

March 22, 2013

John K. Bullard, Northeast Regional Administrator  
U.S. Department of the Interior  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Region  
55 Great Republic Drive  
Gloucester MA 01930-2276

Dr. Amy Hull, Acting Chief  
Environmental Review and Guidance  
Update Branch  
Division of License Renewal  
Office of Nuclear Reactor Regulation  
Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**Re: Request to Reinitiate ESA Section 7 Consultation Related to Operation of the Pilgrim Nuclear Power Station in Plymouth, MA**

Dear Mr. Bullard and Dr. Hull,

Earthrise Law Center (Earthrise), on behalf of Jones River Watershed Association (JRWA) hereby requests that the National Marine Fisheries Service (NMFS) and the Nuclear Regulatory Commission (NRC) reinitiate consultation under Section 7 of the Endangered Species Act, 16 USC § 1536, related to the licensing and operation of the Pilgrim Nuclear Power Station (PNPS) in Plymouth, Massachusetts. By letter dated May 17, 2012 (NMFS Concurrence), NMFS concluded informal consultation with the NRC regarding the relicensing of PNPS with a “not likely to adversely affect” finding for all species under NMFS jurisdiction, including North Atlantic right whales (*Eubalaena glacialis*). NMFS Concurrence at 30. For the reasons explained below, that consultation must be reinitiated based on new information revealing “effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.” 50 C.F.R. § 402.16; *see also Sierra Club v. Marsh*, 816 F.2d 1376, 1388 (9<sup>th</sup> Cir. 1987). Specifically, the occurrence, in January 2013, of a mother right whale and her calf within the PNPS action area triggers the requirement to reinitiate ESA Section 7 consultation.

**Factual Background**

**ESA Consultation Related to Relicensing of Pilgrim Nuclear Power Station**

On May 25, 2012, NRC reissued Entergy’s operating license for PNPS for 20 more years. As part of the relicensing process, NRC engaged in Section 7 ESA consultation with NMFS with respect to several species of federally endangered marine mammals, including North Atlantic right whales.<sup>1</sup> By letter dated May 17, 2012, NMFS concluded informal consultation with NRC,

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<sup>1</sup> The consultation process was flawed in many respects that are beyond the scope of this request to reinitiate consultation. By making this request to reinitiate consultation based on new information not previously considered, JRWA does not waive its rights to challenge the

Kevin Cassidy  
Staff Attorney

agreeing “that the continued operation of Pilgrim may affect, but is not likely to adversely affect” any ESA-listed species. NMFS Concurrence at 2. In reaching its conclusion, NMFS recognized that the “[i]ntake and discharge of water through [PNPS’s] cooling system would not occur but for the operation of the facility pursuant to a renewed license; therefore, the effects of the cooling water system on listed species and any designated critical habitat are effects of the proposed action.” *Id.* at 3. According to NMFS, potential effects on listed species include “exposure to pollutants, *including heat.*” *Id.* at 7 (emphasis added). NMFS defined the action area as including “the intake area and the region within Cape Cod Bay where effects of the thermal plume are experienced.” *Id.* at 3. NMFS assumed the maximum surface area where increased water temperatures are experienced to extend approximately 1.3 miles from PNPS’s discharge canal, and the maximum bottom area to experience increased temperatures to be 8.4 acres. *Id.* Accordingly, NMFS limited the action area to an area within 1.3 miles from the discharge canal.<sup>2</sup>

NMFS considered the effects of PNPS relicensing on right whales, generally, including direct effects from the thermal plume such as stress that may cause injury or mortality or avoidance behavior. *Id.* at 18. Of the thousands of recorded sightings of individual right whales in Cape Cod Bay, NMFS “identified six sighting records (five definite, one probable) of 12 right whales within approximately two miles of the Pilgrim facility.” *Id.* at 4. None of these sightings involved mother-calf pairs or individual right whale calves. *See* Asmutis-Silvia Decl. ¶ 18 (attached with exhibits and incorporated by reference).

Regarding the effects of increased temperature caused by PNPS’s thermal plume, NMFS assumed right whales occurring in the western part of Cape Cod Bay “would avoid waters heated to above 21.8° C by swimming under or around them” and that because the NMFS-estimated area of the plume was extremely small, “any avoidance will not result in any disruption or delay in essential behaviors that these species may be carrying out in the action area, including foraging, migrating or resting.” NMFS Concurrence at 18. Because there had been no sightings of mother-calf pairs or individual right whale calves near PNPS, however, NMFS did not consider the avoidance capabilities of nursing right whale calves and their mothers.

