Daniel S. Morris
Acting Regional Administrator
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Region
55 Great Republic Drive
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WDCS
Whale and Dolphin Conservation Society

April 3, 2012

Re: ESA § 7 Consultation with Nuclear Regulatory Commission on Entergy's Pilgrim Nuclear Power Station, Plymouth, Massachusetts

Dear Mr. Morris,

On behalf of the more than 70,000 supporters and constituents of the Whale and Dolphin Conservation Society (WDCS) I am writing in regard to your consultation under Section 7 of the Endangered Species Act (ESA), 16 U.S. C. §§ 1531-1544, with the Nuclear Regulatory Commission (NRC) regarding the agency's 2006 Biological Assessment (BA) for Pilgrim Nuclear Power Station (PNPS). Our comments here focus on issues impacting the critically endangered North Atlantic (NA) right whale (*Eubalaena glacialis*). However, these concerns, which largely relate to the rigor of the analysis and the applicant's failure to utilize important data sources, call into question the accuracy of biological data which form the basis of conclusions drawn throughout this document including impacts to the other federally-listed species identified in the BA and the NRC's supplemental 2012 BA on Atlantic Sturgeon. The other species in the 2006 BA are the sei whale, fin whale, humpback whale, sperm whale, loggerhead turtle, green turtle, leatherback turtle, and Kemp's ridley turtle.

We would also like to bring to NMFS' attention the fact that numerous marine mammals, all of which are protected under the Marine Mammal Protection Act, 16 U.S.C. §§ 1371-1421h, are present in the vicinity of the PNPS. These include a number of dolphin species, pinnipeds, harbor porpoises and large whales. All of these may be impacted by the thermal discharges as well as by the discharges of biocides, chlorine and radioactive elements. Furthermore, we can find no actual assessment of acoustic impacts which can also impact marine mammals. We urge NMFS to give serious consideration to these species to ensure that these mammals are not subjected to a "take" under the MMPA or ESA (where applicable). We have several years of data documenting the presence of these species in the PNPS vicinity, which is available upon request.

Critical Habitat for Right Whales

According to the March 26, 2012 letter you sent to Andrew S. Imboden, Nuclear Regulatory Commission's (NRC) Office of Nuclear Reactor Regulation, you stated that, "In the case of Pilgrim, the action area does not overlap with any NMFS-designated critical habitat." (This letter is attached to the filing in NRC Docket No. 50-293-LR, "NRC Staff's Answer to

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Correction and Supplement to Jones River Watershed Association and Pilgrim Watch Petitions to Intervene and Motions to Supplement," dated March 26, 2012 (NMFS March 26, 2012 letter).

This conclusion is an issue for us for two reasons. First, we do not believe the "action area" as defined by ESA regulations at 50 CFR 402.02, is adequately defined or that impacts from PNPS are sufficiently addressed in the 2006 BA. The western border of the currently designated Critical Habitat for NA right whales begins within four miles of the location of PNPS (Figure 1). According to NOAA, the general water flow of Cape Cod Bay "is counter-clockwise, running from the Gulf of Maine south *into the western half of CCB, over to eastern CCB"* (emphasis added) (NOAA 1994). It is unclear then, how you have determined that the more than 510 million gallons of thermal discharges from PNPS each day would not impact Critical Habitat. We note that EPA's NPDES permit for PNPS, page 6, allows a Delta T maximum daily temperature rise of 32F degrees. Page 8 of the permit allows a maximum daily discharge of 120F degrees during thermal backwashes for bio-fouling control, three hours per day, two times a week. We believe that there is additional study and/or data needed to make the conclusion that these thermal discharges, which sometimes contain biofouling agents, will not "overlap" with, or impact, the critical habitat. NMFS should define the "action area" by geographic boundaries, and determine whether the thermal discharges would be drawn by currents and tidal action toward the critical habitat for the NA right whale.

Secondly, we are concerned that your letter does not consider the data and information in the September 16, 2009 "Petition To Revise the Critical Habitat Designation for the Northern Atlantic Right Whale (*Eubalaena glacialis*) Under the Endangered Species Act" (CBD et al. 2009). In October 2010, NMFS determined that the petition is warranted and that a rule with any proposed revisions would be available in the latter part of 2011. While we continue to await NMFS' proposed rule expanding the habitat, we are concerned that the Agency has not considered the information in the Petition and its own related finding to accept the petition. As described by Pace and Merrick (2008), the region in which right whales forage "is much more expansive than the two existing Critical Habitat Areas" and right whale sightings occur west of current Cape Cod Bay boundary and within the vicinity of PNPS (Figure 2). We request that all of the data contained in the Petition and NMFS research leading to its decision to accept the Petition be considered in determining whether PNPS is or is not likely to adversely affect the Northern Right Whale current and proposed critical habitat.

