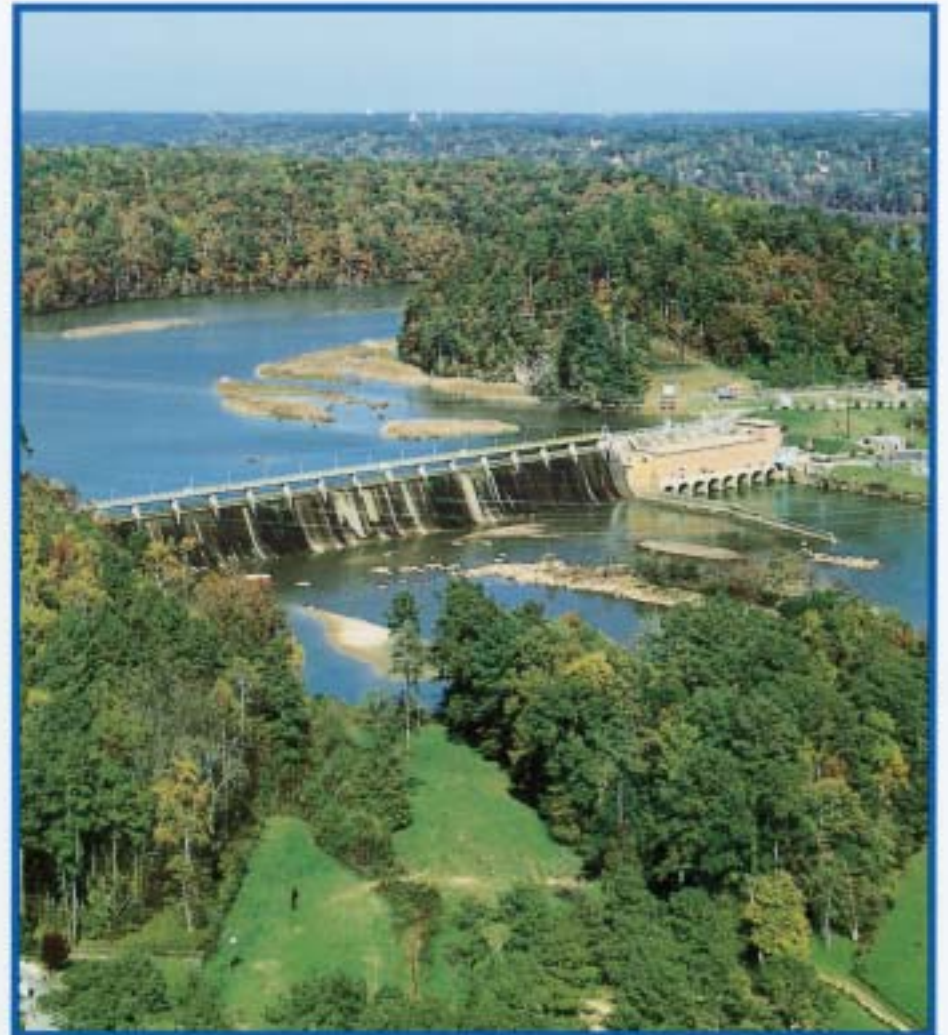




◀ Georgia Power's 31 generating plants and statewide transmission network serve more than 1.3 million customers.



