



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
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AUG 20 2012

F/SER31: NB

Mr. Jeremy J. Susco, Acting Chief  
Environmental Review and Guidance Update Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Re: Request to Reinitiate Section 7 Consultation for Atlantic Sturgeon at Brunswick Steam Electric Plant, Units 1 and 2

Dear Mr. Susco:

This responds to your March 26, 2012, letter. You requested National Marine Fisheries Service (NMFS) concurrence with your project-effect determinations under Section 7 of the Endangered Species Act (ESA). The Nuclear Regulatory Commission (NRC) has requested reinitiation of consultation for the newly ESA-listed Atlantic sturgeon at the Brunswick Steam Electric Plant (BSEP). On February 6, 2012, NMFS listed five distinct population segments of the Atlantic sturgeon under the ESA (77 FR 5880; 77 FR 5914). You determined the project may affect but is not likely to adversely affect Atlantic sturgeon. Our findings on the project's potential effects are based on the project description in this response. Changes to the proposed action may negate our findings and may require reinitiating consultation.

The project is located at latitude 33.9577°N and longitude 78.0089°W (NAD83), in Brunswick County, North Carolina, in the Cape Fear River estuary. The BSEP is comprised of two nuclear fueled units that began commercial operations in 1975 (Unit 1) and 1977 (Unit 2). The NRC issued renewed operating licenses for both units on June 26, 2006, which authorizes Carolina Power and Light Company to operate the BSEP through September 8, 2036, for Unit 1 and through December 27, 2034, for Unit 2. BSEP operates a once-through cooling mode by withdrawing water from the Cape Fear River through a three-mile-long intake canal. The intake canal is approximately 300 ft wide, 18 ft deep and located approximately 6 miles north of the mouth of the Cape Fear River. The water from the intake canal is passed through the plant's condensers, sent through a six-mile-long discharge canal, pumped 2,000 ft offshore through subaqueous pipes, and then is discharged into the Atlantic Ocean at a depth of 10 ft below the water's surface. The two nuclear units operate independently, but share a common intake and discharge canal. As part of the operating permit, the national pollutant discharge elimination system (NPDES) limits the amount of water that may be withdrawn from the Cape Fear River to 1,844 cubic feet per second (cfs) from December to March; and 2,210 cfs from April to November; and 2,335 cfs in July, August, and September. BSEP constructed a permanent diversion structure at the mouth of the intake canal in 1982 to reduce the number of large fish, shellfish, and marine debris entering the canal. This diversion structure is



inspected and maintained daily. According to the NRC, there are no records of Atlantic sturgeon being entrained or impinged at the BSEP since the installation of the diversion structure.

The NPDES permit stipulates that discharged water may not exceed 0.8°C above ambient temperatures from June to August or 2.2°C above ambient temperatures from September to May. Inside the 2,000 acre mixing zone, a small area (120 acres at the water's surface and less than 545 square feet at the bottom) may increase up to 3.9°C above ambient temperatures. Outside of the defined mixing zone, water temperatures may not exceed 32°C as measured 3 ft below the surface. Water temperatures at the bottom of the water column (as measured one foot above the ocean floor), may not exceed 7°F for more than 1,000 feet from the discharge point or more than 4 acres total. Water temperatures around the discharge pipe are monitored semi-annually. The thermal plume data provided by the applicant that was recorded since 2010, indicates that the maximum bottom temperature for all the sampling dates was around 22°C (72 °F). Bottom temperatures were on average approximately 3 to 12 °F above ambient temperature depending on season and were confined to a small portion (less than 4 acres) of water located immediately around the discharge point.

