

Full Construction Approved for Georgia's New Nuclear Units with Granting of License

T. Terrell

For the first time since 1978, the U.S. Nuclear Regulatory Commission (NRC) on Feb. 9, 2012, approved a Combined Construction and Operating License (COL) for Plant Vogtle units 3 and 4 near Waynesboro, Ga. Industry watchers agree that the issuance of the COL paves the way for the new beginning of the nuclear energy industry in this country. Georgia Power, a Southern Company subsidiary, owns 45.7 percent of the new units and took the industry lead in obtaining the historic license.

Por primera vez desde el año 1978, la Comisión de Regulación Nuclear (NRC) de los EEUU aprobó una Autorización Combinada de Construcción y Operación (COL) para las unidades 3 y 4 de Plant Vogtle, situadas cerca de Waynesboro (estado de Georgia). Los analistas de la industria creen que la concesión de la COL preparará el terreno para el nuevo amanecer de la industria nuclear en este país. Georgia Power, una filial de Southern Company, es propietario de un 45,7 por ciento de las nuevas unidades y ha tomado la iniciativa en la industria para obtener este permiso histórico.



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is the director of nuclear development communications for Southern Company. He works exclusively on the Vogtle units 3 and 4 project. He develops and implements communication strategies for the project, the consortium (Shaw Group and Westinghouse) and co-owners. Terrell joined Southern Co.'s subsidiary Georgia Power in 1988 as a spokesman. He became manager of media relations at Georgia Power. During his 24-year career at Southern Co., he has served as director of communications at Southern Company as well as director of communications for Southern Company subsidiary Mississippi Power. Prior to joining Southern Co., Terrell was a TV news reporter for five years in North Carolina, South Carolina and Georgia.

INTRODUCTION

The NRC certified Westinghouse Electric Co.'s AP1000® reactor design in December 2011. Southern Company subsidiary Southern Nuclear, based in Birmingham, Ala., is overseeing construction and will operate the two new 1,100-megawatt AP1000 units for Georgia Power and co-owners Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia and Dalton Utilities.

In addition to Plant Vogtle, Southern Nuclear operates two other nuclear plants: Hatch, near Baxley, Ga., and Farley, near Dothan, Ala. Plant Vogtle was constructed with the option to expand. With operations beginning in 2016 and 2017, Vogtle Units 3 and 4 would be the first new nuclear units built in the U.S. in the last three decades.

HISTORY IN THE MAKING

"This is a monumental accomplishment for Southern Company, Georgia Power, our partners and the nuclear industry," said Southern Company Chairman, President and CEO Tho-

mas A. Fanning during a press briefing on Feb. 9 after the NRC vote on the COL. "We are committed to bringing these units online to deliver clean, safe and reliable energy to our customers. The project is on track, and our targets related to cost and schedule are achievable."

The company expects to deliver to customers more than \$1 billion in benefits from the Department of Energy loan guarantees, production tax credits and recovering financing costs during construction. The Georgia Public Service Commission certified \$6.1 billion for Georgia Power's 45.7 percent ownership of the new units.

"The governor and lieutenant governor of Georgia, the Public Service Commission and members of Georgia's General Assembly had the vision and foresight to make bold decisions to help ensure a secure energy and economic future for the state," said Georgia Power President and CEO Paul Bowers during the Company's press briefing. "The new Vogtle units will provide our customers and the communities we serve with clean, affordable, reliable energy."



Picture 1: L-R: Tom Fanning, Southern Company CEO, Dr. Steven Chu, Energy Secretary, and Paul Bowers, Georgia Power CEO, discuss the construction of Vogtle units 3 and 4 at an on-site event Feb. 15

"Our communities and our country will benefit from this more than \$14 billion investment, representing 4,000 to 5,000 jobs on site during peak construction, and in the process creating over 25,000 direct and indirect jobs by this project alone," Bowers added.