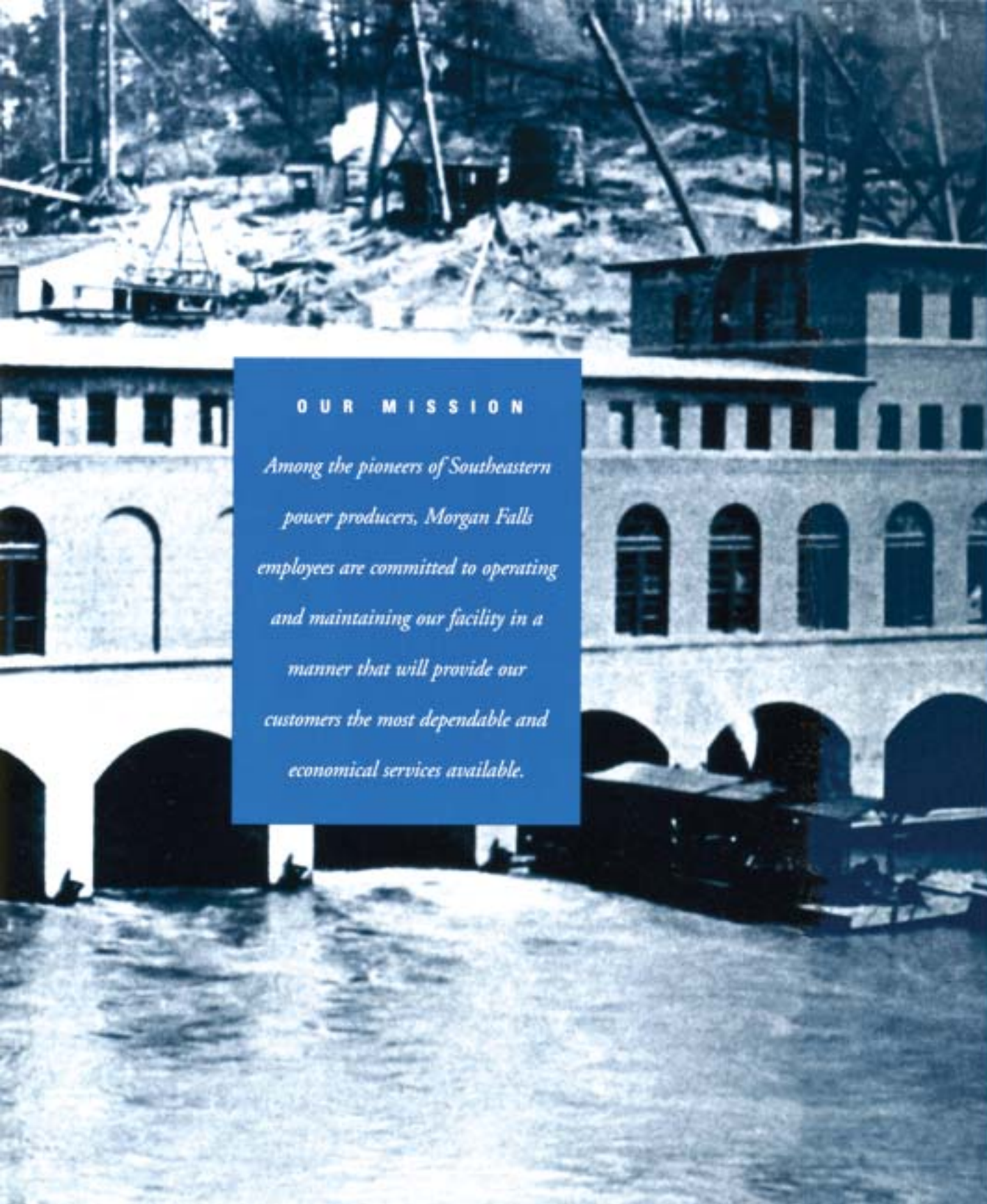
Morgan Falls Hydro Plant • 390 Morgan Falls Rd., Dunwoody GA 30350



# MORGAN FALLS

*Hydro Electric Plant*





#### OUR MISSION

*Among the pioneers of Southeastern power producers, Morgan Falls employees are committed to operating and maintaining our facility in a manner that will provide our customers the most dependable and economical services available.*

## HISTORIC MORGAN FALLS

**M**organ Falls is among the first and largest of the early hydroelectric projects in Georgia. Constructed in the early days of the 20th century to serve the expanding energy needs of the rapidly growing Atlanta area, Morgan Falls Hydroelectric Plant today has great historic and engineering significance.

S. Morgan Smith, through his newly formed company, Atlanta Water and Electric Power, began plans for the plant in 1898. Smith was careful to use only the best materials and workmanship available to assure both the powerhouse and the dam were the finest in the South. Nearly 100 years later, much of the original plant still operates. The original gravity type dam and the original powerhouse are still in use. The seven-unit facility was built by Westinghouse, Church, Kerr & Co. at a cost of more than \$1.5 million — an astounding sum at the time.