NMFS provided a biological opinion for this facility on January 20, 2000, that addressed impacts to shortnose sturgeon and swimming sea turtles. This opinion also provided an incidental take statement for loggerhead, leatherback, green, and Kemp's ridley sea turtles which has not been exceeded since that time. On September 16, 2011, NMFS and U.S. Fish and Wildlife Service issued a final rule changing the listing of loggerhead sea turtles from a single, threatened species to nine distinct population segments (DPSs) listed as either threatened or endangered. This project is located within the Northwest Atlantic Ocean DPS which is listed as threatened. The DPSs were separated based on distinct biological and ecological differences in the populations between these regions. While the previous analysis in the 2000 biological opinion occurred prior to the listing of separate loggerhead DPSs, it focused on the population of loggerhead turtles that is now defined as the Northwest Atlantic Ocean DPS as that was the population being impacted by this project. Hence, the conclusions of that opinion were based upon the impacts to the same population that is now a separately-listed entity. The analysis was completed at a time when loggerhead nesting was in a long-term (25 year) increasing trend; however, the opinion followed a conservative approach and treated the population as stable, since the more recent short-term data at that time had shown no discernible trend (FWRI nesting database). Since the 2000 biological opinion, nesting numbers declined and then started increasing in the past five years resulting in the long-term dataset that once again shows no significant trend. Combining a statistically stable loggerhead nesting population with the fact that the Brunswick plant operations have not substantially changed since the 2000 analysis, and that the last twelve years of turtle capture records for this plant has shown annual loggerhead take levels remaining below those allowed by the take statement, NMFS concludes that the loggerhead effects analysis conducted for the species in the 2000 opinion is representative of the current Northwest Atlantic loggerhead DPS and remains valid. Reinitiation of consultation is not warranted for shortnose sturgeon or sea turtles.

Endangered Atlantic sturgeon<sup>1</sup>, 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 analyzed the routes of potential effects from the proposed project and determined that Atlantic sturgeon are not likely to be adversely affected. Effects include the risk of injury from intake and discharge structures located at the site. Atlantic sturgeon are located within the Cape Fear

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<sup>1</sup> Carolina and South Atlantic DPS

River system as far upstream as the Cape Fear Lock and Dam 1 (river mile 56). Since the project site is located near the mouth of the river and spawning occurs further upstream, potential impacts are only expected to occur to adults and juveniles traversing the river adjacent to the intake canal and those in the vicinity of the discharge pipe within the Atlantic Ocean. With the presence of the diversion structure at the head of the intake canal and the low through-screen velocities of less than 0.6 fps, the risk of Atlantic sturgeon being entrained or impinged would be discountable. The potential effect from thermal impacts at the discharge pipe will be insignificant as it is expected that fish and other organisms would avoid the elevated temperatures in the limited mixing zone area within the open ocean. For instance, shortnose sturgeon in southern systems such as the Cape Fear, Savannah, and Altamaha rivers retreat from freshwater to avoid high summer temperatures<sup>2</sup>. Also, water temperatures at the discharge pipe are lower at the bottom of the water column where sturgeon would be found.

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 attached additional information on other statutory requirements that may apply to this action, as well as information on NMFS' Public Consultation Tracking System (PCTS) that allows you to track the status of ESA consultations. We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions, please contact Nicole Bailey, consultation biologist, at (727) 824-5336 or by e-mail at [Nicole.Bailey@noaa.gov](mailto:Nicole.Bailey@noaa.gov).

Sincerely,



for Roy E. Crabtree, Ph.D.  
Regional Administrator

Attachment

File: 1514-22. M  
Ref: I/SER/2012/01057

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<sup>2</sup> Kynard, B. (1994). Biology and Status of Shortnose Sturgeon *Acipenser brevirostrum*. The International Conference on Sturgeon Biodiversity and Conservation. The American Museum of Natural History July 28 - 30, 1994.

**PCTS Access and Additional Considerations for ESA Section 7 Consultations  
(Revised 7-15-2009)**

**Public Consultation Tracking System (PCTS) Guidance:** PCTS is an online query system at <https://pcts.nmfs.noaa.gov/> that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)(2) and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

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. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE 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. For example: 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).

**EFH Recommendations:** In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division 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 MSA requirements for 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.

**Marine Mammal Protection Act (MMPA) Recommendations:** The 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. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.