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Date: 03/02/2007 12:46:12 PM
Subject: Pilgrim Nuclear Power Station DEIS Comments

Alicia:

could you please send me a note to confirm that you received the attached comments on the Pilgrim Station DSEIS that I forwarded on February 28th? I meant to ask you in my original email but forgot.

Thanks,

Tim

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February 28, 2007

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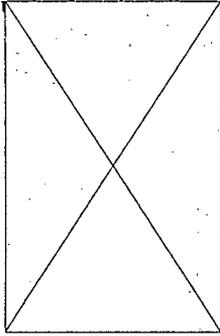
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the Pilgrim Nuclear Power Station, Draft Report for Comment

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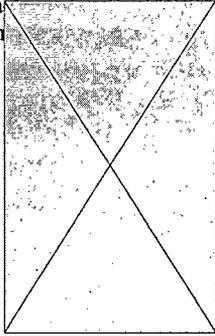
In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act we have reviewed the Nuclear Regulatory Commission's (NRC's) Draft Supplemental Environmental Impact Statement (DSEIS) for License Renewal of the Pilgrim Nuclear Power Station (Pilgrim Station) in Plymouth, Massachusetts.

According to the DSEIS, Entergy Nuclear Operations, Inc. (Entergy or the applicant) has

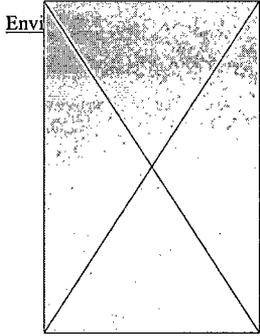
its commercial, recreational and ecological importance and that estimates of winter
flow by equivalent losses due to entrainment and impingement as reported
by annual monitoring reports have ranged from <1 % of the Cape Cod



forward to reviewing responses to the issues highlighted in this letter and technical
attache. My staff is available to provide additional input, as necessary,
to help address the issues discussed in this letter. Please feel free to contact



Summary of Rating Definitions and Follow-up Action



Detailed Comments

Final Impact Statement for License Renewal of Nuclear Plants 29 Regarding the Pilgrim Nuclear Power Station Draft Report for Comment

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the assessment of environmental impact from the entrainment
of organisms

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studies were conducted in 2000, 2002, and 2004 for the purpose of
of winter flounder moving by Pilgrim Station to that which is
Station's cooling system. Page 4-12 of the DSEIS presents
20 percent entrainment rate of stage 4 winter flounder for one
percent in another survey. The DSEIS indicates that the authors of
the studies "emphasized that the higher rate may have been a result of some
methodological difficulties such as lost sampling gear, resulting in no sample collection
from several survey locations." We note that the DSEIS does not appear to include data
to support these conclusions and we recommend that an expanded explanation of the
higher entrainment rate be provided in the FSEIS

2. The DSEIS (DSEIS page 4-13) discusses the 2000 and 2002 larval transport data and
adds that these "reports state that the periodic high entrainment rates observed for stages
3 and 4 larvae were likely due to difficulties in collecting the stages 3 and 4 larvae, as
these larval stages generally are associated with the bottom sediments." It is our
understanding that stage 3 winter flounder are found in the water column. In addition,
one of the two surveys in 2004 shows a stage 4 larval entrainment rate of 20 percent. We
recommend that the discussion in the FSEIS reflect the entire data set.

3. Section 4.1.1.4 of the DSEIS "concludes that the impact of entrainment on marine
aquatic species other than the winter flounder population would be minor." However, it
does not appear that this conclusion is fully supported in the DSEIS and EPA encourages
a closer evaluation of measures to mitigate the adverse impacts of the entrainment

feasibility of measures to mitigate this entrainment impact, including retrofitting the once-through cooling water system with closed-cycle cooling technology.

Comments related to the assessment of environmental impact from the impingement of fish and other aquatic organisms

1. Section 4.1.2.1 of the DSEIS explains that 97% of the over 300,000 fish impinged during 2005 were Atlantic menhaden and that their survival was low (18 and 27%). In addition, there were 19 impingement events (>20 fish/hr) in 2005 which consisted primarily of Atlantic menhaden and Atlantic silversides. Even though the DSEIS acknowledges that "menhaden is one of the most commercially important fish species along the Atlantic Coast" (DSEIS page 2-37), there is little discussion regarding the impact of the impingement losses in Section 4.1.2.2 other than relying on ENSR reports and general statements such as "[t]he Atlantic menhaden stock is considered to be healthy with stable stock size and high biomass." Furthermore, although the DSEIS recognizes that "due to the lack of recent information describing the status of several local populations, it is difficult to quantify impingement impacts," it concludes that "impacts on marine aquatic species other than the Jones River population of rainbow smelt would be minor." EPA recommends that the FSEIS expand on this discussion of impingement impacts and more fully explain the basis for the conclusion that the impacts would be minor.

EPA agrees with the final conclusion in Section 4.1.2.3 of the DSEIS that the "continued operation of PNPS would have a MODERATE impact on the Jones River population of rainbow smelt due to impingement over the course of the license renewal term" and "SMALL to MODERATE impacts on other marine aquatic resources due to impingement." EPA recommends that the FSEIS evaluate further mitigation options for these impingement impacts.

