



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
9450 Koger Boulevard  
St. Petersburg, FL 33702

March 15, 1985 F/SER23:PWR:cf

Elinor G. Adensam  
Chief, Licensing Branch No. 4  
Division of Licensing  
Office of Nuclear Reactor Regulation  
Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Ms. Adensam:

This responds to your February 5, 1985, letter regarding Georgia Power Company's application to the U.S. Nuclear Regulatory Commission (NRC) for an Operating License for the Vogtle Electric Generating Plant, Units 1 and 2. The NRC prepared and forwarded a Draft Environmental Statement (DES) as part of the review of the Operating License Application. Our office received the Vogtle DES on March 6, 1985.

The Vogtle DES contains a biological assessment (BA) for the potential impacts of the Vogtle units on the shortnose sturgeon (Acipenser brevirostrum). Your February 5, 1985, letter notified our office that this BA, presented in DES Section 5.6.2, was being transmitted pursuant to Section 7 of the Endangered Species Act (ESA) of 1973. After reviewing the assessment in the DES, we find that the BA contains insufficient information for us to currently assess project impacts on shortnose sturgeon. We believe a more thorough assessment of the potential adverse impacts of thermal and chemical discharges into the Savannah River needs to be conducted in order for us to recommend any need for the NRC to enter a formal consultation under Section 7 of the ESA. Answers to the following questions would be helpful in meeting our responsibilities:

What are the cumulative effects of the Vogtle Plant and Savannah River Plant (SRP) operations on shortnose sturgeon in the Savannah River? Our primary concerns are with the thermal discharges and chemical/biocide concentration levels released by both facilities.

A. Thermal Effects

1. The Vogtle DES, Section 5.6.2, regarding thermal discharges, state that there will be "open zones for migratory movements" for shortnose sturgeons. Conversely, the SRP's biological assessment concludes that an adequate zone of passage exists for the spawning migration of sturgeon as they avoid the SRP's thermal plumes. It is our understanding that the Vogtle Plant is located across the river from SRP and consequently, additional information concerning the possible thermal blockage of the river is needed. What is the total width of the river affected by the thermal plumes produced by both the Vogtle and the SRP (i.e. what percentage of the Savannah River is affected by thermal effluents at the point of discharge, at 20 m

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downstream, at 50 m downstream, etc.)? Will the cumulative thermal effects significantly increase the isotherm areas? What is considered a "safe zone of passage" for migratory shortnose sturgeon or drifting newly-hatched larvae?

2. The Vogtle DES (Sections 4.2.4.4 and 5.6.2) states that the thermal plume will cause some localized scour of the bottom within a distance of 1.5 m to 2.4 m (5-8 ft) between 7.6 to 9.1 m (25-30 ft) of the pipe outlet. The discharge pipe extends from the west river about 6 m (20 ft) from the low water mark. This is all difficult to visualize; therefore, a figure illustrating an "aerial-view" drawing of the Vogtle discharge and thermal plume (including the scouring and mixing zone areas) would be useful.
3. An additional figure is needed in the DES that would illustrate the Vogtle Plant's intake and discharge structures as they relate to the SRP's discharge thermal plumes (including Beaver Dam Creek and Four Mile Creek).
4. The Vogtle DES (Section 5.3.2.2) states that, "the temperature limits of a maximum of 32.2° C (90° F) or an increase of 2.7° C (5° F) above ambient water will not be exceeded outside the yet-to-be-established mixing zone". It is virtually impossible to assess the potential adverse impacts of the thermal plume if the mixing zone area has not been determined or estimated. When will the mixing zone volume and its corresponding temperatures be established...after the units become operational?

#### B. Chemical Effects

5. The NRC's biological assessment, presented in Vogtle DES Section 5.6.2, concerning the potential effects of chemicals/biocides on shortnose sturgeon in the Savannah River is incomplete. We believe the assessment should address the total residual chlorine (TRC) concentrations discharged by the Vogtle Plant, as well as the cumulative effects, if any, of the Savannah River Plant's residual chlorine discharges. Residual chlorine is toxic to freshwater life, therefore, concentrations of TRC discharged into the river must be described clearly in the DES (and preferably included in the shortnose sturgeon assessment). What are the EPA's regulations concerning the TRC concentration levels at the point of discharge? What is the state of Georgia's TRC chlorine concentration discharge limitations? Are these chlorine concentration limitations referring to the point of effluent discharge or to a "mixing zone" area in the river?
6. The diluting of the discharged chlorine concentrations by thermal analysis referenced in Section 5.5.2.1 on pages 5-15 and 5-16 is not understood (0.1 mg/L diluted to 0.012 mg/L). Was an isotherm "mixing zone" area determined for these calculations?

7. The text of the Vogtle DES does not detail why the use of chlorine as a biofouling control needs to be of such high concentrations. Is this for the anticipated problem of fouling by Corbicula (the Asiatic clam), as mentioned in the executive summary on page ix? If so, where does the fouling occur? What are the chlorine concentration levels needed to kill Corbicula? What effects do such residual chlorine levels have on adult shortnose sturgeon and/or larvae?
  
8. The Georgia Department of Natural Resources' "Effluent Limitations and Monitoring Requirements," listed in the Vogtle DES's Appendix E, does not specify where chlorine concentrations will be monitored in the Savannah River. Are there monitoring plans established to measure free and total residual chlorine concentrations at the intake, discharge, and downstream of the mixing zone during daily chlorination periods at both units?

We look forward to your response to our request for additional information. If you have any questions, please contact Paul Raymond, Fishery Biologist, FTS 826-3366. Mr. Raymond will be in contact with Ms. Melanie Miller to further discuss this consultation later this week.

Sincerely yours,

*Paul W. Raymond*

Charles A. Oravetz  
Chief Protected Species  
Management Branch

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cc:  
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