UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
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Gloucester, MA 01930

MAR 30 2006

Pao-Tsin Kuo, Program Director
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Mail Stop T6-D59
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Assessment of the consequences of License Renewal of Nuclear Plants, regarding Millstone Power Station, Units 2 and 3 (TAC Numbers MC1827 and MC1828) under the essential fish habitat requirements of the Magnuson-Stevens Fishery Conservation and Management Act

Dear Director Kuo:

The National Marine Fisheries Service (NMFS) has reviewed the documentation submitted to us which assesses the request of Dominion Nuclear Connecticut, Inc. to renew their operating licenses (DPR-65 and NPF-49) of their Millstone Point facilities for an additional 20 years. Unit #2 started in 1970 and unit #3 started in 1974. Initial licenses will expire in July 2015 and November 2025, respectively. The two units produce nearly 50% of Connecticut's electric power. The facilities are located on Long Island Sound at Waterford, Connecticut. The two units are authorized to withdraw up to 10 x 10^{10} L/d of saline water from Long Island Sound, surcharge water with a maximum thermal increase of 17.8 ^{0}Celsius above the intake water temperature under normal conditions, and discharge into the Sound.

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act require federal agencies to consult with one another on projects such as this. As this project involves essential fish habitat (EFH), this process is guided by the requirements of NMFS' EFH regulations at 50 CFR 600.905 et seq.. Those regulations mandate the preparation of EFH assessments and generally outline each agency's obligations in this consultation procedure.

Nuclear Regulatory Commission staff and its consultants have been advised by NMFS of fishery issues and consultation obligations associated with the license renewal action. The MSA calls for characterization and evaluation of actions that might adversely impact the EFH of species managed under the MSA. We have previously advised NRC staff of these regulatory responsibilities pursuant to 50 CFR 600.920. We have also informed you that there are 24 species of fish that have EFH designations at and around the Millstone Point Facility (see Attachment "A"). Supplement 22, NRC's programmatic EIS for licensing this nuclear

generating facility, does not provide the required EFH assessment of the consequences of operating the facility, measures to avoid or minimize impacts, or measures to compensate for unavoidable impacts.

General Comments

Long Island Sound, the waters of Niantic Bay and estuary, and Jordan Cove are a highly productive aquatic environment that supports extensive, important living marine resources. Many of the species present are significant both commercially and recreationally, and have been a part of the region's fisheries dating from before the colonization of Connecticut. The Nuclear Regulatory Commission (NRC) prepared a supplemental environmental impact statement (SEIS) to analyze the environmental impacts of this project, as required pursuant to the National Environmental Policy Act (NEPA). That SEIS concluded that continued operation of the Millstone Point facilities will perpetuate avoidable adverse effects to the waters and living marine resources near the project site. The document indicated that pelagic and epi-benthic organisms would be injured and destroyed by either impingement on the traveling screens or during entrainment through the plant cooling system.

NMFS reviewed the initial permit application of Millstone Point Unit 3 in the mid-1970s and concluded that the design, construction, and operation of the cooling water intake structure was likely to exacerbate the existing resource impacts associated with operation of Units 1 and 2. We noted, further, that either the operation of Unit 1 or its removal from service were unlikely to alter significantly the adverse impacts associated with continued operation of Unit 2 and the added impacts from operation of Unit 3. Those conclusions are confirmed with the findings in the SEIS, which provides evidence that the continued operation of Units 2 and 3 creates avoidable adverse impacts on EFH and aquatic resources [Supplement 22, Section 2.2.5.5 (Population Trends Associated with Important Fish and Shellfish Species)].

Project impacts associated with impingement will result in mortality of aquatic organisms by trapping them in one-way water flows leading to exhaustion and other stressful adversities. Entrainment impacts pull organisms such as planktonic eggs and larvae small enough to pass through protective trash racks and screens into cooling systems where they are exposed to sudden pressure changes, abrasion, rapid fluctuations in temperature, and biocides. Further, the proposed license renewal to operate the open cycle cooling process will result in the continued impacts associated with degradation of the area's designated EFH by entraining and physically altering the saline waters within the area landward of Two Tree Island, as well as within Jordan Cove and the Niantic Bay and Estuary complex. Additionally, the document found that license renewal without facility modification will continue to alter the balanced indigenous population of aquatic species found in the area. The document does not address potential EFH avoidance or mitigation measures that might be employed to manage these adverse impacts.

Specific Comments

On Pages 4-10 and 4-11 of the SEIS the authors note the U.S. Environmental Protection Agency's (EPA) publication of final rules in the Federal Register (69 FR 41575) regarding cooling-water intake structures at existing power plants. The discussion reports that licensees may be required to alter the intake structure(s), redesign the cooling system, modify station operation, or take other mitigative measures to reduce entrainment losses due to plant operation. Pages 2-26 to 2-28 of the same document identify that entrainment of early life stages of aquatic species, with special note of winter flounder larvae, may be causing the decline in local populations. Tables 4-4 and 4-5 in the SEIS display estimates of the number of selected finfish eggs and larvae and lobster larvae entrained by the Millstone Point facility as being in the hundreds of million per year (pages 2-30 and 2-31). In the more comprehensive discussion of the Millstone Point entrainment presented on pages 4-11 through 4-22 of the SEIS, the assessment focus and metric for impact characterization implies that stock declines are due to a variety of causes, and not just from the water intake structure. It is important to note that the plant is responsible for a considerable number of egg and larva mortalities, and that the impact can be reduced with alternative cooling methods. This is consistent with the need to address the impacts through avoidance, minimization, and mitigation measures.