2006 NRC Staff Biological Assessment

We have a number of concerns with the NRC Staff 2007 Generic Environmental Impact Statement, Supplement 29 (PNPS EIS), upon which the March 26, 2012 letter states that it will rely for its ESA § 7 determination. ("In addition, on the call, we requested information on the effects to listed species' prey resources and effects of the thermal plume. In response, your staff provided references to appropriate sections of the Environmental Impact Statement. Based on our initial reviews of the available information, barring any unforeseen circumstances, we may be able to conclude that the continued operation of the Pilgrim facility may affect, but is not likely to adversely affect, any NMFS listed species.") NMFS March 26, 2012 letter, page 1.

As a general matter, applicable to all of the comments here, we believe that in assessing impacts to listed species, NMFS should expand its inquiry for ESA § 7 purposes beyond the narrow frame work the NRC uses under its regulations for making findings under the specialized NRC NEPA process. The ESA requires a far more rigorous and expansive biological assessment than the NRC is allowed to make in its "generic environmental impact statements" that apply to all nuclear reactors, regardless of where they are located. Rather, we believe NMFS should obtain site specific data to make ESA § 7 findings, even if the NRC using its NEPA framework, finds the impacts are "small" or that there is no "significant new information."

The following list of concerns is not all-inclusive, but provides examples of some of the issues of concern in the NRC Staff PNPS EIS that is in part the basis for the 2006 BA. We believe, as a result, the PNPS EIS and the 2006 BA must be revised or supplemented to accurately reflect the species and habitats referenced that may be adversely affected.

Whale Distribution

On page 2-85, the PNPS EIS states that"[s]ix different species of great whales migrate along the Massachusetts coast, with the largest number sighted in the spring on Stellwagen Bank off of the tip of Cape Cod (Entergy 2006a).The most common species seen in this area are minke, fin, and humpback whales (Entergy 2006a). Of the six species, three endangered great whale species are found seasonally in New England waters and have been documented in Cape Cod Bay: the North Atlantic right whale (*Eubalaena glacialis*), humpback whale, and fin whale. In addition, two other endangered species, the sei whale (*B. borealis*) and sperm whale (*Physter catodon*), are known to migrate in New England waters off of the coast of Massachusetts."

On page 4-63, the document states that "Although these species are documented in Cape Cod Bay and/or coastal Massachusetts waters, no whales have been observed in the shallow waters off PNPS or in the intake and discharge areas by applicant's biologists since biological monitoring began at PNPS in the late 1960s (Entergy 2006a)."

NMFS should consider the fact that the mysticete species mentioned in this quote are not "migrating past" the coast of Massachusetts but remain resident in these waters for much of the year. In addition, some species, like NA right whales, can be found off the coast of Massachusetts year round (Figure 3). This further highlights the need for a geographic definition of the "action area." Instead of identifying the "action area" with geographic boundaries, the NRC staff BA seems to have accepted Entergy's early verbiage in its relicensing application Environment Report which talks about whether the species are "in the vicinity of PNPS" for ESA § 7 purposes. "In the vicinity" is a phrase that has little utility for an effort to determine whether PNPS relicensing is likely to adversely affect endangered species and critical habitat.

We also request clarification as to what area specifically represents the "shallow waters off PNPS" and the details of the "biological monitoring" to which the PNPS EIS refers. According to NOAA's Sightings Advisory System, right whales have been found in the western portions of Cape Cod Bay including in close proximity to the Plant (Figure 4). On December 30, 2011,

sightings of right whales were documented within several hundred feet of Rocky Hill Road, the street on which PNPS is located (WDCS unpublished data).

Cumulative Impacts

The PNPS EIS states that "Cumulative impacts on the aquatic food web potentially could include reductions in the abundance of important phytoplankton and zooplankton species in the vicinity due to their entrainment in the cooling systems or from exposure to the heated discharges. This could potentially lead to effects on other species in the food web. However, based upon the review conducted by the NRC staff, there is no evidence that the operation of the PNPS cooling system has had an impact on phytoplankton or zooplankton communities, or any resultant effects on the aquatic food web, in Cape Cod Bay."

It is unclear as to how, or by whom, the determination was made that the cooling system has not impacted zoo or phytoplankton communities. No studies are cited for this conclusion and the only reference is a statement quoted from NRC stating "Entrainment of phytoplankton and zooplankton has not been found to be a problem at operating nuclear power plants and is not expected to be a problem during the license renewal term." This broad conclusion is not specifically attributed to PNPS. Based on the NRC statement, the EIS goes on to say that, "The staff has not identified any new and significant information during its independent review of the PNPS ER, the site visit, the scoping process, review of monitoring programs, evaluation of other available information, or consideration of public comments. Therefore, the staff concludes that there would be no impacts of entrainment of phytoplankton and zooplankton during the renewal term beyond those discussed in the GEIS."

