United States Department of the Interior
FISH AND WILDLIFE SERVICE
DIVISION OF ECOLOGICAL SERVICES
FEDERAL BUILDING, ROOM 334
BRUNSWICK, GEORGIA 31526

January 20, 1984

(ER 83/1572)

Mr. John G. Farley
Southern Company Services
P. O. Box 2625
Birmingham, AL 35202

Dear Mr. Farley:

The Fish and Wildlife Service has reviewed the Environmental Report, Operating License Stage, for Georgia Power Company's Vogtle Electric Generating Plant (VEGP), Units 1 and 2, Burke County, Georgia. Our comments are submitted in response to Office of Environmental Project Review's December 1983 Memorandum. Several sections in the report address concerns of the Fish and Wildlife Service that have not been completely resolved.

Section 2.2.2.2.1. Savannah River Adult Fish Study. It should be recognized that the commercially important species of the Clupeidae family which are known to be abundant in the Savannah River are not included in the total biomass of game and commercial fish species (23.7 kg), apparently because of limitations of the sampling technique.

Section 2.2.2.2.2. Savannah River Larval Fish Study. It is noted that American Shad (Alosa sapidissima) comprised 23.6 percent of the total number of eggs and larvae collected. While this value is important, it would be recognized as more meaningful if comparisons equally represented the spawning period of all species.

Section 3.4.1.1. Intake Canal. In the report, it is stated that flow through the canal depends on plant operating conditions and river water level. The average velocity at the river intake canal entrance ranges from 0.01 ft/s at 13,000 gpm withdrawal and water level of 98 ft. msl to 1.05 ft/s at maximum withdrawal of 72,000 (based on four intake pumps operating) and annual average water level (84 ft. msl: flow of 10,300 cfs the entrance velocity is 0.11 ft/s. It is noted that the scenario of operation at maximum withdrawal at a low river water level will create flows at the river intake canal entrance well exceeding 0.5 ft/s and will increase entrainment of the larval eggs and fish.

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Section 3.4.1.4. Intake Structure Designs and Operation. The report states that redesign to minimize impingement allows one pump to be operated through each intake cell. Associated velocities through a particular cell will result from one pump operating and thus reduce potential impingement losses. The Nuclear Regulatory Commission (NRC) concluded on April 29, 1981 that "no significant effects on the fishes of the Savannah River will result from impingement," following submission of the study required by condition E(7) of the VEGP construction permit.

Biological effects of entrainment are not well defined in the report although Section 5.1.3.1.1 states that under minimum flow conditions losses represent about 0.65 percent of the rivers icthyoplankton. The report further states "This removal is not expected to have an adverse effect on these populations or in the organisms that feed on them." The report, however, does not define a significant loss.

Section 3.4.5. Discharge System. This section states that on January 29, 1982 the NRC issued amendment three to the VEGP construction permit allowing the design of the discharge structure to be changed from a submerged multiport diffuser type to a single point 24-inch discharge pipe.

NRC evaluation of the study of the change in discharge structure, based on the minimum river flow of 5,800 cfs, concluded that because of the size and location of the thermal plume, little or no biological effect is expected (5.1.3.2.). It should be pointed out that this heated effluent discharge will attract selected species of fish. It should also be pointed out that the size of the plume may not be as critical as the difference in temperature between ambient river and discharge if drifting anadromous fish eggs and larvae are considered. It is probable that when ambient temperatures abruptly exceed 70 degrees farenheit or abruptly change in excess of 2-3 degrees farenheit it will have a devastating effect on the exposed eggs and larvae of some anadromous fish.

Although previous studies were conducted which mitigate adverse impacts on anadromous and other fish through the incorporation of specific design features, the Fish and Wildlife Service suggests there are remaining aquatic issues unresolved that should be addressed as special study conditions of the operating license. These include:

1. A requirement to monitor entrainment of anadromous species eggs and larvae in the intake canal entrance for two years during the period March 15 - June 15.

2. Conduct a two-year study of the survival of anadromous fish eggs and larval fish drifting through the thermal plume during the period March 15 - June 15.

The existence of anadromous fish populations is determined largely by the environmental conditions of the watershed and for some species

utilizing the South Atlantic streams survival of each year class becomes exremely important because adults are not repeating spawners. Consequently, the survival of eggs and larvae becomes critical. In the interest of sustaining these important resources, the Fish and Wildlife Service recommends the incorporation of Special Conditions 1 and 2 into the operating license and that the need for mitigation of impacts be considered following study completion. The Service requests that you provide us a copy each year of the results of Study 1 and 2. We would also be interested in available reports that address radiological monitoring of fish and wildlife resources.

Respectfully,

L. Glenn McBay
Field Supervisor

Copy to: NRC, Washington, DC
OEPR, Washington, DC
FWS/EC, Washington, DC