

PA-LIR

From: "Ellis, Douglas" <dellis1@entergy.com>
To: "Alicia Williamson" <ARW1@nrc.gov>
Date: 07/11/2006 9:52:45 AM
Subject: FW: Pilgrim Document #83

Alicia - here is document #83. Document #114 will follow shortly later today. Thanks, Doug Ellis.

From: Brochu, Jill
Sent: Tuesday, July 11, 2006 7:05 AM
To: Ellis, Douglas
Subject: RE: Documents Requested by Alicia Williamson

Doug-

See attached.

I am out of the office after today and will be returning to the office on Tuesday July 25. Please let me know if there is anything else I can get you before I leave.

Jill

From: Ellis, Douglas
Sent: Monday, July 10, 2006 3:44 PM
To: Egan, Joseph; Brochu, Jill
Subject: Documents Requested by Alicia Williamson
Importance: High

Joe and Jill - NRC apparently misplaced or otherwise does not have the following documents that my records indicate was sent to them; regardless, I need a copy of the following:

Document #83 Notes or reports generated as a result of the ongoing assessment process" referenced in ER section 5.0. Jill - I think you might be able to locate this and forward to me.

Document #114 Entergy's response to EPA correspondence related to the March 2000 316 Demonstration Report, December 8, 2000. Joe - I think you might be able to locate this and forward to me.

I could be wrong in my thinking/guessing.

RSVP, Doug.

CC: "Brochu, Jill" <JBroc94@entergy.com>, "Ellis, Douglas" <dellis1@entergy.com>

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Pro-Dee



Entergy Nuclear

Review of New and Significant Information

Pilgrim Nuclear Power Station

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1.0 Introduction

Entergy did not identify any new and significant information on environmental issues listed in 10 CFR Part 51, Subpart A, Appendix B, Table B-1, during the preparation of the Pilgrim Nuclear Power Station (PNPS) Environmental Report (ER). Entergy considers its' existing in-house process for reviewing and evaluating environmental issues adequate in identifying new and significant information. This process ensured that new and significant environmental information related to renewal of the PNPS license was identified, reviewed, and addressed as appropriate.

2.0 Existing Environmental Review Process

Entergy has an ongoing assessment process for identifying and evaluating new and significant information that may affect programs at the Entergy Nuclear sites, including those related to license renewal matters. This process is directed by the Entergy Nuclear corporate support group responsible for environmental matters, with assistance from Environmental Focus Group members composed of technical personnel from the Entergy Nuclear Northeast (ENN) and Entergy Nuclear South (ENS) sites. A summary of this process is as follows:

- Issues relative to environmental matters are identified as follows:
 - Participation in industry utility groups (i.e., EEI, EPRI, NEI, and USWAG). Attachment 1 provides of a list of those industry groups.
 - Participation in non-utility groups (i.e., Institute of Hazardous Materials Management, and National Registry of Environmental Professionals).
 - Routine interface with regulatory agencies and other Entergy business units (Fossil, Transmission, and Distribution).
 - Routine reviews of proposed regulatory changes. Attachment 2 provides a list of regulatory agencies monitored.
 - Review of changes to plant system processes, procedures, or plant equipment evaluated by Nuclear Management Manual Procedures ENN-LI-100 (Process Applicability Determinations), EN-LI-101 (10 CFR 50.59 Review Program), and EN-EV-115 (Environmental Reviews and Evaluations).
 - Entergy Nuclear Environmental Focus Group meetings.
- Environmental issues are then reviewed and evaluated initially for potential applicability and impacts by the Entergy Nuclear corporate support group. If the issue is applicable to Entergy, it is then evaluated further by the Environmental Focus Group that consist of technical personnel involved in environmental compliance, environmental monitoring, environmental

planning, and natural resource management issues. For those issues applicable, changes are made to the program and implemented in accordance with site and/or corporate procedures. For Entergy Nuclear, these changes are made by the site Chemistry groups and/or Environmental Focus Group members who has primary responsibility for ensuring compliance with environmental regulations and for enhancement of the systems related to environmental issues.

3.0 Review of Environmental Issues Prior to Environmental Report Submittal

As discussed above, Entergy's existing environmental review process is considered adequate to identify and capture new and significant information. However, additional reviews were conducted by EN in order to ensure that any potential new and significant information was identified and included in the PNPS ER. These measures are as follows:

4.0 Supplemental Environmental Impact Statement Reviews

Entergy reviewed Supplemental Environmental Impact Statements (SEISs) associated with other license renewal applications to determine if there were new and significant information identified for those plants that may be applicable to PNPS. A list of the SEISs reviewed is shown in Attachment 3. During review of the SEISs, three issues (groundwater degradation, power uprate effects, and radiation exposure during license renewal term) were identified by the NRC as potential new and significant information as shown below and were further analyzed in the SEIS. Entergy's response to these three specific issues is also discussed below. Entergy's review of other SEIS submittals identified no new and significant information.

1. Donald C. Cook Nuclear Plant, Units No. 1 & 2 (NUREG-1437 - Supplement 20)

There were two permitted locations where discharge occurs to groundwater. The Cook Nuclear Plant (CNP) facility is authorized to discharge a maximum of 2.4 million gallons per day of process wastewater and a maximum of 60,000 gallons per day of treated sanitary wastewater to two absorption ponds for process wastewater and two sewage lagoons for sanitary wastewater.

