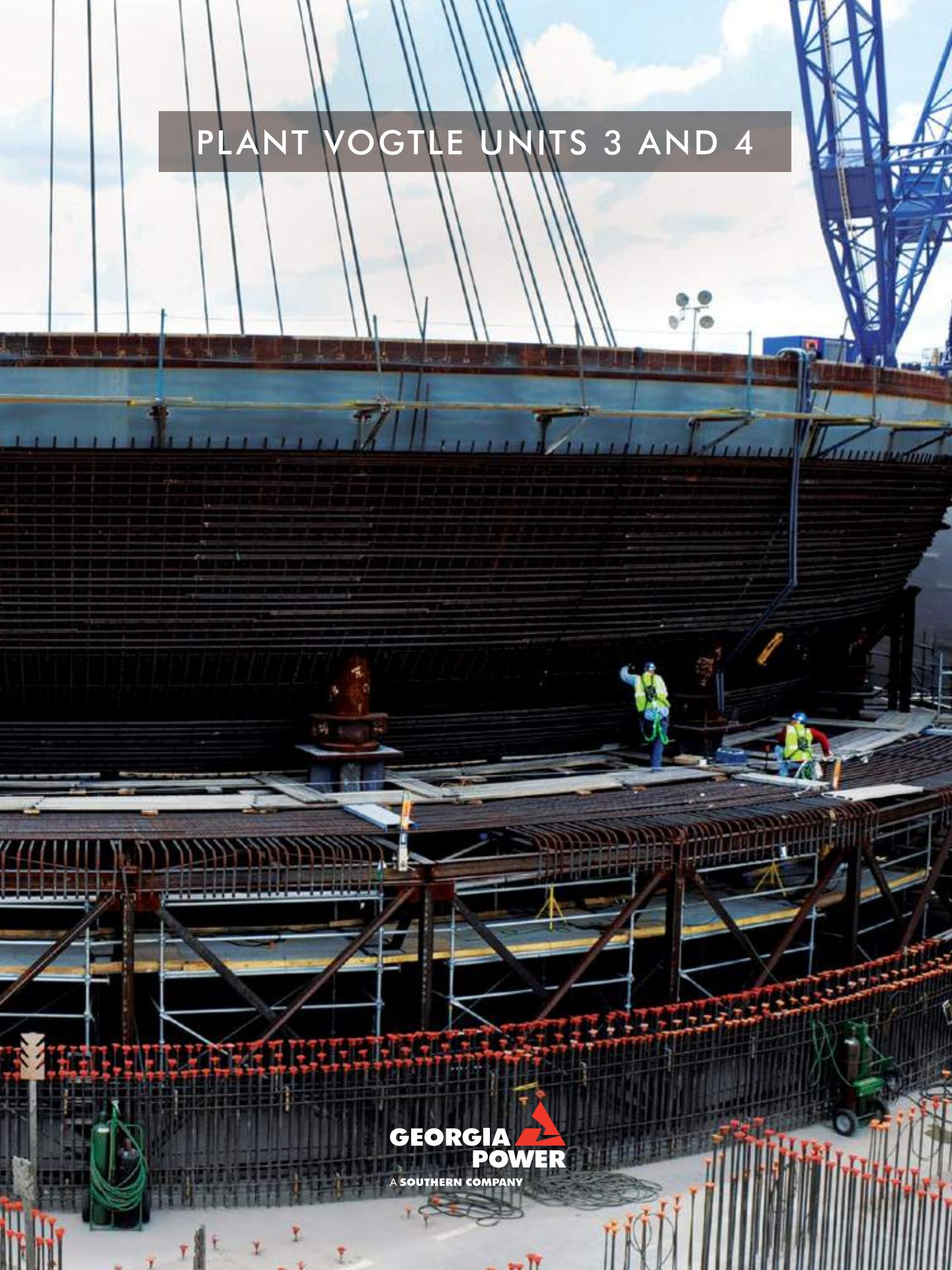


# PLANT VOGTLE UNITS 3 AND 4



**GEORGIA**  
**POWER**

A SOUTHERN COMPANY

# ZERO GREENHOUSE GASES

Nuclear energy facilities release zero greenhouse gases while producing electricity. A single uranium pellet the size of a pencil eraser produces as much electricity as 17,000 cubic feet of natural gas, 1,780 pounds of coal or 149 gallons of oil. Nuclear energy is clean, safe and proven, and provides about 20 percent of the electricity generated in Georgia. Through energy efficiency, conservation, new renewable energy sources, nuclear energy and new environmental controls, we can continue to make our energy supply cleaner and more secure.

