



CQR-1

CONTRACTOR QUALITY REQUIREMENTS for CONSTRUCTION SERVICES Revision Date: 6/8/2015

1.0 SCOPE

This document establishes the minimum quality program requirements for a contractor providing equipment, material, and construction services on Technical and Project Solutions (T&PS) construction sites.

2.0 GENERAL

The quality requirements set forth in this document; the purchaser's surveys, audits, and surveillances; or the absence, lack of, or deficiency in these requirements shall in no way relieve the contractor of any contractual obligations or responsibilities.

3.0 QUALITY PROGRAM

The contractor shall establish, document, and maintain a corporate and site-specific quality program that meets the requirements of this CQR document, and provides any additional controls necessary to ensure compliance with the purchaser's procurement documents.

The contractor shall be responsible for ensuring the quality of all equipment, material, or service obtained from subcontractors or from the contractor's corporate branch locations meets the requirements of the purchaser's procurement documents. All applicable requirements of the purchaser's must be communicated to all contractor work locations and subcontractors. The contractor shall be responsible for ensuring the quality of the equipment, material, or services provided by subcontractors meets the purchaser's procurement document requirements. Subcontractors not included in the contractor's proposal must be approved in writing by the purchaser, prior to using the subcontractor.

3.1 Quality Program Requirements

The contractor shall have an updated quality program, approved and signed by senior management, which contains, but is not limited to, the following:

1. Quality Organization - The quality program shall define the organizational structure of the contractor, with particular emphasis on the quality organization. The quality responsibilities shall be defined, including any project quality requirements. The program shall contain an organizational chart identifying the quality management structure of the contractor. This chart shall establish a quality reporting level to a sufficiently high level of autonomous and independent management to ensure quality problems can be resolved without undue influence from the construction or scheduling processes.
2. Contractor Quality Representative(s) - The quality program shall identify the contractor's representative(s) authorized to resolve quality matters. The contractor's quality representative(s) shall be personnel other than those performing the work and not reporting directly to management responsible for construction or scheduling. The contractor shall designate an onsite quality professional who is qualified to properly inspect and evaluate the work being performed.

3. Quality Personnel Training - The quality program shall provide for, and require the indoctrination and training of, quality personnel performing or managing activities affecting quality. This shall include at a minimum, the quality program, procedures, project-specific technical requirements, and revisions to each as they occur.

The quality program shall identify the activities requiring personnel certification and the requirements for obtaining and maintaining certification.

Documentation shall be generated and maintained that quality personnel have completed the training and are familiar with its contents, prior to the start of work activities.

4. Procedures - The contractor shall develop and use procedures, guidelines, related forms, and other documents, as part of the site-specific quality program, to address the processes, actions, and activities necessary for the implementation of the quality activities related to the scope of work. The procedures shall be controlled and available to the employees performing the work. The procedures shall identify activities to be performed and responsible parties, and shall provide documentation as objective evidence to verify that controls have been satisfactorily established and performed.

The contractor shall develop process procedures to include technical criteria as noted in the purchaser's specifications for the areas referenced in Item 6, Construction Process Control, as related to the scope of work and conditions of the contract. These process procedures shall contain the following information, as applicable:

- Scope of work covered by the procedure.
- Key personnel involved in the process and their responsibilities.
- Technical criteria and references with applicable acceptance criteria.
- Procedural steps, explained in a logical manner, demonstrating how the process will be accomplished and accepted.
- Special conditions, exceptions, or activities relevant to the scope of work and site conditions.
- Key inspection points and hold points, including interfaces with the purchaser.
- Relevant forms and checklists, as they apply to the scope of the procedure, to ensure consistency and a determination of the status (for example, acceptance).
- Documentation requirements for the process and the need for submittal to the purchaser.

Inspection and test plans (ITP) may be submitted in lieu of or in addition to the requirements listed above. (See attachment E for a sample ITP.)

