



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

JUN 13 2013

Melanie C. Wong, Chief
Environmental Review and Guidance Update Branch
Division of License Renewal
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

RE: Request from Earthrise to reinitiate the Endangered Species Act (ESA) section 7 consultation for the continued operation of the Pilgrim Nuclear Power Plant

Dear Ms. Wong,

We completed informal ESA section 7 consultation with the Nuclear Regulatory Commission (NRC) regarding the relicensing and continued operation of the Pilgrim Nuclear Power Station on May 17, 2012, by concluding that the action was not likely to adversely affect any NMFS listed species and would have no effect on right whale critical habitat. On May 29, 2012, you issued a renewed operating license to Entergy, authorizing an additional 20 years of operations at Pilgrim.

Earthrise Law Center, on behalf of Jones River Watershed Association, sent a letter dated March 22, 2013, to us and NRC requesting reinitiation of the consultation. Earthrise states that the occurrence, in January 2013, of a mother-calf pair of right whales near Pilgrim “triggers the requirement to reinitiate” consultation. Your May 31, 2013, letter to us states that you have determined that the letter does not present information that warrants reinitiation of the consultation. We agree with your determination. The justification for our determination is presented below.

As noted in your letter, the ESA and its implementing regulations provide four criteria whereby the consulting agency or the Federal action agency must request reinitiation of formal consultation. Reinitiation of consultation is required and shall be requested by the Federal agency or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) if the amount or extent of incidental take is exceeded; (b) a new species is listed or critical habitat designated that may be affected by the identified action; (c) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (d) 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.

While not specifically stated in the regulations, in practice, we consider these reinitiation criteria to apply to informal consultations as well. The regulations do not provide a process for a third party to request reinitiation of consultation. However, if information, regardless of the source, reveals that the action affects listed species or critical habitat in a manner or to an extent not previously



considered in the consultation, reinitiation of consultation would be required and shall be requested by the Federal agency or by NMFS. Even if the reinitiation provision does not apply to informal consultations, if the informal consultation failed to consider adequately an effect of the action on listed species or critical habitat, then the existing consultation should be modified or a new consultation should be initiated.

We have reviewed the information presented by Earthrise to determine if any of these triggers for reinitiation have been met. As the May 2012 consultation was completed informally, there was no incidental take statement. However, we have no information to indicate that there has been any take of any NMFS listed species to date. We understand that you are currently working to address our request to add a requirement to Pilgrim's operating license that would require reporting to NMFS and NRC of any sightings of NMFS listed species within 500 yards of the facility. No new species or critical habitat has been designated that may be affected by the proposed action. The proposed action (continued operation of the facility pursuant to an extended operating license) has not been modified.

We have considered whether the information presented by Earthrise in their March 2013 letter includes any new information regarding effects of the action that were not previously considered. A right whale mother-calf pair was sighted in Cape Cod Bay, including portions of the Pilgrim action area (as defined in our May 2012 consultation letter) on several days in January 2013. Individual North Atlantic right whales (*Eubalaena glacialis*) occur in Cape Cod Bay nearly year round; however, the vast majority of sightings occur from January – April (Pace and Merrick 2008). However, in January mother-calf right whales are not expected to occur in Cape Cod Bay and we can find no other documentation of a right whale calf in this area in January (see Schevill et al. 1986¹ and Patrician et al. 2009). The Provincetown Center for Coastal Studies (PCCS) states that this is the earliest mother-calf pair sighted in the Bay “by far” (PCCS 2013). They also state that it is unknown where or when the calf was born but that it was very young at the time of the January sighting. Earthrise states that this is the first mother-calf pair in Cape Cod Bay in January in 27 years. However, we have no record of any previous mother-calf pairs in New England waters in January, and Earthrise provides no citations to support previous sightings of mother-calf pairs in the Bay in January.

We consider this sighting of a mother-calf pair in January in Cape Cod Bay highly unusual. Right whale calves are normally born off the coast of Georgia and Florida in the Southeastern U.S. between December and March (Mate et al. 1997, Patrician et al. 2009, Keller et al. 2012). Keller et al. (2012) examined conditions, including water temperature and depth, associated with the sighting of 520 pregnant females and mother-calf pairs between 1992 and 2002. The authors report that peak sightings were in waters with temperatures of 13-15°C and depths of 10-20 meters. These results are also reported by Garrison (2007). Calving is thought to occur in these Southeastern U.S. waters because calves have less blubber and are less insulated against cold temperatures and because there may be less predation, calmer wind/waves and fewer storms (Keller et al. 2012; Garrison 2007). Garrison (2007) states that there is no expectation that suitable calving habitats occur north of North Carolina. Mother-calf pairs remain in the southeastern calving grounds for several months after the birth; most leave these waters and head north by the end of March to early April (Reeves et al. 2001). The trip from the calving grounds to New England waters takes 19-22

¹ Schevill et al. 1986 documents mother-calf pairs in the Bay in March, April, May and June

days (Patrician et al. 2009). We have no information to suggest that the mother's (identified as Wart²) brief appearance in Cape Cod Bay in January with an apparently young calf is anything but a highly unusual event. We do not anticipate that this is the beginning of a trend in which mothers start to abandon their usual calving grounds in the Southeast.