Built roughly 12 miles north of Atlanta at a point on the Chattahoochee River known as Bull Sluice, Morgan Falls provided Atlanta's first hydroelectric power. Originally the plant was called Bull Sluice as well. In 1903 — the year Smith died — it was renamed in honor of his mother, whose maiden name was Morgan.

When the plant began producing electricity in 1904, most of its 10,500-kilowatt output was used to operate the Atlanta street car system. The tiny Atlanta Water and Electric Power Co. soon became part of Georgia Railway and Power Co., which in the 1920s joined with a number of other small power companies to form what is now Georgia Power.





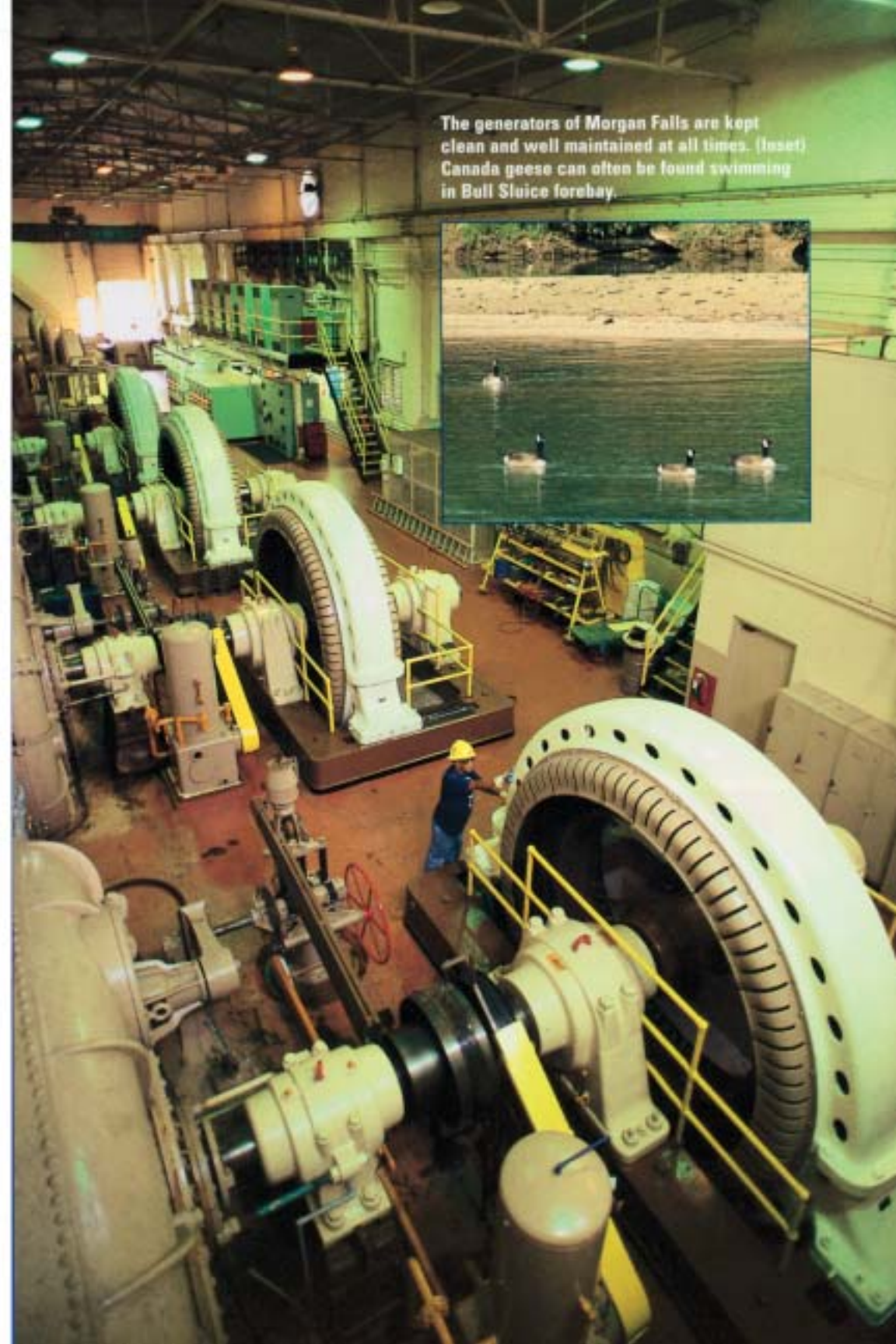
## MORGAN FALLS TODAY

Although the plant's initial installed capacity of 10,500 kilowatts has been upgraded several times over the years and now has a capacity of 16,800 kilowatts, Morgan Falls is small by today's power plant standards. In fact, the combined output of Georgia's hydroelectric plants accounts for less than 5 percent of the state's total power production.

Still, Morgan Falls and other hydroelectric plants make an important contribution to Georgia Power's overall mix. Because hydroelectric plants don't use such fuels as coal, gas, oil, and uranium, they are less expensive to operate and are more environmentally friendly than other types of power plants. When Georgia Power is able to use hydroelectric plants rather than plants that are more expensive to operate, the savings are passed along to customers.

Hydroelectric plants, in addition to producing electricity, provide such other benefits as flood control, recreation, and fish and wildlife habitat. A redevelopment project jointly undertaken by Georgia Power and the City of Atlanta in 1960 enlarged the reservoir capacity, increasing the city's water reserves and the plant's generating capacity.

Like other hydroelectric plants, Morgan Falls operates under licenses issued by the federal government.



The generators of Morgan Falls are kept clean and well maintained at all times. (Inset) Canada geese can often be found swimming in Bull Sluice forebay.



