
Safety Evaluation Report

Related to the License Renewal of Pilgrim Nuclear
Power Station

Supplement 1

Docket No. 50-293

Entergy Nuclear Operations

U.S. Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

September 2007



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ABSTRACT

This document is a supplemental safety evaluation report (SSER) for the license renewal application (LRA) for Pilgrim Nuclear Power Station (PNPS) as filed by Entergy Nuclear Operations, Inc. (ENO or the applicant). By letter dated January 25, 2006, ENO submitted its application to the United States (US) Nuclear Regulatory Commission (NRC) for renewal of the PNPS operating license for an additional 20 years. The NRC staff (the staff) issued a safety evaluation report (SER), dated June 28, 2007, which summarizes the results of its safety review of the renewal application for compliance with the requirements of Title 10, Part 54, of the *Code of Federal Regulations*, (10 CFR Part 54), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

In a letter dated July 26, 2007, the staff requested that the applicant provide additional information on the option(s) that will be used for LRA Commitment No.31, which is discussed in SSER Sections 3.0.3.2.9 and 4.3.3, "Effects of Reactor Water Environment on Fatigue Life," and to describe the methodology that will be used for the chosen Commitment No. 31 option(s). The applicant's response clarified which option would be implemented to fulfill Commitment No. 31, provided the methodology that would be used to implement the selected option, and revised Commitment No. 31 consistent with the response. SSER Sections 3.0.3.2.9 and 4.3.3 incorporates the staff's request and the applicant's response and replace SER Sections 3.0.3.2.9 and 4.3.3.

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ABBREVIATIONS

ACRS	Advisory Committee on Reactor Safeguards
AMP	aging management program
ASME	American Society of Mechanical Engineers
BWR	boiling water reactor
CFR	Code of Federal Regulations
CLB	current licensing basis
CUF	cumulative usage factor
ENO	Entergy Nuclear Operations
F _{en}	fatigue life correction factor
FSAR	final safety analysis report
GALL	NUREG-1801, Generic Aging Lessons Learned Report
GEIS	general environmental impact statement
LR	license renewal
LRA	license renewal application
NDE	non-destructive examinations
NRC	Nuclear Regulatory Commission
OI	open item
PNPS	Pilgrim Nuclear Power Station
RAI	request for additional information
RCPB	reactor coolant pressure boundary
RPV	reactor pressure vessel
RR	reactor recirculation
RRS	reactor recirculation system
SER	Safety Evaluation Report
SRP-LR	Standard Review Plan for License Renewal
SSER	Supplemental Safety Evaluation Report
TLAA	time-limited aging analysis
US	United States
UFSAR	updated final safety analysis report

SECTION 1

INTRODUCTION AND GENERAL DISCUSSION

This document is a supplemental safety evaluation report (SSER) for the license renewal application (LRA) for Pilgrim Nuclear Power Station (PNPS) as filed by Entergy Nuclear Operations, Inc. (ENO or the applicant). By letter dated January 25, 2006, ENO submitted its application to the United States (US) Nuclear Regulatory Commission (NRC) for renewal of the PNPS operating license for an additional 20 years. The NRC staff (the staff) issued a safety evaluation report (SER), dated June 28, 2007, which summarizes the results of its safety review of the renewal application for compliance with the requirements of Title 10, Part 54, of the *Code of Federal Regulations*, (10 CFR Part 54), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants."

In a letter dated July 26, 2007, the staff requested that the applicant provide additional information on the option(s) that will be used for LRA Commitment No.31, which is discussed in SSER Sections 3.0.3.2.9 and 4.3.3, "Effects of Reactor Water Environment on Fatigue Life," and to describe the methodology that will be used for the chosen Commitment No. 31 option(s). The applicant's response clarified which option would be implemented to fulfill Commitment No. 31, provided the methodology that would be used to implement the selected option, and revised Commitment No. 31 consistent with the response. SSER Sections 3.0.3.2.9 and 4.3.3 incorporates the staff's request and the applicant's response and replace SER Sections 3.0.3.2.9 and 4.3.3.

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SECTION 3

AGING MANAGEMENT REVIEW RESULTS

3.0 Applicant's Use of the Generic Aging Lessons Learned Report

3.0.3 Aging Management Programs

3.0.3.2 *AMPs That Are Consistent with the GALL Report with Exceptions and/or Enhancements*

3.0.3.2.9 Fatigue Monitoring Program

Summary of Technical Information in the Application. LRA Section B.1.12, "Fatigue Monitoring," describes the existing Fatigue Monitoring Program as consistent, with exceptions, with GALL AMP X.M1, "Metal Fatigue of Reactor Coolant Pressure Boundary."

In order not to exceed design limits for fatigue, the Fatigue Monitoring Program tracks the number of critical thermal and pressure transients for selected reactor coolant system components and confirms the validity of analyses that explicitly assume a specified number of such fatigue transients by ensuring that the actual effective number of transients is not exceeded.

Staff Evaluation. During its audit and review, the staff confirmed the applicant's claim of consistency with the GALL Report and documented a detailed audit evaluation of this AMP in Audit and Review Report Section 3.0.3.2.9.

The staff reviewed those portions of the Fatigue Monitoring Program for which the applicant claimed consistency with GALL AMP X.M1 and found them consistent.

In a letter dated August 28, 2007, the applicant amended the LRA with respect to its basis for its environmentally-assisted fatigue analysis. In this letter, the applicant clarified that Option 1 of Commitment No. 31 for refined CUF calculations is consistent with the Nuclear Regulatory Commission's (NRC) recommendations for the periodic CUF updates in the "monitoring and trending" (i.e., program element 4) of GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," and that Options 2 and 3 of Commitment No. 31 are considered to be corrective actions that are consistent with the corrective actions recommended in the "corrective action" (i.e., program element 7) of the same GALL AMP. Based on these clarifications, the applicant amended the LRA to bring Commitment No. 31 within the scope of the applicant's Fatigue Monitoring Program and to credit this AMP as the basis for accepting this TLAA in accordance with 10 CFR 54.21(c)(1)(iii). In the LRA amendment, the applicant also stated that the Fatigue Monitoring Program is consistent with GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," without exception. The staff determined that the changes proposed by the applicant are consistent with the NRC's recommendations in GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary." Based on this assessment, the staff concludes that the Fatigue Monitoring Program is consistent with GALL AMP X.M1 without exception and is acceptable.

Operating Experience. LRA Section B.1.12 states that industry experience has been factored into the Fatigue Monitoring Program through incorporation of regulatory guides and boiling water reactor vessel and internals program documents. The locations at which cumulative usage factors are calculated include those indicated in NUREG/CR-6260. Thermal stresses have been evaluated by the applicant and the applicant will continue to evaluate future plant and industry experience with fatigue of Class 1 components. Recent reactor shutdown and startup cycles did not trend toward exceeding the projected number of cycles, demonstrating that the program successfully monitors plant transients and tracks their accumulation.

The staff reviewed the operating experience presented in the LRA and interviewed the applicant's technical personnel to confirm that the plant-specific operating experience revealed no degradation not bounded by industry experience.

The staff confirmed that the "operating experience" program element satisfies the criterion defined in the GALL Report and in Standard Review Plan for License Renewal Section A.1.2.3.10. The staff finds this program element acceptable.

UFSAR Supplement. In LRA Section A.2.1.12, the applicant provided the UFSAR supplement for the Fatigue Monitoring Program. The staff reviewed this section and determined that the information in the UFSAR supplement is an adequate summary description of the program, as required by 10 CFR 54.21(d).

Conclusion. On the basis of its audit and review of the applicant's Fatigue Monitoring Program, the staff determines that those program elements for which the applicant claimed consistency with GALL AMP X.M1, "Metal Fatigue of Reactor Coolant Pressure Boundary," are consistent. The staff concludes that the applicant has demonstrated that the effects of aging will be adequately managed so that the intended function(s) will be maintained consistent with the CLB for the period of extended operation, as required by 10 CFR 54.21(a)(3). The staff also reviewed the UFSAR supplement for this AMP and concludes that it provides an adequate summary description of the program, as required by 10 CFR 54.21(d).

SECTION 4

TIME-LIMITED AGING ANALYSES

4.3 Metal Fatigue

4.3.3 Effects of Reactor Water Environment on Fatigue Life

4.3.3.1 *Summary of Technical Information in the Application*

License renewal application (LRA) Section 4.3.3 summarizes the evaluation of effects of reactor water environments on fatigue life for the period of extended operation. NUREG/CR-6260 "Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear Power Plant Components," applies fatigue design curves that incorporate environmental effects on several plants and identified locations of interest for consideration of environmental effects. NUREG/CR-6260 Section 5.7 indicates for Pilgrim Nuclear Power Station (PNPS)-vintage General Electric plants the following component locations as most sensitive to environmental effects. These locations and the associated calculations relate directly to PNPS:

- reactor vessel shell and lower head
- reactor vessel feedwater nozzles
- reactor recirculation system (RRS) piping (including inlet and outlet nozzles)
- core spray line reactor vessel nozzle and associated piping
- residual heat removal return piping
- feedwater piping

The applicant evaluated the limiting locations (a total of nine components at these six locations) using the guidance in NUREG-1801, Revision 1, Volume 2, "Generic Aging Lessons Learned (GALL) Report," Chapter X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," and in NUREG-1800, Revision 1, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (SRP-LR), Sections 4.3.1.2, 4.3.2.2, and 4.3.3.2, "Generic Safety Issue." Four of nine components reviewed have an environmentally-adjusted cumulative usage factor (CUF) greater than 1.0. The American Society of Mechanical Engineers (ASME) Code does not require environmental adjustment to fatigue analyses.