The absence of mother-calf right whale pairs from New England waters before April is thought to be primarily related to water temperature (see Keller et al. 2012). During January 2013 when the mother-calf pair was sighted near Pilgrim, water temperatures in Cape Cod Bay were approximately 5°C³, significantly colder than the 13-15°C water temperatures where mother-calf pairs are typically found. While this mother-calf pair clearly demonstrated atypical behavior, we have considered what effect the operation of Pilgrim could have had on this pair. While not specifically noted in our May 2012 consultation letter, mother-calf pairs do occasionally occur in Cape Cod Bay and occurrence from March – June would not be considered unusual (see Schevill et al. 1986). Our analysis in the May 2012 consultation applied to both adult right whales and mother-calf pairs expected to be there in that period.

The Pilgrim facility was shut down for several days during January 2013. According to NRC, Pilgrim was non-operational from January 10 (3:34pm) to January 14 (9:40am), January 20 (9:27pm) to January 22 (3:28pm). The Earthrise letter focuses on potential effects of the thermal plume on Wart and her calf. Effects of the thermal plume on right whales were discussed in our May 2012 consultation letter. In this letter we assumed right whales would avoid waters warmer than 21.8°C (the maximum temperature at which right whales have been observed). Given the size of the area where water temperatures could be warmer than 21.8°C, we determined that effects of this avoidance would be insignificant and discountable. Here, we consider whether that same determination can be made for mother-calf pairs.

Earthrise raises two issues for our consideration: (1) the effect of avoidance behavior on nursing; and (2) the ability of calves to avoid surface plumes.

As stated above, the occurrence of a mother-calf pair in Cape Cod Bay in January is not known to have occurred before the sighting of Wart and her calf in January 2013. The occurrence of mother-calf pair in January is not reasonably expected to occur because water temperatures are much colder than those sought out by mothers nursing newborns (13-15°C). NMFS Northeast Fisheries Science Center (NEFSC) reported recently that sea surface temperatures (SSTs) in the Northeast Shelf Large Marine Ecosystem during 2012 were the highest ever recorded in both long-term observational and short-term remote sensing time series. They report that these exceptionally high SSTs are part of a pattern of elevated temperatures occurring in the Northwest Atlantic, but not seen elsewhere in the ocean basin⁴. Despite this, water temperatures in the Bay when Wart and her calf were seen were well within the normal historical range of January water temperatures for the Bay. Our May 2012 consultation considered climate change and the potential for increases in water temperatures in the

² Wart is a well documented right whale first sighted in 1981. This calf is her seventh documented calf, with her last documented calf born in 2005. Wart was sighted with severe entanglements in March 2008. Entangling line was removed from her jaw and baleen in May 2010. The sighting in January 2013 represents the first sighting of Wart since this gear was removed in 2010.

³ Sea surface temperature (SST) data accessed at:

http://marine.rutgers.edu/mrs/sat_data/?product=sst®ion=capecod¬humbs=0

⁴ Information available at: <http://www.nefsc.noaa.gov/ecosys/advisory/current/advisory.html>

action area over the next twenty-years. As noted in the consultation, the period considered for extended operations of Pilgrim is limited to 20 years (i.e., through June 8, 2032). We considered climate change impacts in the action area over the next 20 years to provide context within which the effects of the action will occur from present to June 8, 2032. The model projections are for an increase of somewhere between 3-4°C by 2100 (Frumhoff *et al.* 2007). Assuming that there is a linear trend in increasing water temperatures, one could anticipate a 0.03-.04°C increase each year, with an increase in temperature of 0.6-0.8°C between now and 2032. We concluded that given this small increase, it is not likely that over the proposed 20-year operating period that any water temperature changes would be significant enough to affect the conclusions reached by us in this consultation. As noted above, water temperatures in right whale calving habitat are between 13-15°C. Temperatures in Cape Cod Bay during the calving season are significantly colder, ranging between 0 and 10°C. We are not aware of any models that predict large enough temperature increases to make Cape Cod Bay waters as warm as the southern calving habitat. During the 20 years that Pilgrim will continue to operate, we do not anticipate sea surface temperatures will rise to such a level that more mothers will bring very young calves to, or give birth in, Cape Cod Bay. As stated above, sea surface temperature is not the only factor determining suitability of calving grounds. If in the future, there are more sightings of newborn calves in Cape Cod Bay we can reconsider our conclusion about Wart's presence in Cape Cod Bay with a very young calf in January.