5. Document Control - The contractor shall have measures in place to control issuance of, receipt of, and changes to contractor's documents affecting quality. All purchaser-supplied documents, including revisions, shall be controlled by the contractor's organization. The contractor's system shall maintain traceability, identify proper status, and control transmittal of controlled documents. The contractor shall ensure that documents are reviewed for adequacy, approved for release by authorized personnel, and distributed to the appropriate work location. The contractor shall ensure changes to documents receive the same level of authorization as the original documents. All changes shall be processed in writing or electronically, and all obsolete documents shall be removed promptly from all points of issue and use, or

be adequately marked to identify their status. Documents shall be easily retrievable, legible, reproducible, and uniquely identified.

6. Construction Process Control - Construction activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with the applicable documents.

Fabrication, installation, construction, and inspection activities shall be performed in accordance with applicable codes, technical specifications, manufacturer's recommendations, and engineering drawings. Procedures shall address how special conditions will be met, explain key inspection areas and hold points, identify special equipment needs, define acceptance criteria, and include copies of all relevant forms and checklists.

Procedures and/or ITPs, including appropriate inspection and testing, shall be provided to the purchaser for the following work activities as deemed appropriate by T&PS for the applicable contractual work scope:

- Earthwork operations including soils.
- Concrete operations.
- Caisson operations.
- Piling operations.
- Grouting operations.
- Fit up and installation of structural steel.
- Fit up and installation of ductwork.
- Installation of high-strength bolting.
- Installation of insulation.
- Piping installation.
- Installation of equipment, including rotating equipment.
- Installation of electrical systems.
- Installation of instrumentation.
- Installation and fabrication of fiberglass components to include inspection and testing.
- Application of coatings and paint systems to include surface preparation, inspection, and testing.
- Survey control.
- Material receipt, storage, and handling.
- Document control.

Additional procedures may be required as deemed appropriate by T&PS and as outlined in the contractual scope of work.

7. Control of Special Processes - The contractor shall control special processes that control or verify quality, such as those used in welding, heat treating, and nondestructive examination. Special processes shall be performed by qualified personnel using qualified procedures in accordance with specified technical requirements. The contractor shall submit the initial and any subsequent revision of special process procedures for T&PS approval.

The contractor shall submit and maintain documentation for the certification and/or qualification of personnel, processes, or equipment according to the requirements of applicable codes and standards.

8. Control and Calibration of Measuring and Testing Equipment - Measuring and testing equipment (MTE) utilized will be appropriate to the work performed and in good repair and working condition. At prescribed intervals, or prior to each use, all MTE and devices used for inspection or testing shall be calibrated and adjusted against certified equipment having a known valid relationship to nationally recognized standards. When no national standards exist, the basis employed for calibration shall be documented. The contractor shall:
- Identify MTE and provide a tag, sticker, or other suitable means to show the calibration status.
 - Maintain calibration records and maintain traceability of calibrated equipment. Calibration documentation shall provide traceability by demonstrating an unbroken chain of calibration or comparisons linking them to relevant national standards or physical constants.

If MTE is found to be out of calibration, the equipment and the tests performed with the out-of-calibration equipment shall be evaluated. The equipment shall be tagged and segregated (if space permits) and shall not be used until it has been calibrated, repaired, and found acceptable for use. If it cannot be repaired, the equipment shall be properly disposed. If the results of the testing performed with the equipment are not valid, a nonconformance shall be written.

Calibration and control measures are not required for commercial equipment such as rulers, tape measures, and so forth, if such equipment is not used for Quality Control (QC) or quality verification purposes and provides the required accuracy.

9. Inspection and Testing - The contractor shall have an inspection program that includes receiving, in-process, and final inspections. Procedures used to control inspection shall include characteristics to be inspected, examined, or tested and the acceptance criteria used.

The contractor shall include, as part of the inspection program, necessary documentation of the inspection activities by use of forms, reports, tags, or other suitable means.