Moreover, we have reviewed one of Entergy's "Marine Ecology Study" reports required to be produced by its Clean Water Act NPDES permit. We reviewed the 2010 annual plan, and we note that in it Entergy only considers entrainment for fish eggs and larvae, not for phyto or zooplankton. Therefore, there are no data indicating impingement rates of Calanus copepods, the primary prey item for endangered right whales (Baumgartner et al. 2003). Furthermore, Calanus copepods have a preferred thermal environment from below 0 °C to 16 °C (Lenz et al. 2005) and are unlikely to survive the 27-32F water temperature increase that results from the outflow of the PNPS as reported in the EIS, or the 120F water temperature during the bi-weekly thermal backwashes allowed under the NPDES permit.

We are bothered that the EIS is not clear on the qualifications of the staff or the methods or sources used to make many of the key determinations in this document. According to the EIS, "Cumulative impacts on the aquatic food web potentially could include reductions in the abundance of important phytoplankton and zooplankton species in the vicinity due to their entrainment in the cooling systems or from exposure to the heated discharges. This could potentially lead to effects on other species in the food web. However, based upon the review *conducted by the NRC staff*, there is no evidence that the operation of the PNPS cooling system has had an impact on phytoplankton or zooplankton communities, or any resultant effects on the aquatic food web, in Cape Cod Bay." [emphasis added] Again, there appear to be no citations backing up this claim or the qualifications of the NRC staff that made this determination.

According to the North Atlantic Right Whale Recovery Plan (NOAA 2004), prey impacts leading to "*shifts in community structure and productivity may alter the distribution and occurrence of foraging right whales in coastal habitats, as well as affecting their reproductive potential.*" These potential impacts are not considered by the applicant. We request that NMFS written ESA § 7 concurrence provide citations to monitoring data that has been done to document the impact on phytoplankton and zooplankton communities in Cape Cod Bay from PNPS. We believe that NMFS ESA § 7 finding should be based on a consideration of the effects of PNPS operation on phytoplankton and zooplankton over the past 40 years, and should project the impact for the next 20 years. The 20 year projection should include the impacts of climate change on Cape Cod Bay and how this would impact phytoplankton and zooplankton. Monitoring data showing the phytoplankton and zooplankton communities prior to PNPS operations, which began in 1972, should be looked at for a baseline.

Additionally, there are no considerations for the entrainment or other impacts presented by either of the offshore LNG facilities in Massachusetts Bay. According to the DEIS for the Northeast Gateway Deepwater Port License, copepod entrainment and increased thermal discharge would occur (Docket Number: [USCG-2005-22219]). These are federally permitted actions which we believe occur within the vicinity of PNPS, particularly as currents entering Cape Cod Bay will bring in water that has been impacted by these facilities. The cumulative impact posed by PNPS must be considered.

Acoustic Impacts

We believe that the 2006 BA should identify, document, and assess acoustic effects from PNPS and determine whether they are likely to adversely affect any of the endangered, threatened, and candidate species and critical habitat, and proposed critical habitat under NMFS jurisdiction. According to the PNPS EIS, "noise has not been found to be a problem at operating plants and is not expected to be a problem at any plant during the license renewal term. The staff has not identified any new and significant information during its independent review of the PNPS ER, the site visit, the scoping process, evaluation of other available information, or consideration of public comments. Therefore, the staff concludes that there would be no impacts of noise during the license renewal term beyond those discussed in the GEIS." However, recent data have shown that humpback whales were reacted to an acoustic source 200km away from them (Risch et al. 2012). As a result, we strongly urge NOAA to consider any underwater sounds generated by PNPS operations such as the cooling water intake pumps, thermal backwash operations, and discharges. Not only should acoustic impacts on the proposed critical habitat and the current critical habitat should be addressed but those to individual ESA-listed and MMPA-protected species should also be addressed.

References and Citations

We question the references used throughout the PNPS EIS and the BA document that have led to the ESA § 7 determinations that were made. For example, Entergy (2006a) and Short and Michelin (2006) are frequently used citations when referencing whale distribution. The former is the Entergy's license renewal application and the latter is a "Summary of Marine Mammal Observations during 2005 Surveys. Boston: Massachusetts Water Resources Authority. Report

ENQUAD 2006-04. P17". Information on sand lance and the distribution of marine mammals are a from a very generalized webpage, not peer reviewed publications (http://www.coastalstudies.org/what-we-do/stellwagen-bank/fish_bony.htm). We do not believe that these are sufficient resources for this document. The Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. § 1856(b), standard 2, the Marine Mammal Protection Act require use of the best scientific and commercial data available when making decisions on conservation and management. The Endangered Species Act itself requires the use of "the best scientific and commercial data available" when undertaking consultations and preparation of Biological Assessments (16 USC§1536(c)). We do not believe that the NRC Staff 2006 BA assessment of impacts on endangered species has met this test.