While NMFS determined that consultation with NRC could be concluded with a “not likely to adversely affect” finding, it also stated that “[i]f any whales . . . are observed at or near Pilgrim . . . this should be immediately reported to [NMFS].” *Id.* at 30-31. NMFS also stated that “[a]s a condition of their existing license, Entergy must report to NRC any observations of listed species.” *Id.* at 9.<sup>3</sup>

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consultation process in other forums.

<sup>2</sup> JRWA believes the area where the effects of the thermal plume are experienced is larger than NMFS assumes. However, as explained below, because the whales were observed within the action area defined by NMFS for the purposes of consultation, JRWA accepts, without conceding its accuracy, NMFS’s assumption regarding the extent of the effects of the thermal plume.

<sup>3</sup> NMFS does not cite to a particular license condition for this assertion, and JRWA has been

### **Occurrence Near PNPS of a Right Whale Mother-Calf Pair in January 2013**

On January 12, 2013, staff from Whale and Dolphin Conservation (WDC) responded to a call from local fisherman reporting what they believed to be a pilot whale in Plymouth Harbor. Asmutis-Silvia Decl. ¶ 7. After receiving authorization from NMFS to approach the whale, WDC determined that it was actually a North Atlantic Right Whale and her calf of the year. *Id.* The pair was observed in relatively shallow water (29-59 feet), with the calf almost constantly at the surface. *Id.* ¶ 9. Results from an aerial survey conducted by Provincetown Center for Coastal Studies (PCCS) identified the mother right whale as Wart, last seen in 2010 when scientists disentangled her from fishing gear she had been carrying for two years. *Id.*

On January 17, Wart and her calf were photographed within 0.5 miles of the shore near Manomet, MA. *Id.* ¶ 11. Three days later, the U.S. Army Corps of Engineers temporarily closed the Cape Cod Canal when the pair was located by the breakwater at the east end of the Canal. *Id.* On January 21, a PNPS security officer notified WDC that Wart and her calf were in close proximity to the breakwater within the exclusion zone of the plant. *Id.* ¶ 12. The exclusion zone extends approximately 500 yards from the end of the discharge canal, so it is well within the NMFS-defined action area. Later that same day, researchers from PCCS, NOAA's Northeast Fisheries Science Center, MA Department of Marine Fisheries, and WDC located Wart and her calf in approximately five meters of water off Gurnet Point at Plymouth's outer harbor. *Id.* ¶ 13. While this is the last confirmed sighting of Wart in Cape Cod Bay, scallop fishermen reported what was believed to be Wart and her calf off Race Point, Provincetown, on January 29. *Id.* ¶ 16. The calf, which was no more than two weeks old when first observed, is Wart's first calf in eight years. *Id.* ¶ 10. Furthermore, this is the first mother and calf right whale sighting in Cape Cod Bay in January in 27 years and may be the earliest documented right whale birth in the Northeast Region. *Id.* ¶ 17. This is also the first documented sighting of a mother-calf pair of right whales near PNPS. *Id.* ¶ 18.

### **Requirement for Reinitiation of Consultation**

Under 50 C.F.R. § 402.16(b), reinitiation of consultation is required “[i]f new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.” *See also* NMFS Concurrence at 30. The occurrence of a mother right whale and a newborn calf in the near shore vicinity of PNPS is such new information.

North Atlantic right whales were listed as endangered on June 2, 1970. 35 Fed. Reg. 8495. It has been called one of the “most endangered species in the world” because only approximately 500 individual right whales are believed to exist today. *Report to the North Atlantic Right Whale Consortium*, November 2012. NOAA Fisheries has concluded that the “*loss of even a single individual* may contribute to the extinction of the species” and “if current trends continue, the

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unable to locate this condition in Entergy's operating license.

population could go extinct in less than 200 years.” 60 Fed. Reg. 30,857, 30, 858 (June 1, 2004) (emphasis added); NOAA Fisheries, Biological Opinion re: Reinitiation of Consultation on the Federal Lobster Management Plan in the Exclusive Economic Zone (June 14, 2001), at 102 (“even the loss of one right whale may reduce appreciably the survival and recovery of the species”). A single calf is significant to the species as a whole, given the species’ low reproductive rate and significant rate of failure to thrive. In one year, for example, the entire North Atlantic right whale population produced just one calf, and the average number of calves per year is approximately 12. *See* Recovery Plan for North Atlantic Right Whale (2004 Revision), at IE-1. Kraus (1990) estimated an average mortality rate of 17 percent per year in first-year right whales.<sup>4</sup>