# THE PLAN

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The most safe, cost-effective, reliable and environmentally responsible fuel source today, for baseload generation of electricity, is nuclear. Nuclear energy fits in Georgia Power'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. We're planning to use nuclear units to extend reliable and affordable supplies of electricity in the Southeast.

With operations expected in 2017 and 2018, Vogtle units 3 and 4 will be among the first new nuclear units built in the U.S. in the last three decades.

# VOGTLE 3 AND 4 FACTS

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## OWNERS

- Georgia Power, 45.7 percent; Oglethorpe Power, 30 percent; MEAG Power, 22.7 percent; Dalton Utilities, 1.6 percent
- Licensee/operator for owners: Southern Nuclear Operating Company

## TECHNOLOGY

- Two Westinghouse AP1000 (Advanced Passive) nuclear units
- Approximately 1,117 megawatts each

## LOCATION

- Vogtle Electric Generating Plant (with existing units 1 and 2), Waynesboro, Georgia

## ECONOMIC IMPACT

- \$14 billion capital investment in Georgia
- 5,000 on-site construction jobs
- 800 permanent jobs

## TIMELINE

- Georgia Power filed an Application for Certification of Vogtle units 3 and 4 with the Georgia Public Service Commission (PSC) in August 2008
- The Georgia PSC approved the need and cost-effectiveness, granting approval to implement the proposed Vogtle expansion in March 2009
- Early Site Permit and Limited Work Authorization issued by the Nuclear Regulatory Commission (NRC) in August 2009
- The NRC issued the Construction and Operating Licenses (COLs) for Vogtle units 3 and 4 in February 2012
- Vogtle units 3 and 4 are expected to be placed in service in 2017 and 2018, respectively



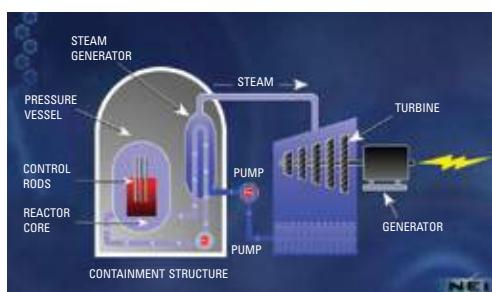
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# NUCLEAR ENERGY



## HOW IT WORKS

Nuclear energy facilities generate electricity using the same engineering technology as conventional steam plants that burn fossil fuels like coal, oil or natural gas. The difference is the heat source used to make steam.



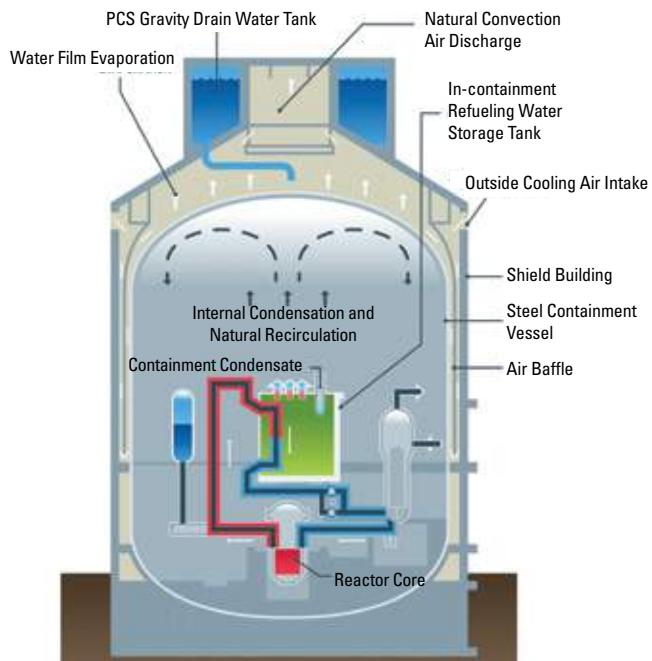
Fuel rods in the reactor core contain uranium pellets. The uranium atoms undergo a chain reaction where they split, or fission, creating heat. When water is pumped around the hot fuel rods, it absorbs this heat.

