td>Is shoring required?</td>
<td></td>
</tr>
</tbody>
</table>

### Are personnel exposed to the following hazards?

<table>
<thead>
<tr>
<th>Hazard/Exposures</th>
<th>Location/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pit/trenches?</td>
<td>YES</td>
</tr>
<tr>
<td>Fall hazards?</td>
<td></td>
</tr>
<tr>
<td>Holes?</td>
<td></td>
</tr>
</tbody>
</table>

### Safety Exposures

<table>
<thead>
<tr>
<th>Safety Exposures</th>
<th>Location/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire hazards?</td>
<td>YES</td>
</tr>
<tr>
<td>Combustibles?</td>
<td></td>
</tr>
<tr>
<td>Process hazards?</td>
<td></td>
</tr>
<tr>
<td>Basements?</td>
<td></td>
</tr>
<tr>
<td>Elevators?</td>
<td></td>
</tr>
<tr>
<td>Party walls?</td>
<td></td>
</tr>
<tr>
<td>Bulkheads?</td>
<td></td>
</tr>
<tr>
<td>Confined spaces?</td>
<td></td>
</tr>
<tr>
<td>Additional safety exposures?</td>
<td></td>
</tr>
</tbody>
</table>
During demolition operations, are safety or protective measures needed for the following?

<table>
<thead>
<tr>
<th>Safety/Protection Measures</th>
<th>YES</th>
<th>NO</th>
<th>Location/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjacent walkways / sidewalks?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent roadways?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent buildings?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public exposure?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilities?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manholes?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm-water runoff?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary support, shoring, or bracing?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjacent retaining walls or slopes?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional items?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Emergency Information

<table>
<thead>
<tr>
<th>Service</th>
<th>Name of Location Agency</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site superintendent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owner’s representative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nearest urgent medical facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nearest hospital:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital address:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directions:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Acknowledgement:

The undersigned have performed and reviewed this Predemolition Engineering Survey as outlined by OSHA 29 CFR 1926.850a.

Contractor Representative: __________________________ Date: ________________

Owner’s Representative: __________________________ Date: ________________
**Form 2A-31.1, Line Breaking Permit**

**Company:** ________________________________

**LINE BREAKING PERMIT**

**Foreman:** ___________  **Craft:** ____________________________

**Date Required:** ___________  **Time:** ____________________________

**Location:** ________________________________________________

**Specify Line:** ________________________________________________

**Contents:** ________________________________________________

*Chemical SDS reviewed*  **Yes ( )  No ( )**

**NOTE:** ALL OPEN ENDED PIPES LEFT ON LOCATION MUST IMMEDIATELY BE BLANKED OR CAPPED.

**ATMOSPHERIC TEST**

<table>
<thead>
<tr>
<th>Flushing agent</th>
<th>Yes ( )</th>
<th>No ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrogen</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special Protective Equipment Required**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Yes ( )</th>
<th>No ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCBA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respirator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber boots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face shield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monogoggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chem. suit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Maximum Allowed**  **Test Results**  **Instrument Used**  **Cal. Date**

<table>
<thead>
<tr>
<th>Test</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Flammability</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hydrogen sulfide</td>
<td>10 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Chlorine</td>
<td>0.5 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Oxygen</td>
<td>&lt;19.5%</td>
<td>&gt;23.0%</td>
<td></td>
</tr>
<tr>
<td>5. Chlorine dioxide</td>
<td>0.1 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Sulfur dioxide</td>
<td>2 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Mercaptan</td>
<td>0.5 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Carbon monoxide</td>
<td>35 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes ( )</th>
<th>No ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot work permit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PERMIT TO BE POSTED AT WORK LOCATION, RETURN TO SAFETY OFFICE UPON COMPLETION OF JOB.**

**APPROVED BY**

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Foreman</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractor Safety Rep.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractor Craft Supt.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;PS Mechanical Rep.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;PS Safety Rep.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T&amp;PS QA/QC Rep.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractor Site Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*SDS Attached*  **Yes ( )  No ( )**

**Required for Hot Tap**

**Final Approval**

Form updated 05-15-2019  Form 2A-31.1  1 of 1
**Form 2A-33.1, Confined Space Entry Permit/Reclassification Form**

**Company:** ______________________________

**STEP 1**

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Confined Space ID/Entry Point(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Entry Supervisor (PRINT CLEARLY)</th>
<th>Confined Space Location/Description</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**STEP 2**

<table>
<thead>
<tr>
<th>Atmospheric Monitor Data</th>
<th>Model/Serial Number</th>
<th>Calibration Date (MM/DD/YYYY)</th>
<th>Daily Bump Test Performed By</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Atmospheric Monitoring Data for Acceptable Entry Conditions**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
<th>Additional Items</th>
<th>Not Req’d</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td>Area secure (tags, barricade, signs, and so forth)?</td>
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<td>Coordination with contractors?</td>
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<td>Clearance obtained?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 3**

<table>
<thead>
<tr>
<th>Potential Hazards in the Confined Space</th>
<th>YES</th>
<th>NO</th>
<th>If YES, explain by documenting measures used to eliminate or control the hazard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous atmosphere potential</td>
<td></td>
<td></td>
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<tr>
<td>Engulfing potential</td>
<td></td>
<td></td>
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<tr>
<td>Configuration potentially hazardous</td>
<td></td>
<td></td>
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<tr>
<td>Other serious safety or health hazards</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Additional Measures Used to Eliminate Hazards:**

**NOTE:** If potential hazards listed above cannot be eliminated, the confined space must be worked as a permit-required confined space.

**STEP 4**

**As the entry supervisor, by my signature below, I certify that the above named confined space poses no actual or potential serious hazards and will be classified as a nonpermit space or worked using the Alternate Procedure as long as the serious hazards remain eliminated.** If serious hazards arise or the scope of the work changes within this confined space, the space shall be evacuated, shall not be entered, and shall be reevaluated to determine if it must be classified as a permit-required confined space.

**This confined space will be worked as:**

- [ ] Reclassified/nonpermit required space.
- [ ] Alternate Procedure (Opco).

**Signature:** ____________________________

**Entry Supervisor, Reclassification Approved**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>Number of Tags Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Reclassification Cancelled**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>Number of Tags Removed</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

| Signature: ____________________________ |

**This confined space will be worked as:**

- [ ] A permit-required confined space. Complete the back of this form.

**Comments:**

---

Form updated 05-09-2017
## STEP 5

**ACTION ITEMS**

- Entry supervisory ensures:
  - Confined Space Rescue Service (CSRS) has been notified and the means of communication has been agreed to.
  - Communication procedures are established for entrants and attendant.

**Emergency contact number**

**Alt. emergency contact number**

- Entry supervisor ensures CSRS has completed the rescue preplan.

## STEP 6

**Entry Supervisor, Permit Approved for Entry (Not to exceed 24 hours)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Transferred To Entry Supervisor (1)</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Signature: ________________________</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Transferred To Entry Supervisor (2)</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Signature: ________________________</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Transferred To Entry Supervisor (3)</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Signature: ________________________</td>
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</table>

## ATTENDANT NAME (PRINT CLEARLY)

<table>
<thead>
<tr>
<th>Name</th>
<th>Time At</th>
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</table>

## ROSTER OF AUTHORIZED ENTRANTS

<table>
<thead>
<tr>
<th>Entry</th>
<th>Time In/Time Out</th>
<th>Time In/Time Out</th>
<th>Time In/Time Out</th>
<th>Time In/Time Out</th>
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**Permit Cancelled**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
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</tbody>
</table>
## Status Legend:
- **PRS** - Permit Required Space
- **RCS** - Reclassified Confined Space
- **ALT** - Alternate Procedure (OPCo Only)
- **CLS** - Closed Space

Enter Permit No. for any SoCo issued Permit

<table>
<thead>
<tr>
<th>Date</th>
<th>Status</th>
<th>Permit No.</th>
<th>Owner/Host</th>
<th>Controlling Employer</th>
<th>Entry Employers</th>
<th>Notes/Special Precautions</th>
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</thead>
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</tbody>
</table>
Form 2A-33.3, Confined Space
Reclassification Tag

Company: ____________________

CONFINED SPACE
RECLASSIFICATION TAG

PRINT CLEARLY

PERMIT/RECLASSIFICATION NUMBER:

ENTRY SUPERVISOR:

CONTACT NUMBER:

ISSUED DATE:

CLOSED DATE:

CONTROLLING CONTRACTOR:

ATMOSPHERIC LEVELS

DATE/INITIAL  O₂  LEL  CO

ACCOFORM SIGNS REORDER# 10247010-001
### Atmospheric Monitoring Data for Acceptable Entry Conditions

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen percent (19.5 to 23.5 percent)</td>
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<tr>
<td>Combustibles (&lt;10 percent LEL or LFL)</td>
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<tr>
<td>Carbon monoxide (&lt;35 ppm)</td>
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<td>List other toxic gases</td>
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</tbody>
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### Atmospheric Monitoring Data for Acceptable Entry Conditions

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
<th>Date/Time</th>
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<tbody>
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<td>Combustibles (&lt;10 percent LEL or LFL)</td>
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### Atmospheric Monitoring Data for Acceptable Entry Conditions

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<th>Result</th>
<th>Initials</th>
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<tbody>
<tr>
<td>Oxygen percent (19.5 to 23.5 percent)</td>
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</tbody>
</table>

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### Atmospheric Monitoring Data for Acceptable Entry Conditions

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Result</th>
<th>Initials</th>
<th>Date/Time</th>
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</thead>
<tbody>
<tr>
<td>Oxygen percent (19.5 to 23.5 percent)</td>
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<td>List other toxic gases</td>
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</tr>
</tbody>
</table>
# OPEN HOLE PERMIT
For Floor Openings, Wall Openings, Grating Removal and Guardrail Removal.

## THIS PERMIT SHALL BE POSTED AT THE BARRICADE ENTRANCE

<table>
<thead>
<tr>
<th>Responsible Person (print):</th>
<th>Contact Number:</th>
</tr>
</thead>
</table>

## Company Performing Work:

Check all that apply:

- [ ] Floor Opening
- [ ] Wall Opening
- [ ] Guardrail Removal
- [ ] Grating Removal
- [ ] Other Floor Opening specify: ______________________________

<table>
<thead>
<tr>
<th>Location:</th>
<th>Scope of Work:</th>
</tr>
</thead>
</table>

## Specific fall protection plan:

## Authorization for creating the opening/guardrail removal
Precautionary measures are in place and authorize the creation of a floor/wall opening and/or guardrail removal.

### JSA/JSB completed and hazards communicated to all members of the new crew

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSA/JSB completed</td>
<td></td>
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</tbody>
</table>

## The following items shall be completed prior to creating the opening/guardrail removal:

- [ ] Area inspected and any unsafe conditions corrected/mitigated
- [ ] Rigid barricades erected
- [ ] Hazard warning signs posted on rigid barricade
- [ ] Fall arrest/restraint measure in place

## Restoration of Safe Work Area

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor grating is in place and secured</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor grating does not have unsupported welds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hole covers, if needed, are in place, marked and secured</td>
<td></td>
<td></td>
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<tr>
<td>Floor openings restored to safe condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall openings restored to safe condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guardrails, including toeboards, are in place and secured</td>
<td></td>
<td></td>
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</tbody>
</table>

The work area was inspected and no hazards related to the work scope remain

- [ ] Yes

## Authorization for close out of permit
When the work area has been restored to a safe condition and barricades may be removed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Approval Contractor Responsible Person:</th>
<th>Approval Contractor Responsible Person Transferred to:</th>
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</thead>
<tbody>
<tr>
<td>Approval Responsible Person:</td>
<td>Approval Responsible Person Transferred to:</td>
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<table>
<thead>
<tr>
<th>NAME</th>
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Form 5-6775
**Form 2B-01.1, PPE Assessment Form**

**Company:** ____________________________

**Instructions:** Use this form as a guide to help you identify the hazards in work areas. When you have completed the form, you are ready to select the appropriate PPE.

<table>
<thead>
<tr>
<th>Area:</th>
<th>Job classification:</th>
<th>Assessor:</th>
<th>Date:</th>
</tr>
</thead>
</table>

**HEAD HAZARDS:** Tasks that can create potential head hazards include working below other workers who are using tools and materials that could fall, working on energized electrical equipment, working with chemicals, and working under machinery or processes that might cause materials or objects to fall.

*Check the appropriate box for each hazard:*

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Description of hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical splash</td>
<td></td>
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<tr>
<td>Electrical shock</td>
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</tr>
<tr>
<td>Impact</td>
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</tr>
</tbody>
</table>

**EYE HAZARDS:** Tasks that can create potential eye hazards include working with acids and chemicals, chipping, grinding, furnace operations, sanding, welding, and woodworking.

*Check the appropriate box for each hazard:*

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Description of hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td></td>
<td></td>
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<tr>
<td>Dust</td>
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<tr>
<td>Heat</td>
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<tr>
<td>Impact</td>
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<tr>
<td>Light/radiation</td>
<td></td>
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</tr>
</tbody>
</table>

**HAND HAZARDS:** Tasks that can create potential hand hazards include cutting material, working with chemicals, working with hot objects, and manual material handling.

*Check the appropriate box for each hazard:*

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Description of hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical exposure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cuts/abrasion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puncture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FOOT HAZARDS:** Tasks that can create potential foot hazards include carrying or handling materials that could be dropped, performing manual material handling, and working with chemicals.

*Check the appropriate box for each hazard:*

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Description of hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical exposure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puncture</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Guidelines for Selecting Personal Protective Equipment (PPE)

Note: Workers should not rely on PPE alone to provide protection against hazards; rather, they should use PPE in conjunction with guards, engineering controls, and sound manufacturing practices.

1. Familiarize yourself with the potential hazards in the area and the types of PPE that are available.
2. Consider the hazards associated with the environment (impact velocities, masses, projectable shape, radiation intensities).
3. Select PPE that ensures a greater level of protection than the minimum required to protect workers from the hazards.
4. Fit the worker with the PPE and give instructions on its use and care. It is very important that workers be made aware of all warning labels for and limitation of their PPE.

Based on the hazard assessment for (Job Classification) the following PPE is required:

<table>
<thead>
<tr>
<th>EYE HAZARD</th>
<th>JOB</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HEAD HAZARD</th>
<th>JOB</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>FOOT HAZARD</th>
<th>JOB</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER</th>
<th>JOB</th>
<th>PPE</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Approved: ____________________________________________

Site Manager
## Equipment Operator Authorization

**Company:** ___________________________

<table>
<thead>
<tr>
<th>Name</th>
<th>Employee ID No.</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Location</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Issue Date**

### The bearer is authorized to operate the following equipment:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Type</th>
<th>Capacity</th>
<th>Examiner's Signature</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Restrictions:** Must wear corrective lenses.  □ No  □ Yes.  
List other restrictions below.
Form 2C-02.1, Overhead Line Permit

Company: ____________________________

Today’s Date ___________  Job Number __________________________

Contractor Name

<table>
<thead>
<tr>
<th>Job Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Number</td>
</tr>
<tr>
<td>Fax Number</td>
</tr>
</tbody>
</table>

Emergency Contact Number

**Survey**

Before beginning any task, you must first survey your work area to find power lines in the area of work or travel.

- Number of Lines ____________________  Voltage ____________________
- Distance (ft) from work area __________

**Identify**

After finding all of the power lines involved in the task, identify the activities you will be doing that may put you or your workers at risk. Mark one or more of the following:

- [ ] Cranes (mobile or truck-mounted)
- [ ] Drilling rigs
- [ ] Backhoes/excavators
- [ ] Long-handled tools
- [ ] Other tools/high reaching equipment
- [ ] Concrete pumper
- [ ] Line voltage
- [ ] Aerial lifts
- [ ] Dump trucks
- [ ] Ladders
- [ ] Material handling and storage
- [ ] Scaffolding
- [ ] Other____________________

**Eliminate or Control**

After identifying the power lines involved and high-risk activities for the task, determine how to eliminate or control the risk of electrocution. A successful determination is often reached only after consultation with the utility. Mark one or more of the following:

- [ ] Move the activity
- [ ] Change the activity
- [ ] Have the utility deenergize line
- [ ] Have the utility move the line
- [ ] Use a protective technology (list):________________________________
- [ ] Use barrier protection
- [ ] Use an observer
- [ ] Use warning lines with flags
- [ ] Use nonconductive tools

Completed by ____________________________  Date __________________________

Approved by ____________________________  Date __________________________

Form updated 05-09-2017
Overhead Line Checklist

Location of work to be performed: _______________________________________

Line designation: _______________________________________________________

Voltage of line? _______________________________________________________

<table>
<thead>
<tr>
<th>Number of lines in service.</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is line(s) deenergized?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is line LO/TO-T?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are safety grounds attached?</td>
<td></td>
<td></td>
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<tr>
<td>Is barricade erected?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will there be an electrical standby?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Name of electrical standby. _____________________________________________

PPE required: _________________________________________________________

Authorizing engineer ________________________ Site/facility EH&S

Electrical superintendent ______________________ Site/facility manager
<table>
<thead>
<tr>
<th>Authorized operators</th>
<th>Certification date</th>
<th>Certification Agency</th>
<th>NCCCO Categories</th>
<th>Certification expiration date</th>
<th>Physical exam expiration date</th>
<th>US driver's licence</th>
<th>State</th>
<th>Expiration date</th>
<th>Written Test</th>
<th>Functional test</th>
<th>Crane departure date</th>
<th>Q1 assessment</th>
<th>Q2 assessment</th>
<th>Q3 assessment</th>
<th>Q4 assessment</th>
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<tbody>
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</tbody>
</table>
Form 2C-03.2, Pre-Use Inspection Checklist for Electrical or Air Powered Hoists
Includes wire rope and chain type

Company: ________________________________

Week of: ________________
Location (For example - Unit / Elevation / Column Line): ____________________________

Inspector: ____________________________
Hoist Make / Model: ____________________________
Hoist Serial #: ____________________________

Inspection Type (circle one): Daily Pre-Use
Monthly (Competent Person) Initial Post Set-up (Competent Person) Other

Requirements
- Operators must perform a pre-use inspection (once per shift) for the items listed below.
- Any equipment found to be unsatisfactory must be removed from service.
- Write legibly.
- Checklist to be retained per document retention requirements.

<table>
<thead>
<tr>
<th>#</th>
<th>Equipment Description and Inspection Criteria</th>
<th>✓ = Satisfactory, U = Unsatisfactory, N = Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operating mechanism – Check for proper operation and adjustment and note any unusual sounds or noise due to chain binding or bearing squeal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Limit switch – Test upper-limit switch. If the hoist has a lower-limit switch, test it with no load before lowering any load that could bring the lower-limit switch into operation.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Air or hydraulic systems – Check for leaks (as applicable) all along the air or hydraulic system, including tanks, valves, pumps, and lines (visual inspection from floor level only)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Hoist braking – Confirm that the brakes are functioning</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Hooks – Check for excessive throat opening, bent or twisted elements, sticky swivel or rough surfaces</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Hook latches – If provided, check for latch engagement, damaged or malfunctioning latch, check self-locking hooks for proper operation and locking</td>
<td></td>
</tr>
<tr>
<td>7a</td>
<td>Load chain – (Welded link) Check for wear, stretch, gouges, nicks, weld splatter, corrosion and distorted links; (Roller chain) in addition to the preceding, check that: rollers run freely; side plates are not spread open; there is no pitting or discoloration</td>
<td></td>
</tr>
<tr>
<td>7b</td>
<td>Mounting – Check to ensure hoist is properly mounted per manufacturers or engineering specifications and mounting location is sufficient for the intended loads.</td>
<td></td>
</tr>
<tr>
<td>7c</td>
<td>Wire rope – Check for broken, bent, kinked, distorted, birdcaging, crushed or corroded wire. Ensure wire rope free and not contacting any obstruction</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Reeling - Check for proper reeling (chain, rope, or strap type)</td>
<td></td>
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<tr>
<td>9</td>
<td>Festoon cable – Check that cable collects evenly, does not bind or hang-up</td>
<td></td>
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<tr>
<td>10</td>
<td>Operator position – Operator position protected by substantial shield to protect from cable failure.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Barricades and Signs – Signage posted indicating maximum load. Barricades established with proper signage for lift area.</td>
<td></td>
</tr>
</tbody>
</table>

Notes/comments: ____________________________
AERIAL LIFT/BUCKET TRUCK OPERATOR AUTHORIZATION

Name

Social Security No.  Company

Project No.  Location

Craft

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Type</th>
<th>Capacity</th>
<th>Examiner's Signature</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Restrictions:  ☐ Yes  ☐ No
Form 2C-09.2, Aerial Lifts and Bucket Trucks
Daily Inspection Form

Equipment identification number: ______________________________________

<table>
<thead>
<tr>
<th>Items</th>
<th>S</th>
<th>U</th>
<th>N/A</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controls labeled</td>
<td></td>
<td></td>
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<tr>
<td>Emergency controls</td>
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<tr>
<td>Fuel system</td>
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<tr>
<td>Guards</td>
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<tr>
<td>Handrails</td>
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<tr>
<td>Hydraulic system (no leaks)</td>
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<tr>
<td>Load charts or labels</td>
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<tr>
<td>Muffler and exhaust</td>
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<tr>
<td>Operating controls</td>
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<tr>
<td>Outriggers</td>
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<tr>
<td>Tires and wheels</td>
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<tr>
<td>Travel alarms</td>
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</table>

Comments and corrective actions taken on above noted deficiencies:

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Inspected by (print) ________________________________ Date ________________________________

Signature ____________________________________________
Form 2C-11.1, Forklift Inspection Record

Company: _____________________________

Make:  
Model:  
Serial No:  
Week Ending:  

Check satisfactory or unsatisfactory for each item.

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>Forks</td>
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<tr>
<td>Hoist chains and cylinder</td>
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<tr>
<td>Brakes - drum</td>
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<tr>
<td>Brakes - carrier</td>
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<td>Other (specify):</td>
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Initials of Inspector

These items shall be checked prior to each shift’s use. Report ALL items in need of repair to the equipment superintendent at the time of inspection. Return the completed sheet to the equipment superintendent at the end of the week.

To be completed by the mechanic:

<table>
<thead>
<tr>
<th>Date reported</th>
<th>Repairs Made:</th>
<th>Date Repaired</th>
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</table>

Signature of the equipment superintendent: _________________________________________________
Check equipment to be inspected:

- Dump truck
- Front-end loader
- Bulldozer
- Backhoe
- Motor grader
- Other: ____________________

Equipment Identification: ____________________

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>CONDITION</th>
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<th>REMARKS</th>
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<td>Access and egress</td>
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<td>Control and levers labeled</td>
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<td>Cotter pins/hardened pins</td>
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<td>Hydraulic system (no leaks)</td>
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<td>Platform decking</td>
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<td>Rearview mirror</td>
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<td>Seatbelts</td>
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<td>Side mirrors (both)</td>
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<td>Steering mechanism</td>
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<td>Tracks, tires, and wheels</td>
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<td>Windshield wipers</td>
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______________________________    ______________________
Inspected By                                      Date

Deficiencies noted above were corrected. Signed ____________________________ Date ____________________
Equipment Identification:

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>CONDITION</th>
<th>REMARKS or REPAIRS</th>
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<td>Horn*</td>
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<td>Hydraulic system (no leaks)</td>
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<td>Windshield wipers</td>
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Comments:__________________________________________________________________________

Inspected By: _____________________________________________ Date: ________________
Form 2C-13.2, Geotechnical and Environmental Drilling Overhead and Underground Conflict Resolution Permit

Company: ______________________

<table>
<thead>
<tr>
<th>Project</th>
<th>MWO(s)</th>
<th>Drawing Number(s)</th>
</tr>
</thead>
</table>

The responsible party(ies) shall review the site for all potential overhead and underground conflicts within his or her purview, and initial in the appropriate space below indicating that a review has been performed, and any conflicts have been identified and resolved†.

<table>
<thead>
<tr>
<th>Boring Number*</th>
<th>Survey</th>
<th>Plant Representative</th>
<th>Client Project Lead</th>
<th>Construction Civil Lead</th>
<th>Drilling Contractor</th>
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* Soil boring may be offset from original location. However, radial distance from original location must be noted, and approved by all individuals.

† If utilities are unable to be cleared by signature, other clearing methods such as vacuum excavation, ground penetrating radar, or 811 tickets may be used. (Note – 811 call required by state law – **Civil Field Services - Hydroexcavation or hand auger to be used to clear all locations**)

What group or individual is responsible for coordination with the generating facility, owner, construction project or controlling entity?

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Has the generating facility, owner, construction project, or controlling entity been communicated with regarding any soil boring and consulted regarding any potential underground utilities?

_____ Yes  _____ No  _____ N/A

Has the boring location been cleared by hydroexcavation or hand auger to minimum depth of 10 ft?

_____ Yes  _____ No  _____ N/A

(Note – If the answer is NO to either of the above questions, contact the appropriate supervisor before continuing work. For locations within the bounds of an active T&PS construction project, construction site management and the facility shall be consulted.)

COMMENTS:
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
Project Name: ____________________________________________
Project Number:____________________________________________

Trade name for product under review: ____________________________________________

Manufacturer's name, address, and phone number:
__________________________________________________________________________
__________________________________________________________________________

Date SDS was received from the purchasing agent/contractor ______________________

Check the appropriate response:

☐ YES - The information contained in the SDS for this product has been reviewed by the
ES&H professional and the product has been approved for order.

☐ NO - Based upon the hazard information contained in the SDS, it is not recommended
that this material be used on this project if an alternative material is available.

☐ CONDITIONAL APPROVAL - The SDS review of this product indicates that special
precautions will be required in order to use this product on this site. The purchase and use of this
material will be approved, provided arrangements are made to meet the following requirements:

Storage: _________________________________________________________________
______________________________________________________________________

Ventilation: ______________________________________________________________
______________________________________________________________________

Training: __________________________________________________________________
______________________________________________________________________

Personal protective equipment: _____________________________________________

Other: ___________________________________________________________________
______________________________________________________________________

Reviewed by: __________________________ Date Reviewed: ___________
<table>
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<th>Product name</th>
<th>Quantity</th>
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<th>MSDS date</th>
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</table>
Form 2E-04.1, Planning Outline for Energized Electrical Equipment

Company: ____________________________

Scope of work: ____________________________

Date to be performed: ____________________________

Contingency plan if the job runs past normal hours: ____________________________

Specify the equipment that is currently energized. ____________________________

What equipment will be energized after the work takes place? ____________________________

What clearance/lockout-tagout is required at the completion of the defined scope of work? ____________________________

Will energizing the equipment change the clearance/lockout-tagout requirements for other personnel?

☐ YES  ☐ NO  ☐ N/A

Who will perform the following activities?

- Throwing switches: ____________________________
- High potential/Megger® testing: ____________________________
- Voltage testing: ____________________________

What personal protective equipment will be required?

Shock protection: ____________________________

Flash protection: ____________________________

What conditions would stop this work? ____________________________
<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>Has all testing been completed and have test sheets been reviewed?</td>
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<tr>
<td>Have the single-line drawings been reviewed, and are they accessible at</td>
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<td>the point of work?</td>
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<tr>
<td>Has the need for standby personnel or barricading of equipment to be</td>
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<tr>
<td>energized been discussed?</td>
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<tr>
<td>Has the downstream clearance/lockout/tagout been verified?</td>
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<tr>
<td>Have all personnel in the area been notified?</td>
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<tr>
<td>Has a visual inspection been made?</td>
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<tr>
<td>Is the proper labeling in place?</td>
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<tr>
<td>Have all ground clusters been removed and accounted for?</td>
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<tr>
<td>Are all doors closed and properly latched?</td>
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<td>Are all covers installed and all holes properly covered?</td>
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<tr>
<td>Has the removal or isolation of temporary feeds/connections been verified?</td>
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</tbody>
</table>

**SPECIAL CONSIDERATIONS**

---

Contractor Electrical Representative                      Date

T&PS or Third-Party Electrical Representative            Date

Plant Electrical Representative                           Date
Form 2E-05.1, Planning Outline for Deenergizing Electrical Equipment  

Scope of work: _____________________________________________
____________________________________________________________________________________
Date to be performed: ___________________________________________________________________
Duration of the work: ___________________________________________________________________
Contingency plan if the job runs past normal hours: __________________________
____________________________________________________________________________________
What will not be deenergized? __________________________________________________________
____________________________________________________________________________________
Method of clearance: ___________________________________________________________________
(List clearance points on the reverse side of this checklist.)
What clearance is required at the completion of the defined scope of work? ________________________
____________________________________________________________________________________
Reverification requirements (Clearance, grounds, test for voltage): _______________________________
____________________________________________________________________________________
Will deenergizing the equipment change the lockout requirements for other personnel?  Yes  No  N/A
Who will perform the following activities?
   • Throwing switches: ___________________________________________
   • Voltage testing: ___________________________________________
(List points for voltage testing on the reverse side of this checklist.)
   • Installing grounds: _________________________________________
(List points for ground installation on the reverse side of this checklist.)
What personal protective equipment will be required? ____________________________
What conditions would stop this work? _________________________________________________

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have the single-line drawings been reviewed, and are they accessible at the point of work?</td>
<td></td>
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<tr>
<td>Has the need for standby personnel or barricading of equipment to be deenergized been discussed?</td>
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<tr>
<td>Are there any back feeds, alternate feeds, or temporary feeds present?</td>
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</tbody>
</table>

Please note any special considerations on the reverse side of this checklist.
<table>
<thead>
<tr>
<th>CLEARANCE LIST</th>
<th>VOLTAGE TEST POINTS</th>
<th>GROUND INSTALLATION POINTS</th>
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</thead>
<tbody>
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SPECIAL CONSIDERATIONS

________________________________________________________________________
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NOTE
Verbal authorizations are to be noted on the appropriate signature line below by printing the name of the appropriate responder and printing the name and signature of the person who received the verbal authorization. Only one verbal authorization is allowed in the planning process. Either the plant electrical representative or the T&PS electrical representative must sign if the other is a verbal authorization.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Contractor Electrical Representative  Date

T&PS or Third-Party Electrical Representative  Date

Plant Electrical Representative  Date
Form 2E-07.1, Energized Electrical Work Permit

Company: ____________________________

Part 1: To be completed by the requestor

1. Description of circuit/equipment/job location: __________________________________________________________

2. Description of work to be done: ________________________________________________________________

3. Justification of why circuit/equipment cannot be deenergized or the work deferred until the next scheduled outage:
   _____________________________________________________________________________________________
   _____________________________________________________________________________________________

Requestor/Title: ____________________________ Date: ______________

Part 2: To be completed by the requestor

1. Detailed job description procedure to be used in performing the above detailed work:
   _____________________________________________________________________________________________
   Check when complete
   ☐

2. Description of the safe work practices to be employed:
   _____________________________________________________________________________________________
   ☐

3. Results of the shock hazard analysis:
   _____________________________________________________________________________________________
   ☐

4. Determination of shock protection boundaries:
   _____________________________________________________________________________________________
   ☐

5. Results of the flash hazard analysis:
   _____________________________________________________________________________________________
   ☐

6. Determination of the flash protection boundary:
   _____________________________________________________________________________________________
   ☐

7. Necessary personal protective equipment to safely perform the assigned task:
   _____________________________________________________________________________________________
   ☐

8. Means employed to restrict the access of unqualified persons from the work area:
   _____________________________________________________________________________________________
   ☐

9. Evidence of completion of a job planning safety analysis:
   _____________________________________________________________________________________________
   ☐

10. Do you agree the above work can be done safely? To be answered by electrically qualified persons performing work
    ☐ Yes ☐ No
    ☐ Yes ☐ No
    ☐ Yes ☐ No
    ☐ Yes ☐ No

Contractor Electrical Representative Date T&PS Electrical Representative Date

Contractor Safety Representative Date T&PS Safety Representative Date

Contractor Corporate Safety Date Plant Electrical Representative Date
Form 2E-07.2, Electrical Hazard Form for Work
Performed Under a Clearance/Lockout Tagout
(Supplemental to Job Safety Analysis)

Company: ____________________________

1. Identify the equipment and frame/bus feeder ID/voltage rating/circuit ID/job location:
____________________________________________________________________________________________
__________________________________________________________________________________________

2. Provide a description of work to be performed:
____________________________________________________________________________________________
__________________________________________________________________________________________

3. Indicate the voltage level of the equipment to be worked on by circling an option below.
120 VAC  208 VAC  480 VAC  600 VAC  2300 VAC  4160 VAC  6900 VAC  13,800 VAC Other _________

4. Have proper clearances or lockout/tagout actions been performed so this work can proceed safely?  
YES or NO

5. Have the work boundaries of the clearance and possible electrical hazards such as adjacent energized cubicles, bus-
work, incoming feeds, back feeds, control, and heater circuits been clearly identified and discussed?  
YES or NO

6. What shock protection/arc flash boundaries (sheet metal, covers, guards, insulating blankets, etc.) are in place to
isolate these energized parts from the area the work will be performed? _____________________________
_________________________________________________________________________________________

7. Please identify the appropriate personal protective equipment/tools that will be used along with their associated safety
ratings (for example, hand tools, gloves, voltage meters, high voltage detectors, insulating blankets, arc flash suits).