As part of its consultation with NMFS regarding federally listed endangered and threatened marine species, NRC conducted a Biological Assessment, which appears in Appendix E of NRC’s Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Pilgrim Nuclear Power Station (NUREG-1437, Supplement 29, Vol. 2) (July 2007) (hereinafter “BA”). Under Section 5.0, Evaluation of Federally Listed Endangered and Threatened Species, NRC considered the effect of PNPS operations on ten federally listed marine species, including North Atlantic right whales. NRC reported that since 1969, when the applicant began monitoring aquatic communities in western Cape Cod Bay, “[n]o Federally endangered or threatened species have ever been observed in Cape Cod Bay near PNPS, or in the facility intake and discharge areas.”<sup>5</sup> BA at E-66. Based in part on the non-occurrence of right whales near PNPS, NRC staff determined “that continued operation of PNPS over the 20-year renewal period would have *no effect* on the North Atlantic right whale.” *Id.* at E-70 (emphasis added). As discussed above, as of January 2013, an endangered right whale and her newborn calf now have been observed near PNPS and within the “action area” as defined by NMFS.

Neither NRC nor NMFS considered the effects of continued PNPS operations on a nursing right whale mother and newborn calf. *See* Asmutis-Silvia Decl. ¶ 15 (“given the calf’s age and the close proximity to its mother, it is highly likely nursing was occurring”). Although NMFS considered certain aspects of the presence of right whales in western Cape Cod Bay in its “not likely to adversely affect” determination, the occurrence of a nursing right whale and her calf in the action area constitutes new information that may affect right whales in a manner or to an extent not previously considered. First, NMFS did not consider essential behaviors that now have been observed occurring in the action area: nursing and other mother-calf interactions. Second, NMFS’ determination did not consider the effects of the action on individual right whale calves, including the tendency of right whale mothers and calves to spend more time at or near the surface (Baumgartner and Mate 2003)<sup>6</sup>, and thus being potentially unable (or unwilling in the

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<sup>4</sup> Kraus, S.D. 1990. Rates and potential causes of mortality in North Atlantic right whales (*Eubalaena glacialis*). *Marine Mammal Science* 6(4):278-291.

<sup>5</sup> As NMFS pointed out in its concurrence letter, since 1997 there have been six sightings (five confirmed, one probable) of 12 right whales within two miles of PNPS. None of those sightings, however, included a mother-calf pair. *See* Asmutis-Silvia Decl. ¶ 18.

<sup>6</sup> Baumgartner, M. F., and B. R. Mate. 2003. Summertime foraging ecology of North Atlantic

case of a mother whale that does not want to leave her calf) to avoid increased surface temperatures.<sup>7</sup>

Although NMFS included some analysis of the action's effects on right whales, NMFS did not consider the potential impairment of essential nursing behaviors of a mother-calf pair. This was not an oversight on NMFS's part; rather it was because these behaviors had not, until January 2013, been observed in the action area near PNPS so there was no reason for NMFS to consider them. NMFS concluded that "avoidance [of the thermal plume from PNPS] will not result in any disruption or delay in any essential behaviors that these species may be carrying out in the action area, *including foraging, migrating or resting.*" NMFS Concurrence at 18 (emphasis added); *see also id.* at 30 ("Right whales use the waters of Cape Cod Bay for foraging."). Additionally, NMFS concluded that energy expenditure resulting from avoidance will not have an effect on right whale physiology or "any *future* effect on growth, reproduction, or general health." *Id.* (emphasis added). As NMFS's determination was predicated on the fact that only *individual* right whales, as opposed to mother-calf pairs, presently use the action area, the analysis only considered the potential impact on the behavior of and physiology of individuals, such as foraging and migrating. Even assuming NMFS has accurately characterized the thermal plume, NMFS did not consider the possibility of or attending impacts of use by right whales of the action area for nursing. The occurrence, for the first time, of a mother-calf pair in close proximity to the breakwater by PNPS within the action area requires NMFS to reinitiate consultation to consider the direct and indirect effects of the PNPS thermal plume on right whale nursing and other essential mother-calf behaviors.