The applicant stated that, considering environmental effects, prior to the period of extended operation for each location that may exceed a 1.0 CUF, the applicant will implement one or more of the following: (1) further refinement of the fatigue analyses to lower the predicted CUFs to less than 1.0, (2) management of fatigue at the affected locations by an inspection program reviewed and approved by the staff (e.g., periodic non-destructive examination of the locations at intervals to be determined by a method acceptable to the staff), or (3) repair or replacement of the affected components.

The applicant stated that, should it opt to manage fatigue during the period of extended operation, the aging management program (AMP) will be submitted for Nuclear Regulatory Commission (NRC) review and approval at least two years prior to entering the period of extended operation. The effects of thermal fatigue for the limiting locations indicated in NUREG-6260 have been evaluated.

4.3.3.2 Staff Evaluation

The staff reviewed LRA Section 4.3.3 to verify (1) pursuant to Title 10, Section 54.21(c)(1)(i) of the Code of Federal Regulations (10 CFR 54.21(c)(1)(i)), that the analyses remain valid for the period of extended operation, (2) pursuant to 10 CFR 54.21(c)(1)(ii), that the analyses have been projected to the end of the period of extended operation, or (3) pursuant to 10 CFR 54.21(c)(1)(iii), that the effects of aging on the intended function(s) will be adequately managed for the period of extended operation.

The staff reviewed LRA Section 4.3.3 against SRP-LR Section 4.3.3.2, "Generic Safety Issue". SRP-LR recommends that the license renewal applicant address GSI-190. To assess the impact of the reactor coolant environment on a sample of critical components, the SRP-LR states that the applicant has to address the recommendations as follows:

1. The critical components include, as a minimum, those selected in NUREG/CR-6260.
2. The sample of critical components has been evaluated by applying environmental correction factors to the existing ASME Code fatigue analyses.
3. Formulas for calculating the environmental life correction factors are those contained in NUREG/CR-6583 for carbon and low-alloy steels, and in NUREG/CR-5704 for austenitic stainless steels (SSs), or an approved technical equivalent.

In LRA Table 4.3-3, the applicant has evaluated the sample of critical components by applying environmental correction factors to the current design basis ASME Code fatigue analysis. The staff confirmed that the critical components include those selected in NUREG/CR-6260. The staff also confirmed that environmental life correction factors are calculated in accordance with those formulas contained in NUREG/CR-6583 for carbon and low-alloy steels, and in NUREG/CR-5704 for austenitic SSs. Therefore, the staff confirmed that PNPS has followed the staff's recommendations to assess the impact of the reactor coolant environment consistent with SRP-LR.

During the audit and review, the staff noted that the projected numbers of transient cycles exceeded the numbers of current design basis transient cycles and that the CUFs were not evaluated based on the numbers of projected cycles. The staff asked why the new CUFs had not been calculated based on the 60-year projected cycles. The applicant responded that PNPS had not intended to imply that the CUFs should be projected out to 60 years in accordance with 10 CFR 50.41(c)(1)(ii). The applicant stated that as long as the cycles are not exceeded, the CUFs do not need to be recalculated. The applicant also stated that the fatigue monitoring program assures that the analyses will be revised to increase the allowable number of cycles before exceeding the number of design basis cycles. The applicant's approach to address this issue is in accordance with 10 CFR 54(c)(1)(iii).

During the audit and review, the staff asked the applicant to resolve three issues in LRA Section 4.3.3 and LRA Table 4.3-3 as follows:

Issue 1. The footnotes in LRA Table 4.3-3 state that generic values for these components were from NUREG/CR-6220. The staff asked the applicant whether this statement should refer to NUREG/CR-6260.

In response, the applicant stated that this reference was a typo that should be NUREG/CR-6260.

The staff finds the applicant's response acceptable as NUREG/CR-6260 is the correct reference. Issue 1 is resolved.

Issue 2. The staff informed the applicant that plant-specific Class 1 component locations selected for the environmentally-adjusted CUF analysis should be based on the corresponding specific plant vintage assessed in NUREG/CR-6260 and that the plant-specific locations for analysis therefore depend on the compliance of a plant's Class 1 reactor coolant pressure boundary (RCPB) configuration with that analyzed for the corresponding plant design in the topical report. The staff informed the applicant that it could not use the generic NUREG/CR-6260 environmentally-adjusted CUF values for environmentally-adjusted CUF analysis without justification that the plant-specific Class 1 RCPB locations analyzed were the same as those analyzed for the corresponding boiling water reactor (BWR)-designed vintage plant in NUREG/CR-6260.

To resolve the issue, the staff asked the applicant to justify its use of the NUREG/CR-6260 generic environmentally-adjusted CUF values for the RR outlet nozzle, core spray nozzle safe end, and feedwater piping.

In its response dated July 19, 2006, the applicant stated that the environmentally-adjusted CUF values for these components were intended as typical values for predicting the effect of the reactor coolant environment on fatigue. The applicant agreed to supplement the LRA to remove the environmentally-adjusted CUF values for the RR outlet nozzle, core spray safe end, and feedwater piping from LRA Table 4.3-3 and to amend the LRA to provide additional environmentally-adjusted fatigue analyses for these components.

In its response dated September 13, 2006, the applicant indicated that it had determined that its design basis includes environmentally-adjusted CUF calculations for the RR outlet nozzle, the core spray nozzle safe-end, and feedwater piping, and submitted a revised table including normal CUF values for these components to the expiration of the current operating license period (i.e., at the end of 40 years), projected CUF values for these components at the expiration of the period of extended operation, and their projected environmentally-adjusted CUF values at the expiration of the period of extended operation. The table also includes the 60-year environmentally-adjusted CUF calculations for all other plant-specific Class 1 components previously analyzed in accordance with ASME Code, Section III CUF calculations. The applicant stated that all CUFs that exceed 1.0 must be recalculated prior to the period of extended operation. The applicant included Commitment No. 31 to address this issue. The staff's resolution of this issue is deferred to the staff's resolution of request for additional information (RAI) 4.3.3-1 which is discussed and evaluated below.

Issue 3. The staff asked the applicant for more details on its corrective action implementation plan for locations projected to have 60-year environmentally adjusted CUF values above 1.0. Specifically, the staff asked the applicant to clarify how the fatigue analyses would be refined further by selection of Option 1 of the corrective action implementation plan. The staff also informed the applicant that it would need to make a commitment in the LRA if Option 2 of the plan, manage the effects of aging, was selected as the course of corrective action for fatigue-induced damage in the components.

In its response dated September 13, 2006, the applicant added Commitment No. 31, stating it would implement one of several options for the locations indicated in NUREG/CR-6260 for BWRs of the PNPS vintage.

In 4.3.3-1 dated July 26, 2007 (ADAMS Accession No. ML072000407), the staff requested that the applicant provide additional information on the option(s) that will be used for LRA Commitment No. 31 and describe the methodology that will be used for the chosen Commitment No. 31 option(s) in sufficient detail for staff review.

In its response dated July 30, 2007 (ADAMS Accession No. ML072190611), the applicant clarified which option would be implemented to fulfill Commitment No. 31 and provided the methodology that would be used to implement the selected option. Commitment No. 31 was revised to state:

“At least 2 years prior to entering the period of extended operation, for the locations identified in NUREG/CR-6260 for BWRs of the PNPS vintage, PNPS will refine our current fatigue analyses to include the effects of reactor water environment and verify that the cumulative usage factors (CUFs) are less than 1. This includes applying the appropriate Fen [sic] factors to valid CUFs determined in accordance with one of the following:

1. For locations, including NUREG/CR-6260 locations, with existing fatigue analyses valid for the period of extended operation, use the existing CUF to determine the environmentally adjusted CUF.
2. More limiting PNPS-specific locations with a valid CUF may be added in addition to the NUREG/CR-6260 locations.
3. Representative CUF values from other plants, adjusted to or enveloping the PNPS plant specific external loads may be used if demonstrated applicable to PNPS.
4. An analysis using an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case) may be performed to determine a valid CUF.

During the period of extended operation, PNPS may also use one of the following options for fatigue management if ongoing monitoring indicates a potential for a condition outside the analysis bounds noted above:

1. Update and/or refine the affected analyses described above.
2. Implement an inspection program that has been reviewed and approved by the NRC (e.g., periodic nondestructive examination of the affected locations at inspection intervals to be determined by a method acceptable to the NRC).

3. Repair or replace the affected locations before exceeding a CUF of 1.0.”

In its response dated July 30, 2007, the applicant also provided its implementation detail for these 3 options as follows:

The processes that will be used to develop the calculations for Option (1) are established design and configuration management processes. These processes are governed by Entergy's 10 CFR 50 Appendix B Quality Assurance (QA) program and include design input verification and independent reviews ensuring that valid assumptions, transients, cycles, external loadings, analysis methods, and environmental fatigue life correction factors will be used in the refined or new fatigue analyses.

The analysis methods for determination of stresses and fatigue usage will be in accordance with an NRC endorsed Edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III Rules for Construction of Nuclear Power Plant Components Division 1 Subsection NB, Class 1 Components, Sub articles NB-3200 or NB-3600 as applicable to the specific component.

PNPS will utilize design transients from Design Specifications as well as design transient information from typical BWR-3 references to bound all operational transients. The numbers of cycles used for evaluation will be based on the design number of cycles and actual cycle counts projected out to the end of license renewal period (60 years).

Environmental effect on fatigue usage will be assessed using methodology consistent with the GALL Report, Rev. 1, that states, “ The sample of critical components can be evaluated by applying environmental life correction factors to the existing ASME Code fatigue analyses. Formulae for calculating the environmental life correction factors are contained in NUREG/CR-6583 for carbon and low-alloy steels and in NUREG/CR-5704 for austenitic stainless steel.