2. EPA's scoping comments noted that the majority of rainbow smelt impinged at Pilgrim Station are believed to have originated from the nearby Jones River population and that without quantification of the size of that population it is not possible to fully assess the relative impact of Pilgrim Station's operations on rainbow smelt. The DSEIS (DSEIS page 4-27) indicates that "considerable uncertainty exists regarding potential impacts to rainbow smelt populations." The DSEIS discusses mitigation measures that could be implemented to reduce impingement event impacts at Pilgrim Station (DSEIS page 4-36) with what appears to be limited analysis of whether they would be effective and to what degree they could be expected to reduce impacts. EPA recommends that the FSEIS expand on that analysis.

3. We also note the discussion in the DSEIS at page 4-27 which states, "Although the loss of winter flounder juveniles and adults through impingement may be contributing to population declines, the level of impact is considered to be minimal when compared to the potential entrainment impacts." We suggest that this comparison is inappropriate and that instead of comparing the two types of impact (entrainment and impingement) that

may contribute to population declines, they both be considered together in the cumulative impact discussion.

Mitigation Measures

Automated Chlorine Monitoring System

The DSEIS (DSEIS page 4-35) lists an automated chlorine monitoring and warning system for the service water and/or condenser cooling water systems as a means to possibly mitigate for a portion of the potential impacts of the continued operation of Pilgrim Station. EPA recommends that improvements to the screenwash system be included in this discussion because chlorine exceedences occurred when there were problems with the screenwash dechlorination system. EPA also recommends that the FSEIS include an evaluation of the potential for reduced impacts associated with the installation of an automated chlorine monitoring system that includes a malfunction notification component.

Light

On page 4-35, the DSEIS indicates that "ENSR (2000) determined that, of the behavioral barriers evaluated, light barriers would be the most effective as several studies have shown that some fish species are attracted to light." This statement should be clarified since an effective barrier would typically repel, not attract, fish.

Cooling Water Bypass Flow

EPA does not believe that the cooling water bypass flow mitigation measure discussed in the DSEIS (DSEIS page 4-37) should be presented as a measure to mitigate for impingement and entrainment impacts since the intake flow at the CWIS remains unchanged.

Winter Flounder Stocking Program

The DSEIS at page 4-38 indicates that NRC staff have not found that the pilot flounder stocking "has substantially offset impacts from continued operation of PNPS to the local winter flounder population." The DSEIS also does not provide any new information or evidence to suggest that hatchery fish can persist in the environment and recruit to the adult population. Thus, the DSEIS appears to lack support for the assertion that if the current winter flounder stocking program is expanded, that it "may have a beneficial impact" on the local population (DSEIS page 4-38). If the continuance or expansion of the stocking program remains a reasonably foreseeable option for Pilgrim Station, we recommend that the FSEIS more fully explore whether stocked fish survive to reproduce and the potential impacts of hatchery-reared fish on the native population.

Fish Return System

The DSEIS (DSEIS page 4-25) indicates that a reimpingement study during the 80's was never completed. Also, the DSEIS (DSEIS page 4-37) lists moving the fish return sluiceway discharge point as a mitigation measure to avoid reimpingement. We recommend that this section of the FSEIS be expanded to include a discussion of the effectiveness of physical and operational modifications to the fish return system including more frequent or continual screen rotation.

Alternate Cooling Water Intake Technology

The evaluation of alternative mitigation measures and cooling water intake structure technologies in the DSEIS (DSEIS pages 4-34 through 4-38) is limited to a listing of various measures. We recommend that this analysis evaluate the benefits of such systems as well as their engineering feasibility and associated adverse impacts, if any.

The DSEIS analysis of closed-cycle cooling in Chapter 8.0 (the environmental impacts of alternatives to license renewal) considers the impacts of closed-cycle cooling associated with the construction of a new nuclear generating station at a greenfield site. In addition to considerations of closed-cycle cooling at a greenfield site, EPA recommends that the analysis of alternatives be expanded to include an evaluation of a retrofit of the existing Pilgrim Station facility to closed-cycle cooling.

Thermal Plume from operation

EPA's scoping comments requested an update of the analyses of thermal plume impacts in light of current information and it appears that the DSEIS only provides a summary of existing data from 1995 and 2000 reports. EPA recommends that the FSEIS provide more recent data if they are available.

Also, EPA's scoping comments suggested that the DSEIS should include the consideration of a biological surveillance program to address impacts to fish. This measure does not appear to be analyzed in the DSEIS and EPA continues to recommend that this impact minimization option be more fully explored in the FSEIS.

Dredging

EPA's scoping comments asked that the DSEIS contain a discussion of future dredging needs for the facility. The DSEIS at page 4-69 explains that the applicant doesn't plan to dredge. However, the DSEIS at page E-63 explains that dredging occurred in 1982 and 1990. While the applicant may have no plans to dredge at this point in time, EPA recommends that the FSEIS reflect that dredging of portions of the facility over the relicensing term may be likely given the past dredging history of the facility.