Additionally, NMFS did not consider the potential impacts of the thermal plume on individual right whale calves. NMFS, assuming that avoidance behavior occurs at temperatures of 21.8 °C, found that water would be discharged at temperatures exceeding the thermal tolerance of right whales even in winter.<sup>8</sup> NMFS Concurrence at 18. NMFS found that regarding "the relatively small subset of right whales in Cape Cod Bay that travel to the western part of the Bay, we expect that right whales would avoid waters heated to above 21.8 °C by swimming under or around them." *Id.* However, until January 2013, the "small subset of right whales" that travelled to the western part of Cape Cod Bay did not include mother-calf pairs or individual right whale calves. This is meaningful with respect to NMFS's assumptions and conclusions related to the effects of the thermal plume because right whale mother-calf pairs spend significantly more time at or near the surface (Baumgartner and Mate 2003). During the January 12 and January 21 sightings, Wart's calf remained at the surface almost constantly. *See* Asmutis-Silvia Decl. ¶ 14. It is possible then that calves may be unable or unwilling to avoid surface plume temperatures in

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right whales. Marine Ecology Progress Series 264:123-135.

<sup>7</sup> With respect to newborn calves, the only effects of continued operation of PNPS that NMFS even arguably considered were the potential for future impingement of whales at Pilgrim. *See* NMFS Concurrence at 9.

<sup>8</sup> Again, for the purposes of this reinitiation request, JRWA accepts—without conceding its correctness—NMFS's assumption regarding the temperature at which right whale avoidance behavior may occur.

the same manner as adult whales can. This possibility is particularly concerning given that the thermal plume is “essentially confined to the surface layer” at high tide, when the plume is at its largest. NMFS Concurrence at 16. Further, given the shallow depths in which the mother-calf pair was observed near PNPS, it is unlikely, even if the mother-calf pair desired to engage in avoidance behavior, that there was sufficient thermal stratification. Reinitiation of consultation is thus necessary to consider the potential effects of the thermal plume on individual right whale calves and mother-calf pairs.<sup>9</sup>

### Conclusion

For all of the above reasons, we request that NRC and NMFS reinitiate ESA Section 7 consultation related to the continued operations for the next 20 years of PNPS. We look forward to your prompt reply. If you have any questions please contact me.

Best regards,



Kevin Cassidy  
Earthrise Law Center

Cc: Pine duBois, JRWA (via email)  
Bruce K. Carlisle, MA Office of CZM (via email)  
David Webster, U.S. EPA (via email)  
Margaret E. Sheehan, EcoLaw (via email)  
Julie Williams, NOAA OGC (via email)  
Melissa Arrighi, Plymouth Town Manager (via email)

Encl.

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<sup>9</sup> The new information of a mother-calf pair occurring in the action area also requires a re-examination of whether the avoidance behavior NMFS expected for whales constitutes “take” as defined by the ESA. NMFS concluded that it did “not anticipate any avoidance-related effects to listed species from the thermal plume to rise to the level of take” (NMFS Concurrence at 22), but, as discussed above, NMFS did not consider the thermal plume’s potential effects on mother-calf pairs or individual newborn calves, including whether avoidance-related effects would rise to the level of “take.”

## DECLARATION OF REGINA ASMUTIS-SILVIA

I, REGINA ASMUTIS-SILVIA, declare as follows:

1. I currently reside in Plymouth, Massachusetts, where I have lived for 19 years.
2. I currently am the Executive Director (North America) of Whale and Dolphin Conservation (WDC), where I have been employed for the last seven years.
3. Whale and Dolphin Conservation was established in 1987 and is dedicated to the conservation and welfare of all whales, dolphins and porpoises (also known as cetaceans). WDC North America is based in Plymouth, Massachusetts.
4. I have a Masters of Science Degree in Biology, and I have researched and worked toward the conservation of North Atlantic right whales in the wild for more than 20 years. I am a member of the Atlantic Large Whale Take Reduction Team where I advocate for fishing practices that will reduce the risk of entanglement to large whales, including the critically endangered right whale.
5. I chaired the Marine Mammal Behavioral Disturbance and Large Whale Entanglement Working Groups and represented the Conservation Seat on the Stellwagen Bank National Marine Sanctuary's Ship Strike Working Group. In addition, I am a member of the Right Whale Consortium, International Fund for Animal Welfare's Marine Mammal Rescue, the New England Aquarium Stranding Network, and provide marine observers to Battelle while they are conducting water sampling cruises in Massachusetts and Cape Cod Bays.
6. I have a 100-ton USCG near coastal Master's license and have worked as a mate and captain on whale watching and research cruises.