If Option (2) of Commitment 31 becomes necessary, the inspection program submitted for approval by the NRC will be described in terms of the ten elements specified in Branch Technical Position RLSB-1 (NUREG-1800, Appendix A-1). Parameters monitored will be the presence and sizing of cracks. Frequency of inspection and acceptance criteria will be established such that detection of aging effects will occur before there is a loss of component intended function(s). The method of inspection will be a qualified volumetric technique based on plant specific and industry-wide operating experience.

If Option (3) becomes necessary, repair or replacement of the affected component(s) will be in accordance with established plant procedures governing repair and replacement activities. These established procedures are governed by Entergy's 10 CFR 50 Appendix B QA Program and meet the applicable repair and replacement requirements of the ASME Code Section XI.

In a letter dated August 28, 2007, the applicant amended the LRA with respect to its basis for its environmentally-assisted fatigue analysis. In this letter, the applicant clarified that Option 1 of

Commitment No. 31 for refined CUF calculations is consistent with both the NRC's recommendations for the periodic CUF updates in the "monitoring and trending" (i.e., program element 4) of GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," and for "corrective actions" in GALL AMP X.M1. The applicant also clarified that Options 2 and 3 of Commitment No. 31 are considered to be corrective actions that are consistent with the corrective actions recommended in the "corrective action" (i.e., program element 7) of the same GALL AMP. Based on these clarifications, the applicant amended the LRA to bring Commitment No. 31 within the scope of the applicant's Fatigue Monitoring Program and to credit this AMP as the basis for accepting this TLAA in accordance with 10 CFR 54.21(c)(1)(iii). These changes are consistent with the NRC's recommendations in GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," and are acceptable. The following paragraphs provide additional information on why the changes in LRA Amendment No. 20 are acceptable.

The "corrective actions" of GALL Chapter X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary," state that acceptable corrective actions include repair of the component, replacement of component, or a more rigorous analysis of the component to demonstrate that the design limit will not be exceeded during the extended period of operation. The staff reviewed the 3 options in Commitment No. 31, which were included in the application as possible corrective actions to address those limiting reactor coolant pressure boundary components with projected environmentally-assisted CUFs in excess of the environmentally-assisted fatigue analysis limit (i.e., 1.0).

The staff reviewed the applicant's implementation plan for using Option (1) of Commitment No. 31 (i.e., the option for implementation of refined environmentally-assisted CUF calculations), as provided in the applicant's letter of August 28, 2007, against the staff's recommendation in SRP-LR Section 4.3.3.2, "Generic Safety Issues." The staff determined the response to the RAI indicated that the refined environmentally-assisted fatigue calculations would be based on the recommendations for performing environmentally-assisted fatigue calculations in NUREG/CR-6583 for steel components and in NUREG/CR-5704 for stainless steel components and that the methods for determination of stresses and fatigue usage factors would be in accordance with an NRC-endorsed edition of the ASME Code Section III, Division 1, Subsection NB, Subarticles NB-3200 or NB-3600, as applicable to the specific component. Based on this response, the staff determined that the implementation plan for using Option (1) of the commitment indicates that the applicant will be using NRC-approved methods for reanalysis and that the option is in conformance with the "corrective actions" recommendations in the both the Standard Review Plan for License Renewal SRP-LR and GALL AMP X.M1, "Metal Fatigue of the Reactor Coolant Pressure Boundary. Based on this assessment, that staff concludes that Option (1) of Commitment No. 31 is an acceptable "corrective action" option for this TLAA.

In its response to RAI 4.3.3-1, the applicant stated that, if Option (2) of Commitment No. 31 is selected for corrective action, the inspection program for implementing the options would meet the following criteria: (1) the inspection program would be based on the 10 program elements for an AMP, as defined in NRC Branch Position RLSB-1, (2) the AMP would be submitted for NRC review and approval at least two years prior to entering the period of extended operation, and (3) the method of inspection will be based on a qualified volumetric examination technique. The ASME Code Section XI, Paragraph IWB-3740(a) states that "Appendix L provides procedures that may be used to assess the effects of thermal and mechanical fatigue concerns

on component acceptability for continued service”; the ASME Code Section XI, Paragraph IWB-3740(b) states that “Appendix L provides procedures that may also be used when the calculated fatigue usage exceeds the fatigue usage limit defined in the original Construction Code.” Paragraph L-3400 of the ASME Code Section XI, Appendix L states that surface examinations or volumetric examinations of reactor coolant pressure boundary components may be used to verify the acceptability of affected components for further service. Based on this response, the staff determined that the implementation plan for using Option (2) of the commitment conforms to the examination provisions stated in paragraph L-3400 of the ASME Code Section XI, Non-mandatory Appendix L and with “corrective actions” recommended in GALL AMP X.M1, “Metal Fatigue of the Reactor Coolant Pressure Boundary.” Based on this assessment, that staff concludes that Option (2) of Commitment No. 31 is an acceptable “corrective action” option for this TLAA.

In its response to RAI 4.3.3-1, the applicant stated that Option (3) for repair or replacement of the affected locations is a corrective action. The applicant also stated that, if this option is selected for corrective action, the repair or replacement activities would be in compliance with applicable provisions of the ASME Code Section XI. The staff determined that, since the implementation of repair and replacement activities will be based on applicable ASME Code Section XI requirements, Option (3) of Commitment No. 31 is consistent the “corrective actions recommended in GALL AMP X.M1, “Metal Fatigue of the Reactor Coolant Pressure Boundary.” On this basis, the staff concludes that Option (3) of Commitment No. 31 is also an acceptable “corrective action” option for this TLAA.

Based on this assessment, the staff concludes that the corrective actions methods discussed in the applicant’s response to RAI 4.3.3-1 and provided in Commitment No. 31 are acceptable because they will be implemented in accordance with NRC-approved methods. Based on this review, the staff concludes that time-limited aging analysis (TLAA) on environmentally-assisted fatigue is acceptable in accordance with 10 CFR 54.21(c)(1)(iii) because the applicant has credited the Fatigue Monitoring Program to manage the effects of aging during the period of extended operation and because the applicant has amended the Fatigue Monitoring program to include the options in Commitment No. 31 for corrective action, as discussed above. RAI 4.3.3-1 is resolved.

4.3.3.3 UFSAR Supplement

The applicant provided an updated final safety analysis report (UFSAR) supplement summary description of its TLAA evaluation of effects of reactor water environments on fatigue life in LRA Section A.2.2.2.3. The applicant stated that the effects of the reactor coolant environment on the metal fatigue analysis had been evaluated for the LRA but only for 40 years and not for the period of extended operation. As a result, the staff determined that the initial version of the UFSAR supplement summary description did not describe the TLAA on environmental fatigue adequately because LRA Section A.2.2.2.3 would need an update to refer to LRA Commitment No. 31, which the applicant relies on for acceptance of the TLAA on environmental fatigue.

In a letter dated September 13, 2006, the applicant amended the LRA and added Commitment No. 31 to address the need for updated, 60-year environmental CUF calculations for plant-specific Class 1 locations that correspond to those analyzed in NUREG-6260. However, the applicant did not revise the LRA Section A.2.2.2.3 summary description to refer to

Commitment No. 31.

In a letter dated August 28, 2007, the applicant amended LRA Section A.2.2.2.3 to refer to Commitment No. 31. The staff reviewed the UFSAR supplement summary description in LRA Section A.2.2.2.3 as amended by this letter. On July 30, 2007, the applicant amended Commitment No. 31 as discussed in the response to RAI 4.3.3-1. The staff determined that the summary description of this TLAA was adequate because it complies with that recommended in the SRP-LR UFSAR supplement table and because it has been amended to refer to Commitment No. 31 on the LRA.

Based on its review, the staff concludes that LRA Section A.2.2.2.3, as amended by the August 28, 2007, letter, complies with 10 CFR 54.21(d).

4.3.3.4 Conclusion

On the basis of its review, as discussed above, the staff concludes that the applicant has demonstrated, pursuant to 10 CFR 54.21(c)(1)(iii), that the effects of aging on the intended function(s) will be adequately managed for the period of extended operation. The staff also concludes that the UFSAR supplement contains an appropriate summary description of the TLAA evaluation, as required by 10 CFR 54.21(d).

4.8 Conclusion for Time-Limited Aging Analyses

The staff reviewed the information in LRA Section 4, "Time-Limited Aging Analyses." On the basis of its review the staff concludes that the applicant has provided an adequate list of TLAAs, as defined in 10 CFR 54.3. Further, the staff concludes that the applicant demonstrated that: (1) the TLAAs will remain valid for the period of extended operation, as required by 10 CFR 54.21(c)(1)(i); (2) the TLAAs have been projected to the end of the period of extended operation, as required by 10 CFR 54.21(c)(1)(ii); or (3) that the aging effects will be adequately managed for the period of extended operation, as required by 10 CFR 54.21(c)(1)(iii). The staff also reviewed the UFSAR supplement for the TLAAs and found that the UFSAR supplement contains descriptions of the TLAAs sufficient to satisfy the requirements of 10 CFR 54.21(d). In addition, the staff concludes, that no plant-specific exemptions are in effect that are based on TLAAs, as required by 10 CFR 54.21(c)(2).

With regard to these matters, the staff concludes, that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis (CLB), and that any changes made to the CLB, in order to comply with 10 CFR 54.21(c), are in accordance with the Atomic Energy Act of 1954, and the NRC's regulations.

SECTION 5

REVIEW BY THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

In accordance with Title 10, Part 54, of the *Code of Federal Regulations*, the Advisory Committee on Reactor Safeguards (ACRS) has reviewed the license renewal application (LRA) for Pilgrim Nuclear Power Station.