The turbine room sump accumulates process wastes from the secondary side. These wastes are neutralized, if necessary, and discharged to absorption ponds approximately 825 feet southeast of the plant. The larger of the two ponds is a 1.4-acre pond and the overflow pond is 0.7 acre, and is connected to the larger pond by a small stream. Discharge into the larger pond is sufficient to keep it full and overflowing to the overflow pond. The combined approximate capacity of the two ponds is 6 million gallons.

The sewage treatment plant discharges treated sanitary effluent to two sewage lagoons that are used alternately. The sewage lagoons are much smaller than the absorption ponds and are located above and immediately east of the absorption ponds. These two wastewater disposal systems use the natural soil column to provide treatment.

Discharges flow downward through the soil to the groundwater, which ultimately discharges into Lake Michigan. These permitted discharges have created a groundwater mound that has superimposed a radial flow pattern on the regional flow towards Lake Michigan. Five groundwater monitoring wells are specified in the permit for compliance monitoring. The groundwater monitoring program has shown that wastewater disposal has been in compliance with permit requirements and with national drinking water standards, although there has been an increase above background for total dissolved solids and sulfate.

Groundwater from the absorption ponds has migrated to the southern plant boundary, but has not exceeded primary drinking water standards. A restrictive covenant has been recorded in Berrien County to ensure that groundwater impacted by the seepage from the absorption ponds would not be withdrawn for any purpose from beneath approximately 207 acres in the southwestern portion of the CNP property. There are no operable groundwater production wells and there are no consumptive uses of groundwater at CNP.

Tritium has been detected periodically in groundwater at monitoring wells across the CNP site. However, the authorization to discharge to groundwater does not contain criteria for tritium, and no sample has exceeded the drinking water standard of 20,000 pCi/L.

On the basis of this information, the staff concludes that although the impacts to groundwater quality that would result from continued disposal of wastewater to onsite absorption ponds and sewage lagoons during the license renewal period are considered a new issue, they would be SMALL and, therefore, not significant. Further mitigation is not warranted.

Entergy's Response: Sanitary wastewaters at the PNPS facility are discharged to leaching fields regulated via Commonwealth of Massachusetts Groundwater Discharge Permit SE#2-389. PNPS is in compliance with this Permit. As a condition of the Permit, several monitoring wells are placed around these fields and monitored for constituents outlined in the Permit. Based on test results, there have been no issues associated with the groundwater or indication of contamination. Therefore, impacts to groundwater are SMALL and the GEIS conclusion remains valid.

2. Browns Ferry Nuclear Power Plant, Units 1, 2 & 3 (NUREG-1437 - Supplement 21)

The staff identified one potential area that required further analysis. Category 1 issues were established by the GEIS after a review of data from existing

operating nuclear plants. The analysis established an envelope of impact for each of the Category 1 issues that were based on the impacts that were identified at nuclear power plants throughout the United States at the time the GEIS was prepared. TVA has applied for extended power uprate (EPU) for the three Brown Ferry Nuclear (BFN) units. These EPUs would eventually increase thermal power levels from the initially licensed levels of 3293 MW(t)/unit to 3952 MW(t)/unit. This represents a total power increase of 20 percent. Once the uprate has been achieved, BFN will have a combined total power level of 11,856 MW(t), and will become the largest nuclear power plant in the United States.

For this reason, the staff determined that there is a potential that, at the uprated power level, BFN may no longer be within the envelope of impacts defined by the GEIS, as amended, for some Category 1 issues. If the potential impacts are beyond the defined envelope, the generic conclusions concerning these Category 1 issues may no longer be valid, and the power uprate could therefore represent new and significant information regarding some of the Category 1 issues. Category 2 issues are not a concern in this regard because all applicable Category 2 issues are evaluated on a site-specific basis for each facility undergoing license renewal.

To address this concern, the staff examined each of the 54 Category 1 issues applicable to BFN and determined that 34 of the Category 1 issues could be influenced by the station thermal power level. The staff then evaluated each of the 34 issues to determine if increasing the unit power level above the levels considered during the development of the GEIS would affect the specific generic conclusions. After evaluating all 34 issues the staff determined that the generic conclusions reached in the GEIS are still valid and that no additional analysis or evaluation of these issues is necessary.

Entergy's Response: With the approval and implementation of an Appendix K (Thermal Power Optimization) power uprate in 2003, the PNPS thermal power level increased by 1.5 percent from 1,998 MWt to 2,028 MWt. This increase in thermal power level is only for one unit and is a small percentage of the BFN levels [11,856 MWt] that was further analyzed by the NRC. The NRC's analysis of the BFN thermal power level increase concluded that the impacts were SMALL and that the conclusions in the GES still remain valid. Therefore, the completed power uprate at PNPS is within the envelope of impacts defined by the GEIS and no new and significant information exists.

3. Millstone Power Station, Units 2 & 3 (NUREG-1437 - Supplement 22)

Radiation exposure issues for the license renewal term are Category 1 issues. During the scoping process and the comment period on the draft SEIS, members of the public (1) expressed concern about the possible impacts on human health from exposure to radiation from Millstone's effluents and (2) cited a number of documents to support their concerns. The NRC Staff reviewed these documents as potential new and significant information regarding the Category 1 radiation exposure issues. Based on the review, the NRC concluded that the information

provided during the scoping process and comment period on the draft SEIS was not new and significant with respect to the findings of the GEIS on the health effects to the public from radiological effluent releases due to Millstone operations.