8. Has this Electrical Hazard form been completed, signed by all employees who will perform the work, attached to the
JSB, and posted at the jobsite?  YES or NO

Sign below to indicate that you possess the adequate training and understanding to perform this work safely.
(To be answered and signed by ALL electrically qualified persons performing the work.)

_________________________  ___________________________  ___________________________
Date                        Date                        Date

_________________________  ___________________________  ___________________________
Date                        Date                        Date

_________________________  ___________________________  ___________________________
Date                        Date                        Date

_________________________  ___________________________  ___________________________
Date                        Date                        Date

Contractor Electrical Supervisor (Foreman)  Date  Contractor Safety Representative  Date
Overview

In an active earth-work construction zone, if at all possible, no one should be on the ground around moving equipment. However, sometimes it becomes necessary to have a man on the ground.

The man-on-the-ground (MOG) process is in place to help equipment operators and the workers around them identify the hazards of working on foot near heavy equipment and give them the knowledge to help avoid serious accidents.

CAUTION

Active earth-work construction zones are RESTRICTED AREAS.

Potential hazards associated with these areas include traffic and construction heavy equipment.

The MOG process is established to protect personnel from traffic and earth-moving and earth-hauling equipment.

Definitions

[contractor] site management – The site superintendent, general foreman, or safety professional.

active earth-work construction zone – A restricted area marked with signage where heavy equipment is actively performing earth work. These areas will be determined by [contractor] site management. See attachment A, Sample Warning Signs, for sample restricted work area signage.

safe zone – An area designated with signage that is inside the earth-work construction zone. Anyone can observe work while on foot inside the safe zone. Workers will be able to drive to each safe zone. See attachment A for sample safe zone signage.
Description of site and conditions

[Contractor – Add a description of the specific site and conditions of the earth-work construction zone.]

[Contractor] EMPLOYEES

Procedure for [Contractor] Personnel to Enter Active Earth-Work Construction Work Zones

[Contractor] Site Management

- [Contractor] site management, general foreman, and safety professional have the authority to approach working equipment.

- [Contractor] site management must make visual contact with operators when leaving a vehicle on foot in work zones. The operator will acknowledge by lowering equipment attachment to the ground and ask the man on the ground of his or her intention.

Surveyors/Soil Testing

- When surveying and soil testing needs to be performed, [contractor] site management will establish the work zone. A guard vehicle (piece of equipment or truck with strobe) with a driver/operator will be assigned to guard the MOG.

- The surveying and/or soil technician will stay within 10 ft of the guard vehicle the entire time he or she is in the work zone.

- All earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the guard vehicle protecting the surveyor and/or soil technician.

Mechanic, Maintenance, or Fueling of Equipment

- If possible, earth-moving equipment needing repair and/or maintenance will be removed from the active earth-work construction zone.

- If removing the equipment is not possible, the mechanic, maintenance, or fuel person will use a guard vehicle equipped with a strobe light. The strobe light must be activated by the mechanic, maintenance, or fuel person before exiting the vehicle.

- The mechanic, maintenance, or fuel person shall make visual contact with the operator once exiting the vehicle. The operator will acknowledge by lowering equipment attachment to the ground and ask the man on the ground of his or her intention.

- The mechanic, maintenance, or fuel person will use cones and/or signs in the earth-work construction zone to establish a work area.

- All other earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the mechanic, maintenance, or fuel person.
Other [Contractor] Employees

The following steps must be followed by all other [contractor] employees **not performing** mechanic, maintenance, fueling, surveying, or soil testing:

- All [contractor] personnel will first receive permission from site management to enter the earth-work construction zone.
- [Contractor] will use a guard vehicle equipped with a strobe light. The strobe light must be activated by personnel before exiting the guard vehicle.
- [Contractor] personnel will stay within 10 ft of the guard vehicle using discretion in terms of where they are located on the jobsite.
- [Contractor] employees must make visual contact with operators when leaving the guard vehicle on foot in work zones. The operator will acknowledge by lowering the equipment attachment to the ground and ask the man on the ground of his or her intention.
- All earth-moving equipment will stay a safe (50 ft when possible) reasonable distance away from the guard vehicle protecting the personnel.
- When the work inside the work zone is completed, [contractor] site management will inform the operators that the work is completed.

SAFE ZONES (All Site Personnel)

[Contractor] site management will establish safe zones (when possible) inside of an active earth-work construction zone(s). The safe zones are the only allowable spaces inside the earth-work construction zone to safely get out of a vehicle to monitor progress of work. The safe zones will also be designated by appropriate signage; see attachment A, Sample Warning Signs, for suggested signage.

Non-[Contractor] Employees Performing Surveying or Soil Testing

- [Contractor] site management, [contractor] equipment operators, and surveyors or soil testers shall perform a JSA prior to begin work.
- When surveying and soil testing needs to be performed, [contractor] site management will provide a guard vehicle (piece of equipment or truck with strobe) that will be assigned to guard the man-on-the-ground.
- The surveying or soil technician will stay within 10 ft of the guard vehicle the entire time he or she is in the work zone.
- All earth-moving equipment will stay a safe, reasonable distance (50 ft when possible) from the vehicle protecting the surveyor or soil tester.
Non-[Contractor] Employees

- Visitors and/or non-[contractor] employees wishing to enter the active earth-work construction zone on foot (other than in a safe zone) must contact [Enter contact name(s) and number(s)] prior to entering.

- [Contractor] site management will escort the visitor and/or non-[contractor] employee to the area.

Attachments

Attachment A, Sample Warning Signs
## Attachment A, Sample Warning Signs

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<tr>
<th>Restricted Work Area</th>
<th><img src="image" alt="Restricted Work Area" /></th>
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<td><strong>RESTRICTED WORK AREA</strong>&lt;br&gt;NO PEDESTRIAN TRAFFIC PERMITTED OUTSIDE DESIGNATED SAFE ZONE</td>
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<td><strong>CAUTION</strong>&lt;br&gt;ACTIVE TRUCK ROUTE</td>
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SOUTHERN COMPANY GENERATION

SCG-SH-0200

GENERATION CLEARANCE PROCEDURE

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<td>January 11, 2013</td>
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<td>February 23, 2016</td>
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<td>December 9, 2016</td>
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## CONTENTS

1.0 PURPOSE AND SCOPE .................................................................................................................. 3  
1.1 Purpose ........................................................................................................................................... 3  
1.2 Scope ............................................................................................................................................... 3  
2.0 DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS .................................................. 3  
2.1 Definitions ....................................................................................................................................... 3  
2.2 References ....................................................................................................................................... 7  
3.0 RESPONSIBILITY ............................................................................................................................ 7  
3.1 Facility Management ....................................................................................................................... 7  
3.2 Designated Employees ..................................................................................................................... 7  
3.3 Employees Requesting a Clearance ................................................................................................. 8  
3.4 Designated Operating Area ............................................................................................................ 8  
3.5 Personnel ......................................................................................................................................... 8  
3.6 Clearance Holders ........................................................................................................................... 8  
4.0 REQUIREMENTS ............................................................................................................................... 8  
4.1 Requesting a Clearance .................................................................................................................. 8  
4.2 Preparing and Issuing a Clearance .................................................................................................. 9  
4.3 Executing a Clearance ...................................................................................................................... 10  
4.4 Obtaining a Clearance .................................................................................................................... 12  
4.5 Signing Off a Clearance ................................................................................................................... 14  
4.6 Releasing a Clearance .................................................................................................................... 15  
4.7 Functional Release .......................................................................................................................... 16  
4.8 Change to Clearance ....................................................................................................................... 21  
4.9 Clearance for Personnel Not On the Authorized List ..................................................................... 23  
4.10 Hold Tags ....................................................................................................................................... 25  
4.11 Exceptions ..................................................................................................................................... 26  
4.12 Training ......................................................................................................................................... 27  
4.13 Procedure Review .......................................................................................................................... 27  
4.14 Clearance Process Review ............................................................................................................. 28  
4.15 Facility Active Clearance Review ................................................................................................. 28  
5.0 KEY CONTACT ............................................................................................................................... 28  
6.0 RECORD RETENTION .................................................................................................................... 28  
7.0 ATTACHMENTS ............................................................................................................................. 28  
   Attachment A – Authorized List ......................................................................................................... 30  
   Attachment B – Clearance Index ......................................................................................................... 31  
   Attachment C – Clearance Numbering System ............................................................................... 32  
   Attachment D – Clearance Exception Report .................................................................................... 34  
   Attachment E – Southern Company Generation Equipment Clearance Form ............................. 35  
   Attachment F – Clearance Tags .......................................................................................................... 36  
   Attachment G – Temporary Protective Ground (TPG) Tag and Forms ............................................. 39  
   Attachment H – Responsible Person Notification Form ................................................................. 42

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2 of 42
1.0 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this procedure is to outline a uniform method and systematic approach for obtaining and releasing clearances on all hazardous energy sources to ensure the safety of all personnel working at Southern Company Generation facilities.

1.2 Scope

The Southern Company Generation clearance procedure applies to all persons working on equipment under the control and operation of Southern Company Generation facilities and must be strictly adhered to. This procedure shall be implemented and strictly enforced by the plant manager and plant management. All persons are responsible for following all guidelines contained within this procedure. Violation of these rules shall be considered sufficient cause for proper disciplinary action up to and including discharge.

This procedure meets all requirements set forth in 29 CFR 1910.269(d), Hazardous energy control (lockout/tagout) procedures, and 29 CFR 1910.147, The control of hazardous energy (lockout/tagout).

Generating facilities may implement site-specific instructions that supplement but do not replace this procedure. Site-specific instructions shall be reviewed and evaluated by the Generation Clearance Committee.

If a conflict arises between this procedure and the clearance forms, clearance instructions, site-specific instructions, or the Frequently Asked Questions (FAQ), the text of the procedure governs.

NOTE - Changes initiated in this revision of SCG-SH-0200 include the adoption of **double verification**. This new requirement must be implemented for all clearances at all facilities. Variance for this requirement can be requested for small work groups. In order for such a variance to be made, it must be documented in the site-specific SCG-SH-0200 procedure and approved by site management.

2.0 DEFINITIONS, REFERENCES, AND RELATED DOCUMENTS

2.1 Definitions

**active clearance** – A clearance that has been issued, executed, and placed in the active clearance file.

**active clearance file** – A designated file or location that holds all clearances that have been issued and that are considered to be active.

**approved energy isolation devices** – Those devices (tags, cable ties, breaker clamps, etc.) specifically provided by the facility for the identification and/or control of
hazardous energy sources. Where possible, tags shall be attached with self-locking, weather-resistant cable ties that can withstand a 50-lb pull.

**authorized list** – A document maintained by the facility that identifies designated employees by name and the type of clearance activity(ies) that each employee is permitted to perform. To qualify, employees must be validated through experience, training, competency testing or practical demonstration. Inclusion on the authorized list is determined at the discretion of the facility’s management.

**clearance** – The process of safely shutting down, isolating, and tagging hazardous energy sources that must be properly completed in order to ensure that machines or equipment are secure and safe for maintenance, inspection, or servicing.

**clearance index** – A form that lists the clearance numbers that have been issued and the status of each clearance. A clearance index is maintained by each designated operating area.

**clearance roster** – A form used to document and track clearance holders (Individual clearance holders, Departmental clearance holders, and Subclearance holders).

**date** – All dates must be written in MM/DD/YY format. This restriction does not apply when the date is part of the clearance number.

**departmental clearance** – A clearance held by an individual for an affected department and identified on the clearance roster. A Departmental clearance is held to maintain the continuation and integrity of the clearance. No individual can perform work under a Departmental clearance. Individuals permitted to hold Departmental clearances are identified in the facility’s authorized list. Based on the permissions given on a facility’s authorized list, a person can release a Departmental clearance for another person.

**designated employee** – A qualified employee who can receive clearance requests, issue, and/or execute plant clearances. Designated employees are listed on a facility’s authorized list.

**designated operating area** – An area or department of the plant that has the exclusive control of issuing and executing plant clearances in their specific area. Examples of designated operating areas are:

- Operations.
- Fuels.
- Laboratory.
- Individual hydro plants.
- Combustion turbine plants.
- Combined cycle plants.
**double verification** – A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all steps of the clearance instructions have been correctly executed.

**electronic hold tag** – A tag, represented by an onscreen icon, that can be placed by programmable logic controllers (PLC) or other approved types of electronic control systems used to prevent the operation of any equipment or component under clearance.

**functional release for test** – The process of performing an operational check, repositioning of equipment, or minor servicing of equipment while under a clearance.

**functional release for maintenance** – The documented process and steps that must be taken by the designated operating area to safely authorize the transfer of specialized local equipment control and permission to a qualified person holding equipment under clearance, the authority to operate specific equipment in circumstances where it is required to use the normal or an alternate energy source to perform an assigned maintenance activity such as jogging, rotating, or intermittently moving the equipment.

**functional release file** – A designated file or location that holds all active functional release documents.

**functional release tag** – A blue tag used during a functional release to temporarily replace a red hold tag to provide an indication that the equipment is undergoing a functional release for test or maintenance.

**hazardous energy source** – An energy source is “hazardous” and must be contained or controlled if it is capable of causing injury. All forms of energy, electrical, mechanical, hydraulic, pneumatic, chemical, radiation, thermal, gravity or others have the potential to present a hazard.

**inactive clearance file** – A designated file or location that holds all completed clearance forms that have been released. Inactive clearances shall be held for 1 year.

**individual clearance** – A clearance issued that authorizes a specific individual listed on the clearance roster to perform work on the equipment under clearance.

**individual clearance holder** – A qualified employee who has been trained and evaluated on specific duties associated with the Southern Company Generation Clearance Procedure and whose name appears on the facility’s authorized list.

**minor servicing** – Performing simple adjustments to ensure that equipment is functioning properly (without having to disassemble the components being adjusted and/or expose an employee to a hazardous energy source).

**nonlisted individuals** – Individuals who intend to work on equipment held under a clearance and who are not included on the facility’s authorized list. These individuals may be unfamiliar with the equipment or lack the necessary experience or training.
**operational check** – An activity, other than maintenance, to determine if the equipment or system is functioning properly.

**personal hold tag** – A hold tag used by an employee for his or her personal protection. Personal hold tags must include the name of the employee applying the tag and the date the tag was applied. A personal hold tag can be removed only by the person who applied it or by management procedure in an exceptional situation. See 4.11, Exceptions, to release clearance and document the action using a Clearance Exception Report (attachment D).

**plant clearance** – A clearance issued on any plant equipment up to and including the main unit disconnects and the starting station service disconnects.

**qualified employee** – An individual trained and evaluated in the Southern Company Generation Clearance Procedure. A qualified employee may request clearance and/or perform work on equipment or systems held under his or her clearance. Such personnel are approved and individually listed on a facility’s authorized list.

**red hold tag** – A red tag or device used to prevent the operation of any equipment or component under a clearance.

**Responsible Person Notification Form** - Used by a contractor’s responsible person to provide notification and documentation to the Subclearance holder that all individuals on the supplemental roster have been notified of a change to clearance or a functional release.

**subclearance** – A clearance held by a qualified person for personnel whose name(s) is not on the authorized list.

**subclearance holder** – A qualified employee who holds a clearance for a person or group of people who are not on the facility’s authorized list. Subclearance holders are designated by plant management and included on the facility’s authorized list. Based on the permissions given on a facility’s authorized list, a person can release a Subclearance for another person.

**supplemental roster** – A sheet to document and track personnel working under a Subclearance holder. The supplemental roster is a supplement to the clearance roster.

**system operator** – An operator outside of Southern Company Generation who has the responsibility to maintain the integrity of the transmission system. Electrical system clearances shall be administered according to individual operating company policies.

**temporary protective grounds (TPG)** – Devices installed by qualified personnel for the purpose of grounding electrical equipment previously energized at a voltage greater than 600 V. All TPGs installed on equipment under a plant (electrical) clearance shall be tagged with an orange TPG tag. The designated employee in the designated operating area shall record the orange TPG tags issued and returned on the TPG Tag Tracking Log (see attachment G, Temporary Protective Ground (TPG) Tag and Forms).
time – All times are recorded as operating time, that is, central time in a 24-hour format.

2.2 References
SCG-SH-0230, Temporary Protective Grounds.

3.0 RESPONSIBILITY

3.1 Facility Management

Facility management is responsible for the following:

- Ensuring proper communication among all parties involved in the clearance process to maintain the safety of both personnel and equipment.
- Establishing and maintaining an authorized list. The authorized list shall include the following:
  a. Names of all persons approved by the facility’s management to accept clearance at the facility.
  b. The various levels of clearance that a qualified employee can hold along with each person’s designated area of authority.
- Making additions or deletions to the authorized list at their discretion.
- Reviewing the authorized list at least annually.

NOTE - Only those individuals whose names are on the authorized list can sign onto the clearance roster. See attachment A, Authorized List, for a sample of the form to be used to list qualified and designated employees and each person’s area(s) of authority. This form is available as a separate document which can be customized for the facility.
- Ensuring control of the isolation of energy sources, as needed, while construction or demolition is underway on equipment connected to energized plant systems.
- Ensuring that, in the event of an accident or incident related to a clearance, all documentation related to the clearance, including tags, are collected and retained.

3.2 Designated Employees

Designated employees (as identified on the Authorized List) are responsible for the following:
- Receiving clearance requests.
- Ensuring a requested clearance is appropriate for the work to be performed.
- Working with the employee requesting a clearance to complete the Clearance Information Sheet of the Southern Company Generation Equipment Clearance Form.
- Issuing clearances.
- Executing clearance instructions.
• Stopping work and consulting the designated operating area if a question arises concerning a clearance.

3.3 **Employees Requesting a Clearance**

Employees requesting a clearance are responsible for the following:

• Ensuring the clearance is appropriate for the work to be performed.
• Working with the designated employee to complete the Clearance Information sheet of the Southern Company Generation Equipment Clearance Form.

**NOTE** - Only qualified employees (as identified on the Authorized List) can request a clearance.

3.4 **Designated Operating Area**

The designated operating area is responsible for maintaining active clearance forms in the active clearance file.

3.5 **Personnel**

Personnel are responsible for using sound judgment and ensuring complete understanding and agreement to assure the safety of all personnel involved, if conditions arise that are not covered by this procedure.

3.6 **Clearance Holders**

All clearance holders are responsible for the following:

• Signing on and off the clearance roster when required.
• Verifying that the clearance is still active before beginning a new shift.
• Removing the TPGs and returning the orange TPG tags to the designated employee in the designated operating area.

4.0 **REQUIREMENTS**

4.1 **Requesting a Clearance**

Employees shall request clearance when servicing and maintaining machines and equipment in which the unexpected energization, startup, or release of stored energy from the machine or equipment could cause injury to employees.

All clearance requests shall be made to a designated employee in the appropriate designated operating area. The designated employee shall verify the employee requesting a clearance is on the facility’s authorized list. The designated employee responsible for receiving the request and/or issuing the clearance and the person requesting the clearance are responsible for ensuring the clearance is appropriate for the work to be performed and shall work together to ensure the completion of the Clearance Information sheet of the Southern Company Generation Equipment Clearance Form (see attachment E, Southern Company Generation Equipment Clearance Form).
NOTE - Because of the limited number of personnel at some facilities, the same person may be both the requester and the designated employee who issues the clearance.

4.2 Preparing and Issuing a Clearance

A designated employee from the designated operating area shall be assigned to prepare the clearance and associated red hold tags and then issue the clearance. All clearances shall remain under the exclusive control of the designated operating area.

Hand-written information on clearance forms shall be completed in ink and be legible. Neither correction fluid nor pencil shall be used on clearance forms. To indicate a correction, designated employees shall draw a single line through the incorrect information and write the correct information above or after. All sections on the clearance form shall either be completed or marked N/A. All copies of clearance forms shall be clearly marked as copies.

The designated employee shall then:

1. Using the clearance index, determine an appropriate clearance number. See attachment C, Clearance Numbering System.

2. Write the clearance number at the top of the Equipment Clearance Form.

3. Obtain a prewritten list of clearance and release instructions, if available, or develop the clearance instructions. These instructions shall be listed on the Equipment Clearance Form under the sections titled Clearance Instructions and Release Instructions respectively.

NOTE - Prewritten clearance instructions shall also include release instructions.

4. Ensure that all instructions and sequences are correct. All electrical sources of energy greater than 50 v will be considered for isolation and control. The clearance instructions shall list all energy sources, the correct means of isolation, and the means of verifying their control in order to safely isolate the equipment.

   a. Each step of the clearance instructions shall be numbered and listed in the sequence in which it is to be performed to safely contain all hazardous energy sources. The release instructions shall also be listed in the order necessary for the reactivation of the equipment.

   b. Before using prewritten clearance or release instructions, the designated employee shall review the steps to ensure that they are adequate for the work to be performed. Prewritten clearance and release instructions are not intended to replace any of the planning necessary to ensure worker safety.

   c. If additional space is needed to properly record the details of either the clearance or release instructions, the designated employee shall use the Additional Clearance/Release Instructions sheet and attach it to the Equipment Clearance Form. In the section titled Additional Pages of Clearance Instructions? a checkmark shall be put in the YES box at the bottom of the sheet.
5. Legibly print and sign his or her name in the spaces provided under the Authorizations for Clearance – Clearance Instructions Issued By section along with the time and date.

Additional information, such as confined space issues, shall be listed in the Comments box of the Equipment Clearance Form.

NOTE - Multiple clearance tags shall be permitted on equipment covered by more than one clearance.

4.3 Executing a Clearance

A designated employee(s) from the designated operating area shall be assigned to execute the clearance instructions.

The designated employee shall review the clearance instructions to ensure agreement with and a clear understanding of the expected actions. If the employee executing the clearance instructions has any doubts that the clearance instructions are correct, he or she shall stop immediately and consult the designated operating area that issued the clearance to resolve the question(s).

The designated employee shall carry the original clearance form while executing the clearance instructions. Under no circumstances shall anyone attempt to execute the clearance instructions from memory.

The designated employee shall perform the clearance instructions as specified and in the sequence listed on the clearance form.

The designated employee assigned to execute the clearance shall then:

1. Ensure the equipment is properly removed from service and that all stored and/or potentially hazardous or residual energy has been relieved, disconnected, or properly restrained.

NOTE – The successful isolation of every hazardous energy source listed on the clearance instructions must be verified and tested. The means of testing and verification may be listed as part of the clearance instructions or added to each step through the use of the clearance instruction sheet that includes the column entitled “Test Performed.” See SCG-SH-0200 Addendum: Verification Guideline for additional details.

NOTE – The level of safety that is achieved by a tagout program must be equivalent to the level of safety obtained by the use of a lockout program. With a tagout program, an additional means of securing the hazardous energy isolation points are necessary to ensure protection. This process is known as “Tags Plus” and shall include extra measures to restrain the energy sources. Such measures may include one or more of the following:

- Removing an isolating circuit element.
- Blocking of a controlling switch.
- Opening of an extra disconnecting device.
• Removing a valve handle.
• Securing the isolation device with a chain, cable, or similar means.
• Using control devices specifically designed to eliminate the likelihood of inadvertent energizing.

2. Isolate all hazardous energy sources in such a manner as to prevent their inadvertent activation. Only approved energy isolation devices specifically provided by the facility for the purpose of controlling hazardous energy shall be used.

3. Ensure that a red hold tag has been placed on each isolation point identified on the clearance instruction sheet. At a minimum, these tags shall be identified with the corresponding clearance number.

   a. Where tagout devices are used on energy isolation devices that have the capability of being locked out, the tagout device shall be fastened at the same point where a lock would be attached.

   b. Where a tagout device(s) cannot be affixed directly to the energy isolating device, the tagout device shall be located as close as safely possible to the energy isolating device in a position that shall be very obvious to anyone attempting to operate the energy isolating device.

4. Verify that isolation and/or de-energization has been accomplished. (See SCG-SH-0200 Addendum: Verification Guideline.)

5. Initial the column labeled Completed on the clearance form indicating the successful completion of each step.

6. Legibly print and sign his or her name in the spaces provided under Authorizations for Clearance – Clearance Instructions Executed By along with the time and date to indicate that all steps listed on the clearance instructions have been properly performed and isolation of the equipment has been verified.

   a. If more than one designated employee is involved in executing the clearance instructions, the person executing the step shall initial the appropriate step(s).

   b. One of the employees shall be responsible for verifying that all steps have been completed, and he or she shall sign the clearance form in the section titled Clearance Instructions Executed By.

   c. A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all steps of the clearance instructions have been correctly executed. This employee shall indicate that each step has been completed as written in the Clearance Instructions by initialing the corresponding box in the Completed column on the Clearance Information sheet.

   d. The second designated employee shall then print, sign, and write the date and time in the section titled Second Verification of Execution By on the Clearance Information sheet.
7. Return all sheets used in executing the clearance to the designated operating area. All sheets related to the clearance should be securely attached to one another.

The designated operating area shall maintain active clearance forms in the active clearance file.

### 4.4 Obtaining a Clearance

<table>
<thead>
<tr>
<th><strong>Individual clearances</strong></th>
<th>Shall be obtained before any maintenance, inspection, or servicing of equipment held under clearance can be performed. An Individual clearance is for the protection of the individual whose name appears on the roster.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Departmental clearances</strong></td>
<td>Shall be used by approved personnel to maintain the continuation and integrity of the clearance, or to ensure that the Departmental clearance holder is kept informed regarding the status of the clearance activities. Such clearances shall not be used for the protection of personnel. A holder of a Departmental clearance shall also obtain an Individual clearance should he or she need to perform work or obtain a functional release on the equipment.</td>
</tr>
<tr>
<td><strong>Subclearances</strong></td>
<td>Shall be used for the protection of personnel not on the authorized list. See 4.9, Clearance for Personnel Not on the Authorized List.</td>
</tr>
</tbody>
</table>

The holder of any type of clearance shall:

1. Review the information on the equipment clearance form to ensure that the clearance is adequate for the work to be performed.

2. Sign on the clearance roster:
   a. Provide all of the following information on the *Clearance Roster*:
      - Legibly print his or her name in the *Requested By* column.
      - Indicate his or her assigned department in the *Dept* column.
      - Circle one letter to indicate the type of clearance requested:
        - I for an Individual clearance.
        - D for a Departmental clearance.
        - S for a Subclearance.
   b. Sign his or her name in the *Accept Clearance* column.
   c. Fill in the date and time the clearance was accepted.
   d. In addition, Subclearance holders shall provide the information required by the last three columns on the right side of the clearance roster including:
      - The legibly printed name of the person responsible for keeping track of and communicating with non-authorized personnel.
- The location of a supplemental roster or other system for tracking such personnel.
- The means to contact the responsible person.
  See 4.9, Clearance for Personnel Not on the Authorized List.

e. If additional space is needed to record clearance holders, use the Clearance Roster Addendum sheet and attach it to the Equipment Clearance Form. In the section titled Additional Pages of Clearance Roster?, put a checkmark in the YES box.

3. Visually verify the equipment under the clearance is appropriately isolated and tagged, and safe for the work he or she intends to perform.

For those employees engaged in electrical work, the clearance shall be checked to ensure the equipment is properly isolated for the work to be performed. If normally energized parts will be exposed to contact while the machine or equipment is de-energized, a test shall be performed by a qualified person to ensure that these parts are de-energized.

NOTE - Verification of de-energization and isolation shall not jeopardize the safety of personnel working on the equipment.

Before beginning a new shift, each clearance holder shall be responsible for verifying that the clearance is still active.

The system operator may request a Departmental clearance. To request clearance, the system operator shall notify a designated employee in a designated operating area. The designated employee shall complete all information on the clearance roster supplying both the system operator’s name and a plant contact (the name of the designated employee who took the request) and the date and time of the request.

