



NRC000029

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

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AUG 11 2008

F/SER31:AM

Mr. William Burton  
Nuclear Regulatory Commission  
Washington, DC 20555-0001

Re: A Biological Assessment for the Shortnose Sturgeon for the Vogtle Electric Generating Plant  
Early Site Permit Application

Dear Mr. Burton:

This responds to your letter dated January 25, 2008, and January 2008 biological assessment (BA) requesting National Marine Fisheries Service's (NMFS) concurrence with your determinations pursuant to section 7 of the Endangered Species Act (ESA) for the Nuclear Regulatory Commission's (NRC) Early Site Permit (ESP) application for the Vogtle Electric Generating Plant (VEGP) in Burke County, Georgia. You determined the project will have no effect on six species of whales, five species of marine turtles, and smalltooth sawfish, and may affect but is not likely to adversely affect shortnose sturgeon. We have also reviewed the September 2007 Draft Environmental Impact Statement (DEIS) prepared by NRC for this ESP. NMFS' determinations regarding the effects of the proposed action are based on the description of the action in this informal consultation. You are reminded that any changes to the proposed action may negate the findings of the present consultation and may require reinitiation of consultation with NMFS.

The project is located at latitude 33.1414°N, longitude 81.7667°W (NAD83), in Burke County, Georgia, adjacent to the Savannah River between river kilometers 241 and 244, approximately 24 km east-northeast of Waynesboro, Georgia, and 42 km southeast of Augusta, Georgia. The applicant proposes to clear, grade, and construct non-safety-related facilities entirely within the confines of the existing VEGP site. The purpose of the proposed permit is preparation for the construction and operation of two new nuclear power units at VEGP. Construction and operation of the units will require additional licensing by the NRC; therefore, the NRC considers this permit a separate action from the filing of an application for a construction permit or combined license for one or more nuclear power facilities. The ultimate construction and operation of the units, however, are the purpose of the ESP, and the ESP has no independent utility except to support construction and operation. Your DEIS for the ESP did analyze potential construction and operation effects on the environment, including shortnose sturgeon. Therefore, this consultation considers potential effects from the ESP as well as the units' construction and operation.

Proposed work under the ESP includes construction of the intake and discharge structures for the new nuclear units and a barge slip to support construction of the new units. All other work, such as clearing and grading, will take place in the uplands; the applicant has committed to



instituting best management practices to mitigate erosion, sedimentation, and dust-generating activities. Approximately 22.5 acres of wetland would be impacted by the construction of the intake and discharge structures and barge slip modifications. It is also estimated that 510 ft of shoreline would be disturbed by the intake and discharge structures and the barge facility. Benthic habitat consists of "brown, poorly graded gravel with sand" to "poorly graded gravel." A tethered, floating silt curtain will be installed for all aspects of the project.

The intake canal would be approximately 240-ft long by 170-ft wide, with an earthen bottom at an elevation of 70 ft above mean sea level (MSL) and vertical sheet piles extending to an elevation of 98 ft MSL. Construction will take place in the summer, fall, and early winter to minimize flooding and impacts to anadromous species that enter the river during the high water conditions of February through April. Permanent and temporary sheet piles will be driven for the intake canal using a vibratory or impact hammer. Piling installation will be conducted from the uplands and the intake area cofferdam will be excavated to an elevation of 70 ft. Installation of the inner serrated weir wall and the outer serrated wall and guide vanes at the mouth of the intake would be accomplished from a barge in the Savannah River. According to the DEIS, construction will take place in the summer, fall, and early winter to minimize the impacts to fish and other aquatic organisms that move into the floodplain with the high water conditions of February, March, and April.