Entergy's Response: The NRC concluded that no new and significant information exists for this issue. In addition, there is no indication that the conservative dose limits established by the NRC will not continue to be met by PNPS during the license renewal term. Based on conversation with PNPS Chemistry personnel (Paul McNulty) calculated doses from gaseous radiological releases are well within the conservative limits established by the NRC and liquid radiological releases are infrequent at the facility. NRC dose limits are conservative and supported by the EPA and international agencies such as ICRP, United Nations Scientific Committee on the Effects of Ionizing Radiation, and the European Commission on Radiation Protection. Therefore, Entergy agrees with the NRC's conclusion regarding no new and significant information.

5.0 Regulatory Consultations

During preparation of the PNPS ER, Entergy consulted with the state, county, and federal agencies listed below. During these consultations, no new and significant information related to Category 1 issue findings arose or was identified by Entergy.

- Commonwealth of Massachusetts Division of Fisheries and Wildlife, National Heritage Endangered Species Program
- National Marine Fisheries
- Massachusetts Historical Commission
- Massachusetts Office of Coastal Zone Management
- Massachusetts Department of Environmental Protection
- Plymouth Town Treasurer
- U.S. Fish and Wildlife Service (Northeast Region)

6.0 Review of Category 1 Issues Not Applicable to PNPS

A review was performed of the Category 1 environmental issues in regard to applicability to PNPS. Entergy has determined that, of the 69 Category 1 issues, 12 do not apply to PNPS because they apply to design or operational features that do not exist at the facility. In addition, because Entergy does not plan to

conduct any refurbishment activities, the NRC findings for the 7 Category 1 issues that apply only to refurbishment do not apply. Category 1 issues not applicable to PNPS are shown below.

Category 1 Issues Not Applicable to PNPS		
Issue	GEIS Section(s)	Comment
SURFACE WATER QUALITY, HYDROLOGY AND USE (FOR ALL PLANTS)		
1. Impacts of refurbishment on surface water quality	3.4.1	No refurbishment activities planned.
2. Impacts of refurbishment on surface water use	3.4.1	No refurbishment activities planned.
3. Altered thermal stratification of lakes	4.2.1.2.3 and 4.4.2.2	PNPS is not located on a lake.
4. Eutrophication	4.2.1.2.3 and 4.4.2.2	PNPS is not located on a lake.
AQUATIC ECOLOGY (FOR ALL PLANTS)		
5. Refurbishment	3.5	No refurbishment activities planned.
AQUATIC ECOLOGY (FOR PLANTS WITH COOLING TOWER BASED HEAT DISSIPATION SYSTEMS)		
6. Entrainment of fish and shellfish in early life stages	4.3.3	PNPS does not use cooling towers.
7. Impingement of fish and shellfish	4.3.3	PNPS does not use cooling towers.
8. Heat shock	4.3.3	PNPS does not use cooling towers.
GROUNDWATER USE AND QUALITY		
9. Impacts of refurbishment on groundwater use and quality	3.4.2	No refurbishment activities planned.
10. Groundwater use conflicts (potable and service water; plants that use <100 gpm)	4.8.2.1 4.8.1.1	PNPS does not use groundwater for any purpose.
11. Groundwater quality degradation (Ranney Wells)	4.8.2.2	PNPS does not use Ranney wells.
12. Groundwater quality degradation (cooling ponds in salt marshes)	4.8.3	PNPS does not use cooling ponds.
13. Groundwater quality degradation (saltwater intrusion)	4.8.2.1	PNPS does not use groundwater for any purpose.
TERRESTRIAL RESOURCES		
12. Cooling tower impacts on crops and ornamental vegetation	4.3.4	PNPS does not use cooling towers
13. Cooling tower impacts on native plants	4.3.5.1	PNPS does not use cooling towers
14. Bird collisions with cooling towers	4.5.6.2	PNPS does not use cooling towers.
15. Cooling pond impacts on terrestrial resources	4.4.4	PNPS does not use cooling ponds.
HUMAN HEALTH		

Category 1 Issues Not Applicable to PNPS		
Issue	GEIS Section(s)	Comment
16. Radiation exposures to the public during refurbishment	3.8.1	No refurbishment activities planned.
17. Occupational radiation exposures during refurbishment	3.8.2	No refurbishment activities planned.
18. Microbiological organisms (occupational health)	4.3.6	PNPS does not use cooling towers, cooling ponds, a lake, or a river for cooling.
SOCIOECONOMICS		
19. Aesthetic impacts (refurbishment)	3.7.8	No refurbishment activities planned.

7.0 Review of Category 1 Issues Applicable to PNPS

For the remaining 50 Category 1 issues applicable to PNPS, Entergy performed additional reviews to ensure that the conclusions of the Generic Environmental Impact Statement (GEIS) remained valid. A discussion of the review of Category 1 issues applicable to PNPS is as follows:

