



United States Department of the Interior

FISH AND WILDLIFE SERVICE

DIVISION OF ECOLOGICAL SERVICES

FEDERAL BUILDING, ROOM 334

BRUNSWICK, GEORGIA 31520

March 26, 1984

(ER 83/1572)

Mr. D. O. Foster
Vice President & General Manager
Vogtle Project
Georgia Power Company
P. O. Box 4545
Atlanta, GA 30302

Dear Mr. Foster:

The Fish and Wildlife Service (FWS) has reviewed Amendment 1 to the Environmental Report, Operating License Stage (ER-OL), for Vogtle Electric Generating Plant (VEGP), Units 1 and 2. Comments on the Environmental Report were forwarded to Mr. John G. Farley, Southern Company Services, by letter dated January 20, 1984.

FWS concerns about the project relate primarily to the potential impacts of project on drifting anadromous fish eggs and larvae, including striped bass, American shad, hickory shad, blueback herring, Atlantic sturgeon, and the shortnose sturgeon. Specifically, these concerns are directed to the intake structure and associated levels of entrainment and to the heated water discharge system. Your report states that "the flow through the canal is determined by plant operating conditions. Velocities are also dependent on the river water level. The average velocity at the river intake canal entrance ranges from 0.01 ft/s at the minimum plant withdrawal rate (13,000 gpm) and a river water level of 98 ft msl (top of canal sheet piling), to 1.05 ft/s at a maximum plant withdrawal rate (72,000 gpm based on all four intake pumps operating) and a minimum river water level of 78.4 ft msl (allowing for 2 ft of riverbed degradation) at guaranteed low flow of 5800 ft³/s. At average plant operating conditions (42,000 gpm based on two intake pumps operating) and annual average water level (84 ft msl based on annual average river flow of 10,300 ft³/s), the entrance velocity is 0.11 ft/s." The scenario of operation at maximum withdrawal at a low river water level creates flow conditions with a high potential for adverse impacts. You have determined that, under minimum flow conditions, losses will represent about 0.65 percent of the river's ichthyoplankton and concluded that "this removal is not expected to have an adverse effect on these populations or on the organisms that feed on them." Design modifications (one pump/cell operation) will apparently mitigate impingement and entrainment losses to some extent. Since the Construction Permit Stage Environmental Report (CPSER) was submitted, other mitigation has included the addition of lateral escape passageways for fish at the intake canal entrance.

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Another change since the CPSEER is the use of a single point discharge in lieu of a multiport diffuser. We understand this change was a result of navigational interest by the Corps of Engineers and because of potential problems in maintenance of the diffuser type system. The State of Georgia will regulate the VEGP discharges through the National Pollution Discharge Elimination System (NPDES) permit to meet water effluent limitations and water quality standards for the "fishing" classification. Criteria D of this classification is temperature - not to exceed 90°F; at no time is the temperature of the receiving waters to be increased more than 5°F above intake temperature. The FWS has not reviewed the thermal plume analysis study submitted to the Nuclear Regulatory Commission and we are very cautious about the potential impacts of this project, although the report states that because of the size and location of the thermal plume, little or no biological effect is expected. Based on the report, the NRC evaluation resulted in a change to delete the multiport diffuser on January 29, 1982. The report states "The heated water discharge from VEGP will not exceed any temperature limits discussed in subsection 5.1.1 outside of a small mixing zone. The largest mixing volume within the 5°F isotherm is estimated to be 1300 ft³. As stated earlier, the allowable mixing zone will be defined by the State of Georgia as part of the NPDES permit."

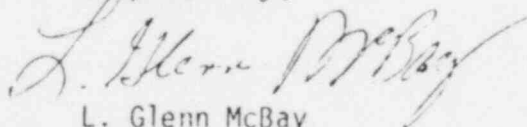
The FWS is concerned that the difference in temperature between ambient river and discharge may potentially impact drifting fish eggs and larvae. We are specifically concerned that the differential may be sufficient to kill early larvae.

We suggest that there are two remaining aquatic issues of concern that should be addressed through brief special studies. These studies should include:

- (1) monitoring the entrainment of anadromous species eggs and larvae at the entrance within the intake canal for two years during the period March 15 - June 15 and
- (2) 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. Bioassay determinations within the plume may be a preferred alternative to Number 2.

Actions to mitigate any significant adverse impact should be considered at the termination of the studies.

Respectfully,



L. Glenn McBay
Field Supervisor

cc: FWS, Atlanta, GA (AHR)
FWS, EC, Washington, DC
EPA, Atlanta, GA
DNR, EPD, Atlanta, GA
NRC, Washington, DC (Charlie Billups)