On April 4, 2007, the applicant presented its LRA, and the NRC staff, including Region I personnel, presented its review findings, as contained in the safety evaluation report (SER) with open items dated March 1, 2007, to the ACRS Plant License Renewal Subcommittee.

On September 6, 2007, the applicant presented its LRA, and the NRC staff, including Region I personnel, presented its review findings, as contained in the final SER dated June 28, 2007, to the ACRS Plant License Renewal Full Committee.

The ACRS will continue its detailed review of the LRA after this Supplemental SER is issued. After the ACRS completes its review of the LRA, and SERs, the Full Committee will issue a report discussing the results of its review. The published copy of this SER will include the ACRS report and the staff's response to any issues and concerns.

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SECTION 6

CONCLUSION

The staff of the United States (US) Nuclear Regulatory Commission (NRC) (the staff) reviewed the license renewal application (LRA) for Pilgrim Nuclear Power Station in accordance with NRC regulations and US NRC NUREG-1800, Revision 1, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," dated September 2005. Title 10, Section 54.29, of the *Code of Federal Regulations* (10 CFR 54.29) sets the standards for issuance of a renewed license.

On the basis of its review of the LRA the staff determines that the requirements of 10 CFR 54.29(a) have been met.

The staff notes that any requirements of 10 CFR Part 51, Subpart A, are documented in NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)," Supplement 29, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Pilgrim Nuclear Power Station," dated July, 2007.

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APPENDIX A

PNPS LICENSE RENEWAL COMMITMENTS

During the review of the Pilgrim Nuclear Power Station (PNPS) license renewal application (LRA) by the staff of the United States (US) Nuclear Regulatory Commission (NRC or the staff), Entergy Nuclear Operations, Inc. (the applicant), made commitments related to aging management programs (AMPs) to manage the aging effects of structures and components prior to the period of extended operation. The following table lists these commitments along with the implementation schedules and the sources for each commitment.

Changes to the attached commitment table reflect changes delineated in Attachment C to the letter dated July 30, 2007. The following item is revised:

- Commitment No. 31

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APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
1	Implement the Buried Piping and Tanks Inspection Program as described in LRA Section B.1.2.	B.1.2	June 8, 2012	Letters 2.06.003 and 2.06.057
2	Enhance the implementing procedure for ASME Section XI inservice inspection and testing to specify that the guidelines in Generic Letter 88-01 or approved BWRVIP-75 shall be considered in determining sample expansion if indications are found in Generic Letter 88-01 welds.	B.1.6	June 8, 2012	Letters 2.06.003 and 2.06.057
3	Inspect fifteen (15) percent of the top guide locations using enhanced visual inspection technique, EVT-1, within the first 18 years of the period of extended operation, with at least one-third of the inspections to be completed within the first six (6) years and at least two-thirds within the first 12 years of the period of extended operations. Locations selected for examination will be areas that have exceeded the neutron fluence threshold.	B.1.8	Inspections completed within the first 18 years of the period of extended operation (at least one-third of these inspections completed within the first six years and at least two-thirds completed within the first 12 years)	Letters 2.06.003, 2.06.057, 2.06.064, and 2.06.081

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
4	Enhance the Diesel Fuel Monitoring Program to include quarterly sampling of the security diesel generator fuel storage tank. Particulates (filterable solids), water and sediment checks will be performed on the samples. Filterable solids acceptance criteria will be = 10 mg/l. Water and sediment acceptance criteria will be = 0.05%.	B.1.10	June 8, 2012	Letters 2.06.003, 2.06.057, and 2.06.089
5	Enhance the Diesel Fuel Monitoring Program to install instrumentation to monitor for leakage between the two walls of the security diesel generator fuel storage tank to ensure that significant degradation is not occurring.	B.1.10	June 8, 2012	Letters 2.06.003 and 2.06.057
6	Enhance the Diesel Fuel Monitoring Program to specify acceptance criterion for UT measurements of emergency diesel generator fuel storage tanks (T-126A&B).	B.1.10	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
7	Enhance Fire Protection Program procedures to state that the diesel engine subsystems (including the fuel supply line) shall be observed while the pump is running. Acceptance criteria will be enhanced to verify that the diesel engine did not exhibit signs of degradation while it was running; such as fuel oil, lube oil, coolant, or exhaust gas leakage. Also, enhance procedures to clarify that the diesel-driven fire pump engine is inspected for evidence of corrosion in the intake air, turbocharger, and jacket water system components as well as lube oil cooler. The jacket water heat exchanger is inspected for evidence of corrosion or buildup to manage loss of material and fouling on the tubes. Also, the engine exhaust piping and silencer are inspected for evidence of internal corrosion or cracking.	B.1.13.1	June 8, 2012	Letters 2.06.003, 2.06.057, and 2.06.064
8	Enhance the Fire Protection Program procedure for Halon system functional testing to state that the Halon 1301 flex hoses shall be replaced if leakage occurs during the system functional test.	B.1.13.1	June 8, 2012	Letters 2.06.003 and 2.06.057
9	Enhance Fire Water System Program procedures to include inspection of hose reels for corrosion. Acceptance criteria will be enhanced to verify no significant corrosion.	B.1.13.2	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
10	Enhance the Fire Water System Program to state that a sample of sprinkler heads will be inspected using guidance of NFPA 25 (2002 Edition) Section 5.3.1.1.1. NFPA 25 also contains guidance to repeat this sampling every 10 years after initial field service testing.	B.1.13.2	June 8, 2012	Letters 2.06.003 and 2.06.057
11	Enhance the Fire Water System Program to state that wall thickness evaluations of fire protection piping will be performed on system components using nonintrusive techniques (e.g., volumetric testing) to identify evidence of loss of material due to corrosion. These inspections will be performed before the end of the current operating term and at intervals thereafter during the period of extended operation. Results of the initial evaluations will be used to determine the appropriate inspection interval to ensure aging effects are identified prior to loss of intended function.	B.1.13.2	June 8, 2012	Letters 2.06.003 and 2.06.057
12	Implement the Heat Exchanger Monitoring Program as described in LRA Section B.1.1 5.	B.1.15	June 8, 2012	Letters 2.06.003 and 2.06.057
13	Enhance the Instrument Air Quality Program to include a sample point in the standby gas treatment and torus vacuum breaker instrument air subsystem in addition to the instrument air header sample points.	B.1.17	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
14	Implement the Metal-Enclosed Bus Inspection Program as described in LRA Section B.1.18.	B.1.18	June 8, 2012	Letters 2.06.003 and 2.06.057
15	Implement the Non-EQ Inaccessible Medium-Voltage Cable Program as described in LRA Section B.1.19. Include developing a formal procedure to inspect manholes for in-scope medium voltage cable.	B.1.19	June 8, 2012	Letters 2.06.003 and 2.06.057
16	Implement the Non-EQ Instrumentation Circuits Test Review Program as described in LRA Section B.1.20.	B.1.20	June 8, 2012	Letters 2.06.003 and 2.06.057
17	Implement the Non-EQ Insulated Cables and Connections Program as described in LRA Section B.1.21.	B.1.21	June 8, 2012	Letters 2.06.003 and 2.06.057
18	Enhance the Oil Analysis Program to periodically change CRD pump lubricating oil. A particle count and check for water will be performed on the drained oil to detect evidence of abnormal wear rates, contamination by moisture, or excessive corrosion.	B.1.22	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
19	Enhance Oil Analysis Program procedures for security diesel and reactor water cleanup pump oil changes to obtain oil samples from the drained oil. Procedures for lubricating oil analysis will be enhanced to specify that a particle count and check for water are performed on oil samples from the fire water pump diesel, security diesel, and reactor water cleanup pumps.	B.1.22	June 8, 2012	Letters 2.06.003 and 2.06.057
20	Implement the One-Time Inspection Program as described in LRA Section B.1.23.	B.1.23	June 8, 2012	Letters 2.06.003, 2.06.057, and 2.07.023
21	Enhance the Periodic Surveillance and Preventive Maintenance Program as necessary to assure that the effects of aging will be managed as described in LRA Section B.1.24.	B.1.24	June 8, 2012	Letters 2.06.003 and 2.06.057
22	Enhance the Reactor Vessel Surveillance Program to proceduralize the data analysis, acceptance criteria, and corrective actions described in LRA Section B.1.26.	B.1.26	June 8, 2012	Letters 2.06.003 and 2.06.057
23	Implement the Selective Leaching Program in accordance with the program as described in LRA Section B.1.27.	B.1.27	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
24	Enhance the Service Water Integrity Program procedure to clarify that heat transfer test results are trended.	B.1.28	June 8, 2012	Letters 2.06.003 and 2.06.057
25	Enhance the Structures Monitoring Program procedure to clarify that the discharge structure, security diesel generator building, trenches, valve pits, manholes, duct banks, underground fuel oil tank foundations, manway seals and gaskets, hatch seals and gaskets, underwater concrete in the intake structure, and crane rails and girders are included in the program. In addition, the Structures Monitoring Program will be revised to require opportunistic inspections of inaccessible concrete areas when they become accessible.	B.1.29.2	June 8, 2012	Letters 2.06.003 and 2.06.057
26	Enhance Structures Monitoring Program guidance for performing structural examinations of elastomers (seals, gaskets, seismic joint filler, and roof elastomers) to identify cracking and change in material properties.	B.1.29.2	June 8, 2012	Letters 2.06.003 and 2.06.057
27	Enhance the Water Control Structures Monitoring Program scope to include the east breakwater, jetties, and onshore revetments in addition to the main breakwater.	B.1.29.3	June 8, 2012	Letters 2.06.003 and 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
28	Enhance System Walkdown Program guidance documents to perform periodic system engineer inspections of systems in-scope and subject to aging management review for license renewal in accordance with 10 CFR 54.4(a)(1) and (a)(3). Inspections shall include areas surrounding the subject systems to identify hazards to those systems. Inspections of nearby systems that could impact the subject systems will include SSCs that are in-scope and subject to aging management review for license renewal in accordance with 10 CFR 54.4(a)(2).	B.1.30	June 8, 2012	Letters 2.06.003 and 2.06.057
29	Implement the Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless Steel (CASS) Program as described in LRA Section B.1.31.	B.1.31	June 8, 2012	Letters 2.06.003 and 2.06.057
30	Perform a code repair of the CRD return line nozzle to cap weld if the installed weld repair is not approved via accepted code cases, revised codes, or an approved relief request for subsequent inspection intervals.	B.1.3	June 30, 2015	Letter 2.06.057
31	At least 2 years prior to entering the period of extended operation, for the locations identified in NUREG/CR-6260 for BWRs of the PNPS vintage, PNPS will refine our current fatigue analyses to include the effects of reactor water environment and verify that the	4.3.3	June 8, 2012 June 8, 2010 for submitting the AMP if PNPS	Letters 2.06.057, 2.06.064, 2.06.081, 2.07.005,