If TPGs are needed as part of the work to be performed the following steps shall be followed:

1. An Individual clearance holder or Subclearance holder may request orange TPG tags from the designated employee in the designated operating area. The designated employee shall prepare the appropriate number of orange TPG tags by writing on the tag(s) in ink:
   - The clearance number.
   - A unique, sequential tag identification number.

2. The designated employee shall then complete the TPG Tag Tracking Log with the clearance holder’s name, the tag identification number(s), and time/date the tags were issued. The TPG Tag Tracking Log shall remain in the active file as part of the clearance documentation.

3. At the top of the Clearance Roster, the designated employee shall circle the YES to indicate TPG tags have been issued for equipment covered by the clearance. This box shall serve as a reminder that orange TPG tags shall be returned to the
designated employee in the designated operating area before the clearance release instructions are issued.

4. The Individual clearance holder or Subclearance holder shall ensure the installation of TPGs with orange tags, movement of TPGs if needed, removal of TPGs when the planned work is completed, and return of the orange TPG tags to the designated operating area.

5. If more than one Individual clearance holder or Subclearance holder needs to have the equipment temporarily grounded, they shall use one of the following options:

<table>
<thead>
<tr>
<th>OPTION A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each clearance holder may obtain his or her own orange TPG tags from the designated employee in the designated operating area and attach the tags to his or her own TPGs.</td>
</tr>
</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>OPTION B</th>
</tr>
</thead>
<tbody>
<tr>
<td>When more than one clearance holder or work group (for example, workers or work crews from both Generation and Transmission) needs TPGs, one Individual clearance holder or Subclearance holder may obtain TPG tags from the designated employee in the designated operating area and attach the TPG tags to his or her TPGs. With the original TPG tag holder’s permission, another Individual clearance holder or Subclearance holder may obtain his or her own orange TPG tags and attach them to the original set of TPGs.</td>
</tr>
</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>OPTION C</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Individual clearance holder on a Generation work crew may obtain TPG tags from the designated employee in the designated operating area and attach the tags to his or her TPGs. The designated employee shall check the Additional Worker List Issued column on the TPG Tag Tracking Log. Other members of the Generation crew shall use the same TPGs and TPG tags. To document other crew members using the TPGs, the TPG tag holder shall fill out the top portion of the TPG Tag Holder Additional Worker List. With the tag holder’s permission, other members of the work crew may work under the original TPGs by signing on the TPG Tag Holder Additional Worker List. Each crew member shall sign off the TPG Tag Holder Additional Worker List when he or she completes his or her planned work. The TPG Tag Holder Additional Worker List shall be returned to the designated operating area when completed.</td>
</tr>
</tbody>
</table>

4.5 Signing Off a Clearance

Upon the completion of the planned work, all clearance holders shall promptly sign off the clearance roster.

Before signing off a clearance:

- All clearance holders shall verify that all tools and materials are cleared from the equipment.
- Subclearance holders shall verify with the person responsible for work crew(s) that all non-authorized personnel, tools, and materials are clear of the equipment.
- All clearance holders listed on the TPG Tag Tracking Log shall ensure the removal of the TPGs and return of the orange TPG tags to the designated employee in the designated operating area.
The designated employee shall record the return of the orange TPG tags on the TPG Tag Tracking Log and shall dispose of the TPG tags.

The last person removing TPGs tags shall be responsible for removing the TPGs.

The holder of any type clearance shall:

1. Sign his or her name in the *Release Clearance* column of the *Clearance Roster*.
2. Fill in the date and time.

When notified to release a Departmental clearance for a system operator, the designated employee shall:

1. Sign his or her name in the *Release Clearance* column in the *Plant Contact* section
2. Legibly print the system operator’s name.
3. Fill in the time and date that the clearance was released.

**NOTE -** If a clearance is needed to maintain the continuation and integrity of the clearance, a departmental clearance should be taken before the Individual clearance is released.

### 4.6 Releasing a Clearance

The equipment under clearance may be restored to service when:

- All clearance holders have released clearance.
- The designated employee from the designated operating area has verified there are no active clearance holders.
- All orange TPG tags listed on the TPG Tag Tracking Log have been returned.

A designated employee from the designated operating area shall prepare the release instructions or review them if they had been prepared in advance. This employee shall ensure that all instructions and sequences are correct.

The designated employee shall legibly print and sign his or her name in the space under *Authorizations for Release – Release Instructions Issued By*, along with the time and date.

A designated employee from the designated operating area shall be assigned to execute the release instructions. This employee shall review the release instructions to ensure agreement with and a clear understanding of the expected actions. The designated employee shall then review the clearance roster to ensure that all personnel have signed-off, releasing their clearances.

If the employee executing the release instructions has any doubts that the clearance instructions are correct, he or she shall stop immediately and consult the designated operating area that issued the clearance to resolve the question(s).
The designated employee shall carry the original clearance form while executing the release instructions. Under no circumstances shall anyone attempt to execute the release instructions from memory.

The release instructions shall be performed as specified on the clearance form.

The designated employee assigned to execute the release instructions shall then:

1. Perform the release instructions as written.

2. Initial the space in the Completed column of the sheet indicating the successful completion of each step.

3. Legibly print and sign his or her name in the space under Authorizations for Release – Release Instructions Executed By, along with the time and date, indicating that all steps listed on the clearance release instructions have been properly performed.
   a. If more than one designated employee is involved in executing the release instructions, the person executing the step shall initial the appropriate step(s).
   b. One of the employees shall be responsible for verifying that all steps have been completed, and he or she shall sign the equipment clearance form in the section titled Release Instructions Executed By.
   c. A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all steps of the Release instructions have been correctly executed. This employee shall indicate that each step has been completed as written in the Release Instructions by initialing the corresponding box in the Completed column on the Clearance Information sheet.
   d. The second designated employee shall then print, sign, and write the date and time in the section titled Second Verification of Release By on the Clearance Information sheet.

4. Return all sheets to the designated operating area. All sheets related to the clearance should be securely attached to one another.

5. Dispose of hold tags when clearance is released.

The designated operating area shall maintain inactive clearance forms in the inactive clearance file.

4.7 Functional Release

4.7.1 Functional Release for Test

A functional release for test may be required in situations when it is necessary to perform an operational check, servicing, or repositioning of equipment under a clearance, and the temporary release of the clearance is necessary.
Any qualified employee holding an Individual clearance or a Subclearance may request a functional release for test of the equipment under the clearance.

NOTE - A functional release for test shall not be required for tests such as meggering, motor evaluation tests, or resistance testing where clearance is not released.

4.7.2 Functional Release for Maintenance

A functional release for maintenance shall be requested and authorized only for equipment that is already safely isolated and tagged in accordance with the Generation clearance procedure.

The person requesting a functional release for maintenance shall be an active Individual clearance or Subclearance holder of the equipment under clearance prior to requesting a functional release for maintenance.

A functional release for maintenance shall be used when a qualified employee needs local control to operate equipment under clearance to perform an assigned maintenance activity such as jogging, rotating, or intermittently moving the equipment. Examples include rotating an air heater to replace baskets and rotating intake water screens to replace or repair them.

The designated operating area shall approve use of a functional release for maintenance.

During a functional release for maintenance, the qualified employee might need to induce energy into the equipment through normal or alternate means to perform the maintenance activity.

A functional release for maintenance authorizes a qualified employee or his or her designee holding stated equipment under clearance, the authority to operate the equipment only when all the following conditions have been met:

- A two-step electrical or mechanical process is required to start the equipment; that is, an additional safety measure that shall be performed by the person designated to operate the equipment.

NOTE - If a two-step process is not in place, a functional release for maintenance cannot be used.

- The name(s) of the person(s) who shall operate the local controls are identified. When working around the clock, a person shall be identified for each shift.

- A documented job safety briefing has been performed including a briefing with the immediate work group that addresses:
  - The person(s) who shall operate the controls.
  - The means of controlling access to the work area.
  - The type of communication method that shall be used to notify others in his or her work group to clear the area prior to energizing the equipment.
Each person’s communication method to respond back that he or she has taken a safe position that shall prevent him or her from making or coming in contact with rotating or energized equipment.

When securing equipment under a functional release for maintenance, it is imperative to understand that some part or portion of the original clearance shall be released and permission authorized for local control of some part of the equipment under clearance to be operated.

4.7.3 Functional Release Procedure

To perform a functional release:

1. The requester shall contact the designated operating area regarding the need for a functional release.

2. The requester shall ensure the functional release is safe for all clearance holders on the equipment under the functional release and shall not endanger people working under clearances on associated equipment.

3. The designated operating area shall assign a person to develop the steps to perform the test.

4. The requester and the designated employee shall complete the information portion of the Functional Release and Notification Roster along with placing a checkmark in the TEST OR MAINTENANCE box. They shall include a list of all steps necessary to safely reinstate the equipment along with the steps necessary to restore the clearance following the completion of the test.

5. The designated employee shall then legibly print the names of all active clearance holders listed on the accompanying clearance roster and circle the type of clearance that each individual holds.

6. The requester shall contact every active clearance holder and inform him or her of the pending functional release.

NOTE - Subclearance holders shall notify the person responsible for the work crew(s) working under his or her Subclearance about the functional release.

7. All active clearance holders shall be required to sign the Notification Roster confirming notification and approval of the functional release, and listing the time and date.

8. The requester shall then ensure that all employees have been safely positioned or removed from the work area and that the equipment listed on the functional release is clear of personnel, tools, and materials that may present a hazard when energy is restored.

NOTE - All active clearance holders who signed the Notification Roster confirming notification and approval of the functional release shall be safely positioned or removed from the work area while the functional release is in progress. When a Functional Release for Maintenance is performed, the requester shall also identify the person(s)
approved to operate the energy source(s) while under a functional release for maintenance. The name(s) shall be entered on each blue functional release tag that is generated and shall later be placed on the specific local controls that he or she shall be authorized to operate.

9. After all active clearance holders have personally signed the Notification Roster, the designated employee shall print, sign, and write the date and time in the section titled Functional Release Instructions Issued By.

10. A designated employee shall execute the functional release instructions. This process shall be conducted in the exact sequence listed on the Functional Release Instructions.

The designated employee shall ensure each red hold tag that is removed, per the functional release instructions, is replaced with a blue functional release tag. The appropriate number of blue functional release tags shall be prepared by:

- Placing a checkmark in the TEST or MAINTENANCE box.
- Writing the name of the requester of the functional release.
- If a Functional Release for Maintenance – writing the name(s) of the person(s) approved to operate the equipment during the functional release.
- Writing the clearance number and the date of the functional release.

11. The designated employee shall then initial the corresponding space on the Functional Release Instructions indicating the successful completion of each step. At the completion of all of the above steps, the designated employee shall print, sign, and write the date and time in the section titled Functional Release Instructions Executed By.

12. The designated employee shall ensure all red hold tags that are removed to perform the functional release are attached to the functional release sheet. The original clearance form, the Functional Release and Notification Roster, and all red tags that were removed shall be retained in the functional release file until the work is complete.

13. A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all functional release instructions have been correctly executed. This employee shall indicate that each step has been completed as written in the Functional Release Instructions by initialing the corresponding box in the Completed column on the Functional Release and Notification Roster sheet.

14. The second designated employee shall then print, sign, and write the date and time in the section titled Verification – Steps to Release Clearance on the Functional Release and Notification Roster sheet.

15. A designated employee shall then notify the requester that the Functional Release is now in effect and the work can be performed.
NOTE - There shall be only one functional release issued per clearance at a given time. While a functional release is in progress, a person who wants to sign off the clearance shall sign off the functional release prior to signing off the clearance. In addition, if a person wants to sign onto a clearance while a functional release is in progress, he or she shall contact the requester of the functional release to obtain an understanding of the activity, get the approval of the requester, and then sign on both the clearance and the functional release.

4.7.4 Returning Equipment to Previous Clearance Status

As soon as possible after the completion of the functional release, the equipment shall be returned to its previous clearance status. This process shall include:

1. The requester shall notify the designated employee in the designated operating area that the activities identified in the section titled Functional Release Information – Reason for Functional Release have been completed, and the requester shall print and sign his or her name, and list the time and date in the section titled Functional Release Information – Requester’s Permission to Restore Clearance.

2. A designated employee shall review the reisolation instructions to ensure their accuracy, and then in the section titled Authorizations for Release – Reisolation Issued By, print and sign his or her name and list the time and date.

3. A designated employee shall perform the steps necessary to restore the clearance. This process shall be conducted in the exact sequence as listed on the Steps to Restore Clearance.

4. The designated employee shall remove the blue functional release tags. When the clearance has been restored per the instructions, the original red hold tags shall be placed on the equipment.

5. The designated employee shall then initial the corresponding space under the Completed column, indicating the completion of each step. The blue tags should be returned to the designated operating area for disposal.

6. Upon completion of the reisolation instructions, the designated employee shall print and sign his or her name and list the time and date in the section titled Authorizations for Release – Executed By.

7. A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all steps necessary to restore the clearance have been correctly executed. This employee shall indicate that each step has been completed as written by initialing the corresponding box in the Completed column on the Functional Release and Notification Roster sheet.

8. The second designated employee shall then print, sign, and write the date and time in the section titled Verification – Steps to Restore Clearance of the Functional Release and Notification Roster sheet.

9. Upon the successful restoration of the clearance, the second designated employee shall notify the requester of the functional release that the equipment is back under the original clearance.
NOTE – The successful reisolation of every hazardous energy source listed on the Functional Release form must be verified and tested. The means of testing and verification may be listed as part of the steps to restore clearance or added to each step through the use of Functional Release form that includes the column entitled “Test Performed.” See SCG-SH-0200 Addendum: Verification Guideline for additional details.

10. The requester shall then personally contact each active clearance holder and require him or her to sign the Functional Release Completion Notification confirming notification that the activity is complete and the original clearance is restored and list the time and date. Each clearance holder can consider the clearance to be active after signing.

NOTE - Any subclearance holder shall notify the person responsible for the work crew(s) working under his or her Subclearance that the original clearance has been restored and is in effect.

11. Before beginning work, the clearance holder shall check to be certain that the equipment is safe to work on.

12. The requester shall print, sign, and write the date and time in the section titled Functional Release Information – Functional Release Complete.

13. The designated employee shall ensure the Functional Release and Notification Roster is attached to the appropriate clearance form and returned to the active clearance file.

If a problem arises during a functional release for test, the designated employee from the designated operating area shall stop the activity and return to the previous clearance.

The person requesting the functional release shall notify all clearance holders that the functional release for test has been stopped and require them to sign the Functional Release and Notification Roster confirming notification that the activity has been stopped and the original clearance is restored and list the time and date.

4.8 CHANGE TO CLEARANCE

1. At the discretion of plant management, a change to clearance may be used on the rare occasion when it is necessary to add or delete a few steps on an active clearance. If the change to clearance risks the integrity of the clearance, the change to clearance must not be completed.

2. This option is not intended to circumvent the clearance procedure but to provide a safer control of components and equipment that are under clearance. The option to implement a change to a clearance is strictly at the discretion of the designated operating area. Any qualified employee who is holding a clearance can request a change to the clearance.

3. When a change to clearance is requested, the following steps shall be performed:

a. The requester shall contact the designated operating area regarding the need to change the clearance.
b. The requester and the designated employee shall complete the information portion of the *Change to Clearance and Notification Roster*. They shall indicate whether steps have been added or deleted from the original clearance by checking the appropriate box on the sheet. The requester shall complete the *Employee Requesting Change* row of the information section. The requester shall provide the reason for the change in sufficient detail. The designated employee shall legibly write the information in the space provided.

c. The designated employee shall obtain the approval from the team leader or the equivalent in the designated operating area. This person shall complete the *Authorizing Change* row.

d. The designated employee shall develop and complete the instructions portion of the sheet including developing a list of steps necessary to be added and/or deleted from the active clearance.

e. The designated employee shall then legibly print the names of all active clearance holders listed on the accompanying clearance roster and circle the type of clearance that each individual holds.

4. The requester shall notify each active clearance holder and inform him or her of the pending change to the clearance. All active clearance holders are required to sign the roster confirming notification along with listing the time and date. All active clearance holders must personally sign the notification roster before the designated employee can begin making the requested change to the clearance. A Subclearance holder shall notify the person responsible for work crew(s) working under his or her Subclearance about the change to clearance.

5. The change to the clearance must be conducted in the exact sequence as listed in the instruction section of the sheet. The designated employee executing the change to clearance shall initial the corresponding space in the *Completed* column indicating the successful completion of each step. After completing all steps, the person executing the change to clearance shall complete the *Employee Executing Change to Clearance* row.

6. A second designated employee from the designated operating area with the authority to execute a clearance shall verify that all steps of the change to clearance instructions have been correctly executed. This employee shall indicate that each step has been completed as written by initialing the corresponding box in the *Completed, Date, and Time* columns on the *Change to Clearance and Notification Roster* sheet. This designated employee shall then print, sign, and write the date and time in the section titled *Verification – Change to Clearance Instructions* of the *Change to Clearance and Notification Roster* sheet.

**NOTE** – The successful isolation of every added hazardous energy source listed on the Change to Clearance form must be verified and tested. The means of testing and verification may be listed as part of the instruction steps or added to each step through the use of Change to Clearance form that includes the column entitled “Test Performed.” See SCG-SH-0200 Addendum: Verification Guideline for additional details.

7. A designated employee shall make the appropriate changes on the original clearance and release instructions on the equipment clearance form.
a. If step(s) have been eliminated from the original clearance instructions, draw a single line through the deleted step(s), and date and initial. Remove the associated red hold tags and attach them to the clearance form until the clearance is completed.

b. If step(s) are added to the original clearance, they shall be added to the bottom of the list of clearance and release instructions.

8. The Change to Clearance and Notification Roster shall then be attached to the original clearance form and maintained in the active clearance file.

4.9 Clearance for Personnel Not On the Authorized List

A person whose name is not on the facility’s authorized list may obtain clearance in one of the following ways:

- By demonstrating to the facility’s management that an effective system of accountability for personnel that meets all requirements set forth in 29 CFR 1910.269(d) and 1910.147 has been established. A facility’s management shall review and approve the system prior to the start of work. Under this system, an authorized Southern Company employee shall accept clearance for the nonlisted individuals using a Subclearance. The person responsible for the nonlisted group of individuals shall assume responsibility for the accountability and notification of their personnel. The Roster Information section of the Supplemental Roster shall be completed, and the sheet shall be returned to the designated operating area on completion of the work.

- By signing on and signing off the Supplemental Roster provided with the Southern Company Generation Equipment Clearance Form. Under this system, an authorized Southern Company employee shall accept clearance for the nonlisted individuals using a Subclearance. The person responsible for the nonlisted group of individuals shall assume responsibility for the accountability and notification of their personnel. The completed Supplemental Roster is part of the clearance form and shall be returned to the designated operating area on completion of the work.

Before beginning work, the portion of the clearance roster established for documenting information related to Subclearances shall be completed including the following:

- A person specified by the contractor shall be responsible for tracking and communicating with all nonlisted individuals who intend to work on the facility’s equipment. The name of this person shall be legibly printed on the clearance roster in the spaces adjacent to the designated Subclearance holder. This person could be a contractor superintendent, crew foreman, a facility project coordinator, or any other responsible individual associated with the group.

- If a roster, document, or some other method is used to track the individual workers, its location shall be listed in the second column of this section.

- In the final column, a means of contacting the person assigned the responsibility for the tracking system, such as a telephone or radio number, shall be included.

The authorized Southern Company employee who holds a Subclearance will ensure the person responsible for the work crew is afforded the opportunity to review the associated...
clearance instruction sheet(s). A copy of the clearance instructions shall be attached to the supplemental roster when issued.

NOTE - For labor broker jobs, a Southern Company employee shall sign the clearance roster and hold a Subclearance. In addition, he or she may be responsible for the work crew.

If an alternate system of accountability has been established, the top portion of the Supplemental Roster provided with the Southern Company Generation Equipment Clearance Form shall be completed. Then:

1. The holder of the Subclearance and the person responsible for the work crew shall work together to complete the information section of the supplemental roster.

2. The Subclearance holder shall place a checkmark in the ALTERNATE ACCOUNTABILITY SYSTEM PROVIDED box.

If an effective system of accountability has not been established, the Supplemental Roster provided with the Southern Company Generation Equipment Clearance Form shall be used. This sheet shall be completed as follows:

1. The holder of the Subclearance and the person responsible for the work crew shall work together to complete the information section of the supplemental roster.

2. The person responsible for the work crew shall then ensure that all individuals intending to work on the equipment under clearance sign on and off the supplemental roster. The required information for the supplemental roster shall include:

   a. Signing on the roster (accepting clearance): Each individual shall legibly print and sign his or her name, the name of the company or organization for which he or she works, along with the time and date he or she accepted the clearance.

   b. Signing off the roster (releasing clearance): Each individual shall sign the corresponding space next to his or her original signature, along with the time and date that he or she releases the clearance.

3. Each individual employee who works on the equipment shall sign off the supplemental roster, releasing clearance, upon the completion of his or her work or at the end of his or her shift, whichever is required by the facility.

The authorized Southern Company employee who holds a Subclearance shall ensure the person responsible for the work crew is appropriately notified regarding all activity that could affect the safety of the work crew.

A Responsible Person Notification Form (see attachment H) shall be used by a contractor's responsible person to provide notification to the Subclearance holder that all individuals on the supplemental roster have been notified of a change to clearance or a functional release. When all parties have signed the Responsible Person Notification Form, the Subclearance holder shall sign the applicable Notification Roster. The completed Responsible Person Notification Form shall be attached to the Clearance
Forms. A separate Responsible Person Notification Form shall be used for each Subclearance holder as listed on the Clearance Roster.

If the authorized Southern Company employee holds a Subclearance for more than one work crew or for multiple work shifts, he or she shall sign the clearance roster for each work crew or work shift.

The person responsible for the work crew shall ensure that all individuals under his or her control are appropriately notified regarding any activity that could affect the safety of individual workers. The person responsible for the crew and the holder of the Subclearance shall remain in communication throughout the duration of the work.

Prior to releasing a clearance or signing any notification roster, the holder of a Subclearance shall receive confirmation from the person responsible for the work crew verifying the notification of his or her crew.

The person responsible for the work crew shall sign the section titled Responsible Person Releases Clearance and fill in the date he or she releases clearance.

The Subclearance holder shall return the Southern Company supplemental roster to the designated operating area prior to signing off the clearance roster.

4.10 Hold Tags

4.10.1 Electronic Hold Tags

Some facilities use a system to control or operate equipment with programmable logic controllers (PLC) or other approved types of electronic control systems. Such systems provide electronic hold tags that are represented by an icon on the control console. The following requirements shall apply at those locations that use such systems:

- These tags shall be placed electronically on the control console screen as specified in the Clearance Instructions section of the Equipment Clearance Form.
- All personnel that operate the control console shall be trained in the use of the PLC system and be aware that the icon represents a hold tag.
- Upon release of the clearance, the electronic hold tag shall be removed from the control console screen as specified in the Release Instructions of the Equipment Clearance Form.

NOTE - Programmable Logic Controllers (PLC) are used in many applications. These control circuit devices are not considered energy isolating devices for purposes of clearance. Safety functions, such as stopping or containing hazardous energy, can fail due to component failure, program errors, magnetic field interference, electrical surges, improper use or maintenance, etc.

4.10.2 Personal Hold Tags

At the discretion of plant management, a person on the facility’s authorized list may use a personal hold tag for work on approved equipment that is not under a plant clearance. Personal hold tags shall be valid for the duration of the shift during which the tag is hung and shall be removed and properly disposed of upon completion of the work. Personal hold tags may be used if all of the following requirements have been met:
• The designated operating area responsible for the equipment shall be first notified and in agreement to permit the use of the personal hold tag.

• The machine or equipment, after being shut down, shall have no potential for stored energy, residual energy, or re-accumulation of stored energy which could endanger employees.

• The machine or equipment shall have a single energy source which can be readily identified and isolated.

• The isolation of the single energy source shall completely de-energize and deactivate the machine or equipment.

• The machine or equipment shall be isolated from the single energy source during servicing or maintenance.

• A single device shall properly achieve an isolated condition.

• The isolation device shall be under the exclusive control of the qualified employee performing the servicing or maintenance.

• The servicing or maintenance shall not create hazards for other employees.

• The facility, in using this exception, shall have had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

• The equipment shall not be under an active plant clearance. A personal hold tag may not be used if any other clearance tag is on the equipment.

The name of the person hanging the personal hold tag and the date that tag was hung shall be written on the tag.

Before beginning work, the person who hung the personal hold tag shall check to be certain that the equipment is properly isolated for the work to be performed.

If the work has not been completed and/or the equipment is not ready to be placed back into service, the individual using the personal tag shall secure another type of clearance to isolate the equipment before removing his or her tag.

After completion of the work, the person who hung the personal hold tag shall notify the designated operating area that the work is complete.

4.11 Exceptions

The plant manager or his or her designee may release a clearance for an employee who is not readily available. When such action is necessary, the following steps shall be taken:

1. All reasonable efforts shall be made to contact the Individual clearance or Subclearance holder to inform him or her that the equipment shall be reenergized and to obtain approval to release his or her clearance.

2. If the employee holding the clearance is at the facility, the employee shall release the clearance.
3. If the employee holding the clearance is NOT at the facility and can be reached by telephone or radio and it is not reasonable for the employee to return to the facility, the plant manager or his or her designee may, with the employee’s agreement, release the clearance.

4. If the employee cannot be contacted, the plant manager or his or her designee shall follow these steps to release the clearance:
   a. Determine the employee holding the clearance has indeed left the facility.
   b. Thoroughly inspect all of the equipment being protected by the clearance to ensure that all personnel, tools, and equipment are clear and the equipment is safe to bring back into operation.
   c. Notify the clearance holder of the actions as soon as possible and before he or she resumes work at the facility or before the start of work on his or her next scheduled workday.

5. The employee releasing the clearance shall sign his or her name on all appropriate documents for the absent employee. A note shall be made in the Comments box of the clearance instructions sheet explaining this action.

6. When deemed appropriate by plant management, a Clearance Exception Report shall be completed detailing all of the actions taken following the removal of an Individual clearance or Subclearance.
   a. This report shall be prepared by the employee who released the clearance and reviewed with the clearance holder upon his or her return.
   b. The Clearance Exception Report may also be used to record any clearance procedural or equipment issues in need of resolution.

4.12 Training

Training shall be provided to ensure the purpose and function of the Southern Company Generation Clearance Procedure are understood by employees and that the knowledge and skills required for its safe application and usage have been acquired.

Retraining shall be provided annually, when there is a change in the clearance procedure, a change in the equipment or processes that presents a new hazard, or when there is reason to believe there are deviations from or inadequacies in an employee’s knowledge or use of the procedure.

4.13 Procedure Review

Southern Company Generation management shall ensure that a periodic review of the Southern Company Generation Clearance Procedure is conducted at least annually to ensure that the procedure and the provisions of 29 CFR 1910.269(d) and 29 CFR 1910.147 are being followed.
4.14 Clearance Process Review

At a minimum, an annual review/inspection of the clearance process shall be performed to ensure that the procedure is being followed. The review/inspection shall:

- Be designed to identify and correct any deviations or inadequacies.
  - Deviations or inadequacies shall be documented.
  - Corrective measure dates shall be set up for deviations or inadequacies that are found.
- Be performed by an employee not holding any of the clearances that are being reviewed.
- Include a review between the inspector and authorized or affected employees of their respective responsibilities under the clearance procedure.
- Certify the review has been accomplished. The certification shall identify:
  - The machine or equipment on which the energy control was used.
  - The date of the review/inspection.
  - The employees included in the review/inspection.
  - The person performing the review/inspection.

4.15 Facility Active Clearance Review

Each facility shall inspect all active clearances annually.

Active clearances shall be inspected annually by an employee from the designated operating area to ensure that:

- The status of the equipment has not changed.
- The clearance is still valid.
- The hold tags are intact and legible. Lost or worn tags shall be replaced.

Following each review, the employee from the designated operating area shall check the box on the Clearance Information sheet and date and initial the appropriate Clearance Index sheet of any outstanding active equipment clearance.

5.0 KEY CONTACT

For questions regarding the content and implementation of this document, contact your safety and health representative.

6.0 RECORD RETENTION

7.0 ATTACHMENTS

Attachment A – Authorized List
Attachment B – Clearance List
Attachment C – Clearance Numbering System
Attachment D – Clearance Exception Report
Attachment E – Southern Company Generation Equipment Clearance Form
Attachment F – Clearance Tags
Attachment G – Temporary Protective Ground (TPG) Tag and Forms
Attachment H – Responsible Person Notification Form
## ATTACHMENT A – AUTHORIZED LIST

<table>
<thead>
<tr>
<th>Location</th>
<th>Department</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### Employee & Authorized To:

<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Classification</th>
<th>Clearance</th>
<th>Control</th>
<th>Radiological</th>
<th>Personal Protective</th>
<th>Maintenance</th>
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</tbody>
</table>

AVAILABLE AS A SEPARATE DOCUMENT TO BE CUSTOMIZED
ATTACHMENT B – CLEARANCE INDEX

<table>
<thead>
<tr>
<th>Plant</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Clearance Index**
Southern Company Generation
SCG-SH-0200, Generation Clearance Procedure

<table>
<thead>
<tr>
<th>Equipment and ID</th>
<th>Isolated</th>
<th>Released</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td>Date</td>
</tr>
</tbody>
</table>

Available as a separate document to be customized
ATTACHMENT C – CLEARANCE NUMBERING SYSTEM

Clearance numbers should be written as follows:

A. For equipment on specific units, use a five-part number, separated by hyphens, designating the unit number, year, month, day, and a consecutive number for clearances written on that day.

NOTE

The clearance number used on electronic tags may be a four- or five-part number, depending on the capabilities of the electronic system. For a four-part number, omit the day (DD).

Example 1: If the clearance is the 11th one written on July 4, 2005 for unit one:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Year (YY)</th>
<th>Month (MM)</th>
<th>Day (DD)</th>
<th>Consecutive Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>05</td>
<td>07</td>
<td>04</td>
<td>11</td>
</tr>
</tbody>
</table>

The clearance number would be 01-05-07-04-11.

B. For equipment not associated with a unit, such as fossil fuels or water treatment, the same numbering system shall be used with the exception that the unit number shall be replaced with, for example, FF for Fossil Fuels or WT for Water Treatment plant clearances. Area designations in a plant may be site-specific.