7.1 Surface Water, Hydrology, and Aquatic Ecology

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
SURFACE WATER QUALITY, HYDROLOGY AND USE (FOR ALL PLANTS)	
1. Water use conflicts (plants with once-through cooling systems)	4.2.1.3
2. Altered current patterns at intake and discharge structures	4.2.1.2.1, 4.3.2.2, and 4.4.2
3. Altered salinity gradients	4.2.1.2.2 and 4.4.2.2
4. Temperature effects on sediment transport capacity	4.2.1.2.3 and 4.4.2.2
5. Scouring caused by discharged cooling water	4.2.1.2.3 and 4.4.2.2
6. Discharge of chlorine or other biocides	4.2.1.2.4 and 4.4.2.2
7. Discharge of sanitary wastes and minor chemical spills	4.2.1.2.4 and 4.4.2.2
8. Discharge of other metals in waste water	4.2.1.2.4, 4.3.2.2, and 4.4.2.2
AQUATIC ECOLOGY (FOR ALL PLANTS)	
9. Entrainment of phytoplankton and zooplankton	4.2.2.1.1, 4.3.3, and 4.4.3
10. Cold shock	4.2.2.1.5, 4.3., and 4.4.3
11. Thermal plume barrier to migrating fish	4.2.2.1.6 and 4.4.3
12. Distribution of aquatic organisms	4.2.2.1.6 and 4.4.3
13. Premature emergence of aquatic insects	4.2.2.1.7 and 4.4.3
14. Gas supersaturation (gas bubble disease)	4.2.2.1.8 and 4.4.3

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
15. Low dissolved oxygen in the discharge	4.2.2.1.9, 4.3.3, and 4.4.3
16. Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses	4.2.2.1.10 and 4.4.3
17. Stimulation of nuisance organisms	4.2.2.1.11 and 4.4.3
18. Accumulation of contaminants in sediments or biota	4.2.1.2.4, 4.3.3, 4.4.3, and 4.4.2.2

Items 1 through 18 - Based on review of PNPS's current NPDES Permit MA0003557, no conditions have been placed in the Permit, nor were there any concerns raised that would invalidate the conclusions reached in the GEIS. In addition, based on Entergy's participation in industry utility and non-utility groups, interface activities with the Massachusetts Department of Environmental Protection and the Environmental Protection Agency, routine reviews of proposed regulatory changes, review of PNPS annual biological monitoring reports, field observations, discussions with PNPS Environmental personnel (Jay Scheffer), and EN Environmental Focus Group meetings, there have been no issues identified that would invalidate conclusions reached in the GEIS. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Specific notes regarding the above Category 1 "Surface Water, Hydrology and Aquatic Ecology" issues, but which are not new and significant information and do not change the conclusions in the GEIS, are as follows:

- **(Item 6)** - The PNPS NPDES Permit has established limits for the discharge of total residual chlorine.
- **(Item 7)** - Sanitary wastewaters at the PNPS facility are discharged to leaching fields regulated via Groundwater Discharge Permit SE#2-389 by the Commonwealth of Massachusetts. PNPS is in compliance with this Permit.
- **(Item 9)** - PNPS has conducted phytoplankton and zooplankton studies in previous years. However, these studies have been discontinued due to the fact that there was no discernible indication of an impact from plant operations.
- **(Item 10)** - Based on conversation with PNPS Environmental personnel (Jay Scheffer), there have been no known incidences of cold shock that occurred at the discharge structure.
- **(Items 11 and 12)** - Studies at PNPS have shown that the facility's thermal discharge does not constitute a barrier to migrating fish and that the geographic distribution of aquatic organisms has not been reduced.

- **(Item 14)** – There have been only 2 occasions at PNPS when there were incidences of gas bubble disease. The last occurrence was in 1976. The NPDES permit outlines the process to be followed in the event of anticipated nitrogen saturation.
- **(Item 15)** - Based on observations by and conversation with PNPS Environmental personnel (Jay Scheffer), there have been no issues associated with low dissolved oxygen in the discharge.
- **(Item 16)** – There has been no indication that predator-prey interactions have been altered.
- **(Item 17)** - Based on monitoring studies and conversation with PNPS Environmental personnel (Jay Scheffer), there has been no stimulation of nuisance organisms such as zebra mussels, asiatic clams, or shipworms.

7.2 Terrestrial Resources

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
TERRESTRIAL RESOURCES	
1. Power line right-of-way management (cutting and herbicide application)	4.5.6.1
2. Bird collision with power lines	4.5.6.2
3. Impacts of electromagnetic fields on flora and fauna (plants, agricultural crops, honeybees, wildlife, livestock)	4.5.6.3
4. Floodplains and wetlands on power line right of way	4.5.7

Items 1 and 4 - With the exception of two lines going from the plant to the 345 kV and switchyard, transmission lines are owned, operated, and maintained by NSTAR. This maintenance includes transmission line corridor upkeep.

As discussed in Section 2.4 of the PNPS ER, NSTAR's corridor vegetation maintenance program is an integrated one which uses a combination of mechanical, chemical, and biological control methods. NSTAR's vegetation program complies with all state and federal regulations.

Item 2 – With the exception of two lines going from the plant to the 345 kV and switchyard, transmission lines are owned and operated by NSTAR. Based on conversation with PNPS Environmental personnel (Jay Scheffer), there have been no observed incidences of bird collisions associated with the two lines going from the plant to the switchyards. In addition, there are no imposed

regulatory monitoring requirements associated with these two lines. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 3 - Entergy's Customer Services Group (Margaret Snow) monitors current studies on the effects of electromagnetic fields (EMF). Although EMF studies are ongoing such as the one published by the National Institute of Environmental Health Sciences & National Institutes of Health (Electric and Magnetic Fields Associated with the Use of Electric Power – June 2002), there is currently no evidence that would invalidate the conclusions reached in the GEIS or present new and significant information.