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
	<p>cumulative usage factors (CUFs) are less than 1. This includes applying the appropriate Fen [sic] factors to valid CUFs determined in accordance with one of the following:</p> <ol style="list-style-type: none"> 1. For locations, including NUREG/CR-6260 locations, with existing fatigue analysis valid for the period of extended operation, use the existing CUF to determine the environmentally adjusted CUF. 2. More limiting PNPS-specific locations with a valid CUF may be added in addition to the NUREG/CR-6260 locations. 3. Representative CUF values from other plants, adjusted to or enveloping the PNPS plant specific external loads may be used if demonstrated applicable to PNPS. 4. An analysis using an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case) may be performed to determine a valid CUF. <p>During the period of extended operation, PNPS may also use one of the following options for fatigue</p>		selects the option of managing the affects of aging due to environmentally assisted fatigue	and 2.07.064

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
	<p>management if ongoing monitoring indicates a potential for a condition outside the analysis bounds noted above:</p> <ol style="list-style-type: none"> 1. Update and/or refine the affected analyses described above. 2. Implement an inspection program that has been reviewed and approved by the NRC (e.g., periodic nondestructive examination of the affected locations at inspection intervals to be determined by a method acceptable to the NRC). 3. Repair or replace the affected locations before exceeding a CUF of 1.0. 			
32	Implement the enhanced Bolting Integrity Program described in Attachment C of Pilgrim License Renewal Application Amendment 5 (Letter 2.06.064).		June 8, 2012	Letters 2.06.057, 2.06.064, and 2.06.081
33	PNPS will inspect the inaccessible jet pump thermal sleeve and core spray thermal sleeve welds if and when the necessary technique and equipment become available and the technique is demonstrated by the vendor, including delivery system.		As stated in the commitment	Letter 2.06.057

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
34	Within the first 6 years of the period of extended operation and every 12 years thereafter, PNPS will inspect the access hole covers with UT methods. Alternatively, PNPS will inspect the access hole covers in accordance with BWRVIP guidelines should such guidance become available.		June 8, 2018	Letter 2.06.057 and 2.06.089
35	<p>At least 2 years prior to entering the period of extended operation, for reactor vessel components, including the feedwater nozzles, PNPS will implement one or more of the following:</p> <p>(1) Refine the fatigue analyses to determine valid CUFs less than 1. Determine valid CUFs based on numbers of transient cycles projected to be valid for the period of extended operation. Determine CUFs in accordance with an NRC-approved version of the ASME code or NRC-approved alternative (e.g., NRC-approved code case).</p> <p>(2) Manage the effects of aging due to fatigue at the affected locations by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method acceptable to the NRC).</p>		<p>June 8, 2012</p> <p>June 8, 2010 for submitting the AMP if PNPS selects the option of managing the affects of aging</p>	Letters 2.06.057, 2.06.064, and 2.06.081

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
	<p>(3) Repair or replace the affected locations before exceeding a CUF of 1.0.</p> <p>Should PNPS select the option to manage the aging effects due to fatigue during the period of extended operation, details of the AMP such as scope, qualification, method, and frequency will be submitted to the NRC at least 2 years prior to the period of extended operation.</p>			
36	To ensure that significant degradation on the bottom of the condensate storage tank is not occurring, a one-time ultrasonic thickness examination in accessible areas of the bottom of the condensate storage tank will be performed. Standard examination and sampling techniques will be utilized.		June 8, 2012	Letter 2.06.057
37	The BWR Vessel Internals Program includes inspections of the steam dryer. Inspections of the steam dryer will follow the guidelines of BWRVIP-139 and General Electric SIL 644 Revision 1.	A.2.1.8 / Conference call on September 25, 2006	June 8, 2012	Letter 2.06.089

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
38	Enhance the Diesel Fuel Monitoring Program to include periodic ultrasonic thickness measurement of the bottom surface of the diesel fire pump day tank. The first ultrasonic inspection of the bottom surface of the diesel fire pump day tank will occur prior to the period of extended operation, following engineering analysis to determine acceptance criteria and test locations. Subsequent test intervals will be determined based on the first inspection results.	B.1.10	June 8, 2012	Letter 2.06.089
39	Perform a one-time inspection of the Main Stack foundation prior to the period of extended operation.	B.1.23	June 8, 2012	Letter 2.06.094
40	Enhance the Oil Analysis Program by documenting program elements 1 through 7 in controlled documents. The program elements will include enhancements identified in the PNPS license renewal application and subsequent amendments to the application. The program will include periodic sampling for the parameters specified under the Parameters Monitored/Inspected attribute of NUREG-1801 Section XI.M39, Lubricating Oil Analysis. The controlled documents will specify appropriate acceptance criteria and corrective actions in the event acceptance criteria are not met. The basis for acceptance criteria will be defined.	B.1.22	June 8, 2012	Letter 2.06.094

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
41	Enhance the Containment Inservice Inspection (CII) Program to require augmented inspection in accordance with ASME Code Section XI IWE-1240, of the drywell shell adjacent to the sand cushion following indications of water leakage into the annulus air gap.	A.2.1.17 and B.1.16.1	June 8, 2012	Letter 2.06.094
42	Implement the Bolted Cable Connections Program, described in Attachment C of Pilgrim License Renewal Application 11 (Letter 2.07.003), prior to the period of extended operation.	A.2.1.40 and B.1.34	June 8, 2012	Letter 2.07.003
43	Include within the Structures Monitoring Program provisions to ensure groundwater samples are evaluated periodically to assess the aggressiveness of groundwater to concrete, as described in Attachment E of License Renewal Application 12 (Letter 2.07.005), prior to the period of extended operation.	A.2.1.32 and B.1.29.2	June 8, 2012	Letter 2.07.005
44	Perform another set of the UT measurements just above and adjacent to the sand cushion region prior to the period of extended operation and once within the first 10 years of the period of extended operation.	A.2.1.17 and B.1.16.1	Prior to the period of extended operation and once within the first 10 years of the period of extended operation	Letter 2.07.010

APPENDIX A: PNPS LICENSE RENEWAL COMMITMENTS				
Number	Commitment	LRA Section(s)	Enhancement or Implementation Schedule	Source
45	If groundwater continues to collect on the Torus Room floor, obtain samples and test such water to determine its pH and verify the water is non-aggressive as defined in NUREG-1801 Section III.A1 item III.A.1-4 once prior to the period of extended operation and once every five years during the period of extended operation.	A.2.1.32 and B.1.29.2	June 8, 2012	Letters 2.07.010 2.07.027, and 2.07.029
46	Inspect the condition of a sample of the torus hold-down bolts and associated grout and determine appropriate actions based on the findings prior to the period of extended operation.	A.2.1.32 and B.1.29.2	June 8, 2012	Letter 2.07.027
47	Submit to the NRC an action plan to improve benchmarking data to support approval of new P-T curves for Pilgrim.	4.2.2, A.2.2.1.1, and A.2.2.1.2	September 15, 2007	Letter 2.07.027
48	On or before June 8, 2010, Entergy will submit to the NRC calculations consistent with Regulatory Guide 1.190 that will demonstrate limiting fluence values will not be reached during the period of extended operation.	4.2, 4.7.1, A.1.1 and A.2.2.1	June 8, 2010	Letter 2.07.027

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APPENDIX B

CHRONOLOGY

This appendix lists chronologically the routine licensing correspondence between the staff of the United States Nuclear Regulatory Commission (NRC) (the staff) and Entergy Nuclear Operations, Inc.. This appendix also contains other correspondence regarding the staff's review of the Pilgrim Nuclear Power Station (PNPS) license renewal application (LRA) (under Docket No. 50-293).

