United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
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Rules and Directives Branch
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Chief, Rules Review and Directives Branch
Division of Administrative Services
Mailstop T 6 059
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sir:

The U.S. Department of the Interior (Department) has reviewed the Generic Supplemental Environmental Impact Statement (GSEIS) for License Renewal of Nuclear Plants, Supplement 4, Regarding the Edwin I. Hatch Nuclear Power Plant (Plant Hatch), Units 1 and 2, Final Report (NUREG 1437). The following comments are provided in accordance with the Department's jurisdiction and special expertise.

Project Description

Southern Nuclear Operating Company (SNC) is seeking to renew the operating license for Plant Hatch Units 1 and 2. Plant Hatch is located approximately 11 miles north of Baxley, on the Altamaha River, in Appling County, Georgia. Plant Hatch is a two-unit steam-electric generating plant equipped with General Electric Nuclear Steam Supply Systems that use a boiling water reactor with a Mark I containment design. The plant uses a closed-loop cooling tower system for main condenser cooling that withdraws make-up water from and discharges to the Altamaha River via shoreline intake and offshore discharge structures. The plant has two boiling water reactors, each with a design rating for a net electrical output of 924 MW(e). The combined power output for units 1 and 2 is 1,848 MW(e). The current operating license for Unit 1 will expire on August 6, 2014, and the operating license for Unit 2 will expire on June 13, 2018.

Fish and Wildlife Coordination Act

The Altamaha River and it's surrounding environments and wetlands provide habitat essential to many species of fish and wildlife including neotropical migratory songbirds, wading birds, reptiles and amphibians, mammals and important inter-jurisdictional fishery resources. Since, no new construction or increase in operating conditions is proposed as part of the license renewal, the U.S. Fish and Wildlife Service (FWS) believes that adverse impacts to terrestrial resources from continued operation of Plant Hatch should be minimal with the exception of radiological impacts.

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Fishery resources of particular concern to the FWS are anadromous species, including American shad, hickory shad, blueback herring, striped bass, the Atlantic sturgeon, and shortnose sturgeon. American shad, striped bass and sturgeon have historically been a significant commercial fishery along the Altamaha River, and populations of all of these species have experienced dramatic declines in the past from which they currently have not recovered. The FWS is also concerned about potential adverse impacts to resident species including largemouth bass, redbreast sunfish and native riverine suckers. The Altamaha River provides important recreational opportunities for the residents of and visitors to Georgia. The Altamaha River is a destination for many out-of-state anglers and is a critical element of the natural heritage of Georgia.

Fish Entrainment and Mortality

The FWS has reviewed and evaluated the 1981 Thermal Plume Model Verification Study, 1981 316(b) Demonstration Study to evaluate fish entrainment at the plant, and additional information provided by SNC. The FWS remains concerned that SNC has not effectively evaluated entrainment and mortality of fish at Plant Hatch for the combined two unit operation which began in late 1979.

The existing water intake structure for Plant Hatch is approximately 150 feet-long and 60 feet-wide and stands approximately 60 feet above the normal water elevation. The water intake openings are 27 feet-wide and extend from 16 feet below to 33 feet above normal water elevations. Large woody debris is removed by trash racks of an unknown dimension, and smaller debris is removed by vertical traveling screens with a 3/8 inch mesh. SNC also reports that intake velocities increase with lower river levels, but these values are not reported for evaluation. Based on some of the intake velocities reported in the 1981 316 (b) Report, it is likely that two unit operation at Plant Hatch, particularly during spawning seasons and low water conditions may have significant adverse impacts on fishery resources through increased entrainment of eggs, larvae and juvenile fish.

Given that the information on fish entrainment and mortality at Plant Hatch is over twenty years old and only represents one year of monthly collections under normal two unit operation, the FWS has determined that these data do not reflect the actual fish entrainment potential at Plant Hatch and cannot reliably be used in evaluating the potential adverse effects on fishery resources in the Altamaha River.

The FWS recommends that SNC conduct limited entrainment and intake velocity verification studies during low flow periods which typically occur in late Summer and early Fall in order to confirm the conclusions presented in the 1981 studies. The additional fish entrainment and mortality data must be collected during normal two unit operation.

Thermal Discharge

Plant Hatch Unit 2 construction began in 1972 and commercial operation began in September, 1979. The existing NPDES permit for Plant Hatch has an established limit for the thermal discharge which is not to exceed 90 °F or 5 °F above ambient. Twelve thermal plume monitoring surveys were conducted during 1980. According to the 1981 report, seven of these twelve monitoring surveys showed inconclusive results. Three of these surveys were conducted with only one cooling tower releasing heated water. Three additional surveys did not detect a thermal plume. The remaining survey postulates that on August 12, 1980 a "secondary thermal plume" was the cause of "excessive solar heating" of adjacent shallow water, and that the survey of the thermal plume from Plant Hatch was biased due to hot weather. These results cannot be considered reliable due to the very limited field verification of the nearly thirty year old model in which seven of only twelve field surveys of the thermal plume were "inconclusive". The purpose of the model and the study was to determine whether the operation of Plant Hatch would be expected to adversely impact aquatic resources of the Altamaha River regardless of natural conditions.

The FWS has determined that the results of the Thermal Plume Model and the field verification survey are not capable of characterizing adverse impacts to the river or temperature deviations resulting from the full two unit operation of Plant Hatch during low Summer and Fall flows. Actual field data on heated water discharges from Plant Hatch is critical during low flow periods when the river experiences drought or near drought conditions. These low flow periods are when the potential impacts to aquatic species in the Altamaha River are the greatest. These impacts are due to higher ambient water temperature, reduced dilution of wastewater from upstream sources, the increased percentage of river flow consumed at Plant Hatch, and the significantly reduced dilution potential for the heated effluent. The FWS recommends that SNC conduct additional field measurements of the discharge and the resulting temperature plume in the Altamaha River under various low flow conditions to verify the conclusions presented in the GSEIS. Field studies of the thermal discharge should be conducted, at a minimum, on a daily basis during various river conditions in the Summer and Fall when ambient water temperature is highest and dissolved oxygen is lowest.

The Department appreciates the opportunity to review and offer comment on the GSEIS for Plant Hatch, and we look forward to assisting in the development of the recommended verification studies. If you have any questions, please contact the FWS NEPA Coordinator Bruce Bell, Atlanta, Georgia at 404/679-7089 or FWS Biologist Mark Bowers, Athens Georgia at 404/679-7223.

Sincerely,

for Gregory L. Hogue
Regional Environmental Officer