Example 2: If the clearance is the 11th written on a fossil fuels piece of equipment on July 4, 2005:

<table>
<thead>
<tr>
<th>Plant Area</th>
<th>Year (YY)</th>
<th>Month (MM)</th>
<th>Day (DD)</th>
<th>Consecutive Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF</td>
<td>05</td>
<td>07</td>
<td>04</td>
<td>11</td>
</tr>
</tbody>
</table>

The clearance number would be FF-05-07-04-11.

C. For equipment common to multiple units, the numbering system established in paragraph A shall be used with the exception that the clearance number shall begin with the letter C (denoting common equipment) followed by the unit number control room or initials of the designated operating area (LA for Lab, FF for Fossil Fuels, or WT for Water Treatment).

Example 3: If the clearance is the first one written from the unit 2 control room on July 4, 2005 for common equipment:
<table>
<thead>
<tr>
<th>Plant Area</th>
<th>Year (YY)</th>
<th>Month (MM)</th>
<th>Day (DD)</th>
<th>Consecutive Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C02</td>
<td>05</td>
<td>07</td>
<td>04</td>
<td>01</td>
</tr>
</tbody>
</table>

The clearance number would be **C02-05-07-04-01**.

**Example 4:** If the clearance is the first one written from the Water Treatment designated operating area on July 4, 2005 for common equipment:

<table>
<thead>
<tr>
<th>Plant Area</th>
<th>Year (YY)</th>
<th>Month (MM)</th>
<th>Day (DD)</th>
<th>Consecutive Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWT</td>
<td>05</td>
<td>07</td>
<td>04</td>
<td>01</td>
</tr>
</tbody>
</table>

The clearance number would be **CWT-05-07-04-01**.
## ATTACHMENT D – CLEARANCE EXCEPTION REPORT

### Clearance Exception Report
Southern Company Generation
SCG-SH-4200, Generation Clearance Procedure

#### Details of the Event (complete all spaces or mark N/A)

<table>
<thead>
<tr>
<th>Type of issue</th>
<th>Clearance removal</th>
<th>Procedural issue</th>
<th>Equipment Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Plant</td>
<td>Clearance Number</td>
<td>Name of Equipment</td>
<td></td>
</tr>
<tr>
<td>Mgt. Designee Approval (Print)</td>
<td>Mgt. Designee Approval (Signature)</td>
<td>Time</td>
<td>Date</td>
</tr>
<tr>
<td>Report completed by (Print)</td>
<td>Report completed by (Signature)</td>
<td>Time</td>
<td>Date</td>
</tr>
</tbody>
</table>

#### Description of event

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

#### Immediate corrective action taken

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

---

**Available as a separate document to be customized**
ATTACHMENT E – SOUTHERN COMPANY GENERATION EQUIPMENT CLEARANCE FORM

- Clearance Information.
- Additional Clearance/Release Instructions.
- Clearance Roster.
- Clearance Roster Addendum.
- Functional Release and Notification Roster.
- Functional Release and Notification Roster Addendum.
- Change to Clearance and Notification Roster.
- Change to Clearance and Notification Roster Addendum.
- Supplemental Roster.
- Supplemental Roster Addendum.
ATTACHMENT F – CLEARANCE TAGS

Front

DANGER

HOLD TAG
DO NOT OPERATE

Clearance # ____________________________

See Other Side

Back

DANGER

DO NOT REMOVE THIS TAG

Comments: ____________________________

______________________________

______________________________

See Other Side

Clearance Hold Tag
Form Number 5-6112
FUNCTIONAL RELEASE TAG

See Other Side

Front

FUNCTIONAL RELEASE

For (check box)  Test ☐  Maintenance ☐

Requester Name: ________________________________

Clearance Number: ______________________________

Date: ______________________________

Information below required for functional release for maintenance

Name of Equipment Operator

Day _______  Evening ________  Night ________

Back

Functional Release Tag
Form Number 5-6113
PERSONAL HOLD TAG

DO NOT OPERATE
PERSONAL HOLD TAG

Back
Front

Personal Hold Tag
Form Number 5-6114
ATTACHMENT G – TEMPORARY PROTECTIVE GROUND (TPG) TAG AND FORMS

SOUTHERN COMPANY GENERATION

TEMPORARY PROTECTIVE GROUND TAG

Clearance number __________
TPG tag number __________

CAUTION

Do NOT Remove This Grounding Device
Unless Authorized By The Clearance Holder

Temporary Protective Ground (TPG) Tag
### TPG Tag Tracking Log

**When using this form, refer to SCG-SH-0230, Temporary Protective Grounds**

**TPG Tag Tracking Log**

**AVAILABLE AS A SEPARATE DOCUMENT TO BE CUSTOMIZED**
### TPG Tag Holder Additional Worker List

When using this form, refer to SCG-SH-0230, Temporary Protective Grounds

#### AVAILABLE AS A SEPARATE DOCUMENT TO BE CUSTOMIZED
**ATTACHMENT H – RESPONSIBLE PERSON NOTIFICATION FORM**

This Responsible Person Notification Form shall be used to ensure and document that proper notification has been accomplished between the Sub clearance Holder and the Responsible Person regarding a change to clearance or a functional release. The Responsible Person and the Sub clearance Holder shall sign the applicable notification form indicating the unauthorized individuals working on the equipment have been made aware of the pending change. The completed Notification Form shall be attached to the applicable Clearance Form.

A separate Notification Form shall be used for each change to clearance or functional release.

### Southern Company Generation Equipment Clearance Form

<table>
<thead>
<tr>
<th>Clearance Number</th>
<th>Date/Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

**Equipment**

#### Notification Form

<table>
<thead>
<tr>
<th>Notification of Functional Release</th>
<th>Check One: Notification of Functional Release</th>
<th>Notification of Change to Clearance</th>
</tr>
</thead>
</table>

**Sub clearance Holder (Print):**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

**Responsible Person Confirms Notification:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Company Name</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

**Responsible Person Confirms Completion:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Company Name</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

Reason for Functional Release and Details:

---

### Notification of Change to Clearance

<table>
<thead>
<tr>
<th>Sub clearance Holder (Print):</th>
<th>Signature</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

**Responsible Person Confirms Notification:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Company Name</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

**Responsible Person Confirms Completion:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Company Name</th>
<th>Date</th>
<th>Time</th>
<th>Contact Number</th>
</tr>
</thead>
</table>

Reason for Change to Clearance and Details:

---

### Available as a Separate Document to Be Customized
SOUTHERN COMPANY GENERATION

SCG-SH-0201

LOCKOUT TAGOUT (LOTO) PROCEDURE

<table>
<thead>
<tr>
<th>Revision</th>
<th>Approval Date</th>
<th>Approved by</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>June 9, 2016</td>
<td>[Signature]</td>
<td>Executive Vice President and Chief Production Officer</td>
</tr>
<tr>
<td>1</td>
<td>January 1, 2018</td>
<td>[Signature]</td>
<td>Executive Vice President and Chief Operating Officer</td>
</tr>
</tbody>
</table>

Southern Company
CONTENTS

1.0 PURPOSE AND SCOPE........................................................................................................... 2
  1.1 Purpose ................................................................................................................................ 2
  1.2 Scope .................................................................................................................................. 2

2.0 DEFINITIONS AND REFERENCES......................................................................................... 3
  2.1 Definitions .......................................................................................................................... 3
  2.2 References ....................................................................................................................... 10

3.0 RESPONSIBILITY..................................................................................................................... 10
  3.1 Plant Manager ................................................................................................................... 10
  3.2 Operating Area Manager ..................................................................................................... 10
  3.3 LOTO Administrator ............................................................................................................ 11
  3.4 Authorized List Administrator ............................................................................................ 11
  3.5 Requestors .......................................................................................................................... 11
  3.6 Operating Area Leader (OAL) ............................................................................................... 11
  3.7 Primary Authorized Employee (PAE) ................................................................................... 12
  3.8 Operating Area Authorized Employee (OAAE) .................................................................. 13
  3.9 Verifier ............................................................................................................................... 13
  3.10 LOTO Holder .................................................................................................................... 13
  3.11 LOTO Coordinator ............................................................................................................ 14
  3.12 Non-listed Worker ............................................................................................................. 15

4.0 PROCEDURE ............................................................................................................................ 16
  4.1 Routine Lockout/Tagout (LOTO) ......................................................................................... 16
  4.2 Simple LOTO ...................................................................................................................... 16
  4.3 Develop LOTO Record ........................................................................................................ 17
  4.4 Isolate Equipment ............................................................................................................... 19
  4.5 Verify Isolation .................................................................................................................... 22
  4.6 Perform Work ..................................................................................................................... 24
  4.7 Maintenance Release .......................................................................................................... 26
  4.8 Work Completed .................................................................................................................. 28
  4.9 Release LOTO ..................................................................................................................... 29
  4.10 Suspend Work .................................................................................................................... 30
  4.11 Testing ............................................................................................................................... 31
  4.12 Modify Boundary ............................................................................................................... 32
  4.13 Non-listed/Visitor Lock ...................................................................................................... 33
  4.14 Lock Emergency Removal ............................................................................................... 34

5.0 TRAINING ................................................................................................................................ 35
  5.1 LOTO Awareness Training .................................................................................................. 36
  5.2 Authorized Worker Training ............................................................................................... 36
  5.3 Department Training and Proficiency Requirements ......................................................... 37
  5.4 Authorized List ................................................................................................................... 37

6.0 Procedure Review ................................................................................................................... 37
  6.1 LOTO Periodic Inspection ................................................................................................... 38
  6.2 Facility Active LOTO Review ............................................................................................. 38

7.0 KEY CONTACT ....................................................................................................................... 39

8.0 QUALITY RECORDS ............................................................................................................. 39

9.0 ATTACHMENTS ...................................................................................................................... 39
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure establishes a program, consisting of energy control, employee training, and periodic inspections, to ensure that before any worker performs any servicing or maintenance on equipment where the unexpected energizing, start up, or release of stored energy could occur and cause injury, the equipment is isolated from the energy source and rendered inoperative.

NOTE: Failure to follow directives outlined in this procedure is considered sufficient cause for disciplinary action, up to and including discharge.

1.2 Scope

This procedure applies to all persons (employees and contractors) working on equipment under the control and operation of Southern Company Generation facilities.

This procedure does not supersede procedures established for the orderly shut down of equipment. Those procedures must be followed to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

NOTE: This procedure does not apply to the following:

- Electrical energy sources less than 50V.
- Work on cord- and plug-connected equipment, where exposure to the hazards of unexpected energizing or startup of the equipment is controlled by unplugging the equipment from the energy source, and the plug is under the exclusive control of the individual performing the service or maintenance.
- Minor servicing, which includes performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).
- Work that does not involve plant-controlled equipment such as:
  - Equipment under the exclusive control of Transmission or Distribution.
  - Equipment identified as new construction that is under the exclusive control of E&CS Projects and has not been connected to the facility.

Generating facilities may develop site-specific procedures to supplement this procedure. Site-specific procedures do not replace material covered in this procedure.

When external maintenance or servicing personnel will be engaged in activities covered by the scope of this procedure, the authorized representatives of the Company and the contractors shall provide and coordinate their respective lockout or tagout procedures.

Details of the LOTO program will be covered as part of the Contractor Orientation Checklist. Southern Company LOTO Awareness Training is available under “Safety Orientation Requirements for Generation Contractors” at the following link: http://southerncompany.com/about-us/suppliers/requirements-plant-access.cshtml. It is the responsibility of each outside servicing employer to train and document their employees in the requirements of this procedure prior to the start of work.
2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

**active LOTO** – A LOTO that has been issued, executed, and has an operating area lock (orange) secured to a master lockbox indicating the associated equipment is isolated and ready for service or maintenance activity.

**active LOTO file** – A designated file or location, such as master lockbox, that holds all LOTO records that have been issued and are considered to be active.

**affected employee** – Employee that is affected by a lockout; which means their work involves the equipment that is being locked out and their job will be affected during the lockout. An affected employee is not authorized to lockout equipment.

**authorized employee** – Employee who has had proper training on equipment isolation and the associated hazards and is allowed to use lockout devices. An authorized employee can be an affected employee.

Authorized employees are qualified by training and evaluation in the Southern Company Generation LOTO procedure in the following categories:

- **LOTO Holder** – A qualified employee/worker who may request LOTO and/or perform work on equipment or systems held by LOTO.

- **LOTO Coordinator** – A qualified employee/worker who may request LOTO and/or coordinate work on equipment or systems held by LOTO for non-listed workers or other authorized workers.

- **Operating Area Authorized Employee (OAAE)** – A person who can lockout or tagout equipment when servicing and/or maintenance is performed by crew, craft, department, or other group. An Operating Area Authorized Employee can perform the following duties:
  - Develop LOTO records.
  - Execute/Verify LOTO records.

- **Operating Area Leader (OAL)** – A person who has primary responsibility for a set number of employees working under the protection of a group lockout device (operating area lock (orange)); has the knowledge and authority to determine if a requested piece of equipment can be taken out of service based on operational conditions, personnel, unit commitments, worker and equipment safety, and any other factors that may impact system reliability; has been qualified to perform all roles of the OAAE; and has the authority to perform the following duties:
  - Accept requests
- Approve/reject requests
- Approve LOTO records
- Issue isolation/release LOTO records
- Approve boundary modifications
- Activate LOTO records
- Complete LOTO records
- Serve as primary authorized employee, as required (see 3.7, Primary Authorized Employee)

NOTE: Operating Area Leader and Operating Area Authorized Employee roles must be independently selected in Cool Compliance to grant permissions within TKPro.

**authorized list** – Roster maintained for the facility that identifies authorized workers by name and type of LOTO activity(ies) each worker is permitted to perform. Inclusion on the authorized list is determined at the discretion of the facility’s management as approved in Cool Compliance.

**capable of being locked out** – Energy isolating device capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

**designated operating area (DOA)** – Area or department of the facility that has the exclusive control of issuing and executing LOTO in their specific area. Examples of designated operating areas:

- Operations
- Fuels
- Laboratory
- Environmental
- Individual hydro plants
- Combustion turbine plants
- Combined cycle plants
- Solar plants

**energy isolating device** – A device that physically prevents the transmission or release of energy, including but not limited to the following: an electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy.

NOTE: Push buttons, selector switches, and other control circuit type devices are not energy isolating devices. See Attachment B for an example of an Operational Control Tag when control devices require exclusive control of the operating area.
energy source – Any source of electrical (50V or greater), mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, or other energy.

hasp – A device that allows energy isolating devices to be locked with multiple locks.

isolate – Removal of all sources of energy from the equipment to be worked on.

isolation test – The method used to ensure all stored energy sources cannot create the potential for injury or accident while servicing or maintenance is being performed on the equipment. The test method is documented on the LOTO Record, as follows:

- visual – A visual inspection to ensure air gap exists or an installed voltage indicator determines absence of energy between energy sources and isolation devices.

- test equipment – Use of instrumentation to verify electrical energy sources are isolated. Voltage meters and noncontact voltage detectors that alarm in the proximity of voltage applications are acceptable, based on the skills and training of the qualified person. All devices must be properly rated for voltage.

Note: Proximity meters are not acceptable for shielded cables. DC circuits and shielded cables must be tested at termination points.

- test/try – Test performed by attempting to operate a piece of equipment either remotely or locally to ensure the equipment will not operate.

- drain/de-pressurize – Verification that a system or component is drained, depressurized, and safe for work.

issued LOTO – LOTO record identified in the software (TKPro) as in-progress by the OAL while the OAAE performs steps to isolate equipment for upcoming service or maintenance activities.

lockbox – Box with multiple locking points in which the key(s) to the lockout device(s) are placed and secured by authorized employees. Lockboxes are red or yellow, based on the following criteria:

- master lockbox – Red lockbox in which key(s) to red isolation locks are placed and secured by an operating area lock (orange). LOTO holders secure locks (individual (blue)/coordinator (green)) after the operating area lock (orange) is secured, to hold the LOTO for service or maintenance activity. The original completed LOTO documentation (LOTO records, LOTO test records, etc.) shall be maintained in an active LOTO file, and the LOTO cover sheet is attached to the master lockbox (red).

- satellite lockbox – Yellow lockbox that is an extension of the master lockbox (red). It may be located remotely in an area that provides convenient access for workers while under the exclusive control of the LOTO Coordinator. A
satellite lock (yellow) will be used in conjunction with the satellite box and is secured to the master lockbox; the associated key is secured in the satellite box with a coordinator lock. A copy of the LOTO documentation (LOTO records, LOTO test records, etc.) is attached to the satellite lockbox.

**lockout** – Placement of a lockout device on an energy isolating device, in accordance with an established procedure, to ensure the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

**lockout device** – Device that employs a positive means (lock and key) to hold an energy isolating device in the safe position and prevent the energizing of equipment. See Attachment A for an example of lockout devices. Southern Company Generation approved lockout devices include the following:

- **Isolation lock** – Red in color, used to secure energy isolation devices. Always secured with an attached tagout device.
- **Operating area lock** – Orange in color, used for operating area continuity; indicates equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices have not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.
- **Individual lock** – Blue in color, assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose. Individual locks must display worker name and contact number.
- **Coordinator lock** – Green in color, used by departments to coordinate multiple work crews, ensure continuity and integrity of an active LOTO for the protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.
- **Satellite lock** – Yellow in color, used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox. Requires an attached LOTO information tag.
- **Non-listed/visitor lock** – Brown in color, used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Only used at the direction of a LOTO coordinator and after a coordinator lock (green) is secured. Non-listed/visitor locks are issued for temporary use at the discretion of plant management. Requires an attached LOTO information tag.
- **Contractor lock** – Lock provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker.

When securing to Southern Company lockout devices, contractor locks shall adhere to the following:

- Contain worker’s name, contact number, and company.
- Not be manufactured by American Lock
lockout tagout (LOTO) – A safety procedure used to ensure equipment is properly shut off and not able to be started up until the completion of maintenance or service work. It requires hazardous energy sources to be "isolated and rendered inoperative" before work is started on the equipment in question. Lockout tagout can be accomplished in the following ways:

- group LOTO – a LOTO executed by authorized workers within a designated operating area for other workers requesting to perform service or maintenance work on equipment.

- simple LOTO – a LOTO executed by authorized workers where personal-protection locks are applied directly to isolation devices when the below criteria is followed:
  - Workers have knowledge, training, skills, tools, and time to perform work safely.
  - Scope of work is of short duration (can be completed in one shift).
  - Isolation steps include five or fewer isolation devices.
  - Scope of work has no special conditions such as confined space, grounding, hydrogen, natural gas, or process safety management chemicals.
  - Parts are readily available.
  - Facility has defined acceptable equipment or type of equipment in site-specific procedures.
  - Permission of the designated operating area (DOA) to proceed exists.
  - Approved documented procedural steps exist and must be followed.

NOTE: Procedural steps are not required if the equipment has a single energy source that can be readily identified, isolated, and verified, and no prior accidents exist involving the unexpected activation or re-energization of equipment during service or maintenance.

LOTO administrator – Individual responsible for administration of the LOTO software. Each facility has LOTO administrator(s), who administers responsibilities, approves standards, and performs other local functions. There is also a corporate LOTO administrator, who is responsible for the overall administration and configuration of the LOTO software across all Southern Company Generation facilities.

LOTO boundary – Energy isolating devices required for a designated scope of work.

LOTO information tag – Tag that identifies the responsible person using a lockout device. Each tag is secured via the lock shackle and, at a minimum, contains the worker's
name and contact number. See Attachment B for an example of a LOTO information tag.

**LOTO record** – Instructional checklist of energy isolating devices needed for a LOTO boundary, used to place and secure equipment in a desired isolation or service position.

**minor servicing** – The act of performing simple adjustments to ensure equipment is functioning properly (without having to disassemble the component being adjusted and/or expose an employee to a hazardous energy source).

**non-listed worker** – Person performing service or maintenance under the direction of a LOTO coordinator and who is not included on the facility’s authorized list. These individuals may be unfamiliar with the equipment or lack the necessary experience or training to individually hold LOTO.

A non-listed worker may perform work under LOTO at the request of the LOTO coordinator in either of the following two ways:

- Individual accountability – By securing directly to an approved Southern Company LOTO device with the permission of the LOTO coordinator.
  - All non-listed workers shall secure a personal protective lock directly to the LOTO device. Under this system, a Southern Company LOTO coordinator shall be responsible for the non-listed group of individuals and assume responsibility for the accountability and notification of any changes to the LOTO.
  - Alternate accountability – A system where a contractor responsible person holds LOTO for other workers. This system can be used when approved by Southern Company plant management. The contractor responsible person, specified by the contractor, may be a contractor superintendent, crew foreman, project coordinator, or any other responsible individual associated with the group and shall be responsible for the following:
    - Communicating with all non-listed individuals who intend to work on plant equipment.
    - Securing a lock designated as an alternate accountability responsible person device behind a coordinator lock on either the hasp or the satellite box.
    - Ensuring each individual worker secures an individual personal protective lock to the appropriate lockout device per their employer’s energy control program.
  - Under this system, a Southern Company LOTO coordinator shall hold the LOTO for the contractor responsible person and provide them all information, including limitations and boundaries associated with the scope of work and LOTO record.

**NOTE:** Contractors shall maintain an effective energy control program of accountability using locks for personnel that meets all requirements set forth in 29
CFR 1910.269(d),1910.147, and this procedure. Program shall demonstrate controlled means to remove individual worker’s lockout devices when not at the facility. Prior to using alternate accountability, contractor shall submit their site-specific alternate accountability system to plant management for approval.

**normal production operations** – Use of equipment to perform its intended production function.

**personal protective lock** – Lockout device used for the protection of individuals performing work under a LOTO. Personal protective locks can be individual, non-listed/visitor, or contractor locks.

**qualified person** – Person who is competent, by their electrical knowledge and skills, to safely work on energized circuits. Competence includes the demonstration of proper use of precautionary techniques, personal protective equipment, insulating materials, voltage detection devices, and insulated tools.

NOTE: Third-party qualified persons shall be trained and qualified by their respective employer.

**requestor** – Employee/worker on the authorized list who has requested a LOTO to have scheduled service or maintenance activity performed on a piece of equipment.

**servicing and/or maintenance** – Workplace activities such as constructing, installing, adjusting, inspecting, modifying, and servicing and/or maintaining equipment. These activities include lubrication, cleaning, or unjamming of equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment or release of hazardous energy.

**standards** – LOTO records, grouped by equipment, developed, approved, and saved for recurring maintenance activities. Standards for each facility are approved by a LOTO administrator at that facility.

**system break** – the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

**tagout** – Placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed.

**tagout device** – Prominent warning device, securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled cannot be operated until the tagout device is removed. See Attachment B for an example of a tagout device.

NOTE: When TPGs are installed as part of the LOTO record by the Southern Company Generation qualified person, two red tags shall be fastened to the TPGs.
Where a lockout device(s) cannot be affixed directly to the energy isolating device, a tagout device shall be located as close as safely possible to the energy isolating device in a position obvious to anyone attempting to operate the device.

Where tagout devices are used to control isolation devices, additional means shall include the implementation of additional safety measures, such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energizing.

NOTE: Tagout devices without a lock shall only be used on isolation devices until a permanent means to hang a lock can be designed and installed.

temporary protective ground (TPG) – Device installed by a qualified person for the purpose of grounding electrical equipment previously energized at a voltage greater than 600 V.

temporary protective ground (TPG) tags – Orange tags affixed to grounds by a qualified third party to control the installation and removal of the grounds.

TKPro – Software used to manage, document, and track activities within the LOTO process. It is the official repository of LOTO documentation, including standards.

worker – Person performing service or maintenance under LOTO.

2.2 References

- 29 CFR 1910.269, Electric power generation, transmission, and distribution
- 29 CFR 1910.147, The control of hazardous energy (lockout/tagout)
- SCG-SH-0230, Temporary Protective Grounds
- D-11, Design Functional Tags

3.0 RESPONSIBILITY

3.1 Plant Manager

Plant manager maintains overall responsibility for the administration of the LOTO program, and is responsible for implementing and strictly enforcing this procedure. The plant manager, or designee, also has responsibility and control of all spare and backup keys issued for removing locks of other employees or departments.

3.2 Operating Area Manager

The operating area manager ensures the LOTO procedure is correctly administered by all designated operating area employees and they are following the LOTO procedure and
performing their respective duties. Operating area manager also defines the process for assigning a single designated primary authorized employee per shift.

### 3.3 LOTO Administrator

There are LOTO administrators for each facility, appointed by management, responsible for the following:

- Reviewing and approving standards at a facility.
- Interfacing with corporate LOTO administrators on software changes or improvements.
- Administration of LOTO training at a facility.

The corporate LOTO administrators will represent operating companies (Alabama Power, Georgia Power, Gulf Power, Mississippi Power, and Southern Power) and are responsible for the following:

- Administration of the LOTO software across the Southern Company Generation facilities.
- Gathering input on software changes or improvements.

The Southern Company Generation corporate LOTO administrator is the primary interface with the LOTO software provider and coordinates changes or improvements.

### 3.4 Authorized List Administrator

The authorized list administrator is designated by the plant manager and is responsible for approving or denying permission requests for the plant’s authorized list through Cool Compliance.

### 3.5 Requestors

The requestor collaborates with the OAL to ensure the LOTO request record is appropriate for the work to be performed. The requestor works with the OAL to complete the LOTO request record. The LOTO request record populates the LOTO information section of the LOTO record and notifies affected workers of scheduled service or maintenance activity. The requestor is responsible for the following:

- Determining what equipment requires isolation for the purpose of servicing for maintenance activity.
- Reviewing with the OAL all applicable scopes of work, work orders, electrical or mechanical prints, and/or other relevant documents to ensure all energy isolations are properly identified.
- Confirming, in collaboration with the OAL, mutual understanding and agreement on energy isolation points are achieved.

### 3.6 Operating Area Leader (OAL)

The OAL is identified as the person with authority to perform specific roles in the LOTO process. The OAL may be a supervisor, operator, or other designee as defined by management, and is responsible for the following:
• Implementing the LOTO procedure.
• Reviewing and understanding the LOTO Request Record.
• Ensuring the operating area (unit) can support and approves the request for LOTO.
• Developing or assigning an OAAE to develop the LOTO isolation record.
• Create standards for approval by the local LOTO administrator.
• Ensure the proper LOTO boundaries are established through reviewing scope and type of work, performing system walk downs, reviewing drawings, and ensuring the proper positioning of devices.
• Ensuring the LOTO record is appropriate for the scope of work and is completed before initiating the isolation process.
• Approving selected LOTO records.
• Assigning OAAE and issuing the LOTO record to execute.
• Resolving any LOTO boundary issues.
• Reviewing the completed LOTO record for accuracy and completeness.
• Authorizing placement or removal of third party grounds. Tracking (TKPro), issuing, and collecting TPG tags (orange).
• Ensuring all locking devices are accounted for and the number of locks/tags matches the number of entries on the LOTO record.
• Assigning a verifier to walk down and verify the execution of the LOTO record.
• Activating the LOTO by ensuring all isolation keys are placed inside the master lockbox and are secured with an operating area lock.
• Activating the LOTO record (TKPro).
• Notifying the requestor of an active LOTO.
• Controlling access to the master lockbox. Ensuring all LOTO holders have reviewed the LOTO information prior to locking on the appropriate lockbox or devices.
• Ensuring all locks are removed before any release or test, boundary reduction modification, or release.
• Removing the operating area lock on the master lockbox to support a release for test, boundary reduction modification, or final release.
• Assigning an OAAE to release the LOTO.
• Reviewing the completed LOTO documents and verifying the LOTO documents indicate the LOTO has been released and equipment is ready for operation.
• Completing the LOTO Record (TKPro) and storing the completed LOTO documents per the record retention schedule.

3.7 Primary Authorized Employee (PAE)

When workers are servicing or maintaining equipment under a group LOTO, a single PAE is identified and documented in each designated operating area for every shift. Transfer of the PAE responsibilities may only be conducted during shift or personnel changes to ensure continuity. Responsibilities of the PAE include the following:

• Having overall job-associated lockout or tagout control responsibility when employees are working under the protection of a group lockout or tagout device(s).
• Coordinating affected work forces and ensuring continuity of protection.
• Providing oversight, ensuring the designated operating area follows provisions for each authorized employee to affix a personal lockout device to the group lockout device, group lockbox, or comparable mechanism, when he or she begins work, and
ensuring they remove those devices when he or she stops working on the equipment being serviced or maintained.

- Ensuring the designated operating area follows procedure for orderly shutdown and startup of equipment.
- Identifying the PAE in the turnover log system for each designated operating area when turnover review has been completed and responsibility has been transferred.

### 3.8 Operating Area Authorized Employee (OAAE)

The OAAE is identified as the person with authority to perform specific roles in the LOTO process. The OAAE may be an operator or other designee as defined by management. The OAAE is responsible for the following:

- Developing a LOTO boundary on the LOTO record that is appropriate for the scope of work, eliminating hazardous energy
- Reviewing the LOTO record with the OAL.
- Placing isolation locks, associated locking devices, and tags on the isolation component, in the proper sequence as outlined on the LOTO record.
- Ensuring the appropriate energy sources to equipment being worked on is properly isolated by a visual, test try, test equipment, or drain/depressurize method.
- Completing each line item on the LOTO record to document the device position and test method used.
- Removing the locking devices and restoring the equipment to the desired position as determined on the LOTO release record.
- Visually verifying personnel are not exposed to equipment before re-energizing equipment.
- Creating standards for approval by the LOTO administrator.

### 3.9 Verifier

The verifier validates (through review) completion of the LOTO. The verifier may not reposition or remove any lockout device placed on equipment. The verifier is responsible for the following:

- Verifying each device listed on the LOTO record is correctly tagged and locked per the LOTO record and the Test Method section is complete.
- Initialing and signing required sections of the LOTO record.
- Notifying the OAL immediately when any devices are discovered in conflict with the LOTO record.

### 3.10 LOTO Holder

The LOTO holder is an authorized employee/worker who may request LOTO and/or perform work on equipment held by LOTO. The LOTO holder is responsible for the following:

- Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.
• Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using an individual lock (blue).

• Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.

• Before beginning a new shift, verifying the LOTO is still active.

• Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.

• Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.

• Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.

• Immediately removing personal protective locks when work is complete and safe to return to service or suspended.

• Prior to removing an individual lock, ensuring a coordinator lock is secured if work is not complete and safe to return to service.

3.11 LOTO Coordinator

The LOTO coordinator is an authorized employee/worker who may request LOTO and/or coordinate work on equipment held by LOTO workers. The LOTO coordinator is responsible for the following:

• Before securing any lock to the lockbox, gaining permission of the designated operating area and ensuring an operating area lock (orange) is secured.