APPENDIX B: CHRONOLOGY	
Date	Subject
January 12, 2006	G20060064/LTR-06-0041 - Sen T. Murray, Rep V. DeMacedo, and Rep T. O'Brien Ltr re: Relicensing of Pilgrim and Vermont Yankee (ADAMS Accession No. ML060230046)
January 13, 2006	G20060054/LTR-06-0037 - Ltr. Alice Moore Re: Concerns Pilgrim and Vermont Yankee Relicensing. (ADAMS Accession No. ML060190039)
January 13, 2006	Letter from W. Bramhall on Proposed Rule PR-73 - Regarding Design Basis Threat. (ADAMS Accession No. ML060180196)
January 18, 2006	G20060065/LTR-06-0042 - Ltr Mark D. Sylvia re: Concerns Pilgrim and Vermont Yankee Relicensing Applications. (ADAMS Accession No. ML060230048)
January 20, 2006	Letter from Pilgrim Security Watch, M. Lampert, et al. E. J. Epstein, N. Cohen, S. J. Goodman, R. Becker, D. Katz and H. Moyer on Proposed Rule PR-73 - Regarding Design Basis Threat (ADAMS Accession No. ML060240587)
January 25, 2006	Letter from M. A. Balduzzi to NRC Submitting Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML060300026)
January 25, 2006	Letter from M. A. Balduzzi to NRC Submitting License Renewal Application Boundary Drawings. (ADAMS Accession No. ML060470248)
January 25, 2006	Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML060300028)
January 25, 2006	Pilgrim Nuclear Power Station Applicant's Environmental Report Operating License Renewal Stage, Appendix E. (ADAMS Accession No. ML060830611)

APPENDIX B: CHRONOLOGY	
Date	Subject
January 27, 2006	Email: (PA) Receipt of License Renewal Applications for VY and Pilgrim (ADAMS Accession No. ML062120498)
January 27, 2006	G20050841/LTR-05-0588-Mary Elizabeth Lampert Ltr. Re. Pilgrim Nuclear Power Station Email Concerns Single Loop Operation Amendment. (ADAMS Accession No. ML060260021)
January 31, 2006	NRC Press Release-06-011: NRC Announces Availability of License Renewal Applications for Vermont Yankee and Pilgrim. (ADAMS Accession No. ML060310043)
January 31, 2006	Receipt and Availability of the License Renewal Application for the Pilgrim Nuclear Power Station. (ADAMS Accession No. ML060310593)
February 3, 2006	Letter from R. Schaff, NRC to D. O'Brien - Regarding Maintenance of Reference Material at the Plymouth Public Library for the Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML060370581)
February 13, 2006	Notice of Forthcoming Public Information Session for the U.S. Nuclear Regulatory Commission (NRC) Staff to Describe the License Renewal Process. (ADAMS Accession No. ML060440543)
February 25, 2006	G20060054/LTR-06-0037 - Alice Moore Ltr. Re. Concerns Pilgrim and Vermont Yankee Relicensing. (ADAMS Accession No. ML060240024)
February 25, 2006	G20060065/LTR-06-0042 - Mark Sylvia Ltr. Re Concerns Pilgrim and Vermont Yankee relicensing applications. (ADAMS Accession No. ML060250068)
February 27, 2006	G20060064/LTR-06-0041 - Rep. V. DeMacedo and Rep. T. O'Brien Ltr. Re. Concerns relicensing of Pilgrim and Vermont Yankee. (ADAMS Accession No. ML060340238)
February 27, 2006	G20060064/LTR-06-0041 - Sen. T. Murray Ltr. Re. Concerns relicensing of Pilgrim and Vermont Yankee. (ADAMS Accession No. ML060240309)
February 28, 2006	Email: (PA) Closeout: G20060065/LTR-06-0042 - Relicensing of Pilgrim and Vermont Yankee (ADAMS Accession No. ML062120549)
March 1, 2006	NRC Press Release-I-06-011: NRC To Hold March 8 th Public Meeting In Plymouth, Mass., On License Renewal Application For Pilgrim Nuclear Plant. (ADAMS Accession No. ML060600528)

APPENDIX B: CHRONOLOGY	
Date	Subject
March 21, 2006	Determination of Acceptability and Sufficiency for Docketing, Proposed Review Schedule, and Opportunity for a Hearing - Regarding the Application from Entergy Nuclear Operations, Inc., for Renewal of the Operating License for the Pilgrim Nuclear Power. (ADAMS Accession No. ML060800745)
March 22, 2006	NRC Press Release-06-040: NRC Announces Opportunity to Request a Hearing on Application to Renew Operating License for Pilgrim Nuclear Power Station. (ADAMS Accession No. ML060810457)
March 29, 2006	NRC Contact Report - Arrange Meeting with Town Officials During Site Audit (Intergovernmental). (ADAMS Accession No. ML063470176)
March 30, 2006	Email: (Intergovernmental) Re: Pilgrim Audit. (ADAMS Accession No. ML063470309)
March 30, 2006	Email: (PA) PNPS Audit Plan. (ADAMS Accession No. ML062480291)
March 31, 2006	Email: (PA) Re: Request - License Renewal Work for CFEB (ADAMS Accession No. ML062120629)
April 3, 2006	NRC Contact Report - Arrange meeting with Town personnel during May Site Audit (Intergovernmental). (ADAMS Accession No. ML063470180)
April 3, 2006	Email: (PA) Re: Request - License Renewal Work for CFEB (ADAMS Accession No. ML062120631)
April 4, 2006	Email: (PA) Pilgrim Audit Plan (ADAMS Accession No. ML062480085)
April 5, 2006	NRC Contact Report - Follow Up from 4/3/06 Telephone Call (Intergovernmental). (ADAMS Accession No. ML063470183)
April 5, 2006	NRC Contact Report - Arrange meeting with Town personnel during Site Audit in May [4/5/06] (Intergovernmental). (ADAMS Accession No. ML063470189)
April 6, 2006	Email: (Intergovernmental) Re: Pilgrim Audit [List for Plymouth meeting]. (ADAMS Accession No. ML063470313)
April 6, 2006	Email: (PA) Questions counts... (ADAMS Accession No. ML062120636)
April 7, 2006	Email: (PA) AMP, AMR, and TLAA questions for PNPS (ADAMS Accession No. ML062120642)

APPENDIX B: CHRONOLOGY	
Date	Subject
April 10, 2006	NRC Contract Report - Arrange Meeting with Planning Council Staff During Site Audit in May (Intergovernmental). (ADAMS Accession No. ML063470164)
April 12, 2006	Email: (Intergovernmental) May 4 meeting - Pilgrim NPS license renewal [List for Carver meeting]. (ADAMS Accession No. ML063470329)
April 12, 2006	Email: (Intergovernmental) May 4 meeting - Pilgrim NPS license renewal [List for Old Colony meeting]. (ADAMS Accession No. ML063470319)
April 12, 2006	Email: (Intergovernmental) May 3 meeting - Pilgrim NPS license renewal [List for Kingston Meeting]. (ADAMS Accession No. ML063470324)
April 12, 2006	Email: (Intergovernmental) May 3 meeting - Pilgrim NPS license renewal [List for Duxbury meeting]. (ADAMS Accession No. ML063470326)
April 18, 2006	Email: (PD) Pilgrim Nuclear Generating Station License Renewal Application. (ADAMS Accession No. ML063460545)
April 21, 2006	Letter from NRC to J. McGinnis, Request for Comments - Regarding the Pilgrim Nuclear Power Station License Renewal Application Review. (ADAMS Accession No. ML061160613)
April 21, 2006	Letter from NRC to S. M. Thomas, Request for Comments - Regarding the Pilgrim Nuclear Power Station License Renewal Application Review. (ADAMS Accession No. ML061170085)
April 21, 2006	Letter from NRC to M. Bowland, Request for Comments - Regarding the Pilgrim Nuclear Power Station License Renewal Application Review. (ADAMS Accession No. ML061170222)
April 21, 2006	Letter from NRC to C. Andrews-Maltais, Request for Comments - Regarding the Pilgrim Nuclear Power Station License Renewal Application Review. (ADAMS Accession No. ML061170152)
April 24, 2006	NRC Request for Additional Information - Regarding Unresolved Inspection Item 05000293-05-003-01 From the NRC Integrated Inspection Report 05000293-05-003 (TAC No. MD0178). (ADAMS Accession No. ML060970397)
April 24, 2006	Email: (PA) PNPS AMP Questions (ADAMS Accession No. ML062120415)

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Date	Subject
April 26, 2006	License Renewal Audit and Review Plan for Plant Aging Management Review and Programs for the Pilgrim Nuclear Power Plant, Docket Number 50-293. (ADAMS Accession No. ML061220630)
April 27, 2006	Email: (PA) PNPS LRA Appendix C - BWRVIP Actions (ADAMS Accession No. ML062090546)
April 28, 2006	Email: (Intergovernmental) May 3 meeting - Pilgrim NPS license renewal [List for Marshfield meeting]. (ADAMS Accession No. ML063470333)
April 28, 2006	NRC Contract Report - Arrange meeting with Town personnel during Site Audit in May (Intergovernmental). (ADAMS Accession No. ML063470170)
April 28, 2006	Email: (PA) Pilgrim Questions to be Discussed at the Audit (ADAMS Accession No. ML062090499)
May 2, 2006	Letter from NRC to Don L. Klima - Regarding Pilgrim Nuclear Power Station License Renewal Application Review. (ADAMS Accession No. ML061240335)
May 4, 2006	Email: (PA) Re: Re-assignment of Tables 3.3.2.14-X (ADAMS Accession No. ML062090497)
May 4, 2006	Email: (PA) AMP questions (ADAMS Accession No. ML062090488)
May 4, 2006	Email: (PA) PNPS Template for not consistent with GALL AMRs (ADAMS Accession No. ML062090496)
May 4, 2006	Email: (PA) Re: Re-assignment of Tables 3.3.2.14-X (ADAMS Accession No. ML062120647)
May 5, 2006	Email: (PA) AMR Template for Not Consistent with GALL Section (ADAMS Accession No. ML062090322)
May 5, 2006	Email: (PA) Re: PNPS Template for not consistent with GALL AMRs (ADAMS Accession No. ML062090493)
May 5, 2006	Email: (PA) Re: Bolting Integrity Program (ADAMS Accession No. ML062090498)
May 5, 2006	Email: (PA) Re: Bolting Integrity Program (ADAMS Accession No. ML062090490)
May 8, 2006	Email: (PA) AMR's Questionary for Pilgrim (ADAMS Accession No. ML062090324)