7.3 Air Quality

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
AIR QUALITY	
1. Air quality effects of transmission lines	4.5.2

Item 1 – Based on review of Section 4.5.2 of the GEIS, several studies have quantified the amount of ozone generated and concluded that the amount produced by even the largest lines in operation (765 kV) is insignificant. The PNPS transmission lines going from the plant to the switchyard are well within the bounds defined in the GEIS. Based on interactions with PNPS Environmental personnel (Jay Scheffer), there are no regulatory required ozone monitoring programs associated with the two PNPS transmission lines nor have there been any regulatory concerns raised. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

7.4 Land Use

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
LAND USE	
1. Land use (License Renewal Period)	3.2

Item 1 – PNPS currently has no plans to increase land use beyond that currently used for plant operational support purposes. In addition, as discussed in Section 3.3 of the PNPS ER, no refurbishment activities were identified. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

7.5 Human Health

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
HUMAN HEALTH	
1. Noise	4.3.7
2. Electromagnetic fields, chronic effects <u>(Did not address in discussion below)</u>	4.5.4.2
2. Radiation exposures to public (license renewal term)	4.6.2
3. Occupational radiation exposures (license renewal term)	4.6.3

Item 1 – Based on discussion with Entergy Nuclear Safety personnel (Larry Schroll), there are no current or proposed Occupational Safety and Health Administration requirements regarding monitoring noise levels at the site boundary. Based on discussion with Entergy Public Relations personnel (David Tarentino), there have been no official complaints regarding noise levels. There have been several telephone calls from local residents with concern regarding noise levels in very specific circumstances. In one of the situations, local residents were concerned with the level of noise of the loudspeakers at the shorefront area. This is no longer an issue as the speakers are no longer in use. In the other situation, PNPS was doing repair work on the breakwater. In an attempt to work within the time constraints of the tide, work was begun with heavy machinery on the breakwater at 6:30 A.M. Upon receiving calls from local residents regarding the level of noise at the early hour, the work crew was instructed not to begin work before 7:30 A.M. This was an isolated incident and a reoccurrence is not expected. Since PNPS plant operational noise levels will be typically less than that of the PNPS construction activity and no plant changes are anticipated during license renewal that would increase noise levels, no problems are anticipated. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 2 – Review of PNPS Annual Radioactive Effluent Release Reports shows that reported doses are well within design objectives and are only a small percentage of the design objectives. Based on discussion with PNPS Radiation Protection personnel (Paul McNulty), there are no planned changes that could potentially affect radiation doses.

As discussed in Section 3.3 of the PNPS ER, no refurbishment activities were identified. In addition, the PNPS license renewal application describes the program for managing aging of systems and equipment. Since current doses are well below design objectives, no refurbishment activities have been identified during the license renewal period, and programs will be in place for managing aging systems and equipment, radiation doses are expected to remain well below design objectives during the license renewal period. Therefore, no new

and significant information was identified and the conclusions in the GEIS remain valid.

Item 3 – Based on conversation with PNPS Radiation Protection personnel (Paul McNulty), there are no planned changes in plant practices or operations that would cause occupational doses to exceed the regulatory limits established by the NRC. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

7.6 Socioeconomics

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
SOCIOECONOMICS	
1. Aesthetic impacts of transmission lines (license renewal term)	4.5.8
2. Public services: public safety, social services, and tourism and recreation	4.7.3, 4.7.3.3, 4.7.3.4, and 4.7.3.6
3. Public services, education (license renewal term)	4.7.3.1
4. Aesthetic impacts (license renewal term)	4.7.6

Item 1 – With the exception of two lines going from the plant to the 345 kV switchyard, the transmission lines are owned and operated by NSTAR. The two lines going from the plant to the switchyards do not cross recreation or historic areas and do not present any erosion control issues. Previous operational experience and conversation with site Public Relations personnel (David Tarentino) has not yielded any public complaints regarding the aesthetics of the PNPS transmission lines. In addition, no concerns were raised by the Massachusetts Historical Commission regarding these lines during Entergy’s consultation process with the agency. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Items 2 and 3 – Based on review of Section 3.5 of the PNPS ER, no additional staff was identified as being needed during the license renewal term. Although the GEIS estimated that an additional 60 employees would be necessary for operation during the period of extended operation, Entergy did not identify the need to add significant new aging management programs for PNPS. In addition, based on Section 3.5 of the PNPS ER, the number of workers required on-site for normal plant outages during the period of the renewed license is expected to be consistent with the numbers of additional workers used for past outages. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 4 – The location of PNPS in the naturally heavily wooded pine forest provides much natural coverage and camouflage for the PNPS buildings and work areas. Previous operational experience and conversation with site Public Relations personnel (David Tarentino) has not yielded any public complaints regarding the aesthetics of PNPS plant structures. Entergy’s review during the license renewal application process identified no needed changes in plant design as a result of license renewal. In addition, no concerns were raised by the Massachusetts Historical Commission regarding PNPS current structures during Entergy’s consultation process with the agency. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

7.7 Postulated Accidents

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
POSTULATED ACCIDENTS	
1. Design-Basis Accidents (DBAs)	5.3.2 and 5.5.1

Item 1 – Based on conversation with Entergy’s Business Development representative (Dave Lach), there were no issues identified by the license renewal team during the evaluation of the PNPS structures and components that would change the existing plant design and performance criteria when reviewed against the PNPS license. Therefore, current design and performance criteria will be maintained during the license renewal term and the GEIS conclusion remains valid.