• Reviewing the LOTO information; knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device as required, using a coordinator lock (green).

• Prior to starting work, verifying by walkdown the LOTO is adequate for the work being performed, and equipment is properly isolated and safe for the work he or she intends to perform.

• Before beginning a new shift, verifying the LOTO is still active.

• Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.

• Changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task as authorized by Maintenance Release LOTO.

• Immediately communicating any concerns noted with the LOTO boundaries or associated scope of work to the designated operating area.

• Controlling access to the satellite lockbox. Providing information (including limitations and boundaries associated with the scope of work and LOTO record) to all workers performing service or maintenance under the coordinator lock (green).

• Managing the installation and removal of third-party TPGs.

• Working with the designated operating area to track the issue and return of TPG tags.

• Securing an individual lock prior to performing any maintenance, inspection, or service of equipment controlled by an active LOTO.

• Removing all locks immediately when work is complete or suspended.
• Completing a Coordinator Continuity Transfer Record prior to taking responsibility of a coordinator lock and either having full understanding of work scope status or obtaining permission of the current LOTO coordinator. Securing a coordinator lock and LOTO information tag before removing the prior coordinator lock.

NOTE: The LOTO coordinator attaches the Coordinator Continuity Transfer Record to the appropriate lockbox or active LOTO file for the duration of the work. At completion of work, the LOTO coordinator returns the record to the DOA, retaining per Southern Company Records Retention Schedule.

3.12 Non-listed Worker

A non-listed worker is a worker performing service or maintenance under the direction of a LOTO coordinator. The non-listed worker shall be responsible for the following:

• Successfully completing LOTO awareness training.
• Knowing that equipment is not safe for performing service or maintenance unless a LOTO has been established and workers are locked on to the appropriate lockbox or device.
• Understanding their role in the LOTO procedure and implementing methods to ensure compliance with this procedure.
• Participating in prejob briefings to understand the scope of work and LOTO boundaries involved.
• Personally locking on and off the appropriate lockbox or device when required, but only after a coordinator lock (green) is secured. Only securing a personal protective lock to a hasp or yellow satellite box.
• Reviewing the LOTO information provided by the LOTO coordinator. Obtaining a copy of all requested LOTO documents.
• Knowing and understanding the limitations and boundaries associated with the scope of work and LOTO record before locking on and off the appropriate lockbox or device and performing work.
• Knowing they have the option, and are encouraged, to personally walk down the LOTO boundaries to ensure a safe work condition.
• Not changing or repositioning any LOTO isolation devices or removing any locks during the course of their work task.
• Stopping work when any deficiencies of the LOTO are identified or when concerns are noted with the LOTO boundaries or associated scope of work, and reporting immediately to the LOTO coordinator.
• Immediately removing personal protective locks when work is complete or suspended.

See non-listed worker definition for details on working under LOTO.

NOTE: Non-listed Workers shall always secure personal protective locks on a hasp or yellow satellite box behind a coordinator lock (green). Non-listed Workers shall not secure a lock directly to a master lockbox. Non-listed workers shall not secure a lock to any Southern Company LOTO device without the permission of the LOTO coordinator or additionally when a coordinator lock is not secured to that device.
4.0 PROEDURE

4.1 Routine Lockout/Tagout (LOTO)

Process Map

Routine LOTO defines the overall process for isolating equipment for servicing and maintenance in which the unexpected energizing or startup of the equipment, or release of stored energy, could harm employees. This process establishes minimum performance requirements for the control of such hazardous energy.

NOTE: All LOTO records shall be created and issued via the TKPro software. In the event of an unscheduled software outage, each facility shall manually create and issue temporary LOTO records until the software returns to service. An index shall be kept of each record using a sequential log number for the designated operating area. All fields on each LOTO record shall be completed to include device descriptions and device number. Associated temporary LOTO tags shall contain at minimum the log number and date. See Attachment C for an example of temporary LOTO records.

Existing active LOTO records shall be completed and retained in a temporary folder until TKPro records are updated and documents can be filed per the record retention schedule.

4.2 Simple LOTO

Process Map

Simple LOTO defines the process for applying individual locks directly to isolation devices by authorized workers to maintain local control of equipment under LOTO.

NOTE: If the work has not been completed and/or the equipment is not ready to be placed in service at the end of shift, or when the authorized employee leaves the facility, the OAL shall be contacted immediately and proceed to 4.3, Develop LOTO Record.

1. OAL selects the Simple LOTO record for the scope of work in software (TKPro).

2. OAL assigns the authorized employee from the LOTO Activated By dropdown list (TKPro) to execute the LOTO.

3. LOTO holder receives the LOTO simple record and executes according to the execution steps, then places devices in the isolation position, and installs individual locks (blue) and tags. Each step is installed to document execution.

Proceed to 4.5, Verify Isolation

NOTE: When executing a Simple LOTO, the LOTO Holder performs the duties of the OAAE in the Verify Isolation process.

4. LOTO holder signs the simple LOTO record (in the LOTO Activated By field) to document execution of the LOTO steps.
5. LOTO holder performs prejob briefing.

6. LOTO holder performs maintenance activity.

7. LOTO holder determines if work is completed and equipment is safe to return to service.

   If yes, proceed to Step 8

   If no, proceed to 4.3, Develop LOTO Record

8. LOTO holder removes the locks from the isolation devices, positions, and initials each step according to the LOTO simple record (release).

9. LOTO holder signs the LOTO simple record (in the LOTO Released By field) to signify scope of work is complete and the equipment is released to Operations.

10. The OAL along with the LOTO holder, reviews the returned documentation with the LOTO holder for completeness and ensures the proper number of tags has been returned.

11. OAL completes the LOTO (TKPro) to document the simple LOTO is completed.

12. OAL files the original completed LOTO documents and retains per Southern Company Records Retention Schedule.

   End of process

4.3 Develop LOTO Record

Process Map

Develop LOTO Record defines the process for requesting and developing LOTO records identifying procedural steps to develop, document, and control potentially hazardous energy when employees are engaged in service and maintenance activities.

Employees shall request LOTO when performing servicing and/or maintenance activity on equipment in which the unexpected energizing, startup, or release of stored energy from the equipment could cause injury to employees.

1. Requestor identifies equipment to be worked on.

2. Requestor submits a LOTO request record (TKPro) to outline the scope of work and equipment to be isolated for servicing or maintenance.

   NOTE: If maintenance release or simple is required, begin Reason for LOTO field with “Maintenance Release” or “Simple LOTO”.

3. OAL, along with the requestor, reviews the request and scope of work to ensure understanding. (TKPro)
4. OAL determines if the equipment can be removed from service without interrupting unit operation.
   
   *If yes, proceed to Step 5*
   
   *If no, proceed to Step 20*

5. OAL approves LOTO Request. (TKPro)

6. OAAE reviews the LOTO request record and defines the isolated boundaries to match the scope of work.

7. OAAE searches the LOTO standards in database to determine if a standard already exists.
   
   *If yes, proceed to Step 8*
   
   *If no, proceed to Step 9*

8. OAAE selects the standard (TKPro) to match the scope of work.
   
   NOTE: If Maintenance Release, use satellite box and assign at least two additional separately keyed isolation locks.

9. OAAE creates the LOTO record and saves (TKPro).

10. OAAE modifies the LOTO record (TKPro)

    NOTE: Indicate isolations on LOTO Isolation Record that will be used for Maintenance Release.

11. OAL reviews the LOTO record (TKPro) to confirm the isolation boundaries match the scope of work.

12. OAL determines if request is for Simple LOTO

    *If yes, proceed to 4.2, Simple LOTO*

    If no, proceed to Step 13

13. OAL determines whether to approve the LOTO for execution.

    *If yes, proceed to Step 14*

    *If no, proceed to Step 6*

14. OAL selects an available lockbox (TKPro)

15. OAL assigns the authorized employee selected from the LOTO Isolation Executed By dropdown list (TKPro) to execute the LOTO.

16. OAL assigns the authorized employee selected from the LOTO Isolation Verified By dropdown list (TKPro) to verify the LOTO.
NOTE: If using independent verification and the name of the authorized employee is not available, manually complete this section as assigned in the Isolate Equipment Process (Step 17).

17. OAL determines if a Maintenance Release is required.

   If yes, proceed to Step 18

   If no, proceed to Step 19

18. OAL issues two single locks for the isolation devices associated with the maintenance release.

19. OAL approves the LOTO (TKPro) and prints the forms and tags (issues) for the LOTO.

   Proceed to 4.4, Isolate Equipment

20. OAL notifies the requestor unit operations cannot support the request.

   End of Process

4.4 Isolate Equipment

Process Map

Isolate Equipment defines the process for isolating (device positioning, locking, tagging, grounding, etc.) equipment when servicing and/or maintenance is performed by a crew, craft, department or other group (Group LOTO). All hazardous energy sources shall be isolated in such a manner as to prevent their inadvertent activation. Only approved energy isolating devices specifically provided by the facility for the purpose of controlling hazardous energy shall be used. Operating Area Authorized Employees shall be responsible for isolating equipment per the LOTO record as issued by the Operating Area Leader.

NOTE: Southern Company Generation Qualified Persons shall install Temporary Protective Grounds (TPGs) per the identified steps on the LOTO record. TPGs shall be secured at minimum with an isolation lock on the ground side of the cable and tagged on both sides of the ground with a danger tag.

1. OAL determines if the concurrent verification is to be used per site-specific procedure.

   If yes, proceed to Step 2.

   If no, proceed to Step 3

2. OAL assigns a verifier to go with the LOTO executor (TKPro).
3. OAAE receives the LOTO record and executes according to the execution steps, then places devices in the isolation position, and installs locks and tags. Each step is initialed to document execution.

   NOTE: If any device requires an isolation test to be performed prior to securing a lockout device, proceed to 4.5, Verify Isolation prior to securing isolation lock and tagout devices.

   *Proceed to 4.5, Verify Isolation*

4. OAAE determines if internal grounds are required.

   *If yes, proceed to Step 5*
   *If no, proceed to Step 8*

5. OAL requests a qualified person to install internal grounds.

6. Prior to installing the grounds, the qualified person performs a walkdown and tests the conductor to verify absence of energy.

   NOTE: Use device properly rated for voltage.

7. Qualified person, with guidance from the OAAE, installs the internal grounds.

   Reference: SCHG-SH-0230 Temporary Protective Grounds

8. OAAE signs the Executed By section of the LOTO Isolation Record and returns to OAL for review.

9. OAL reviews the completed LOTO Record with the OAAE to ensure completeness of the record and all steps are executed.

10. OAL determines if concurrent verification was performed.

   *If yes, proceed to Step 11*
   *If no, proceed to Step 16*

11. OAL determines if LOTO is a maintenance release.

   *If yes, proceed to 4.7, Maintenance Release*
   *If no, proceed to Step 12*

12. OAL places the key(s) to the isolation devices in the master lockbox, then secures the master lockbox with an operating area lock.

13. OAL activates the LOTO Isolation Record (TKPro).
14. OAL attaches the cover page to the master lockbox and places the associated LOTO record(s) in the active LOTO file.

15. OAL notifies the requestor the LOTO is active.

   *Proceed to 4.6, Perform Work*

16. OAL assigns a verifier for independent verification.

17. Verifier walks down the equipment per steps on the LOTO Isolation Record to confirm LOTO devices are properly installed on correct devices. The verifier initials that all devices are correct per LOTO Isolation Record.

   NOTE: The verifier shall not reposition any devices as a part of this walkdown. If any portion of the LOTO record is in question, the verifier shall return to the OAL for resolution.

18. The verifier signs the LOTO Isolation Verified By field on the LOTO Isolation Record.

19. OAL reviews the completed LOTO Record with the verifier to ensure completeness of the record and all steps are verified.

   *Proceed to Step 11*

20. OAL reviews the boundary issue with the OAAE.

21. OAL determines if the boundary can be modified to resolve the boundary issue.

   *If yes, proceed to Step 22*

   *If no, proceed to Step 24*

22. OAL reviews boundary issue with the LOTO with the OAAE and revises LOTO record to resolve the boundary issue.

23. OAL determines if the boundary modification record is approved.

   *If yes, proceed to Step 1*

   *If no, proceed to Step 24*

24. OAL notifies a requestor the unit cannot support the isolation request.

   *Proceed to 4.9, Release LOTO*
4.5 Verify Isolation

Process Map

Verify Isolation defines the process for ensuring the equipment is properly removed from service and that all stored and/or potentially hazardous or residual energy has been relieved, disconnected, or properly restrained.

The verifier shall not reposition or remove any lockout device placed on equipment. Any devices discovered in conflict with the LOTO record shall be identified and brought to the Operating Area Leader (OAL) for resolution.

The Operating Area Authorized Employee (OAAE) assigned to execute the LOTO record shall be responsible for verification of isolation.

1. OAAE determines if any isolation devices are electrical components.
   
   *If yes, proceed to Step 2*
   
   *If no, proceed to Step 13*

2. OAAE determines if it is possible to perform a visual inspection either through (1) ensuring an air gap exists between the source and equipment or (2) an installed voltage indicator to verify the absence of voltage.

   NOTE: When an installed voltage indicator is used, the OAAE shall verify the voltage indicator is operating properly prior to performing the isolation step. If the voltage indicator is not working properly, it cannot be used as a verification method.

   *If yes, proceed to Step 9*
   
   *If no, proceed to Step 3*

3. OAAE determines if a test try will be performed.

   *If yes, proceed to Step 10*
   
   *If no, proceed to Step 4*

4. OAAE determines if test equipment can be used.

   *If yes, proceed to Step 5*
   
   *If no, proceed to Step 6*

5. The qualified employee will use test equipment to verify the absence of the energy and prove to the OAAE that hazardous energy is absent.

   NOTE: Use a device properly rated for the voltage.

6. OAAE determines if hazardous energy is absent.
If yes, proceed to Step 7

If no, proceed to 4.4, Isolate Equipment (Step 22)

NOTE: If any required mechanical component by design cannot be tested for isolation, plant management will work with the appropriate personnel to establish safe work procedures for a system break prior to activating the LOTO.

Using a system break for an isolation test shall only be used until a permanent means for isolation test can be installed.

7. OAAE updates the Test Performed By section of LOTO Isolation Record to indicate the verification action performed.

NOTE: When isolation devices have an active LOTO in place (overlapping LOTO) it shall be assumed that the prior isolation test has not been compromised. The test method section shall be lined through and indicated as a visual test method. The test performed by section shall be initialed, and the prior active LOTO number shall be referenced in the notes section.

8. OAAE determines if a Simple LOTO record is used.

If yes, proceed to 4.2, Simple LOTO (Step 12)

If no, proceed to 4.4, Isolate Equipment (Step 4)

9. OAAE confirms absence of voltage by confirming a visual air gap exists or the voltage indicator validates an absence of voltage.

If yes, proceed to Step 6

If no, proceed to 4.4, Isolate Equipment (Step 22)

10. OAAE clears the area for the equipment that will be attempted to start.

NOTE: Ensure area around equipment is clear of hazards and all personnel in case the equipment should start inadvertently during the test try. Controls should be placed in the “stop” or “off” position following verification of a test try.

11. OAAE performs a test try by attempting to start the equipment using control devices.

NOTE: Attempt to start equipment. (Emergency stops and other interlocks should be checked to make sure they would not block the startup of the equipment.) If using a Start button for the try test, press the Stop button afterward.

12. OAAE determines if the equipment started.

If yes, proceed to 4.4, Isolate Equipment (Step 22)

If no, proceed to Step 7
13. OAAE verifies the system or device is drained, depressurized, and safe for work. Verification can be confirmed by using a pressure gauge, drain, vent, or equivalent method.

*Proceed to Step 6*

### 4.6 Perform Work

**Process Map**

Perform Work defines the process for all workers to ensure an energy isolating device remains in a safe position and prevents the energization of equipment while performing servicing or maintenance activities.

1. LOTO Holder selects the LOTO and verifies with DOA the selected LOTO matches the scope of work.

2. LOTO Holder secures the master lockbox with an individual or coordinator lock.

3. LOTO Holder determines if third-party grounds are required.

   *If yes, proceed to step 4*

   *If no, proceed to step 15*

4. LOTO Holder obtains TPG tags (orange) from the OAL.

5. OAL indicates (TKPro) the LOTO coordinator’s name and time/date the tags were issued. The TPG Tag Tracking index remains in the electronic file as part of the LOTO documentation.

   NOTE: The LOTO coordinator shall request TPG tags (orange) from the OAL in the designated operating area. The OAL shall prepare the appropriate number of TPG tags (orange) by writing the associated LOTO and tag number on the tag(s) in ink.

6. LOTO holder performs a prejob briefing with the third-party qualified person.

7. Third-party qualified person secures lockbox (hasp or satellite as needed) behind the coordinator lock with a non-listed (contractor or visitor) lock.

8. Third-party qualified person performs walkdown with the LOTO holder and verifies the absence of energy.

   NOTE: Use device properly rated for voltage.

9. Third-party qualified person installs grounds and TPG tags (orange).

10. LOTO holder performs work with all workers.
11. LOTO holder determines if testing is required.

   If yes, proceed to 4.11, Testing
   If no, proceed to Step 12

12. LOTO holder determines if work is complete.

   If yes, proceed to 4.8, Work Completed
   If no, proceed to Step 13

13. LOTO holder determines if a boundary modification is needed.

   If yes, proceed to Step 14
   If no, proceed to Step 10

14. LOTO holder determines if a decreased boundary is needed.

   If yes, proceed to 4.10, Suspend Work
   If no, proceed to 4.12, Modify Boundary

15. LOTO holder performs a prejob briefing.

16. LOTO holder performs a walkdown.

17. LOTO holder determines if they will coordinate the LOTO for other workers.

   If yes, proceed to Step 18
   If no, proceed to Step 10

18. LOTO holder performs a prejob briefing with all workers involved in servicing and maintenance activity.

19. Non-listed worker secures lockout device behind the coordinator lock with a personal protective lock.

   NOTE: Each worker may determine to his or her satisfaction the appropriate isolations are in place and the isolations are secure for the task in which he or she is involved. A copy of the LOTO record shall be provided when requested.

   NOTE: If non-listed worker, follow 4.13, Non-Listed/Visitor Lock to obtain lock

Proceed to Step 10
4.7 Maintenance Release

**Process Map**

Maintenance Release defines the process for when a LOTO coordinator needs local control to operate equipment under LOTO to perform an assigned maintenance activity such as jogging, rotating, or intermittently moving the equipment. Examples include rotating an air heater to replace baskets and rotating intake water screens to replace or repair them.

A maintenance release authorizes a LOTO coordinator holding stated equipment under LOTO to operate the equipment only when the following condition has been met:

A minimum of two isolation devices have been identified and shall be used to isolate and control equipment under the maintenance activity. The isolation devices shall remain under the exclusive control of the LOTO coordinator via independently keyed isolation locks and satellite box.

Only one person may hold a maintenance release on a piece of equipment or component at one time.

1. OAL secures all nonmaintenance release isolation keys in master lockbox with operations lock

   **NOTE:** OAL restricts access to master lockbox ensuring other workers understand the LOTO boundary does not include the devices associated with the maintenance release.

2. OAL places maintenance release isolation keys in satellite lockbox.

3. LOTO coordinator secures coordinator lock to satellite lockbox.

4. OAL activates LOTO isolation record (TKPro).

5. OAL attaches the completed LOTO isolation record to lockboxes. OAL attaches original LOTO isolation record to the master lockbox and a copy of the record to the satellite box, then places a cover page for the LOTO on each lockbox.

6. OAL notifies requestor that LOTO is placed.

7. LOTO coordinator relocates satellite lockbox to work area. The satellite lockbox will remain in the maintenance release work area under the exclusive control of the LOTO coordinator for the duration of the job.

8. LOTO coordinator controls access to maintenance release work area.

   **NOTE:** Use barricade procedure to secure the area and control access.
9. LOTO coordinator conducts prejob briefing with all workers involved in maintenance release activities.

NOTE: LOTO coordinator shall document and communicate process for securing and releasing locks during maintenance release.

A briefing with the immediate work group shall address:

- The person(s) who shall operate the controls. When working around the clock, a person shall be identified for each shift.
- The means of controlling access to the work area.
- The type of communication method that shall be used to notify others in his or her work group to clear the area prior to energizing the equipment.
- Each person’s communication method to respond back that he or she has taken a safe position that shall prevent him or her from making or coming in contact with rotating or energized equipment.

10. Workers secure satellite lockbox with personal protective locks.

11. Workers perform maintenance activity with the LOTO coordinator.

12. LOTO coordinator determines if additional maintenance release activity is required.

   *If yes, proceed to Step 13*

   *If no, proceed to 4.8, Work Completed*

NOTE: If Maintenance Release activity is completed prior to other work on the associated LOTO, the isolation devices shall be placed in the position indicated on the Isolation Record and secured with isolation locks and tags. The keys shall be returned to the Designated Operating Area and placed in the master lockbox by the OAL until all work activity is complete and ready to return to service.

13. Workers remove personal locks from satellite box.

14. LOTO coordinator removes coordinator lock from satellite lockbox and obtains keys for maintenance release.

15. LOTO coordinator removes isolation locks and tags.

16. Worker repositions equipment for maintenance activity.

17. LOTO coordinator isolates, tags, and locks devices per LOTO Isolation Record.

18. LOTO coordinator places the keys to the maintenance isolation locks in satellite lockbox and secures with a coordinator lock.

   *Proceed to Step 10.*
### 4.8 Work Completed

**Process Map**

Work Completed defines the process for removing workers from an active LOTO following the completion of all servicing and maintenance activities.

1. Workers remove non-listed personal protective locks.

2. NOTE: If non-listed/visitor lock is used and no longer needed, follow 4.13, Non-Listed/Visitor Lock. LOTO holder determines if coordinating other workers.

   *If yes, proceed to Step 3*

   *If no, proceed to Step 11*

3. LOTO coordinator verifies all personal protective locks are removed.

   NOTE: Excluding qualified person locks.

4. LOTO coordinator determines if third-party grounds are installed.

   *If yes, proceed to Step 5*

   *If no, proceed to Step 10*

5. Third-party qualified person removes grounds and TPG tags, and returns tags to LOTO coordinator.

6. LOTO coordinator returns TPG tags to the DOA.

7. OAL indicates each TPG tags returned in tool (TKPro).

8. Third-party qualified persons remove lock(s).

9. LOTO coordinator verifies all personal protective locks have been removed.

10. LOTO coordinator verifies all personnel are clear of work area.

   NOTE: Collect tools from work area.

11. LOTO holder determines if equipment is safe to return to service.

   NOTE: If any equipment is left in a condition not safe to return to service, all LOTO holders shall remain locked to the master lockbox until a LOTO coordinator responsible for the servicing or maintenance activities can maintain continuity by securing a coordinator lock.

   NOTE: The LOTO Holder shall assign a coordinator associated with the specific scope of work.
If yes, proceed to Step 12
If no, proceed to Step 13

12. LOTO holder removes individual lock and/or LOTO coordinator removes coordinator lock from lockbox.

Proceed to 4.9, Release LOTO

13. LOTO coordinator installs coordinator lock.

14. LOTO coordinator determines if work should be suspended for testing.

If yes, proceed to 4.10, Suspend Work (step 2)
If no, proceed to 4.6, Perform Work

4.9 **Release LOTO**

**Process Map**

Release LOTO defines the process for restoring equipment to normal production operations.

1. OAL determines if all LOTO holder locks are removed.

   If yes, proceed to Step 2
   If no, proceed to 4.14, Lock Emergency Removal

2. OAL releases LOTO (TKPro).

3. OAL assigns OAAE to release LOTO (TKPro).

4. OAL issues LOTO Release Record (TKPro).

5. OAL removes operating area lock from lockbox and issues keys for items to release.

6. OAL determines if internal grounds require removal.

   If yes, proceed to Step 7
   If no, proceed to Step 9

7. OAL requests electrician to remove internal grounds.

8. Qualified person removes internal grounds with OAAE.

9. OAAE removes locks and tags, and repositions and initials each step per LOTO record.
10. OAAE signs *LOTO Released By* section of LOTO Release Record.

11. OAAE verifies all locks returned and stores lockbox.

12. OAL accounts for and disposes of all tags.

13. OAL completes LOTO (TKPro).

14. OAL files original completed LOTO documents and retains per Southern Company Records Retention Schedule.

*End of process*

### 4.10 Suspend Work

**Process Map**

Suspend Work defines the process for removing workers from an Active LOTO to support testing or a reduced boundary.

1. LOTO coordinator determines if third party TPGs are installed.

   *If yes, proceed 4.8, Work Completed (Step 6)*

   *If no, proceed to Step 2*

2. LOTO coordinator verifies all workers have removed locks.

3. LOTO holder verifies all personnel are clear of work area.

   NOTE: Collect tools from work area.

4. LOTO holder removes lock from lockbox.

5. OAL places lockbox(es) in a secure area to prevent access by workers.

   NOTE: Place in designated secure area; remove all locks except operation area lock.

6. OAL determines if all locks are removed.

   *If yes, proceed to Step 7*

   *If no, proceed to 4.14, Lock Emergency Removal*

7. OAL determines if work is suspended for testing.

   *If yes, proceed to 4.11, Testing*

   *If no, proceed to 4.12, Modify Boundary*
4.11 Testing

Processing Map

Testing defines the process for temporary releasing a portion of a LOTO boundary to perform an operational check, servicing, or repositioning of equipment under an Active LOTO. All workers shall suspend servicing or maintenance activity on any system or equipment when a test is performed. Access to the group master lockbox shall be prevented.

Any LOTO holder may request a test release of the equipment and must be on site during the time of the test. Only one person may request a test release on the same equipment at one time.

NOTE: A test release shall not be required for tests such as meggering, motor evaluation tests, or resistance where LOTO is not released.

1. LOTO holder reviews scope of testing with OAL.
2. OAAE creates the LOTO Test Release Record (TKPro).

   NOTE: If TPGs are part of the LOTO record, a review should be performed to determine if removal is required prior to issuing Test Release.

3. OAL reviews isolation boundaries.
4. OAL determines if the LOTO Test Release Record can be approved
   
   If yes, proceed to Step 5
   
   If no, proceed to Step 2

5. OAL assigns employee to release isolation (TKPro).
6. OAL issues LOTO Test Release Record (TKPro).
7. OAL removes operating area lock from lockbox and issues key(s) for items to release.
8. OAL determines if internal ground removal is required.
   
   If yes, proceed to Step 9
   
   If no, proceed to Step 11

9. OAL requests qualified person for ground removal.
10. Qualified person removes internal grounds with OAAE.
11. OAAE removes locks, tags, and LOTO devices; repositions devices.
12. OAAE initials each item repositioned on the LOTO Test Release Record.

   NOTE: Verify all equipment is in the correct position.

13. OAL receives locks, tags, devices, and LOTO Test Release Record.

14. OAL activates LOTO Test Release Record (TKPro).

15. LOTO holder performs a prejob briefing with OAL and OAAE.

16. LOTO holder performs testing with support from the DOA.

17. LOTO holder determines if work is complete.

   If yes, proceed to 4.8, Work Completed

   If no, proceed to Step 18

18. OAL initiates Test Restore Record

   Proceed to 4.3, Develop LOTO Record (step 15)

4.12 Modify Boundary

   Process Map

Modify Boundary defines the process for making changes to the LOTO boundaries including increasing and decreasing isolation devices.

NOTE: If any device of the active boundary is decreased, work must be suspended prior to releasing any isolation device.

When isolation devices are added to increase the boundary, LOTO holders may remain on the active LOTO. New LOTO holders must review and understand the entire boundary prior to performing service or maintenance activity. When a LOTO boundary is increased, all workers shall review the associated LOTO documents and isolation devices per the new boundary modification prior to working beyond the scope original boundary.

1. LOTO holder identifies the isolation needs and requests boundary change.

2. OAL reviews LOTO request and scope of work with the LOTO holder.

3. OAL determines if the unit can support a boundary modification.

   If yes, proceed to Step 5

   If no, proceed to Step 4

4. OAL notifies the requestor that the unit cannot support LOTO request.
End of process

5. OAAE defines the isolation boundaries.

6. OAAE determines if the request is an increased boundary change.
   
   If yes, proceed to Step 8
   
   If no, proceed to Step 7

7. OAAE determines if work has been suspended.
   
   If yes, proceed to Step 8
   
   If no, proceed to 4.10, Suspend Work

8. OAAE creates a boundary change record (TKPro).

9. OAL reviews isolation boundaries.

10. OAL determines if the boundary change record is approved.

   If yes, proceed to 4.4 Isolate Equipment

   If no, proceed to Step 5

   NOTE: If boundary decrease, remove Operating Area Lock to access isolation lock key

4.13 Non-listed/Visitor Lock

Process Map

Non-listed/Visitor Lock defines the process for temporarily issuing a visitor lock to workers who are not on the plant authorized list that require protection under LOTO while performing service or maintenance activity. See Attachment D for an example Non-listed/Visitor Lock index.

At the discretion of plant management, each DOA can issue non-listed/visitor locks to workers.

1. Non-listed Worker/Visitor requests non-listed/visitor lock.

2. LOTO coordinator determines if LOTO Awareness Training has been completed.

   If yes, proceed to Step 4

   If no, proceed to Step 3

3. Worker completes LOTO Awareness Training as coordinated by the LOTO coordinator.
4. LOTO coordinator verifies training is completed and communicates to OAL.

   NOTE: It is the non-listed worker’s (visitor or contractor) responsibility to prove to the LOTO coordinator that LOTO Awareness Training has been completed. Training records, sign in sheets, or verbal confirmation from the worker’s employer are examples of acceptable means of verification.

5. OAL issues non-listed/visitor lock and information tag.

   NOTE: The Non-Listed Visitor Lock Index can be used to track issued locks.

6. Worker uses lock as required by LOTO coordinator.

7. Worker returns non-listed/visitor lock to DOA.

8. OAL returns lock to secure location.

4.14 Lock Emergency Removal

   Process Map

Lock Emergency Removal defines the process for removing a personal protective lock when the lock owner cannot remove the lock. All reasonable efforts shall be made to contact the lock owner and have the individual return to remove their own personal protective lock. If it is not reasonable for the worker to return or the worker cannot be reached, only the plant manager or designee may remove a lock for the worker.