The existing barge slip is located between the existing VEGP Units 1 and 2 intake canal and the ring crane foundation. The downstream sheet-pile wall would be removed and the slope excavated to extend the barge slip 90 ft along the shoreline; the downstream sheet pile would be reconstructed and the shoreline stabilized. Approximately 300 cy of sediment would be dredged to a depth of 67 ft MSL from the Savannah River at the east end of the barge slip. In addition, the construction of the barge slip would require approximately 2,600 cy of stone fill within the barge basin, most of which is not in the Savannah River, to provide a stable foundation for grounding the loaded barges. Some fill would be placed in the area that is currently part of the river. A bathymetry study indicated that there will not be a need to dredge from the end of the barge slip to the federal navigation channel.

The proposed discharge structure will be placed near the southwest bank of the Savannah River, extending about 50 ft into the river. The discharge pipe will be approximately 3.5 ft in diameter, narrowing to 2 ft before the discharge point. The pipe is expected to be elevated 3 ft above the river bottom. Construction would involve the installation of a temporary sheet-pile cofferdam, which would be installed using a vibratory or impact hammer, and a dewatering system, either a well-point or local pumps. The interior of the cofferdam would be excavated so that the pipe could be installed approximately 3 ft below the invert elevation of the discharge piping and then contoured up the river bank. H-piles used for piping supports would be driven to an elevation of 50 ft MSL. After the pipe is laid, the dewatering system would be removed and the piping would be backfilled and graded to the required river bank slope contours. The cofferdam would be removed and riprap material would be installed to stabilize the riverbed and shoreline in the vicinity of the discharge point.

The DEIS states that the plant will use a closed-cycle wet cooling tower system, which reduces water use by 96 to 98 percent, and thereby reduces the likelihood of sturgeon impingement. Units 3 and 4 would have a design through-screen velocity of less than 15 cm/sec (0.5 ft/sec) at a minimum water level of 23.8 m (78 ft) above MSL; the units would withdraw between 0.9 and 1.4 percent of the river flow during normal conditions and between 1.4 and 3.4 percent of the

total flow at maximum withdrawal. All four units (1-4) will be operating simultaneously beginning between 2015 and 2017. The DEIS states that the combined surface-water-use impacts would be minor due to the following: “1) the total VEGP site withdrawals are expected to be less than 5 percent of the total river discharge, 2) the total VEGP site consumptive use is expected to be less than 3.5 percent of the total river discharge, 3) other nearby surface-water users consume less water than the VEGP site would with the proposed two new units, and 4) the reduction in the river stage near the VEGP site caused by its withdrawals is expected to be less than 5 cm (2 in.)” The intake canal will be situated perpendicular to the river flow and a canal weir will be located 15 m (50 ft) inside the canal, with a serrated weir wall to reduce entrainment mortality. The installation of the weir wall would also reduce the potential of sturgeon larvae entrainment, since their larvae are demersal, tending to stay near the river bottom.

Chemicals, including biocides, would be added to the cooling tower basins for Units 3 and 4. Biofouling would be controlled using chlorination and/or other treatment methods. Operation of the cooling towers would be based on four cycles of concentration; thus, the levels of solids and organics in the cooling tower blowdown would be approximately four times higher than the ambient or upstream concentrations. Blowdown from the cooling towers would be discharged to a common blowdown sump to provide retention time for settling of solids or to be treated, if required to remove biocide residuals before the water is discharged to the river. Calculations give an estimated in-river dilution factor of 60 to 120 during periods of average Savannah River discharge, depending on the time of year and river flow rate.

In regards to water temperature, the following information comes directly from the DEIS for the ESP: 1) The discharge from the discharge structure would enter the Savannah River at 123.1 meters (404 ft) downstream through a single submerged port, 2) water quality standards for temperature are not to exceed 32.2°C (90°F), and at no time is the temperature of the receiving waters to be increased more than 2.8°C (5°F). The effluent from new Units 3 and 4 would discharge directly into the Savannah River; the maximum downstream distance of the 2.8°C (5°F) above ambient isotherm was estimated to be 29.6 m (97 ft) from the outfall pipe.