7.8 Postulated Accidents

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
URANIUM FUEL CYCLE AND WASTE MANAGEMENT	
1. Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high-level waste)	6.1, 6.2.1, 6.2.2.1, 6.2.2.3, 6.2.3, 6.2.4, and 6.6
2. Offsite radiological impacts (collective effects)	6.1, 6.2.2.1, 6.2.3, and 6.2.4
3. Offsite radiological impacts (spent fuel and high-level waste disposal)	6.1, 6.2.2.1, 6.2.3, and 6.2.4
4. Non-radiological impacts of the uranium fuel cycle	6.1, 6.2.2.6, 6.2.2.7, 6.2.2.8, 6.2.2.9, 6.2.3, 6.2.4, and 6.6
5. Low-level waste storage and disposal	6.1, 6.2.2.2, 6.4.2, 6.4.3, 6.4.3.1, 6.4.3.2, 6.4.3.3,

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
	6.4.4, 6.4.4.1, 6.4.4.2, 6.4.4.3, 6.4.4.4, 6.4.4.5, 6.4.4.5.1, 6.4.4.5.2, 6.4.4.5.3, 6.4.4.5.4, and 6.4.4.6
6. Mixed waste storage and disposal	6.4.5.1, 6.4.5.2, 6.4.5.3, 6.4.5.4, 6.4.5.5, 6.4.5.6, 6.4.5.6.1, 6.4.5.6.2, 6.4.5.6.3, and 6.4.5.6.4
7. Onsite spent fuel	6.1, 6.4.6, 6.4.6.1, 6.4.6.2, 6.4.6.3, 6.4.6.4, 6.4.6.5, 6.4.6.6, 6.4.6.7, and 6.6
8. Nonradiological waste	6.1, 6.5, 6.5.1, 6.5.2, 6.5.3, and 6.6
9. Transportation	6.1, 6.3.1, 6.3.2.3, 6.3.3, 6.3.4, and 6.6

Item 1 – There are no operational changes planned during the license renewal period that would alter the conclusions reached in the GEIS for individual offsite radiological impacts. Impacts would continue to remain at the levels they were during pre-license renewal years and would be theoretical due to the extremely low doses that do not pose a significant adverse impact. Based on conversation with ENS Nuclear Support representative (David Moore) who is responsible for radiation matters, he was not aware of any additional studies or information that would change the NRC’s conclusion. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 2 – Based on conversation with ENS Nuclear Support representative (David Moore) who is responsible for radiation matters, he was not aware of any additional studies or information that would change the NRC’s conclusion. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 3 – Based on conversation with an Entergy Nuclear representative (Mark Carver) responsible for spent fuel and high-level waste disposal issues, he was unaware of any current or proposed regulatory limits for offsite releases of radioactive nuclides established for Yucca Mountain or any other facility. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 4 – Entergy reviewed the environmental impacts of decommissioning of PNPS (see Section 7.4 of the PNPS ER). These impacts were expected to be comparable to those environmental impacts described in the GEIS for impacts to:

land use, water, air quality, ecological resources, human health, social and economic structure, waste management, aesthetics, and cultural resources. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 5 – Based on review of Section 3.3 of the PNPS ER, no refurbishment activities were identified. Therefore, no additional waste generation would occur during extended operations. Disposal capacity for Class "A" waste will continue with the availability of the Duratek and Studsvik Facilities in Tennessee. Class "B & C" waste is presently sent to the Barnwell facility in South Carolina. Therefore, the GEIS conclusion remains valid.

Item 6 – Based on Section 3.3 of the PNPS ER, no refurbishment activities were identified. Therefore, no additional waste generation would occur during extended operations. Due to controls placed on chemical usage at the PNPS site by Entergy Nuclear's NMM Procedure EV-112 (Chemical Control Program), quantities of generated mixed waste have been minimal, and when generated, would be shipped off-site within the allowed storage time to avoid permitted storage requirements. PNPS minimizes and properly manages mixed wastes in accordance with Entergy Nuclear NMM Procedures EV-104 (Waste Minimization) and EV-106 (Waste Management Program) that will continue to exist during the license renewal term. Therefore, the GEIS conclusion remains valid.

Item 7 – Storage of spent fuel in an Independent Spent Fuel Storage Installation is in the preliminary planning phase at PNPS. Although it is anticipated that an offsite disposal facility would become available in the future, PNPS has sufficient onsite capacity to accommodate dry cask fuel storage during the license renewal period based on conversation with Charlie Minott (PNPS Design Engineering). Based on this conversation, PNPS could safely accommodate spent fuel from PNPS operations on-site for an additional twenty years via dry cask storage. Whether sited within the Owner Controlled area or inside the Protected Area, areas that would be utilized for this additional storage would occur on previously disturbed land. Therefore, the GEIS conclusion remains valid.

Item 8 - Based on discussions with PNPS Radiation Protection personnel (Paul McNulty), there are currently no plans to change operational practices during the license renewal period that would alter the conclusions reached in the GEIS. PNPS's NPDES Permit MA000357 regulates the discharge of wastewaters such as blowdown, water treatment, floor and yard drains, and stormwater runoff. In addition, RCRA nonradiological wastes are minimized and properly managed in accordance with EN's NMM Procedures EV-104 (Waste Minimization) and EV-106 (Waste Management Program). These procedures will continue to exist during the license renewal term and incorporate changing regulatory requirements as they arise. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 9 – Based on review of Addendum 1 to the GEIS and Sections Section 14.6.2.5.2 of the PNPS Updated Final Safety Analysis Report, PNPS meets the fuel enrichment and burnup conditions set forth in Addendum 1 to the GEIS. In addition, there are no plans to change plant operational practices based on discussions with PNPS personnel. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

