

From: [Grange, Briana](#)
To: Bettina.Rayfield@deq.virginia.gov; Janine.Howard@deq.virginia.gov
Subject: FYI: NMFS's EFH Conservation Recommendations for Surry license renewal
Date: Wednesday, January 08, 2020 4:22:00 PM
Attachments: [2019-12-19 NMFS to NRC, EFH Conservation Recommendations.pdf](#)

Hello Bettina and Janine,

I am conducting the essential fish habitat (EFH) consultation related to the proposed license renewal of Surry Power Station in Surry County, Virginia. As part of this consultation, the National Marine Fisheries Service (NMFS) provided recommendations that pertain to the Virginia Pollutant Discharge Elimination System (VPDES) permitting process. I am forwarding the NMFS's recommendations to you for your consideration (see attached letter).

Please do pass these on to the appropriate people within your agency—I thought I would start with you since you submitted comments in November on the NRC's draft environmental impact statement. I am also preparing a response to NMFS, and I will include you on CC.

Feel free to reach out with any questions!

Thank you,

Briana

Briana A. Grange

Conservation Biologist & ESA Consultation Coordinator

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National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
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DEC 19 2019

Ms. Briana Grange
Conservation Biologist & ESA Consultation Coordinator
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Surry Power Station, Units 1 and 2 License Renewal, Draft SEIS and EFH Assessment

Dear Ms. Grange:

We have reviewed sections of the draft supplemental environmental impact statement (SEIS) pertinent to the essential fish habitat (EFH) assessment for the Nuclear Regulatory Commission (NRC) proposed license renewal of Dominion Energy's (Dominion) Surry Power Station (Surry), Units 1 and 2, located along the James River in Surry County, Virginia. The nuclear-powered facility is currently authorized to continue operation until May 2032 (unit 1) and January 2033 (unit 2). The NRC is currently determining whether to issue subsequent renewed licenses for Surry to operate an additional 20 years until May 2052 (unit 1) and January 2053 (unit 2). As part of the National Environmental Policy Act (NEPA) environmental review, NRC has evaluated potential impacts of the Surry Power Station license renewal on essential fish habitat (EFH) and requested to initiate abbreviated EFH consultation. We have reviewed the information provided and recommend that a decision on the relicensing be held in abeyance until the Commonwealth of Virginia has completed its evaluation of the Virginia Pollution Discharge Elimination System (VPDES) permit renewal to ensure that Dominion installs and operates the best available technology (BAT) for adequate aquatic resource protection at the Surry facility.

Project Background

Surry is located along the James River at Gravel Neck approximately 17 nautical river miles upstream of Hampton Roads immediately adjacent the Virginia Department of Game and Inland Fisheries' (VDGIF) Hog Island Wildlife Management Area. The Surry nuclear facility uses a once-through circulating water system for heat dissipation and does not use cooling towers. Rather, heated cooling water is discharged through a discharge canal directly to the James River, approximately 5.7 mi (9.2 km) upstream of the intake. Studies indicate that for the month of August (2013-2017) water passing from the main condenser cooling water loop can increase up to 17 °F (9.4 °C).

Each of Surry's two units requires 840,000 gallons per minute (gpm) ($53 \text{ m}^3/\text{s}$) of river water to supply condensing and service water when operating at full power. Cooling water is withdrawn from the James River via a channel dredged into the river bottom. River water enters a common low-level intake structure consisting of eight 15.3-ft (4.7-m)-wide concrete bays. Each bay contains trash racks, travelling water screens, and a circulating water pump. The system contains a total of 47 screen panels, each of which measuring 14-ft (4.6-m) wide by 2-ft (0.6-m) high with 1/8-inch (0.32-cm) by 1/2-inch (1.3-cm) rectangular screen mesh openings. Trash racks remove



coarse flotsam prior to water entering the low-level intake structure, and traveling water screens prevent juvenile and adult fish and debris from entering the intake water canal. Early life stages of aquatic organisms are impinged onto the travelling screen panels and entrained into the cooling water system.