The approval of the Vogtle COL was a joint effort with NuStart Energy Development, a partnership of 10 power companies created in 2004 to obtain a COL using the new streamlined licensing process and complete the design engineering for the se-

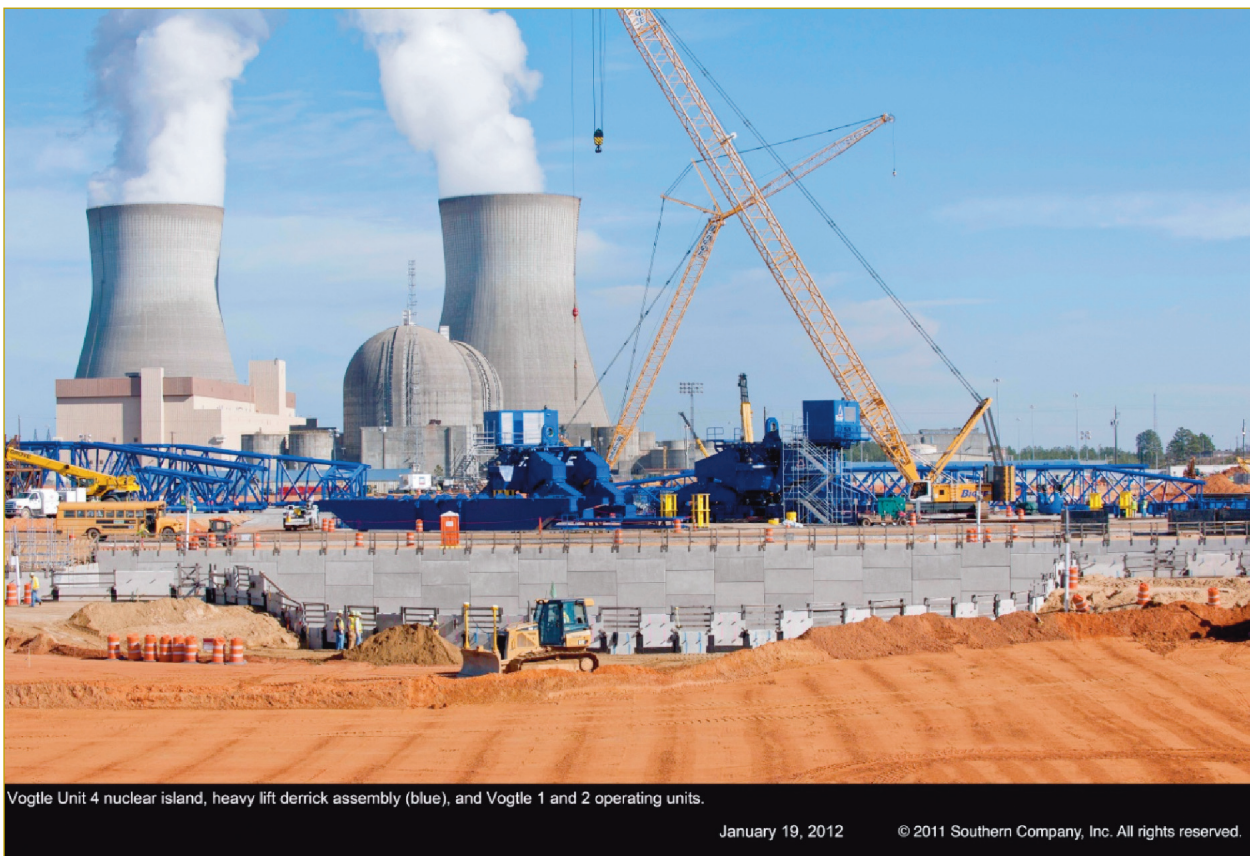
lected reactor technologies. In 2009, NuStart named Vogtle the reference plant for the Westinghouse AP1000 technology.

"The efforts of NuStart and the Department of Energy were vital to achieving this license," Fanning said. "In addition, the NRC's technical staff conducted a thorough evaluation and determined the Vogtle design is safe and meets all regulatory requirements."