7. On January 12, 2013, local fishermen reported what they believed to be a single 12-foot pilot whale in Plymouth harbor and indicated the animal had been in the outer harbor for several days. Staff from WDC, including myself, responded by vessel and determined that the sighting was of a small North Atlantic right whale. After receiving authorization from the National Marine Fisheries Service (NMFS) to approach, WDC confirmed it was actually two right whales, a mother and calf of the year. *See Exhibit 1* (photograph of right whale).
8. Researchers at the Provincetown Center for Coastal Studies (PCCS) and the New England Aquarium estimated the calf was no more than two weeks old when first observed.
9. When I observed the whales on January 12<sup>th</sup>, the pair was in relatively shallow water (29-59 feet). While the calf remained almost constantly at the surface, the mother rarely surfaced and, when she did, little but her head was visible. Due to the behavior of the animals and the gray conditions, the crew was unable to determine if injuries or gear were present. As a result, an aerial survey team from PCCS was enlisted to photograph the pair. The whales were determined to be gear free and PCCS identified the mother as Wart, a whale last seen in 2010 when she was disentangled from fishing gear she had been carrying for roughly two years.
10. Wart was first sighted in 1981 and she is known to have given birth to at least six calves (1982, 1987, 1990, 1994, 2001, and 2005) prior to her current newborn calf.

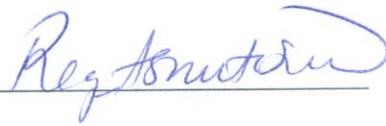
11. Five days after the initial sighting, on January 17, 2013, WDC staff photographed the pair from land, within 0.5 miles of shore off Manomet (central Plymouth), MA. *See Exhibit 2 (Google Earth Map Marking Sightings)*. The U.S. Army Corps of Engineers issued a temporary closure of the Cape Cod Canal on January 20<sup>th</sup> when the pair was located by the breakwater at the east end of the Canal.
12. On January 21, 2013, a security officer from the Pilgrim Nuclear Power Station (PNPS) notified WDC via telephone call that Wart and calf were in close proximity to the breakwater within the “exclusion zone” of the plant. *See Exhibit 2*. My understanding of the “exclusion zone” is that it extends approximately 500 yards out from PNPS’s discharge canal. From reviewing depth charts, the sighting of the whales in close proximity to the breakwater would mean they were in approximately 11 to 27 feet of water at the time.
13. On the afternoon of January 21<sup>st</sup>, researchers from PCCS, NOAA’s Northeast Fisheries Science Center, MA Department of Marine Fisheries, and WDC located Wart and her calf in approximately 16 feet of water off Gurnet Point at Plymouth’s outer harbor. *See Exhibit 2*. No obvious health concerns were noted though zooplankton samples obtained by PCCS appeared to be insufficient for foraging. Water temperature in the harbor was, at least, 10 degrees C lower than off Fernandina Beach, FL, a typical right whale calving habitat.
14. During WDC observations of Wart and her calf, the calf spent nearly all of its time at or near the surface. This is consistent with studies that have documented that calves and mother-calf pairs spend significantly more time at the surface than other whales. *See, e.g., Baumgartner, M. F., and B. R. Mate. 2003. Summertime*

foraging ecology of North Atlantic right whales. Marine Ecology Progress Series 264:123-135.

15. I and other WDC staff also observed the calf swimming in a nursing position next to its mother. Although nursing was not directly observed, given the calf's age and the close physical proximity to its mother, it is highly likely nursing was occurring.
16. While the last confirmed sighting of the pair was on the 21<sup>st</sup>, scallop fishermen later reported what was believed to be Wart and her calf off Race Point, Provincetown, on January 29<sup>th</sup>. No additional sightings have been obtained since that time.
17. This is the first mother and calf right whale sighting in Cape Cod Bay in January in 27 years. (A. Knowlton, pers.comm). Also, it may be the earliest documented birth in the Northeast Region. See Patrician, et al. 2009. Evidence of a North Atlantic right whale calf (*Eubalaena glacialis*) born in northeastern waters. Marine Mammal Science 25(2):462-477.
18. From my review of available NOAA right whale sighting records for Cape Cod Bay, this is the first documented mother-calf pair of right whales sighted near PNPS.

Executed on March 21, 2013, at Plymouth, Massachusetts.