Essential Fish Habitat Conservation Recommendations

Our ability to assess impacts on EFH and associated marine resources for this action is handicapped by the lack of the required EFH assessment. Section 305(b)(2) of the MSA requires all federal agencies to consult with NMFS on any action authorized, funded, or undertaken by that agency that may adversely affect EFH. Included in this consultation process is the preparation of a complete and appropriate EFH assessment to provide necessary information on which to consult, and possible avoidance, minimization, and/or mitigation options for any identified adverse impacts on EFH. In conference call discussions with NRC staff and their consultants, we identified the necessity of undertaking an EFH assessment. However, we have not received the required documentation. Supplement 22 provides a characterization of the facility's impact on several target species of aquatic organisms, and depicts the impacts on winter flounder (an MSA managed species with designated EFH at the site) as "moderate," but does not consider the full suite of 24 species with designated EFH found within the impact zone of the Millstone Point facility. Notwithstanding that finding, we are obligated by our regulations to provide EFH conservation recommendations using the best scientific information available.

This portion of Long Island Sound has been designated as EFH under the MSA for red hake, winter flounder, windowpane flounder, king and Spanish mackerel, cobia, long finned squid, short finned squid, surf clam, scup, ocean quahog, spiny dogfish, black sea bass (all life stages), Atlantic butterfish, summer flounder, Atlantic salmon, pollock, Atlantic sea scallops, Atlantic sea herring, bluefish, little skate, and winter skate (juveniles and adults), as well as red fish and sand tiger shark life stages (see attached listing). Based upon information available in Fisheries Management Plans and EFH source documents regarding the 24 species with designated EFH at

this site, we have concluded that the project is having an adverse effect on their EFH by using up to 10 x 10^{10} L/d of saline waters from the Niantic Bay and estuary and adjacent Long Island Sound. Therefore, we recommend pursuant to Section 305(b)(4)(A) of the MSA that the NRC adopt the following EFH conservation recommendations:

1. Require the applicant to assess and implement environmentally friendly alternative cooling strategies. Federal agencies are required to undertake measures designed to avoid, minimize, or mitigate adverse impacts associated with activities that impact EFH that they are funding, authorizing, or implementing. Those requirements coincide with the objectives of Section 316 (b) of the Clean Water Act (which states: "... the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact."). The alternative cooling system evaluations should be comprehensive and include the supplemental effects and benefits of relocating the intake structure for Unit 3 as well as reducing the volume of cooling water needed and/or retro fitting one or more units with closed cycle cooling systems. This recommendation is necessary to address on-going and predicted adverse impacts on EFH and managed species using the entrained water mass proximal to Millstone Point.

2. Require the applicants to submit a complete impact avoidance/minimization /mitigation plan for this project. NMFS requests an opportunity to review any draft mitigation plan for impacts which can be neither avoided nor minimized, and be able to suggest modifications before the final version is approved by the NRC. This recommendation is necessary to ensure that the mitigation plan is technically sound, and fully compensates for the unavoidable impacts of this project. This request is made pursuant to 50 CFR 600.920. .

Please note that Section 305(b)(4)(B) of the MSA requires the NRC to provide NMFS with a detailed written response to these EFH conservation recommendations, including a description of measures adopted by the NRC for avoiding, mitigating, or offsetting the impact of the project on designated EFH. In the case of a response that is inconsistent with NMFS' recommendations, Section 305(b)(4)(B) of the MSA also indicates that the NRC must explain its reasons for not following the recommendations. Included in such reasoning would be the scientific justification for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects pursuant to 50 CFR 600.920(k). Additionally, a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(l) if new information becomes available or the project is revised in such a manner that affects the basis for the above EFH conservation recommendations.

Fish and Wildlife Coordination Act Recommendations

The portion of Niantic Bay, Jordan Cove, and the waters of Long Island Sound immediately adjacent to Millstone Point function as a migratory corridor and residential habitat for numerous species, some of which are managed through the Atlantic States Marine Fisheries Commission. The list includes American lobster (*Homarus americanus*), tautog (blackfish) (*Tautoga onitis*),

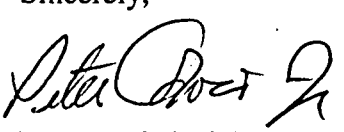
Bay anchovy (*Anchoa mitchilli*), Atlantic menhaden (*Brevoortia tyrannus*), bay scallop (*Argopecten irradians*), and eelgrass (*Zostera marina*). Given the diversity of substrate ranging from sandy/silty to rock outcrop and the beds of eelgrass that predominate in this portion of Long Island Sound, continued use of up to 10 x 10^{10} L/d of water for cooling Units 2 and 3 will further alter, destabilize, and potentially extirpate the balanced indigenous population of aquatic resources in the area. This same conclusion is offered at several points in the Supplemental EIS document regarding Millstone Point. Application of the conservation recommendations provided above for EFH is a necessary and appropriate measure.