In a pressurized reactor, like Plant Vogtle units 1 and 2, this water is kept under high pressure, like a pressure cooker. This superheated water is sent through tubes in a steam generator where cooler water surrounds it and boils to steam. The two water sources remain separated from each other; only the heat is transferred.

The steam turns blades on a turbine generator, causing it to spin a magnet inside a coil of wire. The motion causes electrons to move along the wire in a constant flow called an electric current. Water from the circulating water system condenses the remaining steam and it flows back to the cooling tower where excess heat is given off as a mist above the tower.



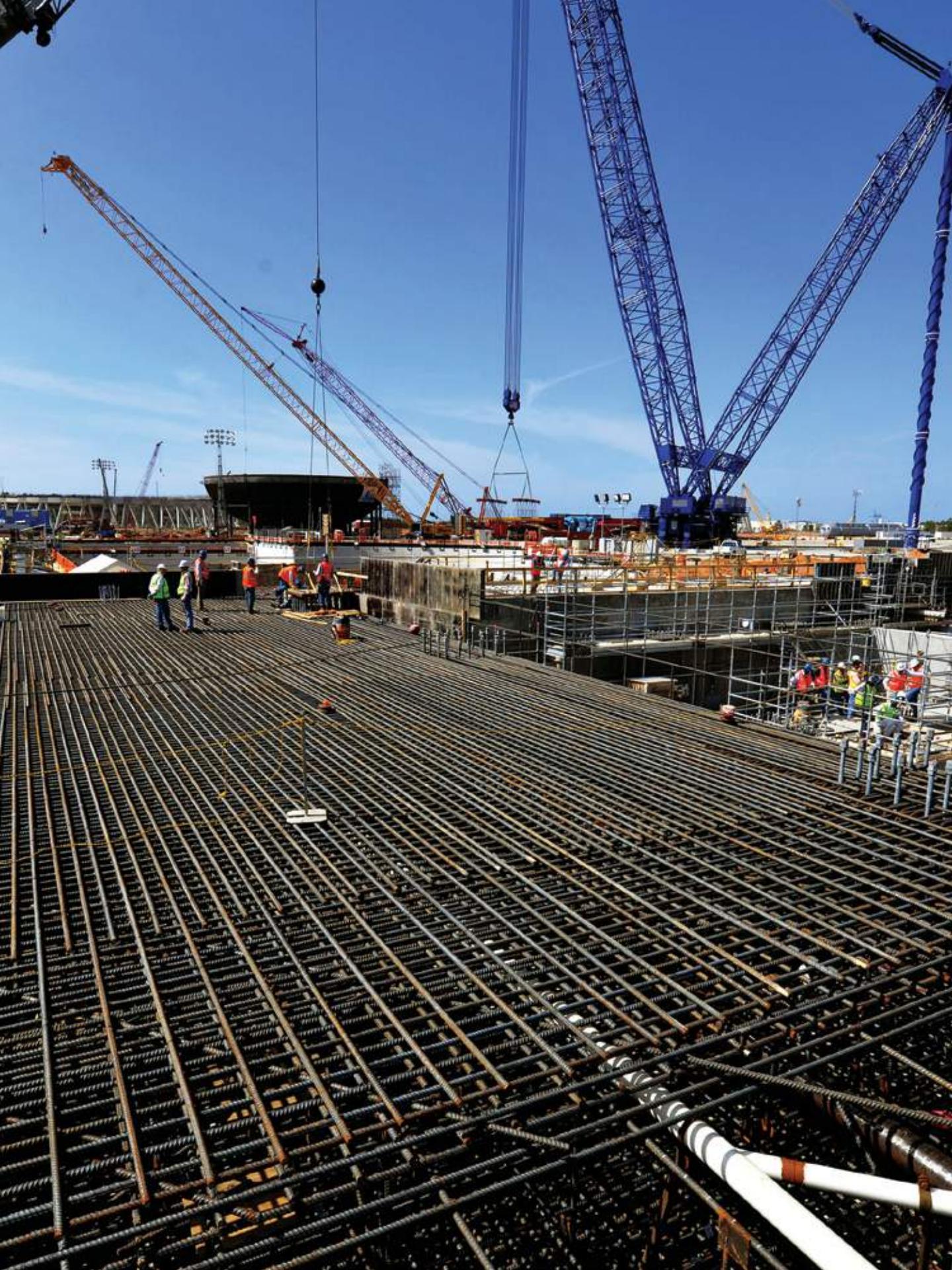
# WESTINGHOUSE ADVANCED PASSIVE (AP1000) TECHNOLOGY