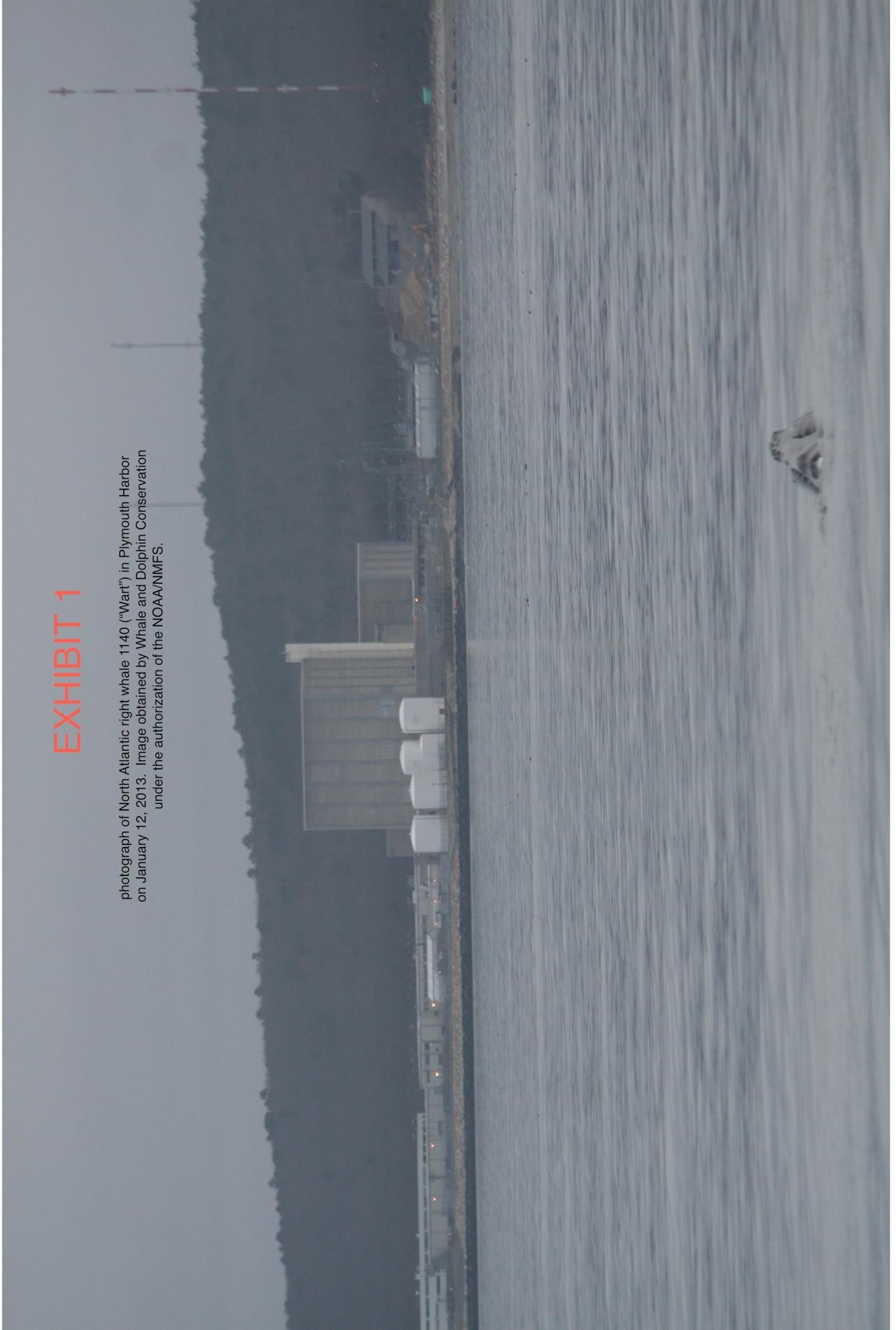
I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.



Regina Asmutis-Silvia  
Executive Director, North America  
Whale and Dolphin Conservation

# EXHIBIT 1

photograph of North Atlantic right whale 1140 ("Wart") in Plymouth Harbor on January 12, 2013. Image obtained by Whale and Dolphin Conservation under the authorization of the NOAA/NMFS.



# EXHIBIT 2

Map of sightings of Wart and calf obtained by Whale and Dolphin Conservation on January 12, 14, 17, and 21, 2013. Approximate water depth and distance from PNPP calculated.

Wart and Calf 1/21/2013 (4.05 miles) (21-33')

Wart and Calf 1/12/2013 (3.09 miles) (25-32')

Wart and Calf 13:30 1/12/2013 (2.73 miles) (32-46')

Wart and calf 1/14/2013 (0.15 miles) (12-27')

1/17/2013 Wart and Calf (4.67 miles) (19-36')