7.9 — Decommissioning

7.107.9 Decommissioning

Category 1 Issues Applicable to PNPS	
Issue	GEIS Section(s)
DECOMMISSIONING	
1. Radiation doses	7.3.1 and 7.4
2. Waste management	7.3.2 and 7.4
3. Air quality	7.3.3 and 7.4
4. Water quality	7.3.4 and 7.4
5. Ecological resources	7.3.5 and 7.4
6. Socioeconomic impacts	7.3.7 and 7.4

Item 1 – PNPS’s current radiation protection practices and NRC regulatory oversight will ensure that radiation doses are managed and regulated during the decommissioning period in accordance with specified practices and standards. In regard to public health protection, PNPS would be required to continue to meet the same permissible exposure levels established by the NRC during the decommissioning period. Based on conversation with ENS Nuclear Support representative (David Moore) who is responsible for radiation matters, he was not aware of any additional studies or information that would change the NRC’s conclusion. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 2 – PNPS is considerably smaller than the 1000-MW(e) reactor referenced in Section 7.3.2 of the GEIS. In addition, based on conversation with an Entergy Nuclear representative (Mark Carver), extending PNPS operations by an additional twenty years would not increase decommissioning waste volumes, so the ratio of decommissioning waste volume to operating waste volume would be even lower. Although it is anticipated that the volume of Class “C” waste would not increase to any appreciable extent, the Envirocare facility in Utah is proposing to expand its capabilities by submitting a Class “B & C” license application to the state of Utah. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 3 – Pilgrim Station utilizes various emission producing equipment, which is currently regulated under PNPS's 50% Facility Emission Cap Approval in accordance with 310 CMR 7.02(11), to support plant operations. During decommissioning the use of this equipment would be discontinued, thereby, decreasing overall site emissions. Based on site tours, fugitive air quality impacts from operation of motor vehicles during this period would be small due to adequate pavement of roads on and near the PNPS site. Finally, decommissioning activities and associated potential of radioactive airborne release are currently regulated under NRC requirements and will continue to be regulated during the license renewal term. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 4 - The PNPS workforce during the decommissioning period will be considerably less than that of the operational period. Therefore, there will be no increased demand on the PNPS's existing sanitary sewer operations regulated under Commonwealth of Massachusetts Groundwater Discharge Permit SE#2-389. In addition, PNPS will continue to be subjected to erosion and spill prevention management requirements imposed by state and/or federal agencies during the decommissioning period. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 5 – Based on site tours, laydown and waste storage areas are already present on-site and are assumed to be adequate to manage decommissioning activities. Therefore, no land disturbance is anticipated. PNPS will continue to be subjected to erosion and spill prevention management requirements imposed by state and/or federal agencies during the decommissioning period. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

Item 6 - Since the PNPS workforce during the decommissioning period is expected to be considerably less than that of the operational period, no increased socioeconomic demands should occur. Although a lesser workforce could potentially impact the local economy, these impacts would be essentially similar whether that action was taken in year 60 or in year 40. Therefore, no new and significant information was identified and the conclusions in the GEIS remain valid.

8.0 Document Reviews

During preparation of the PNPS ER, several documents were reviewed by the license renewal team. Although not inclusive, typical documents reviewed during this process are shown in Attachment 4.

Attachment 1

Industry Participation

Issue	Industry Group	Committee Name
Topic: General Policy		
Environmental Policy	EEI	Environmental Executive Advisory Committee
Auditing	EEI	Environmental Auditing Task Force
Emerging Issues	EEI	Emerging Issues Team
EMF	EEI	EMF Steering Committee/Task Force
Environmental Science R & D	EPRI	EPRI Environment Market Segment Council
Topic: Air		
Federal Air Policy	Class of '85	Class of '85
Air Science R & D	EPRI	Air Quality Health & Risk Assessment
Climate Change	EEI	Global Climate Change Subcommittee
NOx Control R & D	EPRI	G/O Boiler & Combustion NOx Control Target Committee
SO2 Allowance	EEI	SO2 Allowance Trading Work Group
Topic: Ecological Resources		
Gulf of Mexico	GOMP_BC	GOMP Business Council
Natural Resources	EEI	Natural Resources Management Subcommittee
Natural Resources	EEI	NRMS Biologists Task Force
Vegetation Mgmt.	EEI	NRMS Vegetation Management Task Force
Endangered Species	EEI	
Wetlands	USWAG	Section 404 Task Force
Topic: Spill Response		
EPCRA	EEI	EPCRA Subcommittee
Topic: Water		
Federal Water Policy	USWAG	Policy Committee
Legal Counsel	USWAG	USWAG Counsel

Issue	Industry Group	Committee Name
Analytical Procedures Biological Testing Cooling Systems Effluent Guidelines Hydroelectric Stormwater Water Quality	USWAG USWAG USWAG USWAG USWAG USWAG USWAG	Analytical Procedures Committee Bioavailable Metals Working Group Cooling Systems Committee Effluent Guidelines Committee Hydroelectric Task Force Non-Point/Storm Water Task Force Water Quality Committee
Topic: Waste		
Federal Waste Policy DOT Ash Management Ash Use Oil Ash Low Volume & Mixed Waste Remediation Rulemaking PCBs Spill Cleanup Superfund Tanks Treated Wood	USWAG USWAG USWAG USWAG USWAG USWAG USWAG USWAG USWAG USWAG EEI USWAG USWAG	USWAG Policy Committee USWAG DOT Task Force Ash Management and Solid Waste Committee USWAG Ash Use Task Force USWAG Oil Ash Work Group USWAG Low Volume Waste Committee USWAG Remediation Committee USWAG RCRA Rulemaking Task Force USWAG PCB Committee USWAG Spill Cleanup Task Force Superfund Subcommittee USWAG Tanks Subcommittee USWAG Treated Wood Task Force