Vogtle units 3 and 4 will use Westinghouse Advanced Passive (AP1000) technology. These units operate using the same basic technology as a traditional nuclear plant; however, the new units incorporate advancements and improvements in nuclear technology. These units build on proven nuclear technology, while also incorporating improvements in that technology.

The AP1000 pressurized water reactor works on the simple concept that, in the event of a design-basis accident (such as a coolant pipe break), the plant is designed to achieve and maintain safe shutdown condition without any operator action and without the need for AC power or pumps. Instead of relying on active components such as diesel generators and pumps, the AP1000 relies on the natural forces of gravity, natural circulation and compressed gases to keep the core and containment from overheating.

The AP1000 requires less equipment and infrastructure to operate and maintain the plant. Lower operating and maintenance requirements also save money in the form of smaller maintenance staffs. The selection of proven components ensures a high degree of reliability to reduce maintenance costs. Standardization of components reduces spare parts inventories and streamlines training requirements, resulting in shorter maintenance times. Additionally, built-in and online testing is provided for critical components.



## WHO ARE THE OWNERS?

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Georgia Power is the largest subsidiary of Southern Company, one of the nation's largest generators of electricity. The company is an investor-owned, tax-paying utility with rates well below the national average. Georgia Power serves 2.4 million customers in all but four of Georgia's 159 counties.



Oglethorpe Power Corporation is an Atlanta-based power supply cooperative serving 38 Electric Membership Corporations (EMCs) in Georgia. These EMCs provide retail electric service to more than 4.1 million Georgians throughout the state. With assets of more than \$8 billion and annual revenues exceeding \$1 billion, Oglethorpe Power is one of the nation's largest electric cooperatives and is among the largest private corporations in Georgia.



The Municipal Electric Authority of Georgia (MEAG Power) is a public generation and transmission organization providing power to 49 Georgia communities with annual electric sales of \$815 million and 10.5 million megawatt-hours of delivered energy in 2012.



Dalton Utilities has operated as a public utility since 1889 and provides potable water, electrical, natural gas and wastewater treatment services to approximately 73,000 customers in the City of Dalton and portions of Whitfield, Murray, Gordon, Catoosa and Floyd counties. In 2003, Dalton Utilities launched OptiLink and now provides broadband, cable television, telephone and Internet services to residential and business customers.



Southern Nuclear, a subsidiary of Georgia Power parent Southern Company, is overseeing construction and will operate the two new 1,117-megawatt AP1000 units for Georgia Power and the co-owners. Southern Nuclear operates a total of six units for Alabama Power and Georgia Power at the Joseph M. Farley Nuclear Plant near Dothan, Ala.; the Edwin L. Hatch Nuclear Plant near Baxley, Ga., and the Alvin W. Vogtle Electric Generating Plant near Waynesboro, Ga.





<http://www.southerncompany.com/nuclearenergy/>

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