The contractor shall supply quality representatives in sufficient number to provide the timely and accurate quality inspection of work activities. The contractor QC representatives must be qualified to inspect and evaluate the work in accordance with contract conditions and technical specifications. The contractor shall provide résumés and any other applicable qualifications, or certifications of all quality representatives for review and approval by the purchaser, if requested.

In-process inspection shall include necessary verification that procedures for special processes are being used when applicable, and that physical examinations of the material or equipment are being conducted.

Final inspection shall include verification that all required records and documents are complete and that physical examination of the material or equipment has been made.

The contractor shall have a system to indicate the inspection status of each item being inspected by use of stamps, tags, travelers, or other suitable means.

If testing is required, the contractor shall have documented testing procedures and shall perform the tests to ensure the end product meets the requirements of the contract documents.

If the need arises, the contractor may hire a qualified third-party testing agency to supplement QC staffing requirements. The qualifications of this agency, along with the qualifications of inspectors or technicians assigned to the construction site, shall be submitted to T&PS for review.

10. Material Receipt, Storage, and Handling - The contractor shall establish and maintain a system for handling, storage, preservation, and traceability of all materials and equipment from the time of receipt through the entire process to protect the quality of products and prevent damage, deterioration, or loss. The equipment manufacturer's handling and storage requirements shall be met, or any exceptions shall be approved by T&PS.

The system shall include provisions for protection and identification of the product until delivery to the purchaser, including provisions for preventive maintenance as required.

The contractor shall have an inspection program that includes receiving inspections.

Procedures used to control inspection shall include characteristics to be inspected, examined, or tested and the acceptance criteria used.

11. Nonconforming Items and Corrective Action - The contractor shall have a written procedure for identifying and controlling nonconforming items. These measures shall establish personnel responsibilities and authority for disposition of those items.

The procedure shall establish methods for investigating each nonconformance and initiating corrective action to prevent recurrence. The procedure shall establish methods to verify repair, rework, use-as-is, or disposal of the nonconforming items and subsequent reinspection or re-testing as required to ensure compliance with procurement documents.

The procedure shall contain provisions for the issuance of a hold tag or similar measures to isolate nonconforming items from construction use until such a time as the nonconformance has been resolved.

T&PS shall be notified of all identified nonconformances related to project engineering, procurement, and construction activities.

Records shall be maintained to document the nature, extent, and disposition of the nonconforming items and the corrective action to prevent recurrence.

12. Subcontractor Management - The contractor shall have written procedures and be responsible for ensuring the quality of all materials and equipment obtained from sub-suppliers, or work performed by subcontractors, meets the requirements of this document and the purchaser's procurement documents.

All applicable requirements of the purchaser's must be communicated to the sub-suppliers or subcontractors. The contractor shall ensure the quality of equipment or services provided by sub-suppliers or subcontractors meets the purchaser's procurement documents.

The purchaser must approve in writing all subcontractors, sub-suppliers, and manufacturing not included in the contractor's proposal.

13. Quality Records - The contractor shall adequately define quality records and identify procedures for the care, custody, control, and retention of those records.

14. Quality Program Evaluations - The contractor shall routinely monitor the effectiveness of the quality program through inspections, meetings, assessments, or audits and make appropriate adjustments to the quality program to comply with requirements.

4.0 QUALITY PROGRAM DOCUMENTATION SUBMITTAL AND EVALUATION

4.1 Documentation Required For Qualification and Evaluation

Contractors requesting the opportunity to perform work for T&PS shall submit their application and one uncontrolled copy of their corporate quality program through the BROWZ contractor qualification and evaluation web-based system.

T&PS shall review the potential contractor's quality program as a part of the qualification process. T&PS uses attachment B as a guide in the review of these quality programs. Deficiencies noted during the review will be documented on the checklist and transmitted on BROWZ to the potential contractor for consideration or correction.

4.2 Documentation Required with Proposal

Contractors selected to bid on a particular scope of work shall submit a quality program as part of their bid proposal as specified in the special conditions of the contract. This quality program shall meet the requirements of this document. T&PS shall use attachment B, Contractor Corporate Quality Program Evaluation Checklist, as a guide in the review of these quality programs. Deficiencies noted during the review will be forwarded to the bid evaluation team for proper consideration and action.