Magnuson Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies such as the NRC to consult with us on any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect EFH identified under the MSA. The EFH regulations, 50 CFR Section 600.920, outline that consultation procedure.

EFH is defined by the MSA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. The James River has been designated as EFH for various life stages of ten (10) federally managed species including: Atlantic herring (*Clupea harengus*), black sea bass (*Centopristis striata*) bluefish, (*Pomatomus saltatrix*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), winter skate (*Leucoraja ocellata*), red hake (*Urophycis chuss*), summer flounder (*Paralichthys dentatus*) and windowpane flounder (*Scophthalmus aquosus*). EFH includes not only the various life stages of federally managed species and their habitats but also the prey species upon which they feed.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) requires federal agencies to consult with us on activities that affect, control, or modify waters of any stream or bodies of water, to minimize the adverse impacts of such actions on fish and wildlife resources and habitat. The James River is designated a confirmed anadromous fish use area by the Virginia Department of Game and Inland Fisheries (VDGIF) for seven diadromous species including Alewife (*Alosa pseudoharengus*), American shad (*Alosa sapidissima*), blueback herring (*Alosa aestivalis*), hickory shad (*Alosa mediocris*), striped bass (*Morone saxatilis*), yellow perch (*Perca flavescens*) and American eel (*Anguilla rostrata*). A number of these Alosine fish are important forage for several federally managed fish species such as bluefish, summer flounder and windowpane flounder. Actions that reduce the availability of prey species such as these, either through direct harm or capture, or through adverse impacts to the prey species' habitat may also be considered adverse effects on EFH. Time of year restrictions on certain in-water activities, including dredging and water withdrawal, appropriate screening and reduced intake velocities are often recommended by us as a means to protect the migration, spawning, and early life stages of anadromous fish in the James River system.

General Comments

Various elements comprising NRC's EFH assessment are found in several sections of the draft SEIS including Section 3.8.1.4, Section 4.8.1.4 and Appendix C. Staff evaluated several potential stressors to EFH including; 1. Physical removal of habitat through cooling water withdrawal, 2. Physical alteration of habitat through heated effluent, 3. Chemical alteration of habitat through radionuclides and other contaminants in heated effluent, 4. Physical removal of habitat through maintenance dredging, 5. Reduction in the prey base, and 6. Effects from maintenance dredging.

Based on their analysis, NRC staff state in Section 4.8.1.4 that the proposed relicensing of Surry would result in no more than minimal adverse effects on EFH.

We understand that Dominion is preparing environmental studies and analysis to determine whether current infrastructure and operational practices to prevent the entrainment of eggs and larvae of managed species and their prey are sufficient to meet the Clean Water Act 316(b) regulations under the Virginia Pollution Discharge Elimination System (VPDES) program. We also understand that the most recent impingement and entrainment study conducted by Dominion for Surry during the years 2015 and 2016 was reviewed by Virginia Marine Resources Commission (VMRC) and the Virginia Institute of Marine Science (VIMS) which determined the results are incomplete due to the large mesh size used to sample nekton and plankton, including blue crab (*Callinectes sapidus*) megalops and oyster (*Crassostrea virginica*) larvae. Therefore, the mortality of federally managed species, their prey species and diadromous species resulting from impingement and entrainment at Surry cannot be adequately quantified at this time and we are unable to concur with your position that “NRC staff’s line-of-evidence analysis yielded no evidence of noticeable or detectable ecological impairment resulting from impingement of aquatic organisms at Surry.”

EFH Conservation Recommendations

We are unable to concur with your EFH determination that relicensing will result in no more than minimal adverse effect on EFH. Some of the studies and data used to support NRC’s EFH determination are more than 40 years old, with changes in the James River system having occurred over that period of time such as salinity intrusion with increasing sea level. Without comprehensive impingement and entrainment sampling of early life stages of EFH, their prey and anadromous species, we are unable to quantify the potential impacts to EFH including egg, larval and juvenile life stages at this time.