   1. OAL makes all reasonable effort to contact worker.

   2. OAL determines if the worker is an authorized worker.

      If yes, proceed to Step 5

      If no, proceed to Step 3

   3. LOTO coordinator determines if the contractor responsible person available.

      If yes, proceed to Step 4

      If no, proceed to Step 5

   4. LOTO coordinator requires implementation of contractor lock removal policy.

      End of Process

   5. OAL determines if employee can be contacted to remove lock.

      If yes, proceed to 4.8, Work Completed

      If no, proceed to Step 6
6. Employee’s supervisor verifies for LOTO holder or LOTO coordinator verifies for non-listed worker is not at facility and takes steps to control the employee’s access to facility.

7. Employee’s supervisor or LOTO coordinator verifies all personnel clear of work area.

8. Employee’s supervisor or LOTO coordinator verifies all tools and equipment are clear and equipment is configured to return to service.


10. OAL determines if the LOTO holder is an authorized worker.

   If yes, proceed to Step 11

   If no, proceed to Step 16

11. Employee’s Supervisor or LOTO Coordinator completes Emergency Lock Removal Record with Plant Manager or designee and obtains spare key.

12. Employee’s supervisor or LOTO coordinator removes lock and provides it to plant manager or designee.

13. Plant manager or designee notifies LOTO holder of actions and returns lock.

   NOTE: Following discussion, plant manager can remove restriction to facility access.

14. LOTO Holder signs and records Date and Time fields of the LOTO Lock Emergency Removal Record.

15. OAL files LOTO Lock Emergency Removal Record with original LOTO documents and retains per Southern Company Records Retention Schedule.

16. LOTO Coordinator cuts lock.

   Proceed to Step 14.

   End of Process

5.0 TRAINING

All Southern Company Generation employees and other personnel working under the requirements of this procedure shall be trained in the use of this procedure.
5.1 **LOTO Awareness Training**

Each employee whose work operations are or may be in an area where energy control procedures may be used, shall be instructed during site orientation or annual compliance training (as applicable) on the LOTO procedure; instruction shall include training about the prohibition related to attempts to restart or re-energize equipment that are locked out or tagged out. Each affected employee shall be instructed in the purpose and use of the energy control procedure. Any worker not on the plant’s authorized list shall complete LOTO Awareness Training prior to working on equipment as a non-listed worker.

5.2 **Authorized Worker Training**

Initial training shall be classroom training conducted by a qualified instructor as deemed by management.

- At minimum, employees shall be trained annually to ensure the purpose and function of the energy control program are understood and the knowledge and skills necessary for the safe application, usage, and removal of the energy controls are required.
- Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- When tagout systems are used, employees shall also be trained in the following limitations of tags:
  - Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint, provided by a lock, on those devices.
  - When a tag is attached to an energy isolating means, it shall not be removed without authorization of the authorized person responsible for it; and it shall never be bypassed, ignored, or otherwise defeated.
  - Tags shall be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area.
  - Tags and their means of attachment shall be made of materials that withstand the environmental conditions encountered in the workplace.
  - Tags may evoke a false sense of security, so their meaning needs to be understood as part of the overall energy control program.
  - Tags shall be securely attached to energy isolating devices so they cannot be inadvertently or accidentally detached during use.

Site-specific training shall be conducted at each facility, and shall include any local requirements of the plant or designated operating areas and identify employees having specific roles and responsibilities at that facility. Each facility shall have a unique SHIPS number for site-specific training.

Refresher training shall be classroom training, and include a review of both initial and site-specific training. Refresher training shall be conducted annually or when:

- Periodic inspections reveal, or when the employer has reason to believe, there are deviations from, or inadequacies in, the employee's knowledge or use of the energy control procedures.
The retraining shall re-establish employee proficiency and introduce new or revised control methods and procedures, as necessary.

NOTE: Approved employee training (Initial/Site Specific/Refresher) shall be documented in SHIPS prior to requesting access on any authorized list in Cool Compliance. Completion of authorized worker training shall be acceptable training for workers that are required to work at other facilities as a non-listed worker.

5.3 Department Training and Proficiency Requirements

In addition to the LOTO training outlined in this procedure, each employee’s supervisor shall ensure department training has been completed, and evaluate each employee, specific to their position, on the following:

- Understanding of general plant knowledge, such as plant orientation, system design, and system operation.
- Proficiency to safely perform assigned job responsibilities.
- Understanding of limitations of the LOTO program.

NOTE: Required department training is defined by plant management. Additional training may be required for specific LOTO roles, such as LOTO coordinators.

5.4 Authorized List

Cool Compliance governs permissions for all roles in the LOTO process. Inclusion on any facility authorized list shall be approved or denied in Cool Compliance by the employee’s supervisor and the plant authorized list administrator. The supervisor’s approval in Cool Compliance certifies the employee has met the requirements of 5.3, Department Training and Proficiency Requirements and is proficient to hold all selected roles. The plant authorized list administrator’s approval in Cool Compliance grants final permission and inclusion on the plant’s authorized list.

- Authorized list permission will expire at 1 year + 60 days after the most recent training completion date, or as revoked by management.
- TKPro automatically integrates with Cool Compliance to govern permissions in the software according to the authorized list.
- For permissions not integrated with TKPro, the employee’s supervisor shall collect lockout devices (locks, keys, etc.) when permissions have expired in Cool Compliance.

NOTE: With permission of the DOA, employees who have not been approved on the facility authorized list may work under the guidance of a coordinator only after completion of annual LOTO Awareness training and issuance of a non-listed/visitor lock (brown).

6.0 PROCEDURE REVIEW

Southern Company Generation management shall ensure a review of the Southern Company Generation LOTO Procedure is conducted at least annually to ensure the procedure and the provisions of 29 CFR 1910.269(d) and 29 CFR 1910.147 are being followed.
6.1 LOTO Periodic Inspection

A periodic inspection of LOTO records will be conducted at least annually at each facility to ensure the procedure is being followed. Each facility, having similar equipment by system and the same or similar types of control measures, shall group LOTO records for the purpose of inspection. An authorized employee shall interview a representative number of available employees implementing and/or holding an active LOTO within each system.

NOTE: If an active LOTO is not available, an authorized employee shall conduct at minimum a periodic inspection for each system using completed LOTO records annually.

The LOTO Periodic Inspection Record shall be completed by an authorized employee not utilizing the LOTO record being inspected. The inspection shall identify and require correction of any deviations or inadequacies.

NOTE: If significant deviations or inadequacies are discovered during the periodic inspection, an additional inspection of a LOTO record shall be performed within the same system.

The LOTO Periodic Inspection Record shall certify:

- The equipment on which the energy control was used.
- The date of the inspection.
- The employees included in the inspection.
- The person performing the inspection.

A copy of the LOTO Periodic Inspection Record shall be retained per the record retention schedule. The Facility Management, LOTO Coordinator and Safety & Health manager shall develop corrective actions to address any procedure inadequacies. When the inspection reveals any inadequacies in employee knowledge, plant management shall conduct a more detailed review to address responsibilities. Employees found to have significant inadequacies shall be removed from the facility authorized list and retrained.

6.2 Facility Active LOTO Review

Each facility shall inspect all active LOTO records annually from the date they became active.

Active LOTO records shall be inspected annually by an employee from the designated operating area to ensure the following:

- The status of the equipment has not changed.
- The LOTO record is still valid.
- The locks and tags are intact and legible.
- Following each review, the employee from the designated operating area indicates the review on the LOTO record, identifying any actions required, noted, and/or performed.
7.0 KEY CONTACT

For questions regarding the content and implementation of this document, contact your safety and health representative.

8.0 QUALITY RECORDS

The following records are official records and shall be retained in accordance with the Southern Company Records Retention Schedule:

- LOTO Isolation Record
- LOTO Maintenance Release Record
- LOTO Release Record
- LOTO Test Release Record
- LOTO Test Restore Record
- LOTO Boundary Increase Record
- LOTO Boundary Decrease Record
- LOTO Simple Record
- LOTO Lock Emergency Removal Record
- LOTO Annual Procedure Review Record
- Coordinator Continuity Transfer Record

9.0 ATTACHMENTS

Attachment A, Example Lockout Devices
Attachment B, Example LOTO Tag
Attachment C, Example Temporary LOTO Records
Attachment D, Example Non-listed/Visitor Lock Index
Attachment A, Example Lockout Devices

**Lockout Device** – Device that utilizes a positive means such as a lock and key, to hold an energy isolating device in the safe position and prevent the energizing of equipment. Southern Company Generation approved lockout devices are as follows:

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Isolation locks</strong></td>
<td>Red locks are used to secure energy isolation devices.</td>
</tr>
<tr>
<td></td>
<td>• Keyed in groups (lock sets)</td>
</tr>
<tr>
<td></td>
<td>• Used to secure/isolate equipment</td>
</tr>
<tr>
<td></td>
<td>• Always secured with an attached tagout device.</td>
</tr>
<tr>
<td><strong>Operating area locks</strong></td>
<td>Orange locks are used for operating area continuity indicating equipment has been isolated per the LOTO record. Operating area locks are always the first lock on and last lock off to ensure continuity of the active LOTO and the position of isolation devices have not been altered. No other lock shall be placed on the master lockbox without an operating area lock previously installed.</td>
</tr>
<tr>
<td></td>
<td>• “Operations Lock”</td>
</tr>
<tr>
<td></td>
<td>• Keyed in groups by Designated Operating Area (DOA)</td>
</tr>
<tr>
<td></td>
<td>• All Operating Area Leaders are issued keys</td>
</tr>
<tr>
<td></td>
<td>• Indicates the position of isolation devices has not been altered</td>
</tr>
<tr>
<td><strong>Individual locks</strong></td>
<td>Blue locks are assigned to individuals for their personal protection while performing work under a LOTO. Individuals are assigned five locks for this purpose.</td>
</tr>
<tr>
<td></td>
<td>• Keyed in groups (lock sets)</td>
</tr>
<tr>
<td></td>
<td>• Each worker has 5 locks and 1 key</td>
</tr>
<tr>
<td></td>
<td>• Emergency key held by Plant Manager or Designee</td>
</tr>
<tr>
<td></td>
<td>• Can lock on any LOTO with DOA permission</td>
</tr>
<tr>
<td></td>
<td>• Shall display worker name and contact number</td>
</tr>
<tr>
<td><strong>Coordinator locks</strong></td>
<td>Green locks are used by departments to coordinate multiple work crews, ensure continuity and integrity of active LOTO and for the protection of other workers. Coordinator locks are issued and controlled as approved by plant management, as required for each department. Requires an attached LOTO information tag.</td>
</tr>
<tr>
<td></td>
<td>• Keyed in groups by department</td>
</tr>
<tr>
<td></td>
<td>• Used to coordinate work crews</td>
</tr>
<tr>
<td></td>
<td>• Requires an attached LOTO information tag and:</td>
</tr>
<tr>
<td></td>
<td>1. Hasp on master lockboxes (red) or</td>
</tr>
<tr>
<td></td>
<td>2. First lock on a Satellite lockbox (yellow)</td>
</tr>
<tr>
<td><strong>Satellite lock</strong></td>
<td>Yellow locks are used to maintain continuity while a satellite lockbox is in use. Satellite locks are assigned to a corresponding satellite lockbox.</td>
</tr>
<tr>
<td></td>
<td>• Placed on master lockbox</td>
</tr>
<tr>
<td></td>
<td>• Shows satellite lockbox in use</td>
</tr>
<tr>
<td></td>
<td>• Keyed individually (to corresponding yellow box)</td>
</tr>
<tr>
<td></td>
<td>• Requires an attached LOTO information tag</td>
</tr>
</tbody>
</table>
Brown locks are used for non-listed workers to enable them to perform service or maintenance under the protection of a LOTO. Non-listed/visitor locks are issued for temporary use at the discretion of plant management. Requires an attached LOTO information tag.
- Issued by DOA (1 lock and 1 key)
- Requires LOTO Awareness Training annually
- Can only lock behind a coordinator (Green Lock)
- Requires an attached LOTO information tag

Contractor locks are provided by contractors for adherence to the Southern Company LOTO procedure and protection of their employees. All contractor personal protective locks shall be individually keyed and individually assigned to that worker. When securing to Southern Company lockout devices, contractor locks shall adhere to the following:
- Contain worker’s name, contact number, and company.
- Not be manufactured by American Lock
- Shall be silver, gray, or black in color.
Attachment B, Example LOTO Tag

Example of Tagout devices
Example of TPG Tags

SOUTHERN COMPANY GENERATION

TEMPORARY PROTECTIVE GROUND TAG

LOTO number____________________
TPG tag number__________________

5-8794 11/18

CAUTION

Do NOT Remove This Grounding Device
Unless Authorized By The LOTO Holder
Example of LOTO Information Tag

**LOTOK INFORMATION TAG**

**LOTOK ROLE:**
- [ ] LOTO COORDINATOR (GREEN LOCK)
- [ ] 3rd Party Grounds Installed (TPG’s)
- [ ] SATELLITE BOX (YELLOW LOCK)
- [ ] NON-LISTED/VISITOR
  - [ ] Alternate Accountability Responsible Person

**NAME:**

**CONTACT #:**

**DEPARTMENT/LOCATION:**

5-6705 Rev 1/2017
Example of Operational Control Tag

![Example of Operational Control Tag Image](image-url)

If there are questions or concerns regarding placement of this tag, please contact the Designated Operating Area.
### Attachment C, Example Temporary LOTO Records

#### Southern Company Generation
**LOTO REQUEST Record**

<table>
<thead>
<tr>
<th>Request #:</th>
<th>Equipment:</th>
<th>Equipment #:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LOTO Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant: Requested By: Designated Operating Area: Date/Time Needed:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for LOTO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Approved By: Signature: Date: Time:

---

#### Southern Company Generation
**LOTO ISOLATION Record**

<table>
<thead>
<tr>
<th>LOTO #:</th>
<th>Equipment:</th>
<th>Equipment #:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>LOTO Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant: Requested By: Date/Time Needed:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reason for LOTO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issued By: Lock Box #: Single Locks:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Executed By: Signature: Verified By: Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boundary Operating Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag #: Device: Device #: Position: Tag Type: Locking Device: Exclusive By: Test Method: Test Pass/Fail: Verifier: Notes:</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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Page 1 of 1

Page 1 of 2
# Southern Company Generation

## LOTO TEST RELEASE Record

<table>
<thead>
<tr>
<th>LOTO #</th>
<th>Equipment</th>
<th>Equipment #</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTO Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant</td>
<td>Requested By</td>
<td>Date/Time Needed</td>
</tr>
<tr>
<td>Reason for LOTO</td>
<td></td>
<td></td>
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<tr>
<td>Reason for Test</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Issued By</th>
<th>Lock Box #</th>
<th>Single Locks</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Executed By</th>
<th>Signature</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Boundary</th>
<th>Operating Area</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tag #</th>
<th>Device</th>
<th>Device #</th>
<th>Position</th>
<th>Executed By</th>
<th>Notes</th>
</tr>
</thead>
</table>

Page 1 of 2

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## LOTO LOCK EMERGENCY REMOVAL Record

<table>
<thead>
<tr>
<th>LOTO #</th>
<th>Equipment</th>
<th>Equipment #</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTO Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant</td>
<td>Requested By</td>
<td>Date/Time Needed</td>
</tr>
<tr>
<td>Reason for LOTO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Instructions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lock Holder</th>
<th>Lock Removal Requested By</th>
</tr>
</thead>
</table>

| Reason for Lock Removal | |
|--------------------------||

<table>
<thead>
<tr>
<th>LOTO Coordinator or Lock Holder Supervisor (Print)</th>
<th>Signature</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Manager/Designee (Print)</td>
<td>Signature</td>
<td>Date</td>
<td>Time</td>
</tr>
<tr>
<td>Lock Holder Signature upon return to plant site</td>
<td>Signature</td>
<td>Date</td>
<td>Time</td>
</tr>
</tbody>
</table>

Page 1 of 1
Southern Company Generation

**SCG-SH-0201, Lockout Tagout (LOTO) Procedure**

<table>
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<tr>
<th>LOTO Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant: Requested By: Date/Time Needed</td>
</tr>
</tbody>
</table>

### Original LOTO Coordinator

<table>
<thead>
<tr>
<th>LOTO Coordinator</th>
<th>Signature</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Comments**

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Page 1 of 1
## Attachment D, Example Non-listed/Visitor Lock Index

<table>
<thead>
<tr>
<th>Lock #</th>
<th>Name</th>
<th>Company</th>
<th>Contact #</th>
<th>Supervisor</th>
<th>Supervisor #</th>
<th>Training Date</th>
<th>Lock Issue Date</th>
<th>Lock Return Date</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Page 1 of 1
## SOUTHERN COMPANY GENERATION

**SCG-SH-0700**

SCAFFOLD SAFETY PROCEDURE

<table>
<thead>
<tr>
<th>Revision</th>
<th>Approval Date</th>
<th>Approved by</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>May 27, 2009</td>
<td>[Signature]</td>
<td>Executive Vice President and Chief Production Officer</td>
</tr>
<tr>
<td>1</td>
<td>September 27, 2012</td>
<td>[Signature]</td>
<td>Executive Vice President and Chief Production Officer</td>
</tr>
<tr>
<td>2</td>
<td>August 15, 2013</td>
<td>[Signature]</td>
<td>Executive Vice President and Chief Production Officer</td>
</tr>
</tbody>
</table>
Contents

1.0 PURPOSE AND SCOPE ............................................................................................................. 3
  1.1 Purpose .................................................................................................................................... 3
  1.2 Scope ...................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES .......................................................................................... 3
  2.1 Definitions ............................................................................................................................... 3
  2.2 References ............................................................................................................................. 5

3.0 RESPONSIBILITY .................................................................................................................... 5
  3.1 Facility Management .............................................................................................................. 5
  3.2 Safety and Health/Compliance .............................................................................................. 5
  3.3 Supervisors ............................................................................................................................ 6
  3.4 Competent Persons ................................................................................................................. 6
  3.5 Generation Employees ........................................................................................................... 6

4.0 REQUIREMENTS ..................................................................................................................... 6
  4.1 General Requirements ........................................................................................................... 6
  4.2 Training ................................................................................................................................ 7
  4.3 Contractor Requirements ....................................................................................................... 7
  4.4 Engineered Scaffold Systems ................................................................................................. 8
  4.5 Scaffold Tagging ..................................................................................................................... 9
  4.6 Inspection – All Hardware ...................................................................................................... 10
  4.7 Storage of Scaffolding ........................................................................................................... 10

5.0 KEY CONTACT ....................................................................................................................... 10

6.0 ATTACHMENTS .................................................................................................................... 11
  ATTACHMENT 1, SCAFFOLD TAGS EXAMPLES .................................................................. 12
  ATTACHMENT 2, ENGINEERED SCAFFOLD INSPECTION FORM ....................................... 13
  ATTACHMENT 3, ENGINEERED SCAFFOLD SYSTEMS CHECKLIST ................................. 14
  ATTACHMENT 4, SCAFFOLD INTEGRITY CHECKLIST ......................................................... 15
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure outlines the minimum requirements for the erection, inspection, dismantling, and using of scaffolds at all Southern Company Generation facilities.

1.2 Scope

This procedure applies to all persons working on Southern Company Generation facilities in the operation and maintenance of those facilities.


2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

competent person – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

NOTE
Scaffold competent persons may be Southern Company employees or employees of companies contracted by Southern Company or its contractors. For the purpose of this procedure, a competent person must have training and experience in scaffold use, inspection, or erection and have authority to take corrective action.

contractor – Any legal entity that contracts with Southern Company to perform or to have performed, the work for the project and that has the overall responsibility for the construction of the project.

engineered scaffold system(s) – A scaffold designed by a registered professional engineer as provided in this procedure.

founding system – Scaffold base built up from the ash pit or coutant bottom to the vertical wall of the boiler. Named for the founding beams that span the gap above the ash pit, it provides support for the scaffold. This system includes all the hardware used to build the base of a boiler scaffold.

PE – A registered professional engineer – An individual licensed and registered under the laws of the state where the scaffolding erection is performed to engage in the practice of engineering.

For the purpose of this procedure, a PE is a registered professional engineer specialized in structural engineering and is not an employee of Southern
Company, or its affiliates, but is retained or employed by the contractor or scaffold erector.

**qualified person** – One who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work, or the project.

Scaffold contractors shall designate a qualified person to supervise erection of and to inspect scaffolds designed by a PE. For the purpose of this procedure the “subject matter, the work, or the project” mentioned in the above definition shall be system scaffolding.

**responsible person** – The Southern Company Generation employee with responsibility for projects requiring engineered scaffold. This person is responsible for all tasks outlined in the engineered scaffold systems checklist ([attachment 3, Engineered Scaffold Systems Checklist](attachment:attachment_3,Engineered_Scaffold_Systems_Checklist)).

At a minimum the responsible person shall have completed scaffold user training SHIPS # 010554.

**scaffold** – Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage) used for supporting employees or materials or both.

**scaffold erector** – An individual designated to erect scaffolds. Scaffold erectors shall be trained in the nature of scaffold hazards; correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining scaffolds; design criteria; maximum intended load capacity; and intended use of scaffolds.

**scaffold inspector** – The PE, qualified person, or competent person responsible for inspecting scaffold.

**Scaffold Integrity Checklist** – See [attachment 4](attachment:attachment_4). A checklist completed by the responsible person to identify the scope of work inside and outside of the boiler that may adversely affect the structural integrity of the supporting structure for the engineered scaffold system. This completed Scaffold Integrity Checklist shall be shared with contractor, competent person, qualified person, and PE.

**scaffold user** – Any person who uses scaffold on Southern Company Generation property. Scaffold users shall be trained in and have knowledge of the basic elements of a safe scaffold platform, fall protection requirements, common electrical hazards, and falling object protection.

**tagging system** – A process for tagging scaffolds to indicate completion and inspection.

- **Red Tag** – Indicates the scaffold is under construction and not ready for use.
• Yellow Tag – Indicates a scaffold that is safe to use but has been altered to suit a specific job. This designation usually indicates an incomplete deck, handrail, or ladder.

• Green Tag – Indicates a scaffold is erected per the standard. A green tagged scaffold has a complete deck, proper access, and handrails installed.

All Southern Company Generation facilities shall use this tagging system to verify the required before-use and per-shift inspections are performed on all scaffolds regardless of type. Scaffold tags shall be signed and dated for the day and work shift.

2.2 References

This procedure meets all requirements set forth in:

• 29 CFR 1910.28, Safety Requirements for Scaffolding.
• 29 CFR 1926.450, Scope, Application, and Definitions Applicable to Subpart L.
• 29 CFR 1926.451, General Requirements.
• 29 CFR 1926.452, Additional Requirements Applicable to Specific Types of Scaffolding.
• 29 CFR 1926.453, Aerial Lifts.
• 29 CFR 1926.454, Training Requirements.

NOTE

All scaffolds built and used on Southern Company Generation facilities shall meet the requirements set forth in the applicable standards referenced in section 1.2, Scope, and in this procedure.

3.0 RESPONSIBILITY

3.1 Facility Management

Facility management is responsible for ensuring all management, supervisors, and employees work in compliance with this program.

3.2 Safety and Health/Compliance

Safety and health/compliance are responsible for the following:

• Facilitating employee training on scaffold use.
• Assisting with daily scaffold hazard recognition.
• Providing technical assistance.
3.3 **Supervisors**

Supervisors are responsible for the following:

- Ensuring employees are trained in scaffold use.
- Monitoring employee performance for compliance with scaffold requirements.

3.4 **Competent Persons**

- Performing per shift scaffold inspection.
- Ensuring scaffold hazards are identified and properly addressed before use.
- Being capable of identifying hazardous or dangerous conditions on scaffolds.
- Being knowledgeable in the application and use of scaffold systems.

3.5 **Generation Employees**

Generation employees are responsible for completing appropriate training and working in compliance with this program. Employees are responsible for the following:

- Knowing and understanding the approved scaffold tagging requirements.
- Ensuring scaffold hazards are identified and properly addressed on the job safety briefing.

4.0 **REQUIREMENTS**

4.1 **General Requirements**

Plant management shall designate Southern Company Generation employees as scaffold competent person(s) for the types of scaffolds used at the facility. This designation shall be made in writing and plant management shall review the individual’s qualifications. At a minimum, a competent person shall have experience working from scaffolds and have completed a recognized Scaffold Competent Person class. Companies contracted by Southern Company Generation to inspect, erect, or modify scaffolding shall designate competent person(s) as required by OSHA and this procedure.

**NOTE**

Southern Company Generation employees with training recorded in SHIPS may be considered *designated in writing*. Details such as the level of training and type scaffold trained on may be filed at the location.

Scaffolds shall be erected, moved, dismantled, or altered only under the supervision and direction of a competent person in scaffold erection, moving, dismantling, or alteration. Such activities shall be performed only by experienced and trained employees selected...
for such work by the competent person. This training shall be in accordance with the current version of OSHA’s scaffolding standards, 29 CFR 1926.454.

All personnel working from scaffolds shall attend scaffold safety training for the type of scaffold being used. This training shall be in accordance with the current version of OSHA’s scaffolding standards, 29 CFR 1926.454.

Scaffolding in excess of 125 ft in height shall be designed by a PE. In addition, regardless of height, any scaffold built on a founding system (base) installed to the vertical wall of the boiler must be designed by a PE.

Each scaffold shall be built as complete as physically possible: complete deck, handrail/midrails, toe boards, and access ladder. If the scaffold cannot be built per the standard, it shall be yellow tagged and all deficiencies clearly identified on the tag.

Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold’s structural integrity is maintained by the scaffold user. Scaffold components manufactured by different manufacturers shall not be modified to intermix them unless a competent person determines the resulting scaffold is structurally sound.

Scaffold planks are to be used for their designated purpose only.

4.2 Training

Southern Company Generation employees designated as scaffold users or scaffold competent persons shall be trained in accordance with the Southern Company Generation training program as outlined in the training trigger list.

SHIPS training records will be used to verify training for Southern Company Generation employees.

Reference SHIPS Numbers

Scaffold User (every 3 years) 010554
Scaffold User Web/Online (every 3 years) 017343
Scaffold Competent Person (every 3 years) 010552

Contractor scaffold training must meet OSHA Standards as designated in 29 CFR 1926.454.

4.3 Contractor Requirements

Contractors who use, inspect, erect, and modify scaffolding at Southern Company Generation facilities shall designate competent and qualified persons as required by OSHA and this procedure. Documentation supporting these designations shall be provided to plant management on request.
Contractors with responsibility for the erection, modification, or disassembly of scaffolds shall provide trained scaffold erectors and be able to present documentation supporting this designation on request.

Contractors shall inspect all scaffold material prior to installation at a Southern Company Generation facility. All material shall meet the structural requirements set forth by the competent person, qualified person, scaffold erector, or PE of record.

4.4 Engineered Scaffold Systems

Approval from Supply Chain Management is required for any contractor bidding or erecting PE scaffolds.

Scaffolding systems in excess of 125 ft in height shall be designed by a PE. In addition, regardless of height, any scaffold built on a founding system (base) installed to the vertical wall of the boiler shall be designed by a PE.

The responsible person shall complete attachment 4, Scaffold Integrity Checklist, as part of the planning process, prior to the prebid or prework meeting. The responsible person shall discuss in detail the scaffold work scope and the boiler work scope, including any work that may impact the structural integrity of the scaffold support structure. This completed Scaffold Integrity Checklist shall be shared with contractor, competent person, qualified person, and PE.

The plant responsible person shall request PE-designed scaffolds in advance. Design drawings will be reviewed to determine the design meets the requirements of the planned work.

A minimum of 2 weeks prior to installation of PE-designed scaffolding, the contractor shall provide the responsible person a PE-stamped engineering design drawing released for construction and the qualifications for the erection contractor’s qualified and competent persons.

The responsible person shall provide the contractor with a copy of the Engineered Scaffold Inspection Form (attachment 2). The inspection points will be determined at this time.

The contractor shall inspect and certify the installation of the scaffold meets the requirements of the engineering drawing.

NOTE

When necessary to determine that the design allows access to the planned work, the Southern Company responsible person may accompany the inspector.

Each phase of the scaffold will be inspected as outlined below by the PE of record for scaffold design or his or her designee. The inspector shall not be involved with or responsible for the erection of the scaffold:

- Phase I will be at completion of the foundation level of the scaffold.
• Phase II will be at a midlevel point of the installation as agreed between the purchaser and the contractor.

• Phase III will be at the completion of the installation.

The representative of the contractor shall sign the Engineered Scaffold Inspection Form and present the inspection form to the Southern Company responsible person. With the exception of the responsible person who may accompany the inspector to ensure the design allows access to the planned work, no Southern Company Generation employee may use the scaffold before the Engineered Scaffold Inspection Form is completed and signed (see attachment 2).

After the responsible person has received the signed inspection documents from the contractor, the scaffold will be evaluated by competent persons representing Southern Company Generation, the contractor, and the company contracted to erect the scaffold. Any deficiencies shall be identified and corrected by the contractor before work from the scaffold begins. The appropriate scaffold inspection tag shall then be signed, dated, and placed at all points of scaffold access.

It is the responsibility of the responsible person to maintain for 3 years all records of:

• Attachment 2, Engineered Scaffold Inspection Form.
• Attachment 3, Engineered Scaffold Systems Checklist.
• Attachment 4, Scaffold Integrity Checklist.

No changes may be made to any structural members of a PE-designed scaffold without prior approval in writing from the PE of record who designed, approved, and signed the scaffold design drawing. Changes must be inspected by the PE of record or his or her designee.

Scaffold components manufactured by different manufacturers shall not be intermixed unless the components fit together without force and the scaffold's structural integrity is maintained by the scaffold user. Scaffold components manufactured by different manufacturers shall not be modified to intermix them unless approved by the PE of record who designed, approved, and signed the scaffold design drawing.

4.5 Scaffold Tagging

4.5.1 General Scaffold Tagging Requirements

• A green scaffold tag designates a scaffold erected as per the standard as defined by the manufacturer and/or 29 CFR 1926, Subpart L.

• A yellow scaffold tag designates a scaffold that is safe to use but has been altered to suit a specific job. A yellow scaffold tag shall detail any hazards and the necessary protective measures. Yellow tags shall not be used as a substitute for scaffolds that can be fully completed. Yellow tags will not be used to authorize use of scaffold with inadequate bracing, footing, or support.
• A red tag designates a scaffold is in the process of being erected, changed, dismantled, or has been damaged. A scaffold with a red scaffold tag shall be considered unsafe and shall not be used.

### 4.5.2 Installation and Removal of Scaffold Tags

• A competent person shall inspect all scaffolds to determine whether a usable scaffold receives a yellow or a green tag. The competent person shall be responsible for signing, dating, and completing all pertinent information on the tag and affixing the tags.