WHY NUCLEAR?

The most cost-effective, reliable and environmentally responsible fuel source today, for mass or baseload generation of electricity, is nuclear. Nuclear energy fits in Southern Company's mix of smart energy sources. It's a proven technology that produces no greenhouse gas emissions and can relieve cost uncertainty caused by coal and natural gas prices.

By 2030, electrical demand is projected to increase 27 percent in the Southeast. Additionally, current and pending legislation and environmental standards are impacting electricity generation fueled by coal. The company is planning to use nuclear units to extend reliable and affordable supplies of electricity in the Southeast.



Vogtle Unit 4 nuclear island, heavy lift derrick assembly (blue), and Vogtle 1 and 2 operating units.

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Upper section of Vogtle Unit 3 containment vessel lower head fastened to assembly and welding stand.
November 3, 2011 ©2011 Southern Company, Inc. All rights reserved.

Nuclear generation is projected to be more cost effective than traditional coal and gas resources. Vogtle Units 3 and 4 are expected to save Georgia customers up to \$6 billion in lower electricity rates over the life of the units as compared to a coal or natural gas plant. Nuclear energy is estimated to be between 15 percent to 40 percent less expensive than wind generation and 50 percent to 80 percent less expensive than solar in the southeastern United States. Nuclear capacity can be built to meet local energy demand growth in Georgia. Wind and solar have limited availability in the Southeast and do not offer economic-scaled options.

CONSTRUCTION PROGRESSES

The construction of two new electric generating units at Plant Vogtle continues with approximately 2,000 personnel focused on safety and quality in their everyday tasks. Before issuance of the COL, work at the site was done under what's referred to as a "Limited Work Authorization." Approved by the NRC, it gave SNC the authority to perform specific safety-related work such as preparing foundations, installing backfill and doing work on the "nuclear island" – the area where the nuclear-related components for the new units will be placed.

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.

Several million cubic yards of special soils were backfilled and compacted during the excavation of the two new units. More backfilling will take place in the years ahead as the turbine building is constructed.

The nuclear islands for Units 3 and 4 were lined with retaining walls and now extend 40 feet into the ground.

The first components that will be put in place inside the nuclear islands are the CR-10 modules. These are the cradles on which the containment vessels will sit. Work is currently under way on the Unit 3 CR-10 at the Containment Vessel Cradle Assembly Pad. Once in place, each CR-10 module and containment vessel bottom will be surrounded by concrete.

Between the two nuclear islands is the circular platform for the heavy lift derrick crane. The platform surrounded by a 300 foot diameter rail-track. This will allow the crane to place the 1,000-ton sections of the containment vessels and large structural modules inside each of the nuclear islands. The first parts of the crane assembly are being placed on the track now, and the 560-foot boom is being assembled.

Some 5,000 construction workers will be employed on the site at the height of construction. The new units will bring some 800 permanent positions to the Burke County site. Plant Vogtle units 3&4 represent a \$14 billion investment in the state of Georgia.

VOGTLE UNITS 3 AND 4 TIMELINE

- Georgia Power filed an Application for Certification of Vogtle Units 3 and 4 with the Georgia Public Service Commission (PSC) on August 1, 2008.
- The Georgia PSC approved the need and cost-effectiveness, granting approval to implement the proposed Vogtle expansion in March 2009.
- In April 2009, Vogtle Units 3 and 4 were named the U.S. nuclear industry reference plant for the AP1000. As reference plant, these units will be the first in America licensed to operate using AP1000 technology.
- Early Site Permit (ESP) and Limited Work Authorization (LWA) issued by the Nuclear Regulatory Commission (NRC) received August 2009.
- Combined Construction and Operation License (COL) for Vogtle units 3 and 4 issued by NRC on Feb. 10, 2012.
- Vogtle Units 3 and 4 are expected to be placed in service in 2016 and 2017, respectively. ■