We request that all of the information contained here be considered by NMFS in making its ESA § 7 determination on the NRC Staff 2006 BA and 2012 supplemental BA, and that the issues we raise here be addressed in NMFS written concurrence with the BAs.

It is critical that NMFS conduct a thorough ESA § 7 Consultation with Nuclear Regulatory Commission on Entergy's Pilgrim Nuclear Power Station, Plymouth, Massachusetts. The year round distribution of right whales and other protected species must be considered. Cumulative impacts must be adequately addressed to fully evaluate the risk to the marine environment, and most specifically right whales.

Sincerely,

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Figure 1. Distance from PNPS to Boundary of NA Right Whale Critical Habitat

Figure 2. Northeastern U.S. waters including the existing Cape Cod Bay and Great South Channel Critical Habitat. Small dots represent all right whale sightings in the NARWC sightings database analyzed. From Pace and Merrick (2008).

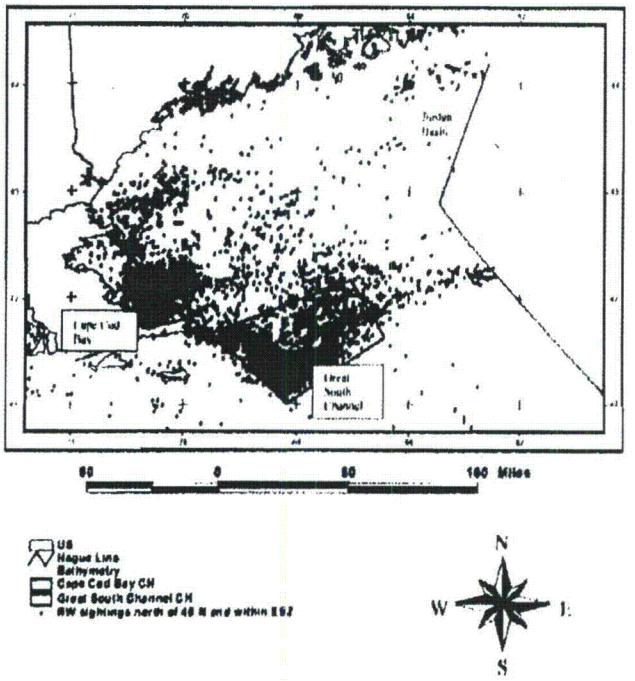


Figure 3. Average NARWC Whale Data (All Months, 1978-2010) from Industrial Economics, North Atlantic Right Whale Consortium Whale Data (1978-2010) as prepared for NMFS 1.25.2011

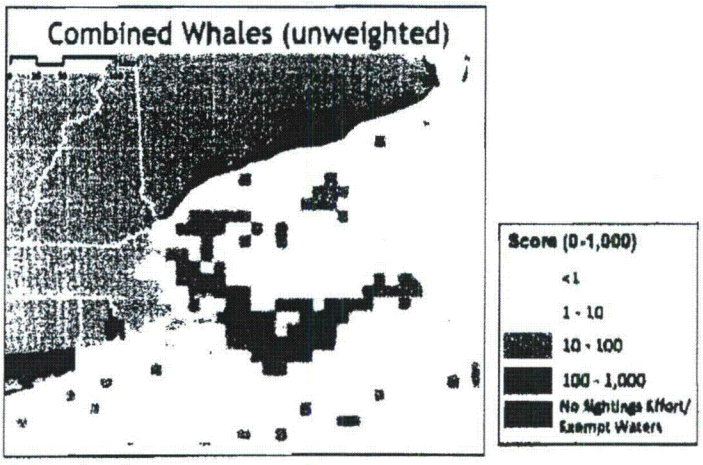
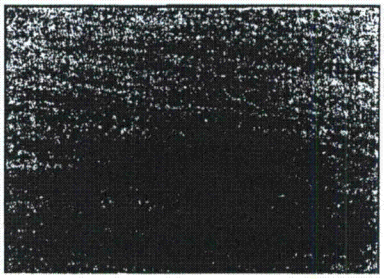
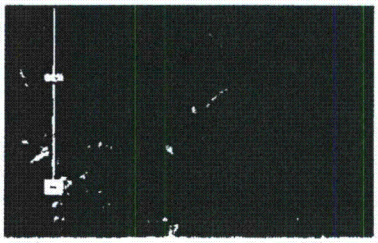


Figure 4. December 30, 2012, image obtained from shore at Rocky Hill Road, WDCS.





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Risch D, Corkeron PJ, Ellison WT, Van Parijs SM (2012) Changes in Humpback Whale Song Occurrence in Response to an Acoustic Source 200 km Away. PLoS ONE 7(1): e29741. doi:10.1371/journal.pone.0029741