Attachment 2

Regulatory Agencies Monitored

1. Chemical Safety and Hazard Investigation Board
2. Department of Commerce
3. Department of Defense
4. Department of Energy
5. Department of Health & Human Services (Center for Disease Control and Prevention)
6. Department of Homeland Security (Coast Guard)
7. Department of Interior (Fish and Wildlife Service)
8. Department of Justice
9. Department of Labor
10. Department of Transportation
11. General Services Administration
12. Environmental Protection Agency
13. Nuclear Regulatory Commission
14. Arkansas Department of Environmental Quality
15. Louisiana Department of Environmental Quality
16. Massachusetts Department of Environmental Protection
17. Mississippi Department of Environmental Quality
18. New York Department of Environmental Conservation
19. Vermont Agency of Natural Resources

Attachment 3
Previous SEIS Reviews

1. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Calvert Cliffs Nuclear Power Plant (NUREG-1437, Supplement 1)
2. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Oconee Nuclear Station, Units 1, 2 & 3 (NUREG-1437, Supplement 2)
3. Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding the Arkansas Nuclear One, Unit 1 (NUREG-1437, Supplement 3)
4. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Edwin I. Hatch Nuclear Plant, Units 1 and 2 (NUREG-1437, Supplement 4)
5. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Turkey Point Plant, Units 3 and 4 (NUREG-1437, Supplement 5)
6. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 6 - Regarding Surry Power Station, Units 1 and 2 (NUREG-1437, Supplement 6)
7. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 7 - North Anna Power Station, Units 1 and 2 (NUREG-1437, Supplement 7)
8. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 8 – Regarding McGuire Nuclear Station, Units 1 and 2 (NUREG-1437, Supplement 8)
9. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 9 - Regarding Catawba Nuclear Station, Units 1 and 2 (NUREG-1437, Supplement 9)
10. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 10 - Regarding Peach Bottom Atomic Power Station, Units 2 and 3 (NUREG-1437, Supplement 10)
11. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 11 - Regarding St. Lucie Units 1 and 2 (NUREG-1437, Supplement 11)
12. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 12 - Regarding Fort Calhoun Station, Unit 1 (NUREG-1437, Supplement 12)
13. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 13 - Regarding H.B. Robinson Steam Electric Plant, Unit No. 2 (NUREG-1437, Supplement 13)

14. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 14 - Regarding R.E. Ginna Nuclear Power Plant (NUREG-1437, Supplement 14)
15. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 15 - Regarding Virgil C. Summer Nuclear Station (NUREG-1437, Supplement 15)
16. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 16 - Regarding Quad Cities Nuclear Power Station (NUREG-1437, Supplement 16)
17. Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 17 - Regarding Dresden Nuclear Power Station, Units 2 and 3 (NUREG-1437, Supplement 17)
18. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 18 - Joseph M. Farley Nuclear Plant, Units 1 and 2 (NUREG-1437, Supplement 18)
19. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 19 - Arkansas Nuclear One, Unit 2 (NUREG-1437, Supplement 19)
20. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 20 - Donald C. Cook Nuclear Plant, Units No. 1 and 2 (NUREG-1437, Supplement 20)
21. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 21 - Browns Ferry Nuclear Plant, Units 1, 2 and 3 (NUREG-1437, Supplement 21)
22. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 22 - Millstone Power Station, Units 2 and 3 (NUREG-1437, Supplement 22)
23. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 23 - Point Beach Nuclear Plant, Units 1 and 2 (NUREG-1437, Supplement 23)
24. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 24 - Nine Mile Point Nuclear Station, Units 1 and 2 - Draft Report for Comment (NUREG-1437, Supplement 24)
25. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 25 - Brunswick Steam Electric Plant, Units 1 and 2 - Draft Report for Comment (NUREG-1437, Supplement 25)

Documents Reviewed (Typical)

50% Facility Emission Cap Approval in accordance with 310 CMR 7.02(11)

Air Permit Correspondence with Massachusetts Department of Environmental Protection

Annual Chemical Inventory Reports

Annual Radioactive Effluent Release Reports

Annual Radiological Environmental Operating Reports

Condition Reports (2003, 2004, and 2005)

Entergy Nuclear Annual Environmental Program Report (2004)

Final Environmental Statement Related to the Operation of Pilgrim Nuclear Power Station (Docket No. 50-293), May 1972

Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS), Volumes 1 and 2 (NUREG-1437)

Hazardous Waste Reports

Commonwealth of Massachusetts Groundwater Discharge Permit SE#2-389

NMM Procedure ENN-EV-104, Waste Minimization

NMM Procedure ENN-EV-115, Environmental Reviews and Evaluations

NMM Procedure ENN-LI-100, Process Applicability Determinations

NMM Procedure ENN-LI-101, 10CFR50.59 Review Process

NMM Procedure ENN-EV-106, Waste Management Program

NPDES Correspondence to Environmental Protection Agency

NPDES Monthly Discharge Monitoring Reports

NPDES Permit MA000357

NPDES Renewal Application

316 Demonstration Report – Pilgrim Nuclear Power Station, ENSR Corporation, March 2000, Document Number 0970-021-200

Additional Documents (Refer to references in the PNPS Environmental Report)