We understand that it is outside the scope of the NRC’s authority under the license renewal process to make a decision or recommendations regarding changes to nuclear power plant cooling systems, other than those involving safety-related issues. While our EFH regulations require us to provide conservation recommendations that may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH, we cannot recommend that agencies take actions beyond their statutory authority. As a result, we understand that measures necessary to avoid or minimize adverse impacts to aquatic resources including EFH such as those listed below are outside the scope of your statutory authority. We hope that these recommendations are considered by Virginia DEQ as they evaluate the renewal of the facilities VPDES permit. They are provided to you to explain our rationale for not concurring with your EFH determination, to support our EFH conservation recommendation that your decision on relicensing be withheld until the VPDES renewal is completed, and to identify our concerns that should be addressed as part of the VPDES renewal process.

Pursuant to Section 305(b)(4)(A) of the MSA, we recommend you adopt the following EFH conservation recommendation to minimize impacts to EFH and other aquatic resources:

- Hold a decision on license renewal in abeyance until the Commonwealth of Virginia completes its renewal of the VPDES permit.

Section 305(b)(4)(B) of the MSA requires you to provide a written response to us within 30 days after receiving our EFH conservation recommendations. The response must be provided to us at least 10 days before the signing of the Finding of No Significant Impact (FONSI) or a Record of Decision, to allow time for dispute resolution if necessary. The response must include a description of measures proposed for avoiding, mitigating, or offsetting the impact of the activity on EFH, as required by section 305(b)(4)(B) of the MSA and 50 CFR 600.920(j). In the case of a response that is inconsistent with our conservation recommendations, you must explain your reasons for not following the recommendations, including the scientific justification for any disagreements with us over the anticipated effects of the action or the measures needed to avoid, minimize, mitigate, or offset such effects.

Please note that a distinct and further EFH consultation must be initiated pursuant to 50 CFR 600.920(j) if new information becomes available or if the project is revised in such a manner that affects the basis of our determination above.

The following recommendations are not EFH conservation recommendations because they fall beyond the statutory scope of the relicensing process. A response to us regarding these recommendations is not required. As stated above, we hope that these measures are considered under the VPDES process to fully evaluate the effects of the operation of the facility on aquatic resources and to minimize adverse effects.

1. Implement best available technology (BAT) in cooling water intake structures including 1-mm wedge wire screens and 0.25 ft./sec. maximum intake velocity to reduce impingement and entrainment of aquatic organisms, including early life stages of anadromous species, EFH species and their prey.
2. Investigate the application of BAT including closed-system cooling and cooling towers to reduce thermal impacts associated with the elevated temperature of cooling water discharge.
3. Conduct seasonally appropriate ichthyoplankton sampling at the intake structures to quantify impingement and entrainment impacts to early life stages of managed species, their prey species, and anadromous species and develop operational procedures accordingly to minimize impacts.
4. Coordinate with us prior to undertaking any maintenance dredging of the intake or discharge channels to determine appropriateness of a time of year restriction based on proposed timing, means and methods of the dredging.

Endangered Species Act

In addition to EFH, federally threatened or endangered species under our jurisdiction including Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and shortnose sturgeon (*Acipenser brevirostrum*) are documented in the project area. Therefore, consultation with our Protected Resources Division under Section 7 of the endangered species act (ESA) is required. Please contact Brian Hopper by phone (410-267-5649) or e-mail (brian.d.hopper@noaa.gov) with questions regarding your obligations under Section 7 of the ESA.

We look forward to your response to our EFH conservation recommendations. If you have any questions please do not hesitate to contact David O'Brien in our Gloucester Point, VA field office at 804-684-7828 (david.l.o'brien@noaa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Chiarella', with a long horizontal flourish extending to the right.

Louis A. Chiarella
Assistant Regional Administrator
for Habitat Conservation

cc: R. Peabody, VMRC
A. Ewing, VDGIF
L. Varnell, VIMS