• The scaffold tags shall be affixed to scaffold access points in a manner that makes it obvious the tag applies to the scaffold and will not interfere with normal access.

• Any scaffold user may remove a green or yellow scaffold tag if the scaffold is found to be deficient in any safety aspect (for example, the scaffold has been damaged, improperly modified, or is missing components). The person who removed the tag shall notify plant management the scaffold has been deemed unsafe for use. As soon as possible, the issue must be corrected.

• After a scaffold has been repaired, a competent person shall reinspect it and retag it accordingly.

• Per-shift inspections by competent persons shall be performed to ensure all scaffolds remain in a safe condition and tags are appropriately signed, dated, and legible.

### 4.6 Inspection – All Hardware

Scaffold erection crews shall inspect all components for defects as the erection proceeds. Any components found to be defective shall be set aside and tagged for repair or disposal.

All planking shall be scaffold grade as defined in the OSHA scaffold standard.

### 4.7 Storage of Scaffolding

Scaffold materials shall be temporarily stored in a manner that will protect and prevent damage to them. Scaffold materials, in particular wood scaffold planks, shall be stored under a protective roof when possible.

Scaffold materials shall not be left in work areas where they obstruct traffic and/or cause fire hazards. Scaffold material shall not be stored in a manner that blocks access to electrical equipment, fire protection equipment, or any emergency exits or equipment.

### 5.0 KEY CONTACT

For questions regarding the content and implementation of this procedure, contact the Southern Company Generation Safety and Health.
6.0 ATTACHMENTS

- Attachment 1, Scaffold Tags Examples.
- Attachment 2, Engineered Scaffold Inspection Form.
- Attachment 3, Engineered Scaffold Systems Checklist.
- Attachment 4, Scaffold Integrity Checklist.
Attachment 1, Scaffold Tags Examples

Do-Not-Use Scaffold Tag (Red)

Incomplete but structurally safe scaffold tag (Yellow)

Completed Scaffold Tag (Green)
Attachment 2, Engineered Scaffold Inspection Form

The inspections listed below are to be performed by the PE of record for scaffold design or his/her designee. (4.3.7)

<table>
<thead>
<tr>
<th>Plant</th>
<th>Unit #</th>
<th>WO No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erection Phase</td>
<td>Inspection Requirements</td>
<td>Inspected By</td>
</tr>
<tr>
<td>1 Founding system (base) Installed to vertical wall of boiler</td>
<td>The scaffolding system, to this point, is installed as required by the PE stamped drawing with no deficiencies and is ready to continue erection</td>
<td></td>
</tr>
<tr>
<td>2 Scaffold erected to mid-point or work platform (dance floor)</td>
<td>The scaffolding system, to this point, is installed as required by the PE stamped drawing with no deficiencies and is ready to continue erection</td>
<td></td>
</tr>
<tr>
<td>3 Scaffold complete</td>
<td>The scaffolding system is completely installed as required by the PE-stamped drawing with no deficiencies and is ready for use (Green Tag)</td>
<td></td>
</tr>
<tr>
<td>4 Scaffolding system modified</td>
<td>PE-approved modifications to the scaffolding system have been completed as required by revised PE-stamped drawing with no deficiencies and is ready for use (Green Tag)</td>
<td></td>
</tr>
</tbody>
</table>

Inspector's Comments

<table>
<thead>
<tr>
<th>Item</th>
<th>Note deficiencies and corrective action required (see chart below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Level of Urgency

1. Red Tag Scaffold (DO NOT USE) Until Repairs are Completed for Items
2. Yellow Tag (RESTRICTED USE) Fall Protection Required
3. Green Tag (READY FOR USE) No Deficiencies

Reinspect a scaffolding system after any repairs or modification.

By signing below, contractor hereby certifies (1) inspection or reinspection of the scaffolding has been performed, (2) all corrective action required to correct deficiencies in the scaffolding has been taken, and (3) the scaffolding meets the requirements of the engineering drawing and is ready for safe use.

Contractor representative ___________________________ Date ____________
Reference 4.3.8
Attachment 3, Engineered Scaffold Systems Checklist

This checklist is to be completed by the Southern Company Generation responsible person.

In the chart below, each area identified by an item number requires the name and initials of the responsible person in the appropriate column.

<table>
<thead>
<tr>
<th>Plant</th>
<th>Unit #</th>
<th>Work Order No.</th>
<th>Item</th>
<th>Responsible Person(^1) (print name)</th>
<th>Task</th>
<th>Initials</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Develop contracting strategy (include in prime package or contract direct)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>Identify qualified contractors/subcontractors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>Complete the Scaffolding Integrity Checklist. At the prebid or prework meeting, discuss in detail the boiler work scope including any work that may impact the integrity of the scaffold support structure. The completed Scaffold Integrity Checklist shall be shared with contractor, qualified person, competent person, or PE. (See attachment 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>At the prebid or prework meeting, discuss in detail the scaffolding work scope and provide Southern Company Generation Scaffold Safety Procedure, including engineered scaffold inspection requirements, with contractor, qualified person, competent persons, and PE. (See attachment 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>2 weeks prior to mobilization, obtain PE-stamped engineered drawings and qualified and competent persons qualifications from the erection contractor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>Identify the project evaluation team(^2) and review engineered drawings to familiarize team members with the work scope.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>Meet with contractor qualified and competent persons, distribute the scaffold inspection form, and determine 3 points for approval. (See attachment 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8</td>
<td>Conduct preinspection job safety briefing to review drawing and any information relevant to the particular brand or type scaffold used. Require the erector's qualified and competent persons to attend.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9</td>
<td>Determine who is responsible from contractor for initial tagging and per-shift scaffold inspections for each phase of the project</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td>Review the tagging system requirements with the appointed competent persons</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This document shall be maintained on plant site for 3 years.

---

\(^1\) The responsible person is the Southern Company Generation employee with responsibility for projects requiring engineered scaffold. At a minimum, the responsible person shall have completed scaffold user training SHIPS # 010554.

\(^2\) The evaluation team shall consist of competent persons representing Southern Company, the contractor, and the company contracted to erect the scaffold.
### Attachment 4, Scaffold Integrity Checklist

This checklist shall be completed by the responsible person to identify the scope of work inside and outside of the boiler that may impact the load bearing capability of the scaffold support structure. This checklist shall be shared with the contractor, competent person, qualified person, and PE.

<table>
<thead>
<tr>
<th>Plant:</th>
<th>Unit:</th>
<th>MWO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsible Person (<em>Print</em>):</td>
<td>Responsible Person (<em>Sign</em>):</td>
<td>Date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Responsible Person’s Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there any plans to stage equipment (panels, burners, etc.) on the scaffolding that will add weight to the scaffold?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
<tr>
<td>Are there any structural members (buckstays, trusses, tension bars, etc.) or structural tubes (rear waterwall hanger tubes) being cut or removed?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
<tr>
<td>Will any work be completed on the countant slopes? Any waterwall panel replacements in this area or a large quantity of panels replaced in the vertical walls? Are any structural modifications required on the boiler proper to complete a major section (Superheat, Reheat, etc) that may add weight or affect the integrity of the boiler? Will burner corners be replaced?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
<tr>
<td>Will any work be in the lower dead-air space on any structural members or hangers?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
<tr>
<td>Will any headers be unpinned or disconnected from structural steel in the lower furnace area?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
<tr>
<td>Will any large water wall section be removed while the unit has installed scaffolding?</td>
<td>YES (provide explanation)</td>
</tr>
<tr>
<td><strong>Explanation:</strong></td>
<td></td>
</tr>
</tbody>
</table>
SOUTHERN COMPANY GENERATION

SCG-SH-2101

Hazard Communication

<table>
<thead>
<tr>
<th>Revision</th>
<th>Approval Date</th>
<th>Approved by</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>August 9, 2013</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Executive Vice President and Chief Production Officer
## Contents

1.0 PURPOSE AND SCOPE ........................................................................................................ 3

1.1 Purpose .......................................................................................................................... 3

1.2 Scope ............................................................................................................................ 3

2.0 GENERAL INFORMATION ........................................................................................... 3

3.0 SITE SPECIFIC PROGRAM .......................................................................................... 4

4.0 LABELING AND OTHER FORMS OF WARNING ......................................................... 4

4.1 Labels and Containers .................................................................................................. 4

4.2 Workplace Labeling ..................................................................................................... 4

4.3 Pictograms and Associated Hazards ............................................................................ 6

5.0 ACCESS TO CHEMICAL HAZARD INFORMATION (SDSS) ....................................... 6

6.0 WORKPLACE CHEMICAL INVENTORY ....................................................................... 7

7.0 EMPLOYEE INFORMATION AND TRAINING ................................................................ 8

7.1 Who to Train .................................................................................................................. 8

7.2 Frequency ..................................................................................................................... 8

7.3 Content ........................................................................................................................ 8

8.0 NON-ROUTINE TASKS ............................................................................................... 9

9.0 UNLABELED PIPES ..................................................................................................... 9

10.0 CONTRACTOR/VENDOR COORDINATION ................................................................. 9

10.1 Site Hazards ................................................................................................................ 9

10.2 Hazardous Chemicals .................................................................................................. 10

10.3 Prior to Work ............................................................................................................... 10

10.4 Obligations .................................................................................................................. 10

11.0 STATE AND OTHER JURISDICTIONAL REQUIREMENTS .................................... 10

12.0 REFERENCES ............................................................................................................. 10

13.0 DOCUMENT REVISION LOG .................................................................................. 11

14.0 ATTACHMENTS ......................................................................................................... 11
1.0 PURPOSE AND SCOPE

1.1 Purpose

The purpose of this Hazard Communication document is to ensure that Southern Company Generation employees are effectively informed of the potential and existing chemical hazards in the work environment and to comply with the federal Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200).

1.2 Scope

This document applies to all hazardous chemicals that employees could be exposed under normal working conditions or in the case of an emergency. A hazardous chemical is any chemical which is classified as a physical hazard (flammable, explosive, corrosive), health hazard (irritant, toxin, carcinogen), simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.

This document does not apply to:

- Hazardous waste.
- Consumer products brought on-site by personnel for personal use (e.g. shaving cream, hair spray, hand lotion)
- Any consumer product or hazardous substance when used for the purpose intended by the manufacturer where the use results in a duration and frequency of exposure not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.

2.0 GENERAL INFORMATION

This document contains provisions for:

- Labeling of containers of chemicals in the workplace.
- Distribution of Safety Data Sheets (SDSs) to employees.
- Development and implementation of employee training programs regarding hazards of chemicals and protective measures.
- Providing a list of the hazardous chemicals known to be present on site.
- Methods used to inform employees of the hazards of non-routine tasks.
- Hazards associated with chemicals contained in unlabeled pipes.
- Provisions for informing contractors of hazard communication requirements.
3.0 SITE SPECIFIC PROGRAM

The Company shall develop, implement, and maintain a written hazard communication program containing site-specific information at each workplace that is readily available to employees, their representatives, and regulatory inspectors upon their request. This document along with a completed Appendix I, Required Site-Specific Information, may serve as each site's written hazard communication program. If a site chooses to provide their own written program, it shall contain the provisions presented above in the General Program Information section to be considered complete and in compliance with 29 CFR 1910.1200. In addition, the written program shall clearly state who is responsible for the overall site coordination as well as who is responsible for any of the specific elements.

The written program shall be an accurate representation of what hazardous chemicals exist or are used by employees working for or assigned to the facility. Therefore, it shall be updated whenever changes are made. The site-specific information shall be kept current, and as a matter of good practice, the overall program shall be reviewed periodically.

4.0 LABELING AND OTHER FORMS OF WARNING

4.1 Labels and Containers

Chemical manufacturers, importers, and distributors shall provide labels, tags, or other markings for containers of hazardous chemicals. Containers of hazardous chemicals shall be inspected upon receipt and if an appropriate label is not present, the chemical shall not be accepted. The information shall include at least the following:

- Product identifier.
- Signal word.
- Hazard statement(s).
- Pictogram(s).
- Precautionary statement(s).
- Name, address, and telephone number of the chemical manufacturer, importer, or responsible party.

4.2 Workplace Labeling

Although there is no specific format for labeling containers of hazardous chemicals in the workplace, they shall be properly labeled, tagged, or marked with one of the following:

- The information specified on the manufacturer, importer or distributor container label as described in the section above.
- Product identifier and words, pictures, symbols, or a combination thereof, which provide at least general information regarding the hazards of the chemicals.
Workplace labels using National Fire Protection Association (NFPA) or Hazardous Material Information System (HMIS) hazard classification systems meet this requirement.

This general information in conjunction with the other information immediately available to employees (for example, SDSs), shall provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

In certain situations involving individual stationary process containers, the label may be replaced by a sign, placard, process sheet, batch ticket, operating procedures, or other means to convey the identity of the hazardous chemical and the appropriate physical and health hazards. If these other forms of warning are used, they shall be readily accessible to employees in their work area during each work shift.

Labels shall not be required for portable containers into which a small amount of a chemical is transferred for immediate use by the person performing the transfer. An example of this exception is the transfer of a few milliliters of a chemical into a container for use in another location when transferred, transported, and fully used by one individual during the work shift.

When needed, chemical product labels shall be manually created or generated electronically. Labeling software packages are readily available as well as some customized labels for a specific chemical. The label on a container shall contain the same chemical or product name as is indicated on the product's SDS contained in the 3E Chemical Inventory System. Site-specific labeling systems shall be described in Attachment I of this program.

- No labels on original containers shall be altered or defaced in any manner. If labels are removed, defaced or become illegible, the container shall be immediately marked with the required information.

- There shall be no requirement to re-label chemicals that are properly labeled by the manufacturer or distributor when they are received. However, if chemicals are received that are not labeled appropriately the Company shall assume the responsibility to label the container. The only chemicals generally excluded from the Hazard Communication labeling requirement are the following:
  
  a. Pesticides regulated under the Federal Insecticide, Fungicide, and Rodenticide Act (shall be labeled in accordance with FIFRA).

  b. Any chemical substance or mixture defined in the Toxic Substances Control Act that are subject to labeling requirements of that Act.

  c. Foods, drugs, or cosmetics regulated by the Food and Drug Administration (shall be labeled in accordance with FDA regulations).


  e. Agricultural or vegetable seed covered under the labeling regulations of the Department of Agriculture.
4.3 Pictograms and Associated Hazards

Chemical manufacturers, importers, or distributors shall include pictograms on shipped containers. Additionally, Southern Company has the option to include pictograms on workplace containers along with other information as a means of communicating chemical hazards to our employees.

Pictograms shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. One of eight standard hazard symbols shall be used in each pictogram. The eight hazard symbols are depicted below along with the associated hazards they are intended to communicate:

<table>
<thead>
<tr>
<th>Flame</th>
<th>Flame Over Circle</th>
<th>Exclamation Mark</th>
<th>Exploding Bomb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammables</td>
<td>Oxidizers</td>
<td>Irritant</td>
<td>Explosives</td>
</tr>
<tr>
<td>Self Reactives</td>
<td></td>
<td>Dermal Sensitizer</td>
<td>Self Reactives</td>
</tr>
<tr>
<td>Pyrophorics</td>
<td></td>
<td>Acute Toxicity</td>
<td>Organic Peroxides</td>
</tr>
<tr>
<td>Self-heating</td>
<td></td>
<td>(harmful)</td>
<td></td>
</tr>
<tr>
<td>Emits Flammable Gas</td>
<td></td>
<td>Narcotic Effects</td>
<td></td>
</tr>
<tr>
<td>Organic Peroxides</td>
<td></td>
<td>Respiratory Tract</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irritation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Corrosion</th>
<th>Gas Cylinder</th>
<th>Health Hazard</th>
<th>Skull and Crossbones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosives</td>
<td>Gases Under Pressure</td>
<td>Carcinogen</td>
<td>Acute Toxicity (severe)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Respiratory Sensitizer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reproductive Toxicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Target Organ Toxicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mutagenicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aspiration Toxicity</td>
<td></td>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

5.0 ACCESS TO CHEMICAL HAZARD INFORMATION (SDSs)

The chemical product information found in SDSs can be viewed or downloaded from the 3E System, the company’s official depository of SDS, available through any Southern Company computer with intranet access. In the event that employees are working remotely and cannot access 3E, they can acquire chemical product information via SDS hard copies or by contacting someone to obtain the information from the SDS (other Southern Company personnel or 3E at (800) 451-8346). SDSs shall also be provided to employees, their representatives, and/or regulatory inspectors upon their request.
OSHA mandates that hazardous chemical manufacturers/distributors/importers shall include at least the following section numbers and headings in the SDS and shall be presented in the order listed.

- Section 1 – Identification.
- Section 2 – Hazard(s) identification.
- Section 3 – Composition/information on ingredients.
- Section 4 – First-aid measures.
- Section 5 – Fire-fighting measures.
- Section 6 – Accidental release measures.
- Section 7 – Handling and storage.
- Section 8 – Exposure controls/personal protection.
- Section 9 – Physical and chemical properties.
- Section 10 – Stability and reactivity.
- Section 11 – Toxicological information.
- Section 12 – Ecological information (Non-mandatory).
- Section 13 – Disposal considerations (Non-mandatory).
- Section 14 – Transport information (Non-mandatory).
- Section 15 – Regulatory information (Non-mandatory).
- Section 16 – Other information, including date of preparation or last revision.

6.0 WORKPLACE CHEMICAL INVENTORY

A list of hazardous chemicals known to be present on site shall be available at all company locations. The hazardous chemicals shall be registered by their product identifier as it appears on the SDS. Inventory verification shall be performed periodically to ensure it remains current.

Chemical inventories are available on the 3E System. The 3E Chemical Inventory System can be accessed by clicking this link or by selecting the Safety link on the Southern Today webpage and then clicking SDS. Employees have unrestricted ability to view SDSs, facilities’ chemical inventories, ingredients in products, manufacturer information, and print labels.
7.0 **EMPLOYEE INFORMATION AND TRAINING**

7.1 **Who to Train**

Employees to be trained shall be those who could be exposed to hazardous chemicals under normal working conditions or in the case of emergency.

**NOTE**

Office workers who encounter hazardous chemicals only in isolated instances shall not be covered by the Hazard Communication standard. However, if an office worker is routinely required to perform jobs that may expose them to hazardous products, training shall be required.

7.2 **Frequency**

Employees shall be provided with effective information and training on hazardous chemicals in their work area. Employees shall receive initial training prior to potential exposure to hazardous chemicals. If a new hazard is introduced into the workplace OR non-routine tasks are to be performed, workers shall receive training on the new hazards or job tasks. The completion of training shall be documented in SHIPS.

**NOTE**

Hazard communication training shall be performed initially and on an annual basis to ensure that employees understand the hazard communication program.

7.3 **Content**

Information and training may be designed to cover categories of hazards (for example: flammability, carcinogenicity) or specific chemicals. Chemical-specific information shall always be available through labels and SDSs.

Employees shall be informed of the following:

a. Any operations in their work area where hazardous chemicals are present.

b. The location and availability of the written hazard communication program, including the required list of hazardous chemicals, and the required SDSs.

Training shall include at least the following:

a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area.

b. The physical, health, simple asphyxiation, combustible dust, and pyrophoric gas hazards, as well as hazards not otherwise classified, of the chemicals in the work area.
c. The measures employees can take to protect themselves from the hazards, such as appropriate work practices, emergency procedures, and PPE to be used.

d. The details of the hazard communication program including an explanation of the labels received on shipped containers and the workplace labeling system used by their employer; the SDS, including the order of information and how employees can obtain and use the appropriate hazard information.

The following categories shall be covered for Company employees working at power generation facilities or at locations where workers have potential exposures to these types of products:

a. Acid and caustic agents.
b. Compressed gases.
c. Flammable liquids.
d. Halogenated solvents.

If a facility uses paints, cleaning agents, or any materials from a category not otherwise listed in this program, training shall be conducted on any chemical product categories to which employees can be exposed.

8.0 NON-ROUTINE TASKS

Employees shall be properly informed of the potential hazards that may be associated with performing non-routine tasks. Non-routine tasks are those which employees may perform so infrequently that they are unaware of or may have forgotten the hazards involved with using the hazardous chemicals required for the task.

Non-routine tasks shall be identified in your site-specific information. In addition, the means by which employees will be informed of the potential hazards from the hazardous chemicals shall also be explained. The training may be conducted in a job safety briefing, toolbox session, or other information sharing methods.

9.0 UNLABELED PIPES

If the site has piping containing hazardous chemicals, labeling or color-coding for content identification is recommended. If color-coding is used, a description of the color-coding scheme shall be presented in the site-specific information. Regardless of the labeling or color-coding, the hazards associated with chemicals contained in the pipes shall be communicated to employees.

10.0 CONTRACTOR/VENDOR COORDINATION

10.1 Site Hazards

Company representatives shall respond to contractor inquires concerning site hazards. Known hazards are generally identified and communicated during the Contract
Preparation stage. However, during the course of the work, the Company's contract administrator shall communicate additional hazards as appropriate.

10.2 Hazardous Chemicals

The contractor shall comply with contract provisions and applicable laws and regulations concerning potentially hazardous chemicals. Examples include:

- All materials used by the contractor shall be approved by the Company prior to these substances being brought on-site.
- All approved materials shall be supported by an SDS.
- All materials shall be stored in containers approved for storage of that product and all containers shall be in good condition.
- All containers shall be clearly labeled in compliance with all regulations.
- All containers shall be stored in a manner to provide adequate security of the chemicals.

10.3 Prior to Work

Prior to beginning work on Company property, the contractors shall be notified of hazardous chemicals to which the contractor's employees may be exposed and the appropriate control measures needed to limit such exposure (for example: alarms, evacuation routes). Copies of SDSs for these materials shall be provided to the contractor upon request. The Company shall inform the contractor of the location and content of the facility's written Hazard Communication Program.

10.4 Obligations

The full extent of the Company's and the contractor's obligations are spelled out in the standard form contract (refer to the facility's contractor handbook if available or to the Southern Company Contract Manual).

11.0 STATE AND OTHER JURISDICTIONAL REQUIREMENTS

Business units shall determine if there are any state or other jurisdictional hazard communication requirements that affect their locations. If requirements do exist, and if they are more restrictive than the requirements in this program, they shall be incorporated into the site-specific hazard communication program.

12.0 REFERENCES

13.0 DOCUMENT REVISION LOG

1. March 26, 2004 - Section 2101.300.F. - Deleted misleading language that implied chemicals used in laboratories may not require labeling. Section 2101.500 - Deleted vague language concerning chemical inventory of products not currently on site.

2. February 18, 2005 - Updated guideline and site specific procedures (Appendix I) to reference the new 3E Chemical Inventory System and deleted all reference to the retired Chem-RTK system. Simplified statement in 2101.300.A (second bullet) to remove reference to have labels include applicable target organ affects (e.g. eye irritant, corrosive lungs, and mucous membranes, etc.). According to OSHA Directive CPL 02-02-038 - CPL 2-2.38D paragraph (f)(5), employers may provide general information regarding the hazards of chemicals on labels as long as other information is immediately available. MSDS’s and summary information is provided on the web-based chemical inventory database available to all Southern Company employees. In addition, all employees are informed of this access in compliance training. The Directive also states that NFPA and HMIS labels are sufficient for in-plant labeling even though target organs are not provided on these container labels.


5. August 9, 2013-Various sections-updated entire document: revised the table of contents, added purpose and scope, deleted the word “program” and added an attachment for a site specific program

14.0

Attachment 1. Required Site Specific Information
### A. Program Element Responsibilities

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Name</th>
<th>Contact Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>This individual is responsible for all the listed activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall site coordination:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review and updates of site-specific information (Appendix I):</td>
<td></td>
<td></td>
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<tr>
<td>Product labeling:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDS maintenance, availability, and acquisition:</td>
<td></td>
<td></td>
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<tr>
<td>Providing information and training; recordkeeping of training:</td>
<td></td>
<td></td>
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<tr>
<td>Maintaining up-to-date list of hazardous chemicals (inventory):</td>
<td></td>
<td></td>
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<tr>
<td>Information/training for non-routine tasks:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contractor coordination:</td>
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</tr>
</tbody>
</table>
B. Safety Data Sheets

1. SDSs for this site are maintained electronically on the 3E Chemical Inventory System.

   NOTE

   If you use the 3E system, the following information applies

   The 3E System is located on the Southern Today website under Safety. Employees have unrestricted ability to view SDSs, chemical inventories, ingredients in products, manufacturer information, and print labels.

   3E System procedure for viewing or printing an SDS:

   a. Under (M)SDS tab, choose “Product Name” as the <Search Criterion> in the “Search for” box

   b. Type your product name and click “Search”

   c. Click blue document icon next to your product and then “view, email or fax” the SDS

   d. Manufacturer, Part Number, etc. can also be used as the

2. SDSs for this site are maintained as hard copies.

   Describe how MSDSs can be obtained at this site (e.g. where the hard copies are located):

C. Workplace labeling

If applicable, describe the procedures and systems used at this site for workplace labeling of hazardous chemicals.

D. List of Hazardous Chemicals

The list of hazardous chemicals (workplace inventory) is maintained electronically using the 3E System.

Note: When the 3E System is used to generate a workplace inventory, the following information applies

3E System procedure for finding a product on the chemical inventory list:

a. Under Inventory tab choose “Search Inventory”

b. Choose your location from the facility tree on the left, by clicking the + buttons under My Locations and Southern Company and highlight red
c. Then Search for the product as you did in the above instructions; Click the "Show All" button to view the entire chemical inventory

d. If the product is not on your inventory, notify Compliance Team member to have the product added.

3E procedure for printing a chemical inventory:

a. Under Inventory tab choose “Inventory Reports”

b. Choose your location from the facility tree on the left, by clicking the + buttons under My Locations and Southern Company and highlight red

c. Select the type of report you would like to run

d. Choose "Run Report"

The list of hazardous chemicals (workplace inventory) for this location is maintained as a hard copy in the following location:

Additional Site Specific Procedures

E. Information and Training

1. The following site-specific hazard communication training is provided to employees at this site:

2. Training records for this facility are maintained electronically in SHIPS

F. Non-routine Tasks

1. The following non-routine tasks may be performed at this site:

   NOTE

   Include information about the hazards associated with these tasks (e.g. hazardous chemicals required)

   [Example entry - replace with your own tasks]

   System A - Ash Handling

   Task - Spray Coating parts with Wear Resistant Epoxy or other materials

   Hazard - Fumes, Contact with skin, Environmental disposal of waste

   Products - Epoxy, Paint, Solvents, Paint Thinner

2. Describe the method used to inform employees and applicable contractor employees of the hazards associated with the non-routine tasks:
G. Unlabeled Piping

1. This site does / does not have pipes containing hazardous chemicals.

2. This site does / does not use a color coding scheme to label pipes containing hazardous chemicals.

3. If applicable, the following is a description of this site’s color-coding scheme for piping containing hazardous chemicals:

4. For areas where hazardous chemicals are transferred in unlabeled pipes, workers must contact appropriate personnel to determine:
   - The chemicals in the pipes;
   - The potential hazards, and;
   - Safety precautions to be taken.
SOUTHERN COMPANY OPERATIONS
PROCEDURE

SCO-SH-0900

BARRICADES

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# CONTENTS

1.0 PURPOSE AND SCOPE ................................................................................................................. 3
1.1 Purpose ................................................................................................................................... 3
1.2 Scope ................................................................................................................................... 3

2.0 DEFINITIONS AND REFERENCES ................................................................................................. 3
2.1 Definitions ................................................................................................................................. 3
2.2 References ................................................................................................................................. 3

3.0 RESPONSIBILITY .......................................................................................................................... 4
3.1 Management ............................................................................................................................... 4
3.2 Contractors ................................................................................................................................. 4
3.3 Safety and Health Compliance Personnel .................................................................................. 4

4.0 PROCEDURE ................................................................................................................................ 4
4.1 Non-Rigid Barricades .................................................................................................................. 4
4.2 Barricades – Protective (Rigid) .................................................................................................... 6
4.3 Traffic Barricades and Signs ........................................................................................................ 6

5.0 TRAINING .................................................................................................................................. 7

6.0 ATTACHMENTS ............................................................................................................................ 7
Attachment 1 – Barricade Tag ............................................................................................................. 8
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for the use of rigid and non-rigid barricades to minimize exposure to hazards such as, but not limited to, slips, trips, falls, overhead work, leaks, chemicals, radiation, and high temperatures.

1.2 Scope

This procedure applies to all Southern Company Operations employees and contractors at generating facilities and E&CS project locations.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

contractor responsible person – The contractor employee responsible for the work; may include job titles such as foreman, general foreman, and craft supervisor. Note: The contractor responsible person may change over the course of a project.

guardrail system – A barrier erected to prevent workers from falling to lower levels that consists of top rail at 42 in., ± 3 inches, a mid-rail centered between top rail and working surface, and a toe board. (Note: “Guardrail system” is equivalent to the OSHA definition of “standard railing” plus “standard toe board” for General Industry from 29 CFR 1910.21, Walking-Working Surfaces.)

non-rigid barricade – Barrier that serves only as a warning and is not designed to prevent workers from falling to a lower level. For the purposes of this procedure, barricade tape is used to erect non-rigid barricades.

responsible person – The Southern Company employee or designated third-party agent responsible for overseeing the work; may include job titles such as contract coordinator, E&CS coordinator, discipline lead, or team leader. The responsible person may change over the course of a project.

rigid barricade – Barrier typically constructed of wood, steel, scaffold components, or other structurally substantial materials capable of withstanding without failure, a force of at least 200 lb. applied in a downward or outward direction within 2 in. of the top edge, at any point along the top rail. Toe boards are required on a rigid barricade where there is a risk of debris falling on workers at a lower level.

traffic barricade – A barrier used to control traffic by closing, restricting, or delineating all or a portion of the right-of-way of a public roadway to protect employees from vehicular traffic.

2.2 References

- 29 CFR 1910.21, Walking-Working Surfaces, Definitions
- 29 CFR 1910.23, Guarding Floor and Wall Openings and Holes
- 29 CFR 1926.502(b), Fall Protection Systems Criteria and Practices, Guardrail Systems
- SCO-SH-0910, Floor Opening, Wall Opening, and Guardrail Removal

3.0 RESPONSIBILITY

3.1 Management

Plant management and project management are responsible for implementing and ensuring compliance with this procedure, which includes ensuring affected employees are trained on the requirements of this procedure.

3.2 Contractors

Contractors working on Southern Company Operations sites are responsible for complying with the requirements established within this procedure to include communicating the requirements to their employees and subcontractors.