However, even though we do not expect newborn right whale calves in the action area normally, given the presence of Wart and her calf in January 2013, we have considered the potential effect of the thermal discharge from Pilgrim on mother-calf pairs. Between January and May, mean sea surface temperatures in Cape Cod Bay range from approximately 0-10°C (see Delorenzo Costa *et al.* 2006). Even taking the conservative assumption that right whale calves may be negatively affected at water temperatures above 15°C (the maximum normal range of their calving grounds) to consider direct effects to right whales from the thermal plume (i.e., stress that may cause injury or mortality or avoidance behavior), we would consider the area where water could be heated to above 15°C. During the January – May, water would need to be heated at least 5°C above ambient to reach this level. Based on the analysis presented in our May 2012 consultation letter, this area would be extremely small. For example, when ambient temperatures were 8.5°C and 11.5°C, the surface area where water temperatures were greater than 7°C and 6°C above ambient, respectively were 0.1 and 0.5 acres. Using this example, if ambient water temperatures were 8.5°C, the area where water temperatures would be above 15.5°C would be 0.1 acres. It is not reasonable to expect that avoidance of an area less than 0.5 acre would negatively affect any normal mother-calf behaviors, including nursing or would otherwise affect the health or fitness of the calf. Because of the very small size of the area, it is also not reasonable to expect that avoiding this area would cause the mother to expend energy in a way that affected her ability to successfully nurse the calf. Right whale calves are “followers” (see Thomas and Taber 1984) and are almost continuously in physical contact with their mother (Hain *et al.* 2013, Taber and Thomas 1982, Baumgartner and Mate 2003). Given this well documented behavior, it is reasonable to anticipate that any movements the mother makes to avoid potentially stressful temperatures will be closely followed by the calf. Earthrise suggests that the tendency of right whale calves to remain at the surface may make it more difficult for them to avoid the surface plume, suggesting that the calves may be less likely to dive and avoid the plume by swimming beneath it. However, while it is true that mother-calf pairs spend more time at the surface than other right whales (see Baumgartner and Mate 2003, Hain *et al.* 2013), Baumgartner and Mate (2003) report that calves often surfaced and dove simultaneously with the

presumed mother. While the length of time a calf can stay submerged is less than an adult (Baumgartner and Mate 2003), given the small size and shallow depth (5 to 8 feet from the surface) that a whale would have to dive below to avoid the plume, it is reasonable to expect that both the mother and calf have sufficient mobility to avoid the limited area where water temperatures are elevated enough to be potentially stressful. Earthrise states that “it is possible....that calves may be unable or unwilling to avoid surface plume temperatures in the same manner as adult whales can.” However, Earthrise offers no evidence or information to support this claim other than to state that mother-calf pairs spend more time at the surface than other right whales and that Wart’s calf appeared to remain at the surface during the January 2013 sightings. Based on the available information discussed here, it is reasonable to expect that mother-calf pairs will be able to avoid any potentially stressful water temperatures by swimming around or under them and that any effects of this avoidance behavior will be insignificant. Wart and her calf were sighted off Race Point, Provincetown heading away from Cape Cod Bay on January 29 and were re-sighted in late April 2013 in Cape Cod Bay with both mother and calf in apparently good condition.

As noted above, reinitiation of consultation is necessary if 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 in the consultation. While the sighting of a mother-calf pair in the action area (as defined in our May 2012 consultation letter) represents new information, we have determined that there are no effects of the action that were not previously considered in the consultation. After reviewing this new information, we have determined that effects to all right whales, regardless of life stage, are likely to be insignificant and discountable.

For the reasons presented here, we have determined that neither reinitiation of consultation, modification of the existing consultation nor a new consultation is required at this time. We look forward to continuing to work with you and your staff on issues related to the operation of the Pilgrim facility. As noted in your letter, if the Environmental Protection Agency (EPA) issues a revised National Pollutant Discharge Elimination System (NPDES) permit for Pilgrim or issues revised Clean Water Act 316(b) regulations that result in modifications to the Pilgrim cooling water intake or discharge system, reinitiation of the May 2012 consultation is likely to be necessary. Should you have any questions regarding this correspondence, please contact Mary Colligan, Assitant Regional Administrator for Protected Resources (978-281-9116 or Mary.A.Colligan@noaa.gov).

Sincerely,


John K. Bullard
Regional Administrator

EC: Williams - GCNE
Crocker - F/NER3

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