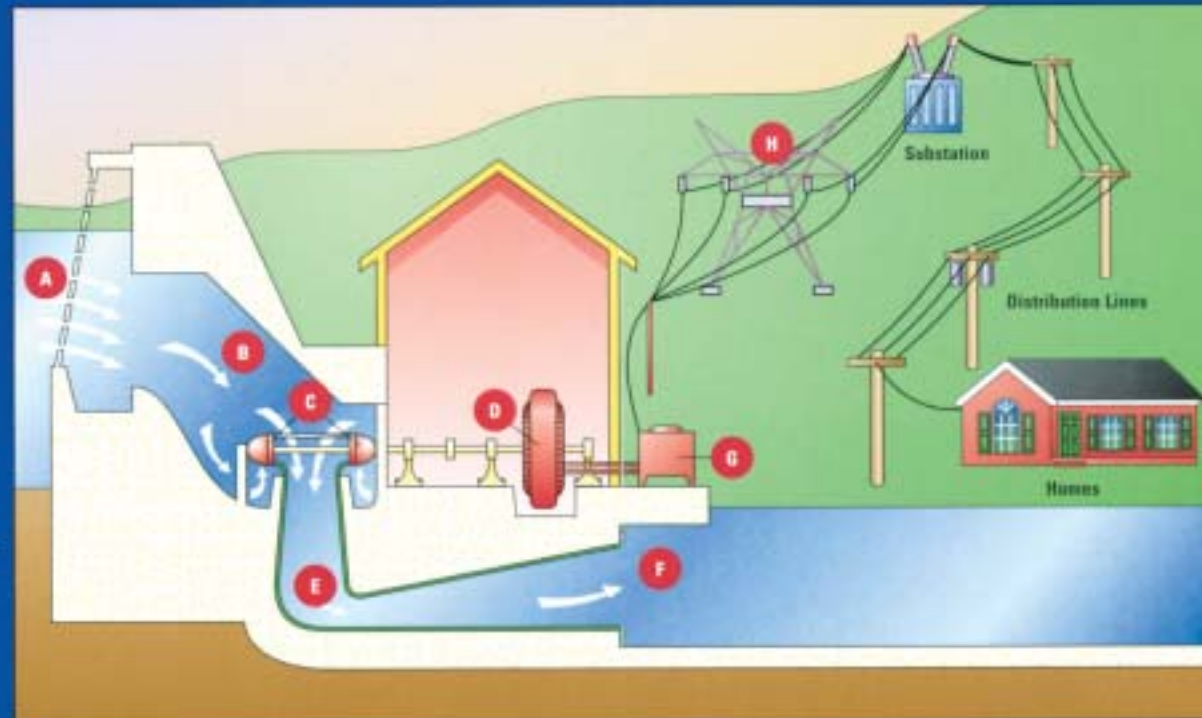
## HOW MORGAN FALLS WORKS

Morgan Falls today operates much as it did when it first started producing power. In fact, it uses the same principles applied centuries ago in such water-powered factories as grist mills and textile plants, where the natural energy of falling or flowing water turned huge wheels to power machinery. In the late 19th Century, the first hydroelectric plants took the old water wheel concept to a new technological level by using falling water to spin turbines and generators instead of turning simple paddle wheels.

A hydroelectric plant requires a dam to hold back enormous amounts of water, creating a reservoir. A dam across the Chattahoochee River forms Bull Sluice Lake, the reservoir for Morgan Falls. This simplified diagram shows how Morgan Falls uses the power of the Chattahoochee River to toast your morning muffins.

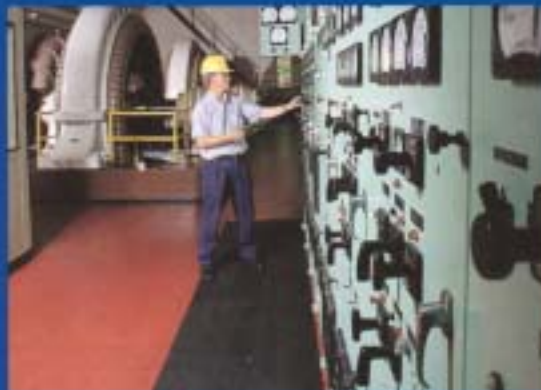
Falling water from the reservoir (A) passes through the

penstock (B) to enter the powerhouse. There the water turns the propeller-like water turbine (C), which is connected to a shaft to the generator (D). The generator spins and produces electricity.



The water is then discharged through the draft tube (E), where it enters the tailrace (F) and returns to the river unaltered.

The electricity produced by the spinning generator (D) is conducted to the power transformer (G), where the voltage is increased. The high voltage electricity is then fed into Georgia Power's transmission lines (H) for distribution throughout the state to electricity customers. Before the customer receives the electricity, another transformer reduces the voltage to the appropriate level.



Plant operators take hourly readings from the control board.



Morgan Falls employees regularly inspect the condition of the generators.



