



Nuclear Development

August 2011

Plant Vogtle Community Newsletter

Plant Vogtle 3 and 4 Update - August 2011

The construction of two new electric generating units at Plant Vogtle continues with more than 1,700 personnel focused on safety and quality in their everyday tasks.

As seen in the foreground of the photograph to the right, approximately 300 sections of 10-foot diameter concrete and steel **Circulating Water System (CWS) pipes** are being put in place for Vogtle Unit 4. Most of the Vogtle Unit 3 CWS piping is already set and has been covered with concrete and soil. The CWS pipes will be used to re-circulate large quantities of water between the units' two cooling towers and their respective turbine building condensers.

Just on the other side of the CWS pipes, as shown in the photograph, is the **Vogtle Unit 4 "nuclear island,"** the location where the nuclear-related components for Vogtle Unit 4 will be placed. A 215-foot tall cylindrical-shaped containment building, which will enclose the reactor vessel and two steam generators, as well as a used fuel pool and an auxiliary building will be positioned inside each of the new unit's nuclear islands. The bottom of the nuclear island, which is now enclosed by a retaining wall, will be 40 feet below the grade of the surrounding land. The major work inside the nuclear islands is scheduled to begin later this year after the Southern Nuclear Operating Company receives a Combined Construction and Operating License (COL) from the U.S. Nuclear Regulatory Commission.

Also under construction is the foundation for a very large **heavy lift derrick crane**, as can be seen in the area of the yellow crane in the above photograph. This heavy lift derrick, which will rotate on a 300-foot diameter circular rail, will make several lifts to both of the new units of over 1,000 tons, using a boom that is approximately 560 feet long. Vogtle Unit 3 site preparation is taking place on the other side (east side) of the crane foundation as seen in this photograph and is progressing, as scheduled, a few months ahead of the construction of Vogtle Unit 4.

Most visible from River Road is the 145-foot wide, 305-foot long and 125-foot tall **Module Assembly Building** (photo below) where large sections for both of Vogtle's new units will be assembled after the components are delivered to the site by train and truck. Also visible from the highway is a large parking lot where several thousand personnel will park during the construction project, which will last into 2017.



The nuclear island retaining walls, circulating water pipe and the backfill work for both new units is scheduled to be completed by the end of 2011. To ensure the new units can safely withstand earthquakes, several million cubic yards of soil have been excavated and sorted, with suitable backfill soils placed inside the excavated areas and then highly compacted. Vogtle Unit 3 is scheduled to start operations by 2016 and Vogtle Unit 4 by 2017 to provide valuable electricity to customers throughout Georgia.

The Westinghouse AP1000

The new Westinghouse Electric Company-designed AP1000 units at Plant Vogtle will utilize several advanced safety features, including passive safety features relying on gravity, natural circulation, compressed gas and condensation. These natural forces eliminate the dependence on electrical systems to keep fuel cool and covered with water during an adverse event.

The AP1000 is receiving a rigorous Nuclear Regulatory Commission review. Similar to the existing nuclear units, the purpose of this analysis is to ensure the new design will protect public health and safety through the use of multiple safety barriers and cooling systems, if needed, due to a severe natural or man-made event.

The artist rendering (right) of Plant Vogtle's two new electric-generating units shows units 3 and 4 in the foreground, with the existing units - Vogtle 1 and 2 - in the background.



The two new AP1000 units will generate approximately 1,100 megawatts of electricity per unit, which is about 100 megawatts less per unit than the Vogtle 1 and 2 units. The two new cooling towers will be 596 feet tall as compared to the Vogtle 1 and 2 cooling towers that are 548 feet tall.

For more information on the Westinghouse AP1000 go to www.ap1000.westinghousenuclear.com, or check out Southern Company's web site at www.southerncompany.com.

Nuclear Safety - Facts about radiation

◆ Radiation is energy traveling in the form of particles or waves. It exists in nature, and everyone is exposed to it daily. In fact, radiation is safely used to save and improve American lives every day, for example, in medical diagnostics and treatment.

◆ Industry and government have highly sophisticated instruments to measure and detect radiation at minuscule levels to help them take informed actions to protect public health.

◆ Radiation safety is based on time, distance and shielding. The less time spent near a source and the greater the distance from a source, the less radiation received. Shielding also plays a vital role. For example, a lead blanket or vest is often placed on patients receiving X-rays to minimize radiation exposure to other parts of the body.

◆ The nuclear energy industry has the responsibility to protect the public from radiation. To do so, we use multiple layers of redundant backup systems to make sure radiation is safely contained where it should be - inside the steel, concrete and advanced technology of a nuclear energy facility such as Plant Vogtle.

Resources: www.radiationanswers.org; www.nei.org;
www.nrc.gov; www.southerncompany.com

Did you know?

Plant Vogtle Units 1 and 2

Plant Vogtle supplied nearly 17 percent of the electrical energy used by 2.36 million Georgia Power customers in 2010. And for the other co-owners, Plant Vogtle provided approximately 22 percent of Oglethorpe Power's electricity for its 38 Electric Membership Corporations (EMCs), more than 25 percent of the Municipal Electric Authority of Georgia's electricity for its 49 Georgia communities, and more than 22 percent of the electricity used by 73,000 Dalton Utilities customers!

Plant Vogtle Units 3 and 4

Georgia Power is in position to deliver to customers nearly \$1 billion in benefits from U.S. Department of Energy loan guarantees as well as production tax credits and savings from recovering financing costs during construction.

For more information

• **On the web:** www.southerncompany.com/nuclearenergy

• **Vogtle Visitors Center:** 706-554-9407 or 706-724-5197
(Visits by appointment)

• **Jobs at Vogtle:** Contact Suzanne Sharkey at 706-437-7103 or by email at ssharkey@southernco.com