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Date	Subject
May 9, 2006	Email: (PA) AMR Review of Section 3.3 (ADAMS Accession No. ML062090328)
May 10, 2006	Email: (PA) Draft Questions for the Aging Management Program (AMP) Gall Consistency Audit - for Pilgrim. (ADAMS Accession No. ML062480272)
May 10, 2006	Email: Draft questions for the Aging Management Program (AMP) Gall consistency audit - for Pilgrim LRA. (ADAMS Accession No. ML063070393)
May 10, 2006	Email: (PA) FWD: Pilgrim AMP Combined Questions (ADAMS Accession No. ML062480283)
May 10, 2006	Email: Guidance How to File Petition for Intervention with NRC - Pilgrim LRA. (ADAMS Accession No. ML063070187)
May 11, 2006	Letter from Entergy to NRC, Pilgrim Nuclear Power Station, License Renewal Application, Amendment 1. (ADAMS Accession No. ML061380549)
May 11, 2006	Email: (PA) Table 3.3.1 AMR questions (ADAMS Accession No. ML062090333)
May 11, 2006	Email: Pilgrim Letter 2.06.040 - License Renewal Application, Amendment 1. (ADAMS Accession No. ML063070402)
May 11, 2006	Pilgrim Nuclear Power Station License Renewal Application Review (SHPO No. RC36661) (ADAMS Accession No. ML061310234)
May 12, 2006	Email: Guidance how to file petition for intervention with NRC - Pilgrim LRA. (ADAMS Accession No. ML063070405)
May 12, 2006	PNPS License Scoping Comment - Tom Belcher. (ADAMS Accession No. ML062410406)
May 15, 2006	Transmittal Letter for License Renewal Audit and Review Plan for Plant Management Reviews and Programs for the Pilgrim Nuclear Power Plant Docket 50-293. (ADAMS Accession No. ML061220716)
May 17, 2006	Official Transcript, Afternoon, Public Scoping Meeting for Pilgrim, 05/17/2006. (ADAMS Accession No. ML061700046)
May 17, 2006	Pilgrim Nuclear Power Station Environmental Scoping Meeting Handouts. (ADAMS Accession No. ML061420164)
May 17, 2006	Official Transcript, Evening, Public Scoping Meeting for Pilgrim, 05/17/2006. (ADAMS Accession No. ML061700050)

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Date	Subject
May 19, 2006	Email: (PA-LR) Information re: Pilgrim LRA. (ADAMS Accession No. ML063060296)
May 19, 2006	Email: (PD) Information re: Pilgrim LRA. (ADAMS Accession No. ML063460507)
May 24, 2006	Letter from Dr. Dean, ACHP to DLR to address license renewal application for Pilgrim. (ADAMS Accession No. ML061710601)
May 25, 2006	Letter from Pilgrim Watch to NRC, Request for a Hearing and Petition to Intervene. (ADAMS Accession No. ML061630125)
May 26, 2006	Massachusetts Attorney General's Request for a Hearing and Petition for Leave to Intervene with Respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Pilgrim Nuclear Power Plant Operating License (ADAMS Accession No. ML061630088)
May 28, 2006	Email: (PA) Questions for NRC About the Reactor Head Closure Studs AMP (XI.M3) as described in the GALL Report (ADAMS Accession No. ML062090338)
May 30, 2006	Letter from Diane Curran submitting the originals of several documents for which copies of faxed signature pages were filed on May 26, 2006 in connection with the Massachusetts Attorney General's hearing request and backfit petition (ADAMS Accession No. ML061640031)
June 2, 2006	Email: (PA-LR) FW: Word Document of NRC LRA Programs Audit of Pilgrim. (ADAMS Accession No. ML063050504)
June 5, 2006	Notice of Adoption of Contention by Pilgrim Watch. (ADAMS Accession No. ML061720384)
June 6, 2006	Hearing Referral Memorandum from A. Vietti-Cook to P. Bollwerk, ASLBP. (ADAMS Accession No. ML061600221)
June 7, 2006	Establishment of Atomic Safety and Licensing Board (ADAMS Accession No. ML061590519)
June 7, 2006	License Renewal Application, Amendment 2. (ADAMS Accession No. ML061710422)
June 8, 2006	Email: FWD: LRA Amendment 2 (Updated Drywell Shell Information). (ADAMS Accession No. ML063070330)
June 9, 2006	Email: The second set of AMR Questions. (ADAMS Accession No. ML063070327)

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June 9, 2006	Email: (PA-LR) Another Round of AMR Questions and TLAA Questions. (ADAMS Accession No. ML063050512)
June 14, 2006	LB Order - Regarding Schedule and Guidance for Proceedings (ADAMS Accession No. ML061660047)
June 14, 2006	Entergy Response to NRC Request for Additional Information - Regarding Technical Specification Changes to Revise Reactor Coolant Leakage Detection System Instrumentation. (ADAMS Accession No. ML061720084)
June 15, 2006	Notices of Appearance for Susan L. Uttal and Harry E. Wedewer (ADAMS Accession No. ML061670059)
June 15, 2006	NRC Staff Answer to Notice of Adoption of Contentions by Pilgrim Watch (ADAMS Accession No. ML061670039)
June 16, 2006	Request of the Town of Plymouth to Participate as of Right Under 2.315(c). (ADAMS Accession No. ML061740346)
June 16, 2006	Letter from D. Curran to Judge Young providing recent decision by U.S. Court of Appeals for the Ninth Circuit. (ADAMS Accession No. ML061740349)
June 16, 2006	Unopposed Motion for Extension of Time to Reply to NRC Staff Response to Hearing Request, filed by D. Curran, Counsel for Massachusetts Attorney General. (ADAMS Accession No. ML061780634)
June 16, 2006	Unopposed Motion for Extension of Time to Reply to NRC Staff Response to Hearing Request. (ADAMS Accession No. ML061810395)
June 16, 2006	Email from S. Hollis to Judge Young re: Participation in Pilgrim Proceeding and Notice of Appearance. (ADAMS Accession No. ML061780125)
June 16, 2006	Letter from S. S. Hollis to NRC, re Pilgrim Power Station - Regarding Renewal of Facility Operating License DPR-35 for a 20 Year Period. (ADAMS Accession No. ML061770043)
June 19, 2006	NRC Staff's Response to Request for Hearing and Petition to Intervene Filed by Pilgrim Watch (ADAMS Accession No. ML061710086)
June 20, 2006	Official Transcript of Pilgrim Nuclear Power Station Pre-Hearing Conference. (ADAMS Accession No. ML061740366)

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June 21, 2006	Email: (PA) Additional Missing AMPs (ADAMS Accession No. ML062510359)
June 21, 2006	LB Order and Notice - Regarding Oral Argument and Limited Appearance Statement Sessions (ADAMS Accession No. ML061720397)
June 22, 2006	Email: (PA) Additional missing AMPs (ADAMS Accession No. ML062510295)
June 22, 2006	Entergy's Answer to Massachusetts Attorney General's Request for a Hearing, Petition for Leave to Intervene, and Petition for Backfit Order. (ADAMS Accession No. ML061790134)
June 22, 2006	Email: (PA) Additional Missing AMPs (ADAMS Accession No. ML062510361)
June 22, 2006	NRC Staff Answer Opposing Massachusetts Attorney General's Request for Hearing and Petition for Leave to Intervene and Petition for Backfit Order (ADAMS Accession No. ML061730482)
June 23, 2006	NRC Press Release-I-06-038: Licensing Board to Hear Oral Arguments and Receive Public Comment in Pilgrim License Renewal Proceeding. (ADAMS Accession No. ML061740031)
June 25, 2006	Email: (PA) Additional AMR Question - Section 3.1.1 (ADAMS Accession No. ML062120410)
June 26, 2006	Entergy's Answer to the Request for Hearing and Petition to Intervene by Pilgrim Watch and Notice of Adoption of Contention. (ADAMS Accession No. ML061840216)
June 26, 2006	Email from R. Chin, Duxbury Nuclear Advisory Committee to Judge Young re: Limited Appearance Statements (ADAMS Accession No. ML061780159)
June 26, 2006	Email: (PA) Audit Report Attachment 5 - List of Documents (ADAMS Accession No. ML062130145)
June 26, 2006	Email: (PA) Schedule (ADAMS Accession No. ML062120408)
June 26, 2006	Email: (PA-LR) Draft Qs on Section 2.3 on Pilgrim LRA Staff Request a Phone Call on June 27, 2006. (ADAMS Accession No. ML063050509)
June 27, 2006	Email: (PA) PNPS Response for AMR Items 460 and 512 - Potential Conflict in the Responses (ADAMS Accession No. ML062090388)

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Date	Subject
June 27, 2006	Email: (PA) PNPS Response for AMR Items 460 and 512 - Potential Conflict in the Responses (ADAMS Accession No. ML062120407)
June 27, 2006	Email: (PA-LR) Fwd: PNPS Response for AMR Items 460 and 512 - Potential Conflict in the Responses. (ADAMS Accession No. ML063050396)
June 29, 2006	Email: (PA-LR) Additional Questions From Bob Jackson (ADAMS Accession No. ML063050603)
June 29, 2006	Email: (PA) PNPS Shell (ADAMS Accession No. ML062090319)
June 29, 2006	Email: (PA) Jim and Peter (ADAMS Accession No. ML062090309)
June 29, 2006	Email: (PA) Nonsafety-Related SCs (ADAMS Accession No. ML062130056)
June 29, 2006	Email: (PA) Additional Question from Bob Jackson (ADAMS Accession No. ML062130057)
June 29, 2006	Email: (PA) Re: QA for Aging Management of NSR Components (ADAMS Accession No. ML062130058)
June 29, 2006	Email: (PA) Re: QA for Aging Management of NSR Components (ADAMS Accession No. ML062090569)
June 29, 2006	Pilgrim - Massachusetts's Attorney General's Reply to Entergy's and NRC Staff's Responses to Hearing Request and Petition to Intervene. (ADAMS Accession No. ML061870225)
June 29, 2006	Email: (PA) - None - (ADAMS Accession No. ML062120406)
June 29, 2006	Email: (PA) Re: QA for Aging Management of NSR Components (ADAMS Accession No. ML062090318)
June 29, 2006	Email: (PA-LR) Nonsafety-Related SCs. (ADAMS Accession No. ML063050610)
June 30, 2006	Email: (PA) FWD: Questions and Answers of Pilgrim LRA Aging Management Reviews. (ADAMS Accession No. ML062480379)
June 30, 2006	Notice of Forthcoming Exit Meeting with Entergy Nuclear Operations, Inc., on License Renewal Scoping and Screening Methodology and the Aging Management Program / Aging Management Review Audits for Pilgrim Nuclear Power Station. (ADAMS Accession No. ML061810424)
June 30, 2006	Email: (PA:) FWD: Questions and Answers of Pilgrim LRA Aging Management Reviews (ADAMS Accession No. ML062130018)