Shortnose sturgeon, protected by the ESA, can be found in or near the action area and may be affected by the project. There is no designated critical habitat in or near the project area.

NMFS has identified the following potential effects to shortnose sturgeon and concluded that they are not likely to be adversely affected by the proposed ESP. Possible effects include the risk of injury from construction activities. Due to the species' mobility and the implementation of best management practices, such as the timing of the project (i.e., outside of the spawning season), risk of injury effects will be discountable. Turbidity curtains will be used during all phases of work and will remain in place until the proposed project is complete, and will then be removed. Effects on the species caused by exclusion from and temporary loss of spawning habitat due to construction activities are expected to be insignificant; neither the water depths, substrate bottom type, time of year for construction, nor the shape of the river at this location are conducive to shortnose sturgeon spawning. Shortnose sturgeon generally do not inhabit this section of the Savannah River at this time of year; sturgeon are generally found upstream from the site during the proposed construction months and no spawning studies have observed them in the river adjacent to the Vogtle site.

Other concerns that NMFS has regarding the effects to shortnose sturgeon include the future use of the intake and discharge structures proposed at the site. The potential effect from thermal discharge will be insignificant as it is expected that fish and other organisms would avoid the elevated temperatures, as they can move through this part of the river unencumbered by any structures or physical features that would retain them in the plume; this also reduces the likelihood of cold shock when moving outside of the plume.

The risk of sturgeon impingement within the intake structures will be discountable due to the very small chance of sturgeon being trapped, as detailed above.

Potential effects from chemical effluents will be insignificant due to the fact that "no impacts to the aquatic ecology of the Savannah River from these chemicals [i.e., biocides] have been observed" from operating Units 1 and 2. Discharge from Units 3 and 4 will be similar and thus expected to have insignificant effects on shortnose sturgeon.

Based on the above information, NMFS concludes that this proposed action is not likely to adversely affect shortnose sturgeon; therefore, this concludes your consultation responsibilities under the ESA for species under NMFS' purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action.

We have enclosed additional information on other statutory requirements that may apply to this action, and on NMFS' Public Consultation Tracking System to allow you to track the status of ESA consultations. If you have any questions, please contact Ms. Alexis Meyer at (727) 824-5312 or by e-mail at [Alex.Meyer@noaa.gov](mailto:Alex.Meyer@noaa.gov). Thank you for your continued cooperation in the conservation of listed species.

Sincerely,



*For* Roy E. Crabtree, Ph.D.  
Regional Administrator

Enclosure

File: 1514-22.F.1.FL  
Ref: I/SER/2008/00705

## **Additional Considerations for ESA Section 7 Consultations (Revised 01-18-2008)**

Marine Mammal Protection Act (MMPA) Recommendations: The Endangered Species Act (ESA) section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Contact Ken Hollingshead of our NMFS Headquarters' Protected Resources staff at (301) 713-2323 for more information on MMPA permitting procedures.

Essential Fish Habitat (EFH) Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division (PRD) pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act's (MSA) requirements for essential fish habitat (EFH) consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes; goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system allowing federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants to track the status of NMFS consultations under ESA section 7 and under MSA sections 305(b)2 and 305(b)(4): Essential Fish Habitat. Access PCTS via: [www.nmfs.noaa.gov/pcts](http://www.nmfs.noaa.gov/pcts). Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The Corps Permit Site allows COE permit applicants the ability to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted an ESA section 7 consultation with the COE since the beginning of the 2001 fiscal year (no password needed).

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. E.g., SAJ-2005-123, SAJ-2005-1234, SAJ-2005-12345.

For inquiries regarding applications processed by Corps districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. E.g., AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at [Eric.Hawk@noaa.gov](mailto:Eric.Hawk@noaa.gov). Requests for username and password should be directed to [PCTS.Usersupport@noaa.gov](mailto:PCTS.Usersupport@noaa.gov).