



United States Department of the Interior

OFFICE OF THE SECRETARY

OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE

Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

January 17, 2001

65 FR 67718

11/9/00

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ER-00/843

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 Department of the Interior has reviewed the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 4, Edwin I. Hatch Nuclear Plants, Units 1 and 2, Appling County, Georgia, as requested.

General Comments

The Altamaha River and its surrounding environs 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, adverse impacts to terrestrial resources from continued operation of Plant Hatch should be minimal with the exception of radiological impacts. Fishery resources of particular concern to the Fish and Wildlife Service (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 other 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.

The FWS remains concerned that the entrainment and mortality of fish at Plant Hatch has not been effectively evaluated for the combined 2-unit operation which began in late 1979. The FWS letter dated November 8, 1999, indicated concern about fish entrainment and mortality at Plant Hatch and requested additional information to evaluate the potential impacts of project license renewal on those aquatic resources. On December 7, 1999, the FWS received a response from Southern Nuclear Operating Company (SNC) which included a Biological Information Update, the 1981 Thermal

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Plume Model Verification Study, and the 1981 316(b) Demonstration Study to evaluate fish entrainment at the plant. Additionally, after the completion of the 1981 studies, a low water weir was constructed in the Altamaha River which may significantly increase the potential for fish entrainment by changing the physical surroundings of the intake structure. Entrainment of aquatic species must be evaluated for river conditions where the weir affects the water intake for Plant Hatch.

Construction of Plant Hatch Unit 1 began in 1968 and commercial operation began in December 1975. Plant Hatch Unit 2 construction began in 1972 and commercial operation began in September 1979. Entrainment samples for Plant Hatch were collected in 1974, 1975, 1976, 1979, and 1980. Samples were collected weekly from 1974 through 1976 and monthly in 1979 and 1980. During nearly all of the sampling period, 1974 through September 1979, only Unit 1 was operating at Plant Hatch. Unit 2 began operating in September 1979, and the only data on fish entrainment and mortality at Plant Hatch under normal 2-unit operation was collected during the “monthly” sampling conducted in 1980. Given that the information on fish entrainment and mortality at Plant Hatch is over 20 years old and only represents one year of monthly collections under normal 2-unit operation, the FWS is concerned that these data do not reflect the actual fish entrainment potential at Plant Hatch and cannot be reliably used in evaluating the potential adverse effects on fishery resources in the Altamaha River.

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 specific values are not reported for any evaluation. Based on some of the intake velocities reported in the 1981 316 (b) Report, it is likely that 2-unit operation at Plant Hatch, particularly during spawning seasons, may have significant adverse impacts on fishery resources through increased entrainment of eggs, larvae and juvenile fish, especially in years with lower than usual flows such as occurred in 1999 and 2000. The FWS recommends that SNC conduct a thorough and complete assessment of fish entrainment and mortality at Plant Hatch under various flow conditions that reflect actual normal 2-unit operation and 2-unit operation at low river flows.

The FWS letter dated November 8, 1999, also indicated concern about the potential impacts of thermal discharges from Plant Hatch on aquatic species in the Altamaha River, and requested additional information to evaluate the potential impacts of project license renewal. The existing NPDES permit for Plant Hatch has established limits 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. Seven of these 12 monitoring surveys showed inconclusive results according to the 1981 report. 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 30-year old model in which seven of only 12 field surveys of the thermal plume were “inconclusive.” The notion that a “secondary plume” had developed near a sandbar during a hot August day must be rejected since this is a natural occurrence during the summer months, and the purpose of the model and the study was to determine whether Plant Hatch would be expected to adversely impact aquatic resources of the Altamaha River regardless of natural conditions. The thermal impacts of the heated discharge may also become exacerbated during low flows where the weir within the river channel may affect the dilution of heated effluent due to altered flow patterns and river channel dimensions.

The FWS is concerned that the results of the Thermal Plume Model and the field verification survey are not capable of characterizing impacts to the river or temperature deviations resulting from the full 2-unit operation of Plant Hatch during low summer and fall flows. The FWS recommends that SNC conduct actual field measurements of the discharge and the resulting temperature plume in the Altamaha River under various flow conditions during the warmer months. 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 acute 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. Field studies of the thermal discharge should be conducted, at a minimum, on a daily basis during various river conditions and the critical low flow periods in summer and fall when ambient water temperature is highest and dissolved oxygen is lowest.

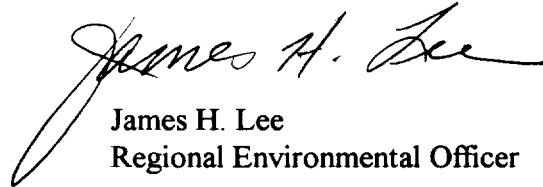
Section 4.3 of the EIS for Plant Hatch addresses the radiological impacts of normal operations, which does not include a discussion of the radiological impacts to fish and wildlife. Further, the EIS does not describe the actual levels of radiation in the ambient environment or the level of increase attributed to operations at Plant Hatch. Section 4.3 only states that the radiation dose to the general public will continue at current levels, and that occupational doses would be below regulatory limits without indicating the actual values for Plant Hatch. Our understanding from SNC was that the issues raised in the November 8, 1999, letter would be addressed in further detail in the Draft EIS. The FWS contends that the radiological impacts to the environment have not been evaluated for Plant Hatch in the draft EIS, and that avoidable impacts to fish and wildlife resources may exist and have not been carefully considered.

The FWS letter dated January 13, 2000, indicated, based on the information provided by SNC, concurrence with SNC’s determination that license renewal for Plant Hatch would not adversely affect threatened or endangered species under purview of the FWS. Our understanding is that Section 7 consultation has been initiated with the National Marine Fisheries Service concerning potential impacts to the federally-threatened shortnose sturgeon.

As the Federal agency responsible for the protection and conservation of fish and wildlife resources in the Altamaha River, the FWS recommends that the NRC require a thorough fish entrainment and mortality study to be conducted to adequately characterize fish entrainment under full 2-unit generating conditions prior to any license renewal for Plant Hatch. We further recommend that thorough field studies be conducted to evaluate actual thermal discharges under full 2-unit generating conditions during low flow periods for multiple years. Further, we recommend that the radiological environment of Plant Hatch be fully described, and the potential for impacts to the environment and fish and wildlife resources evaluated according to appropriate scientific methods.

Thank you for the opportunity to review and comment on the Draft Generic EIS for Edwin I. Hatch Nuclear Plant. If you have any questions or comments or need additional information please, contact staff biologist Mark D. Bowers of the Fish and Wildlife Service, Georgia Ecological Services Field Office, at (706) 613-9493.

Sincerely,



James H. Lee
Regional Environmental Officer