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Daniel S. Morris
Acting Regional Administrator
National Oceanic and Atmospheric Administration
National Marine Fisheries Service - Northeast Region
55 Great Republic Drive
Gloucester, MA 01930-2276
daniel.morris@noaa.gov

**Re: ESA § 7: Nuclear Regulatory Commission Biological Assessment on
Entergy's Pilgrim Nuclear Power Station, Plymouth, Massachusetts**

Dear Mr. Morris,

This is to follow up on previous letters to your office regarding compliance with Endangered Species Act (ESA), 16 U.S.C. §§ 1531-1544 in connection with the 20-year relicensing of Entergy's Pilgrim Nuclear Power Station (PNPS).¹ Please accept this new information for your consideration of PNPS relicensing effects on (1) river herring and shad stocks, and how this new information relates to the Cape Cod Bay ecosystem, and (2) acoustic impacts on North Atlantic right whales.

(1) New information on river herring.

The Atlantic States Marine Fisheries Commission has released a draft of *Management Board Review of the of Stock Assessment Report No. 12-02, Terms of Reference & Advisory Report of the River Herring Stock Assessment, Peer Review*, dated March 2012. This report concludes that that the coast-wide population of river herring is depleted to near historic lows.

The impact of pollution and power station is referenced in relation to sources of mortality. It states,

¹ See, letter from Jones River Watershed Association, dated Feb. 6, 2012, and letters from JRWA and Pilgrim Watch dated April 12, April 13, and April 24, 2012, and April 3, 2012 letter from Whale and Dolphin Conservation Society.

A. Status of stocks: Current and projected, where applicable

The coast wide meta-complex of river herring is depleted to near historic lows. Analysis of trends in abundance, mean length, and maximum age, as well as estimates of total mortality for 52 in-river stocks of alewife and blueback herring for which data were available indicated that 22 were depleted, 1 stock was increasing, and the status of 28 stocks could not be determined because the time-series of available data was too short (see response to ToR 6 for more on status determination). In addition, stock assessments for 3 rivers (the Monument, Nanticoke, and Chowan), representing a broad geographic range, indicate populations are at very low levels. Total mortality rates in all systems explored were higher than the benchmark Z40%, and most were above the Z20% benchmark. The Panel felt a benchmark closer to Z40% was more appropriate, such that mortality is likely too high in all systems where it was estimated. **Determining the relative contribution of various factors to this mortality is difficult given the limited data, but it is likely that a number of factors will need to be addressed, including fishing (both in-river and ocean bycatch), water passageways, water quality, predation, and climate change, to allow for the recovery of river herring.** (emphasis supplied)

As we have shown in previous correspondence, river herring are the third most impinged species at PNPS. The numbers of river herring killed each year are documented in Entergy's reports filed with the EPA.

Entergy's application for relicensing states that it plans to continue the same once-through cooling operations through 2032, and therefore will continue to impact river herring.

Although river herring is a candidate species under the ESA, we request that NMFS follow its own policy that advises providing the action agency and the applicant (Entergy) of potential ESA concerns for candidate species that may be listed in the future.

(2) Acoustic information about impacts on North Atlantic right whales.

According to Entergy's environmental impact statement for Pilgrim, § 2.1.3, the cooling and service water systems uses two vertical, mixed flow, wet-type pumps to supply a continuous supply of condenser cooling water. Each of the two pumps uses a 1450-horsepower pump with a capacity of 155,000 gallons per minute. There are also five service water pumps located in the central wet well of the intake structure. Water is continuously discharged into Cape Cod Bay. At low tide, the discharge is rapid and turbulent (estimated at 8.1 fps). We request that NMFS consider the acoustic impacts on North Atlantic right whales from the operation of the intake pumps, service water pumps, and cooling water discharges.

The leading expert on acoustic impacts on right whales states, “In Cape Cod Bay, man-made noise has reduced right whales' acoustic habitat by as much as 80 percent. Chris Clark, director of Cornell University's Bioacoustics Research Program.”²

Here are references on this issue:

National Research Council (NRC). 2003. Ocean Noise and Marine Mammals. (National Academies Press). 192 pp.

Richardson, W. J., C. R. Greene, Jr., C. I. Malme, D. H. Thomson. 1995. Marine Mammals and Noise. Academic Press. NY.

Hildebrand JA. 2009. Anthropogenic and natural sources of ambient noise in the ocean. Marine Ecology Progress Series 395: 5–20.

Clark CW, Ellison WT, Southall BL, Hatch L, van Parijs SM, Frankel A, Ponirakis D. 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication. Marine Ecology Progress Series 395: 201–222.

Tyack P. L. 2008 Implications for marine mammals of large-scale changes in the marine acoustic environment. J. Mammal. 89, 549–558.

Parks S. E., Clark C. W., Tyack P. L. 2007 Short and long-term changes in right whale calling behavior: the potential effects of noise on communication. J. Acoust. Soc. Am. 122, 3725–3731.

Boyd I, et al. 2008. The effects of anthropogenic sound on marine mammals: A draft research strategy. European Science Foundation. Position Paper no. 13. (12 December 2011; www.esf.org/publications/scienceposition-papers.html)

Please feel free to contact Meg Sheehan, meg@ecolaw.biz, or Pine DuBois, pine@jonesriver.org, if you have any questions.

Very truly yours,

Signed electronically

Margaret Sheehan, Esq.

Anne Bingham, Esq.

² Scientific American. 10/22/10

Rep. Edward Markey
Rep. Bill Keating
Senate President Therese Murray
Senator Dan Wolf
Rep. Thomas Calter
Rep. Sarah Peake
Office of Coastal Zone Management
Whale and Dolphin Conservation Society
Provincetown Center for Coastal Studies
Mass DEP, Ken Kimmel, Commissioner
U.S. EPA, Region 1, Curt Spaulding, Regional Administrator
Nuclear Regulatory Commission, Staff Attorney