Maintenance personnel operate the Tainter Gate Hoist which regulates the lake elevation.

## MORGAN FALLS HYDROELECTRIC PLANT DATA

▶ Ownership	Georgia Power
▶ Location	12 miles north of Atlanta on the Chattahoochee River in Fulton and Cobb counties
▶ Completion Date	1904
▶ Generating Capacity	16,800 kilowatts total 2,400 kilowatts per unit (7 units)
▶ Plant Site Area	20 acres (approximately)
▶ Dam:	Type Gravity Construction Rubble-masonry Length 1,075 feet Height 56 feet
▶ Reservoir:	Name Bull Sluice Lake Water Surface 580 acres Shoreline 12.6 miles Crest Elevation 866 feet

## GEORGIA POWER AND SOUTHERN COMPANY

In terms of load demand, Georgia Power is one of the largest investor-owned electric utilities in America. Its nearly 15,000-megawatt system supplies electricity to more than 97 percent of Georgia. The company's 31 generating plants and statewide transmission network serve more than 1.3 million customers.

About 74.3 percent of the electricity generated by Georgia Power comes from coal-fired plants. The rest comes largely from nuclear, hydroelectric and oil- and gas-fired units. Oil- and gas-fired plants, which produce less than one percent of the company's total generation, presently are operated only when demand on the system is extremely high.

Georgia Power is the largest of five operating companies — along with Alabama Power, Gulf Power, Mississippi Power and Savannah Electric and Power — in the Southeastern United States that, along with a number of special purpose companies and overseas enterprises, comprise Southern Company. The generating units within these five Southeastern operating companies are fully integrated so that they continually deliver electricity from the most economical units available at that moment.



An employee inspects and performs maintenance on the Tainter Gate. (Below) The plant equipment is kept clean.