Conclusions

The supplemental document concludes that the only "moderate" actionable impact on aquatic resources associated with operation of Millstone Point's Units 2 & 3 is the reduction of the winter flounder population. This conclusion disregards impacts on other aquatic resources without justification. It also disregards the entrainment and impingement data regarding organisms impacted by the operation of the Unit 2 & 3 open cycle cooling systems.

In summary, we recommend that the NRC should evaluate and require the use of alternative cooling methods that reduce adverse impacts associated with operation of the Millstone Point facilities. Further, we recommend that a comprehensive mitigation plan be developed that is based on mitigation of the on-going adverse impacts and any adverse impacts that continue to exist after methods to minimize adverse environmental impacts are installed and operational. We look forward to your response to our EFH conservation recommendations as well as our other recommendations regarding this project. Should you have any questions about this matter, please contact Michael Ludwig at our facility in Milford, Connecticut, or via e-mail at <Michael.Ludwig@NOAA.Gov >.

Sincerely,



Peter D. Colosi, Jr
Assistant Regional Administrator
for Habitat Conservation

cc: US EPA, Reg I
F&WS - RI
CTDEP- OLISP
CTDEP - Water Quality Unit

--millstonepointefh06

ATTACHMENT "A"

Summary of Essential Fish Habitat (EFH) Designation for the waters adjacent to Millstone Point, Waterford, Connecticut

10 x 10 Square Coordinates:

Boundary	North	East	South	West
Coordinate	41° 20.0' N	72° 10.0' W	41° 10.0' N	72° 20.0' W

Square Description (i.e. habitat, landmarks, coastline markers): The waters within the square within the Connecticut River estuary affecting the following: from Poverty Point of Old Lyme, CT., to Millstone Point east of Niantic Bay, and waters south of the following Connecticut towns: Old Lyme, Lyme, Black Hall, Sound View. These waters also affect the following: Niantic Bay, the opening to the Black Hall River, the opening to the Pataguansett River, Black Point, Hatchett Point, and Griswold Point, and Eastern Great Island. Also affected is Plum Island, which is U. S. Government owned and closed to the public, along with other small reefs and islands including the following: Hatchett Reef, N. Brother, S. Brother, Black Buoys, Little Rock, White Rock, Waterford I., Black Rock, Three Foot Rock, and Wigwam Rock.

Species	**Eggs**	**Larvae**	**Juveniles**	**Adults**
Atlantic salmon (*Salmo salar*)			X	X
pollock (*Pollachius virens*)			X	X
red hake (*Urophycis chuss*)	X	X	X	X
redfish (*Sebastes fasciatus*)	n/a			
winter flounder (*Pleuronectes americanus*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)			X	X
Atlantic sea herring (*Clupea harengus*)			X	X
bluefish (*Pomatomus saltatrix*)			X	X
long finned squid (*Loligo pealei*)	n/a	n/a		
short finned squid (*Illex illecebrosus*)	n/a	n/a		
Atlantic butterfish (*Peprilus triacanthus*)		X	X	X
summer flounder (*Paralichthys dentatus*)		X	X	X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristus striata*)	n/a	X	X	X
surf clam (*Spisula solidissima*)	n/a	n/a		

ocean quahog (*Artica islandica*)	n/a	n/a	X	X
spiny dogfish (*Squalus acanthias*)	n/a	n/a	X	X
king mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
cobia (*Rachycentron canadum*)	X	X	X	X
sand tiger shark (*Odontaspis taurus*)		X		
little skate (*Raja erinacea*)			X	X
Winter skate (*Raja ocellata*)			X	X

Definitions

10 Minute Square Tables

The notation "X" in a table indicates that EFH has been designated within the square for a given species and life stage.

The notation "n/a" in the tables indicates some of the species either have no data available on the designated lifestages, or those lifestages are not present in the species' reproductive cycle. These species are:

1. redfish, which have no eggs (larvae born already hatched);
2. long-finned squid, short-finned squid, surf clam, and ocean quahog which are referred to as pre-recruits and recruits (this corresponds with juveniles and adults in the tables);
3. spiny dogfish, which have no eggs or larvae (juveniles born live);
4. scup and black sea bass, for which there is insufficient data for the life stages listed, and no EFH designation has been made as of yet (some estuary data is available for all the life stages of these species, and some of the estuary squares will reflect this).

The Highly Migratory Species' life stages that are summarized within the squares are broken down into neonates, juveniles, and adults. For these species there are no 'egg' designations, and neonates correspond to the heading larvae within each summary table.

n/a = The species does not have this lifestage in its life history (dogfish/ redfish), or has no EFH designation for this lifestage (squids, surf clam, ocean quahog). With regard to the squids, the surf clam, and the ocean quahog, juvenile corresponds with pre-recruits, and adult corresponds with recruits in these species' life histories.