If the contractor is an unsuccessful bidder, the quality program may be destroyed after the purchase order has been placed.

4.3 Documentation required for approval prior to start of construction activities

4.3.1 Site-Specific Quality Program

4.3.1.1 *Program Transmittal*

Upon award, a contractor shall formally transmit to the purchaser's site construction management, within 5 days of initial site mobilization, a site-specific quality program that meets the requirements of this document.

The submitted contractor quality program shall be specific to the particular project and shall encompass all relevant portions of the work to be performed on the project.

All subcontractor quality assurance programs and QC procedures are considered part of the contractor's quality program and are to be formally transmitted to the purchaser's site construction management along with the contractor's quality program.

4.3.1.2 *Personnel Certification*

The contractor shall submit to the purchaser the qualifications and/or certifications of all contractor and testing agency personnel performing inspection and tests.

The purchaser reserves the right to request personnel be replaced if their qualifications are not appropriate for the inspections and tests being performed.

At the purchaser's sole discretion, the contractor shall designate a full-time onsite quality professional who is qualified to properly inspect and evaluate the work being performed. This individual shall be familiar with the scope of work being performed and shall be onsite whenever work is being performed. This individual shall be responsible for interfacing with the purchaser with regard to the contractor's quality program to ensure the work performed by the contractor meets all quality standards. This individual shall have authority and the autonomy to enforce the contractor's approved quality program.

4.3.1.3 *Program Review*

The purchaser's site construction management shall conduct a formal review of the contractor's site-specific quality program and procedures according to the Contractor Site-Specific Quality Program Review Checklist.

The purchaser may conduct an initial pre-construction meeting with the contractor to clarify, discuss, and review the results of the contractor site-specific quality program evaluation.

The purchaser reserves the right to request inspection and test plans and any additional documentation and procedures to supplement and further define the contractor quality program.

4.3.1.4 *Acceptance and Follow-up*

After evaluation by the T&PS construction site manager or designee, results of the contractor site-specific evaluation shall be formally transmitted to the contractor.

Results will be noted on the T&PS Contractor Site-Specific Quality Program Review Checklist.

- Acceptable results are considered accepted for use for work performed by the contractor on the specific project.
- Unacceptable results, including corrective action as applicable, shall be added to the checklist for appropriate follow-up and resolution.

After corrective actions are taken and satisfactory results are obtained, the construction quality lead shall sign the accepted Contractor Site-Specific Quality Program Evaluation Form.

NOTE

If acceptable results are not achieved in a timely manner, T&PS construction management may issue an NCR addressing the nonconforming items.

T&PS reserves the right to perform whatever inspection, testing, and monitoring necessary to ensure quality workmanship and conformance to applicable procedures, project specifications, and drawings.

All revisions, deletions, addendums, or changes to the approved contractor quality program shall be submitted to the purchaser for review and approval.

4.4 Other Documentation Required for Approval

4.4.1 Quality Control Documentation List

When required by the procurement documents, the contractor shall compile and submit for approval a QC documentation list of the specific documents to be generated during erection or installation at the construction site. This documentation shall include, but is not limited to, copies of all forms, checklists, ITPs, and so forth to be used to verify QC and conformance to specifications requirements.

5.0 QA SURVEYS, AUDITS, AND SURVEILLANCE

5.1 General

The contractor's work and adherence to procedures are subject to surveys, audits, and surveillance by the purchaser or purchaser's authorized representatives. This surveying, auditing, and surveillance shall in no way relieve the contractor of any contractual responsibilities.

5.2 Quality Surveillances

The contractor's quality program shall be subject to surveillance by the purchaser and will vary depending on the contractor's performance, past records, past surveillance results, and other factors. The contractor shall respond in writing to all findings. Responses to reports on nonconforming items shall be documented and corrective action accomplished expeditiously.

Subcontractors also are subject to surveillance by Purchaser.