3.3 Safety and Health Compliance Personnel

Facility/Project Safety and Health Compliance personnel are responsible for the following:

- Facilitate employee training.
- Assist with walking and working surface hazard recognition.
- Provide technical assistance for barricade selection and use.

4.0 PROCEDURE

4.1 Non-Rigid Barricades

4.1.1 General Requirements

A barricade tag shall be affixed to all non-rigid barricades in a prominent location. Multiple barricade tags should be used when necessary (for example, large barricades or multiple approach paths). Barricade tags shall be predominately orange in color and, at a minimum, include the following:

- Name of the Company/Contractor
- Name of the person responsible for the barricade for each shift where work is being performed and means of contact (for example, radio or phone number).
- Date barricade was erected.
- Reason for barricade – include actual and/or potential hazard(s).

Attachment points for barricade tape should be approximately the same height as a standard upper handrail
Person(s) erecting non-rigid barricades shall ensure the required area is completely barricaded to prevent workers from accidentally entering the hazardous area. For example, in addition to barricading same-level access to the hazardous area, stairway and ladder access also must be barricaded.

When placing barricade tape, ensure exits and emergency vehicle routes are not blocked, unless necessary for employee safety. The barricaded area shall be of the appropriate size to delineate the hazard, but not so large as to create an unnecessary problem for normal pedestrian flow of traffic. The practice of securing barricade tape to buildings and other permanent structures often results in an excessively large barricaded area. Suitable anchor points for the barricade tape shall be selected. Barricade tape shall not be attached to equipment (pumps, fans, motors, etc.) without approval of the operating department or system owner. Stanchions, traffic cones, saw horses, and other portable anchor points are preferred because they can be better positioned.

Barricades shall be maintained in good condition while in use; when no longer required, barricades shall be completely removed, including loops of tape tied around supports. Tape shall be properly disposed of if not properly stored for reuse.

When non-rigid barricades are erected around excavations, they shall be placed at least 6 ft from the edge of the excavation.

**NOTE**

Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall arrest systems, covers, or guardrail systems erected around such hazards.

**WARNING**

Non-rigid barricades shall not be used as a substitute for rigid barricades when protecting workers from fall hazards.

When necessary, auxiliary lighting or other means shall be used to ensure barricades remain visible even at nighttime.

**4.1.2 Danger Barricades (Red)**

Predominantly red (black striping is permissible) barricade tape printed with the word “DANGER” shall be used to erect barricades for areas that contain or may present an immediately dangerous to life and health (IDLH) situation. Activities or conditions warranting a red danger barricade may include areas:

- Where overhead lifts are being performed.
- Within the counterweight swing radius of cranes.
- Near steam or chemical leaks.
- Beneath ice accumulations.
Only persons who have participated in the Job Safety Briefing for the work and are directly involved with the activities/conditions associated with a red danger barricade shall cross the red danger barricade, unless permission is granted by the owner of the barricade or a crew member involved with the work.

4.1.3 **Caution Barricades (Yellow)**

Predominantly yellow (black striping is permissible) barricade tape printed with the word "CAUTION" shall be used to erect barricades for areas that present a possible safety hazard. Activities or conditions warranting a yellow caution barricade may include:

- A minor oil leak that creates a slippery floor.
- A tripping hazard.
- Washing down.

Workers should avoid crossing yellow caution barricades when possible. Persons not directly involved with the activities/conditions associated with the erection of a yellow caution barricade may cross a yellow caution barricade as long they understand the nature of the hazard and they can avoid the hazard.

4.1.4 **Radiation Barricades (Magenta/Yellow)**

Yellow barricade tape printed with the words “RADIATION HAZARD” in magenta text shall be used to erect barricades for areas impacted by radiography activities. The person responsible for the radiography activities shall ensure radiation barricades are properly positioned. Radiation barricades shall not be crossed by persons not involved with the radiography work.

4.1.5 **Staging Barricades (Green)**

Green barricade tape can be used to delineate staged material areas where no safety hazard exists.

All efforts should be made to keep the material and/or equipment out of walkways. Care shall also be taken not to create a hazard when staging material.

4.2 **Barricades – Protective (Rigid)**

Rigid barricades are required for, but not limited to, the following situations:

- Floor openings and wall openings (See SCO-SH-0910, Floor Openings, Wall Openings, and Guardrail Removal Procedure.)
- Unprotected floor edges or platforms, to include leading edge work.
- Excavations adjacent to passageways and those where a fall hazard exists.

4.3 **Traffic Barricades and Signs**

When barricades and associated signs are erected on or adjacent to public roadways, they shall conform to Part VI of the Manual on Uniform Traffic Control Devices
Note: Part VI of the Manual on Uniform Traffic Control Devices provides guidance on signs and warning devices required when working on or adjacent to public roads.

4.4 Barricade Removal

In the absence of the responsible person the plant/project manager or his or her designee may remove a barricade after all attempts to contact the individual who placed the barricade have been exhausted and a thorough assessment of the hazards has been conducted.

4.5 E&CS Site-Specific Procedures

A site-specific barricade procedure addressing warning and protective barricades shall be developed and implemented on E&CS projects. The site specific procedure shall meet the requirements contained herein, at a minimum. These site specific procedures shall be made available to appropriate plant personnel.

5.0 TRAINING

Training shall be provided to ensure the purpose and function of the Southern Company Operations Barricade procedure are understood and the knowledge and skills required for its safe application and usage have been acquired.

Employees whose work involves activities at generating facilities and/or project sites outside of office settings shall train to this procedure. Training is available through SHIPS code 022874, Barricade and Open Hole Training.

All affected employees shall be retrained every 3 years or if the following conditions occur:

Retraining shall be provided when there is a change in this procedure or when an employee’s knowledge or use of this procedure is deficient.

6.0 ATTACHMENTS

Attachment 1 – Barricade Tag, Form #S-5425
Attachment 1 – Barricade Tag

Form 5-5425, available through the APCO print shop.

BARRICADE TAG

Date applied: ___________________ Estimated Completion Date: ___________________

Reason/Hazard: ________________________________________________________________

___________________________________________________________________________

Company/Name/Contractor: ______________________________________________________

Contact: __________________________ Contact Number: _____________________________

Second Shift Contact: __________________ Contact Number: ________________________

REMOVE TAPE WHEN WORK IS COMPLETED
**FLOOR OPENING, WALL OPENING, AND GUARDRAIL REMOVAL**

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</table>
CONTENTS

1.0 PURPOSE AND SCOPE .................................................................................................................................................. 2
   1.1 Purpose ........................................................................................................................................................................ 2
   1.3 Scope ............................................................................................................................................................................. 2
2.0 DEFINITIONS AND REFERENCES ............................................................................................................................... 2
   2.1 Definitions ................................................................................................................................................................. 2
   2.2 References ................................................................................................................................................................. 3
3.0 RESPONSIBILITY .......................................................................................................................................................... 3
   3.1 Management ............................................................................................................................................................... 3
   3.2 Contractors ................................................................................................................................................................. 3
   3.3 Contractor Responsible Person .................................................................................................................................. 4
   3.4 Safety and Health Compliance Personnel ............................................................................................................... 5
4.0 PROCEDURE ................................................................................................................................................................. 5
   4.1 Rigid Barricades ......................................................................................................................................................... 5
   4.2 Open Hole Permit ....................................................................................................................................................... 5
   4.3 Grating Removal ......................................................................................................................................................... 7
   4.4 General Requirements .............................................................................................................................................. 7
   4.5 Barricade Removal ..................................................................................................................................................... 8
   4.6 Site-Specific Safety Plan for Contractors .............................................................................................................. 8
5.0 TRAINING ..................................................................................................................................................................... 8
6.0 ATTACHMENTS .......................................................................................................................................................... 9
   ATTACHMENT 1 – Open Hole Permit ............................................................................................................................... 10
   ATTACHMENT 2 – “Hole Cover Do Not Remove” Sticker ............................................................................................ 11
   ATTACHMENT 3 – Open Hole Permit Index .................................................................................................................. 12
   ATTACHMENT 4 – Best Practices Step-By-Step Guides ............................................................................................... 13
      Grating Removal ......................................................................................................................................................... 13
      Floor Openings ........................................................................................................................................................... 14
      Wall Openings .......................................................................................................................................................... 15
      Guardrail Removal ................................................................................................................................................... 16
   ATTACHMENT 5 – Fall Hazard Sign ............................................................................................................................ 17
1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure describes the steps required to minimize the potential for an incident or injury when workers perform tasks that could create a fall hazard. Examples of such tasks include, but are not limited to, creating a floor opening, removing one or more sections of floor grating, creating a wall opening, or removing a guardrail.

1.3 Scope

This procedure applies to Southern Company Operations employees and contractors at generating facilities and E&CS project locations.

Exemption

The Southern Company Generation Emergency Response Teams will follow the requirements set forth in the Technical Rescue Training Manual, Module 9, Tripod and Winch Devices for Retrieval, when training and performing actual rescues around open holes.

See Module 9, Tripod and Winch Devices for Retrieval Rescues/Training Operations Near Open Holes.

2.0 DEFINITIONS AND REFERENCES

2.1 Definitions

contractor responsible person – The contractor employee responsible for the work; may include job titles such as foreman, general foreman, and craft supervisor. Note: The contractor responsible person may change over the course of a project.

floor opening – An opening measuring 12 in. or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall. Examples of a floor opening include a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this subpart. (From 29 CFR 1910.21, Walking-Working Surfaces.)

An opening in a roof is considered to be a floor opening when the roof is normally considered to be a walking-working surface.

non-rigid barricade – Barrier that serves only as a warning and is not designed to prevent workers from falling to a lower level. For the purposes of this procedure, barricade tape is used to erect non-rigid barricades.

qualified person – A person who, by possession of a recognized degree, certificate, or professional standing, or with extensive knowledge, training, and experience, has
demonstrated the ability to solve or resolve problems relating to the subject matter, work, or project.

**responsible person** – The Southern Company employee or designated third-party agent responsible for overseeing the work; may include job titles such as contract coordinator, E&CS coordinator, discipline lead, or team leader. The responsible person may change over the course of a project.

**rigid barricade** – Barrier typically constructed of wood, steel, scaffold components, or other structurally substantial materials capable of withstanding without failure, a force of at least 200 lb. applied in a downward or outward direction within 2 in. of the top edge, at any point along the top rail. Toe boards are required on a rigid barricade where there is a risk of debris falling on workers at a lower level.

**wall opening** – An opening that measures 18 in. or more in its least dimension located in any wall or similar structure through which persons may fall and the bottom of the opening is less than 30 in. above the walking/working surface. (From 29 CFR 1910.21, Walking-Working Surfaces)

**unsupported weld** – A weld on the walking surface that is not supported by structural steel.

### 2.2 References

- 29 CFR 1910.21, Walking-Working Surfaces, definitions
- 29 CFR 1910.23, Guarding Floor and Wall Openings and Holes
- 29 CFR 1926.502(b), Fall Protection Systems Criteria and Practices
- 29 CFR 1926.501(b)(4)(ii), Duty to Have Fall Protection, Holes
- 29 CFR 1926.750, Subpart R, Steel Erection
- SCO-SH-0900, Barricades
- SCG-Technical Rescue Training Plan

### 3.0 RESPONSIBILITY

#### 3.1 Management

Plant management and project management are responsible for implementing and ensuring compliance with this procedure, which includes ensuring affected employees are trained on the requirements of this procedure.

#### 3.2 Contractors

Contractors working on Southern Company Operations sites are responsible for complying with the requirements established within this procedure to include communicating the requirements to their employees and subcontractors.

The Southern Company or designated 3rd party management contractor responsible person is responsible for the following:
- Inspect the work area for rigid barricades to ensure safety precautions have been taken as indicated on the Open Hole Permit.
- Review and sign the completed Open Hole Permit prior to the removal of floor grating, guardrails, or creation of an unprotected floor or wall opening.
- Periodically monitor the area during the course of work to ensure compliance with this procedure.
- Ensure rigid barricades and signage is maintained in good condition.
- Inspect area at completion of work to ensure working surfaces, walls, and guardrails are returned to a safe condition.
- When Southern Company employees comprise the work crew, review the job safety briefing (JSB) and participate in the JSB meeting.

**NOTE**

The responsible person may change during the course of the work or project. It is permissible for the person responsible for the work at any time during the work or project to authorize modification and removal of a rigid or non-rigid barricade after the area is deemed to be safe.

The Southern Company responsible person’s inspection of a contractor’s work is solely to ensure the contractor is meeting the requirements of this procedure and their contractual requirements.

3.3 **Contractor Responsible Person**

The contractor responsible person is responsible for the following:

- Immediately notify their Southern Company coordinator on determination that a floor opening or wall opening must be created or that a guardrail must be removed.
- Ensure the work area is safe. Take steps to eliminate or mitigate hazards.
- Ensure the work crew understands the applicable requirements of this procedure.
- Review the job safety analysis (JSA) or JSB and participate in the JSA or JSB meeting.
- Review and sign the completed Open Hole Permit prior to the removal of floor grating, guardrails, or creation of an unprotected floor or wall opening.
- Monitor the area during the course of work to ensure compliance with this procedure.
- Ensure rigid barricades and signage is maintained in good condition.
- Inspect area at completion of work to ensure working surfaces, walls, and guardrails are returned to a safe condition.
- On completion of the work, review and sign the Open Hole Permit to indicate close out of the permit and release the area to general access.
- If the responsible person changes during the course of the work, the new responsible person shall sign and date the *transferred to* field on the Open Hole Permit.

**NOTE**

The contractor responsible person may change during the course of the work or project. It is permissible for the person responsible for the work at any time during the work or project to authorize modification and removal of a rigid or non-rigid barricade after the area is deemed to be safe.
3.4 Safety and Health Compliance Personnel

Facility/project Safety and Health Compliance personnel are responsible for the following:

- Facilitate employee training on this procedure and risk mitigation requirements.
- Assist with walking and working surface hazard recognition.
- Provide technical assistance for barricade selection and use.

4.0 PROCEDURE

4.1 Rigid Barricades

Rigid barricades shall be constructed in accordance with OSHA requirements (see 29 CFR 1910.23 and 1926.502(b)). Barricade examples include those built from scaffolding components, lumber and wooden post, and railing/cables.

The work area shall be fully encompassed by the rigid barricade or a combination of the rigid barricade, existing guardrails, walls, or other structural components. Access points shall be equipped with swing gates, offset guardrails, or other approved devices. If the barricade has removable handrails for access, they shall be pinned or otherwise secured to prevent unintentional removal.

The barricaded area shall be of the appropriate size to contain the hazard, but not so large as to create an unnecessary problem for normal pedestrian traffic or emergency access and egress routes.

4.2 Open Hole Permit

The Open Hole Permit (attachment 1) is used for all applicable floor openings, holes, wall openings, grating removal, and guardrail removal.

NOTE

Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall arrest systems, covers, or guardrail systems erected around such hazards.

The responsible person or contractor responsible person shall complete the Open Hole Permit through the section authorizing the creation of the opening or removal of guardrails before such work is performed. The signature(s) of the responsible person(s) authorizes the work to begin.

NOTE

If contractors are not involved with the work, the responsible person shall write “N/A” in the permit sections provided for approval by the contractor responsible person.
After being authorized by the responsible person(s), the Open Hole Permit shall be attached to the rigid barricade at the barricade entrance.

The responsible person shall ensure rigid barricades and signage are maintained in good condition.

If the fall hazard is mitigated by installation of a proper hole cover during the course of work, fall protection is not mandatory while the hole cover is in place.

Hole covers shall be constructed of substantial materials able to support two times the intended load. The construction of hole covers with a short dimension greater than 4 ft and hole covers subject to loads beyond personnel and hand-portable equipment shall be determined by qualified personnel. Hole covers shall be secured against movement and shall be prominently labeled “HOLE COVER – DO NOT REMOVE.” (Attachment 2)

When constructing hole covers from wood, the following minimum requirements shall be observed:

<table>
<thead>
<tr>
<th>OPENING SIZE</th>
<th>REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 18 in. in largest dimension</td>
<td>Single layer of 3/4 in. plywood secured to the working surface</td>
</tr>
<tr>
<td>Greater than 18 in. in least dimension</td>
<td>Two layers of 3/4 in. plywood secured to each other and the working surface</td>
</tr>
<tr>
<td>Greater than 48 in. in any dimension</td>
<td>Consult qualified person</td>
</tr>
<tr>
<td>Oriented strand board (OSB) is not to be used for hole cover material. Use plywood with a rating sufficient for the environment it will be used, such as exterior or interior grade.</td>
<td></td>
</tr>
</tbody>
</table>

For hole covers constructed of materials other than wood, consult the qualified person for the requirements’ minimum dimensions based on the size of the opening, proposed materials, and bracing.

If the area below the intended opening could be affected by overhead hazards, the responsible person shall erect a red danger barricade. See SCO-SH-0900, Barricades.

The responsible person shall inspect the work area at the completion of work, but prior to the rigid barricade being removed. After the work area has been restored to a safe condition, rigid barricades should be promptly removed.

When the work area has been restored to a safe condition, the responsible person(s) shall sign the Open Hole Permit to close-out and dispose of the permit.

Plants or projects shall use the Open Hole Permit Index (attachment 3) to track the location and responsible person of open hole permits.
4.3 Grating Removal

Contractors who remove/install grating and its supporting structure comprising a walking-working surface shall be trained in steel erection (29 CFR 1926.750, Subpart R).

Exception: The steel erection training requirement does not apply for removal of sections of grating that are designed to be periodically removed for maintenance activities.

When grating is removed, it shall be:

- Secured to prevent an accidental drop to a lower level.
- Where appropriate, handled with grating hooks to avoid pinch-point injuries.
- Stored and secured so it does not pose additional hazards from accidental movement or trip hazards.
- Reinstalled to meet the original specifications, after completion of work.

NOTE

Unsupported welds are not permitted on reinstalled grating. Any repairs to grating must meet the manufacturer's original grating specifications for load rating.

See attachment 4 – Best Practices for additional instructions

4.4 General Requirements

When the work or project requires one of the following:

- Creating a floor opening (includes removing grating).
- Creating a wall opening where the bottom of the opening is 39 in. or less from the walking/working surface.
- Removing guardrails.
- Excavations where a fall hazard of 4 ft. or greater exists.

Southern Company Operating personnel and contractors shall use the following requirements:

- Complete a job safety analysis or briefing (JSA or JSB) specific to the task; communicate safe work practices and requirements to all workers involved.
  - Communicate hazards to other workers in the area that may be affected, and note the hazards on their JSA or JSB.
  - Annotate a task-specific fall-protection plan on the JSA or JSB and the Open Hole Permit.
- Prior to performing any task covered by this procedure, the responsible person completes the Open Hole Permit and enters the permit in the permit index.
• Wear appropriate fall protection, in the form of an approved personal fall-arrest system, when working within the barricaded area, or be sure an approved fall-prevention system is in place to prevent worker exposure when a fall potential exists.

• To prevent unimpeded access, erect a rigid barricade with appropriate signage at all approaches to the area where the grating will be removed or where an unprotected floor or wall opening presents a fall hazard. Ensure the area is fully encompassed by the rigid barricade or a combination of the rigid barricade, existing guardrails, walls, or other structural components.

• If fall arrest or fall prevention is required inside a rigid barricade when a floor or wall opening is not properly covered, post the “DANGER – FALL HAZARD – 100% TIE-OFF REQUIRED INSIDE THIS BARRICADE” sign (see attachment 5), at a minimum, on each side of the rigid barricade. Large barricades may require additional signs. Handwritten signs are NOT permitted.

• Barricade the area below the intended opening that may be affected by overhead hazards to prevent access, and post signage to identify the hazard. See SCO-SH-0900, Barricades.

• After work has been completed and prior to the barricade being removed, check grating or floor plates to confirm all clamps and clips have been attached and secured. Install guardrails to the original specifications.

• Close-out the permit only after the area has been inspected and found to be safe in accordance with the restoration requirements listed on the Open Hole Permit.

4.5 **Barricade Removal**

In the absence of the responsible person, the plant/project manager or his or her designee may remove a barricade after all attempts to contact the individual who placed the barricade have been exhausted and a thorough assessment of the hazards has been conducted.

4.6 **Site-Specific Safety Plan for Contractors**

If a contractor has additional requirements not covered by this procedure, they may use their procedure on approval by Southern Company site or project management. Contractors requesting to use their procedure shall submit, as part of their site-specific safety plan, measures to be used when creating floor openings or wall openings, removing grating, or removing guardrails. The contractor’s procedure shall meet or exceed the requirements of SCO-SH-0910 to be approved.

All open holes shall have the Southern Company Open Hole Permit completed by the contractor’s responsible person and posted appropriately (see 4.2, Open Hole Permit).

5.0 **TRAINING**

Training shall be provided to ensure the purpose and function of this procedure are understood and the knowledge required for its safe application and usage have been acquired.
Employees whose work involves activities at generating facilities and/or project sites outside of office settings shall be trained in this procedure. Instructor lead Training is available through SHIPS code 022874, Barricade and Open Hole Training. Online training is available through Ships# 023428 SG/Web Barricade and Open Hole training.

All affected Generation employee shall be retrained every 3 years, or if the following conditions occur:

- Change in this procedure.
- Employee knowledge or use of this procedure is deficient.

All affected E&CS employees will receive annual update training as part of the annual E&CS Procedures – Environmental Health and Safety Training or if the following conditions occur:

- Change in this procedure.
- Employee knowledge or use of this procedure is deficient.

NOTE

SHIPS Code for E&CS will be assigned annually and training will be automatically scheduled in LearningSOurce.

6.0 ATTACHMENTS

Attachment 1 – Open Hole Permit; Maximo item number 1319324

Attachment 2 – Guides “Hole Cover - Do Not Remove” sticker; Maximo item number 9-2534

Attachment 3 – Open Hole Permit Index

Attachment 4 – Best Practice – Step-by-Step

Attachment 5 – Fall Hazard Sign; Maximo item number 1319323
ATTACHMENT 1 – OPEN HOLE PERMIT

OPEN HOLE PERMIT
For Floor Openings, Wall Openings, Grating Removal and Guardrail removal.

**This permit shall be posted at the barricade entrance**

<table>
<thead>
<tr>
<th>Responsible Person (print):</th>
<th>Contact Number:</th>
</tr>
</thead>
</table>

**Company Performing Work:**

- [ ] Floor Opening
- [ ] Wall Opening
- [ ] Guardrail Removal
- [ ] Grating Removal
- [ ] Other Floor Opening: _________________

**Location:**

**Scope of Work:**

The following items shall be completed prior to creating the opening/guardrail removal:

- [ ] USA/USB completed and hazards communicated to all members of the new crew
- [ ] Area inspected and any unsafe conditions corrected/mitigated
- [ ] Rigid barricades erected
- [ ] Hazard warning signs posted on rigid barricade
- [ ] Fall arrest/restraint measure in place

**Specific fall protection plan:**

Authorization for creating the opening/guardrail removal

Precautionary measures are in place and authorize the creation of a floor/wall opening and/or guardrail removal.

<table>
<thead>
<tr>
<th>NAME</th>
<th>SIGNATURE</th>
<th>DATE</th>
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</thead>
</table>

**Approval**

- Contractor Responsible Person:
- Contractor Responsible Person Transferred to:
- Approval Responsible Person:
- Approval Responsible Person Transferred to:

**Restoration of Safe Work Area**

<table>
<thead>
<tr>
<th>Restoration of Safe Work Area</th>
<th>Yea</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Floor grating is in place and secured</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Floor grating does not have unsupported welds</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Hole covers, if needed, are in place, marked and secured</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Floor openings restored to safe condition</td>
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<td>[ ]</td>
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<tr>
<td>Wall openings restored to safe condition</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Guardrails, including toeboards, are in place and secured</td>
<td>[ ]</td>
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<td>The work area was inspected and no hazards related to the work scope remain</td>
<td>[ ]</td>
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Authorization for close out of permit
When the work area has been restored to a safe condition and barricades may be removed.

<table>
<thead>
<tr>
<th>NAME</th>
<th>SIGNATURE</th>
<th>DATE</th>
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</table>

Maximo item number 1319324
ATTACHMENT 2 – “HOLE COVER DO NOT REMOVE” STICKER

HOLE COVER
DO NOT REMOVE

9-2534

Maximo item number 9-2534
## Open Hole Permit Index

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Unit</th>
<th>Floor or Area</th>
<th>Time</th>
<th>Date</th>
<th>Responsible Person</th>
<th>Contact Number</th>
<th>Company/Department</th>
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Southern Company Generation
SCG-SH-0910, Floor Openings
ATTACHMENT 4 – BEST PRACTICES STEP-BY-STEP GUIDES

Grating Removal

The following is a best practice, step-by-step guide for grating removal.

1. Notify the responsible person as soon as it is determined a section of grating must be removed.

2. Install protective systems (rigid barricades) at all access points and approaches to the work area. The barricade shall fully encompass the hazard and allow no unimpeded access.

3. Post signage identifying the hazard.

4. Install gates or offset openings for personnel access to the work area. Use only the approved access points to enter the work area.

5. Install barricades and signage on lower levels when work creates an overhead hazard. Notify other work crews in the area of the activities.

6. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.

7. Initiate Open Hole Permit and obtain appropriate signatures.

8. Conduct a JSA or JSB with all workers involved, identifying task steps, hazards, and safe work practices.

   Ensure only individuals trained in steel erection (29CFR 1926.750 subpart R) and this procedure are allowed to remove grating. Exception: The steel-erection training requirement does not apply for removal of small sections of grating that are designed to be periodically removed for maintenance activities. Check with responsible person if questions arise.

9. When removing grating, ensure the piece is secured to prevent accidental drop to a lower level and handle it with grating hooks.

10. Ensure removed grating is stored and secured in such a manner that it does not pose additional hazards from accidental displacement or trip hazards.

11. On completion of the work, ensure the grating is reinstalled to meet the original specifications.

12. The work area will be inspected by the responsible person. If found to be safe, obtain the appropriate signatures on the permit, closing it out.

13. Remove signage and barricades.

14. Return the work area to normal operations.
Floor Openings

Floor openings are generally created by removing existing equipment (for example, removal of piping from a penetration) or created when installing or modifying equipment. The following is a best practice, step-by-step guide for floor openings.

1. Immediately notify the responsible person when it is determined that a floor opening must be created by removal of existing equipment or created to install equipment.

2. Install protective systems (that is, a rigid barricade) at all access points and approaches. The rigid barricade shall fully encompass the hazard and allow no unimpeded access.

3. Post signage identifying the hazard (see attachment 1).

4. Install gates or offset openings in barricades for personnel access to the work area. Use only the approved access points to enter the work area.

5. Install barricades and signage on lower levels when work creates an overhead hazard. Notify other work crews in the area of the activities.

6. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.

   **NOTE**

   Each employee on walking/working surfaces shall be protected from falling through or stepping into holes or openings, regardless of the fall potential, by personal fall-arrest systems, covers, or guardrail systems erected around such hazards.

7. Initiate Open Hole Permit, and obtain appropriate signatures.

8. Conduct a JSA or JSB with all workers involved, identifying task steps, hazards, and safe work practices.

9. Perform the task, taking steps to prevent falling objects as equipment is removed or holes are cut in the floor.

10. Install or reinstall the equipment to eliminate the hazard or take steps to protect the floor opening. If an opening is still present, a proper hole cover is the preferred method.

11. On completion, the responsible person inspects the work area. If found to be safe, obtain the appropriate signatures on the permit, closing it out.

12. Remove signs and barricades. Return work area to normal operations.
Wall Openings

Wall openings are typically created during construction or maintenance activities. A wall opening is where the bottom edge is less than 39 in. from the walking and working surface (lower than a guardrail) and the potential to fall to a lower level is present. Protective measures for wall openings usually include plywood to close the opening or rigid barricades to prevent exposure to a fall. The following is a best practice, step-by-step guide for wall openings.

1. When it is determined that work must take place in an exposed wall opening where the bottom edge is less than 39 in. from the walking and working surface and a fall hazard will be present, immediately notify the responsible person.

2. Erect a rigid barricade set back from the opening with a gate or an offset opening for access.

3. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.

4. Erect warning or protective barricade as appropriate on lower levels with signage indicating the overhead work hazard.

5. Notify other work crews of the work and the hazards. The hazards shall be noted on the JSA or JSB for other crews working in the immediate area.

6. Initiate the Open Hole Permit and obtain appropriate signatures.

7. Conduct JSA or JSB, identifying task steps, hazards, and safe work practices.

8. Perform the task, taking steps to prevent objects falling to lower levels.

9. On completion of the task, eliminate the fall hazard by installing equipment, windows, wall panels, and such or by leaving the rigid barricade in place as an engineering control until such time the wall opening can be permanently closed.

10. When the fall hazard has been eliminated, ensure the work area is inspected by supervision and the E&CS coordinator. If found to be safe, obtain the appropriate signatures on the permit, closing it out.

11. Remove barricades, except any needed to eliminate the fall hazard, remove signage, and return the work area to normal operations.
Guardrail Removal

If a guardrail must be removed to facilitate work, it often creates a fall hazard. The following is a best practice, step-by-step guide for guardrail removal.

1. When it is determined a guardrail must be removed, immediately notify the responsible person.

2. Erect a rigid barricade with proper signage, set back from the section to be removed, or establish a rigid barricade at all approach points to prevent unimpeded access to the work area.

3. Erect barricades and signage on lower levels if work presents an overhead work hazard, and post signage to identify the hazard.

4. Notify other crews in the area of the work and hazards associated. Other crews will note the hazards on their JSA or JSB.

5. Install fall protection equipment (such as self-retracting lanyards or horizontal lifelines) or install fall-prevention equipment that limits employee exposure to a fall hazard. Identify fall-prevention measures on the JSA or JSB.

6. Initiate an Open Hole Permit and obtain appropriate signatures.

7. Conduct a JSA or JSB, identifying task steps, hazards, and safe work practices.

8. Perform the task.

9. On completion of the task, reinstall the guardrails to meet original specifications. If guardrail must be left out, a rigid barricade must be in place as an engineering control.

10. The responsible person will inspect the area. If found to be safe, obtain the appropriate signatures on the permit, closing it out.

11. Remove barricades, except any needed to eliminate fall hazards, remove signage, and return the work area to normal operations. NOTE – any barricade left in place must be tagged properly.
ATTACHMENT 5 – FALL HAZARD SIGN

DANGER

FALL HAZARD

100% TIE-OFF REQUIRED INSIDE THIS BARRICADE

Maximo item number 1319323