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June 30, 2006	Email: (PA) Draft AMP Section of Audit Report (ADAMS Accession No. ML062510364)
June 30, 2006	Email: (PA) Response to ARM Questions 482 & 483 (ADAMS Accession No. ML062090567)
June 30, 2006	Email: (PA) Response to ARM Questions 482 and 483 (ADAMS Accession No. ML062090380)
June 30, 2006	Email: (PA) Draft AMP Section of Audit Report (ADAMS Accession No. ML062120423)
June 30, 2006	Email: (PA) Questions and Answers of Pilgrim LRA Aging Management Reviews. (ADAMS Accession No. ML062480297)
June 30, 2006	Email: (PA-LR) Questions and Answers of Pilgrim LRA Aging Management Reviews. (ADAMS Accession No. ML063050613)
July 3, 2006	Pilgrim Watch Reply to NRC's and Entergy's Answers to Notice of Adoption of Contention by Pilgrim Watch. (ADAMS Accession No. ML062160441)
July 3, 2006	Email: (PA) Re: QA for Aging Management of NSR Components (ADAMS Accession No. ML062090565)
July 3, 2006	Email: (PA) Re: QA for Aging Management of NSR Components (ADAMS Accession No. ML062090307)
July 3, 2006	Pilgrim Watch Reply to Entergy Answer to Request for Hearing and Petition to Intervene by Pilgrim Watch. (ADAMS Accession No. ML062160449)
July 5, 2006	Email: (PA) Re: Draft AMP Section of Audit Report (ADAMS Accession No. ML062090303)
July 5, 2006	Email: (PA) FW: Handling of Generic Issues (ADAMS Accession No. ML062130091)
July 5, 2006	Email: (PA) Quality Assurance for Aging Management of NSR Components (ADAMS Accession No. ML062090304)
July 5, 2006	Email: (PA) Re: Draft AMP Section of Audit report (ADAMS Accession No. ML062130089)
July 5, 2006	Email: (PA) Re: FW: Handling of Generic Issues (ADAMS Accession No. ML062090300)
July 5, 2006	Email: (PA) Re: Quality Assurance for aging management of NSR components (ADAMS Accession No. ML062130064)

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July 5, 2006	Pilgrim - License Renewal Application Amendment 3. (ADAMS Accession No. ML061940175)
July 5, 2006	Pilgrim - License Renewal Application Amendment 4. (ADAMS Accession No. ML061930418)
July 5, 2006	Email: (PA) FYI: Draft Audit Report Shell TLAA on Metal Fatigue - Audit Report Section 4.3 (ADAMS Accession No. ML062090297)
July 5, 2006	Email: (PA) PNPS's TLAA Section 4.6 (ADAMS Accession No. ML062090563)
July 5, 2006	Email: (PA) Quality Assurance for Aging Management of NSR Components (ADAMS Accession No. ML062090561)
July 5, 2006	Email: (PA) PNPS's TLAA Section 4.6 (ADAMS Accession No. ML062090305)
July 5, 2006	Email: (PA) Re: Quality Assurance for aging management of NSR components (ADAMS Accession No. ML062130054)
July 5, 2006	Email: (PA) Comments on the AMP writeup (ADAMS Accession No. ML062130053)
July 5, 2006	Email: (PA) Re: Quality Assurance for Aging Management of NSR Components (ADAMS Accession No. ML062090294)
July 6, 2006	Official Transcript of Limited Appearance Comment Session in the Pilgrim Nuclear Power Station License Renewal Proceeding. (ADAMS Accession No. ML061930218)
July 6, 2006	Email: (PA-LR) FW: PNPS ER EJ writeup. (ADAMS Accession No. ML063060309)
July 6, 2006	Email: (PA) Re: Quality Assurance for Aging Management of NSR Components. (ADAMS Accession No. ML062120477)
July 6, 2006	Email: (PA) Re: Quality Assurance for aging management of NSR components (ADAMS Accession No. ML062130140)
July 6, 2006	Email: (PA) FYI: Draft Audit Report Shell TLAA on Metal Fatigue - Audit Report Section 4.3 (ADAMS Accession No. ML062130086)
July 6, 2006	Email: (PA) Additional AMR questions (ADAMS Accession No. ML062130061)
July 6, 2006	Official Transcript of Oral Arguments on Contentions for the Pilgrim Nuclear Power Station License Renewal Proceeding. (ADAMS Accession No. ML061940179)

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Date	Subject
July 7, 2006	Email: (PA) Re: Comments on Pilgrim AMP document (ADAMS Accession No. ML062120412)
July 7, 2006	Pilgrim - Limited Appearance Statement by Maurice C. Cion. (ADAMS Accession No. ML062070067)
July 7, 2006	Email: (PA) Re: Comments on Pilgrim AMP Document (ADAMS Accession No. ML062090293)
July 7, 2006	Email: (PA) Re: Comments on Pilgrim AMP Document (ADAMS Accession No. ML062130142)
July 7, 2006	Limited Appearance Statement by W. Bramhall (ADAMS Accession No. ML062060607)
July 7, 2006	Official Transcript of Oral Arguments on Contentions in the Pilgrim Nuclear Power Station License Renewal Proceeding. (ADAMS Accession No. ML061930390)
July 7, 2006	Email: (PA) Comments on Pilgrim AMP document (ADAMS Accession No. ML062120480)
July 10, 2006	Pilgrim - Email from Diane Curran to ASLBP and Parties. (ADAMS Accession No. ML062070055)
July 10, 2006	Email: FWD: Response to your question - Regarding Radwaste Piping. (ADAMS Accession No. ML063070319)
July 11, 2006	Letter from CZM to S. Bethay - Regarding Federal Consistency Review of the Pilgrim Nuclear Power Station Operating License Renewal; Plymouth. (ADAMS Accession No. ML062090362)
July 12, 2006	Email from Susan Uttal to ASLBP and Parties. (ADAMS Accession No. ML062070131)
July 12, 2006	Email: FWD: Pilgrim License Renewal Application Amendment 3 Cover Letter and Attachment A. (ADAMS Accession No. ML063070536)
July 13, 2006	Summary of Public Scoping Meetings Conducted Related to the Review of the Pilgrim Nuclear Power Station, License Renewal Application. (ADAMS Accession No. ML061700055)
July 13, 2006	Letter to the Administrative Judges from Counsel for Entergy following up on one of the two matters raised at last week's prehearing conference. (ADAMS Accession No. ML062020235)
July 13, 2006	Limited Appearance Statement of John R. Glover. (ADAMS Accession No. ML062070224)

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July 13, 2006	NRC Press Release-I-06-040: NRC To Meet With Entergy On July 19 th To Discuss Pilgrim License Renewal Audit Findings. (ADAMS Accession No. ML061940368)
July 13, 2006	Email: NRC to Discuss Pilgrim Audit Findings. (ADAMS Accession No. ML063070249)
July 14, 2006	LB Order - Regarding Need for Further Briefing on Definition of New and Significant Information As Addressed in Participants' Petitions, Answers and Replies Relating to Massachusetts Attorney General's Contention and Pilgrim Watch Contention 4:. (ADAMS Accession No. ML061950481)
July 14, 2006	Email from Judge Young to the parties. (ADAMS Accession No. ML062060614)
July 14, 2006	Email to Judge Young from Molly Bartlett (ADAMS Accession No. ML062060616)
July 17, 2006	Email: Core shroud tie rod upper support cracking- information request. (ADAMS Accession No. ML063070252)
July 17, 2006	Limited Appearance Statement on Behalf of Clean Water Action (MASSPIRG). (ADAMS Accession No. ML062070051)
July 17, 2006	Email: (PA-LR) Re: Pilgrim [from Lampert to A. Williamson 7/17/06]. (ADAMS Accession No. ML063060259)
July 17, 2006	Email: (PA-LR) Re: Pilgrim. (ADAMS Accession No. ML063060249)
July 17, 2006	Email: (PA-LR) Additional info for ER. (ADAMS Accession No. ML063060239)
July 19, 2006	Pilgrim Nuclear Power Station - License Renewal Application Amendment 5. (ADAMS Accession No. ML062080142)
July 19, 2006	Pilgrim - License Renewal Application Amendment 5. (ADAMS Accession No. ML062090075)
July 20, 2006	Letter on behalf of more than two dozen organizations and individuals listed on draft Director's Decision - Regarding groundwater contamination petition. (ADAMS Accession No. ML062190445)
July 20, 2006	Letter from Entergy to NRC - Regarding follow up information from the prehearing conference on Pilgrim's aging management review to ASLBP. (ADAMS Accession No. ML062120018)

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Date	Subject
July 21, 2006	Entergy's Brief on New and Significant Information in Response to Licensing Board Order of July 14, 2006. (ADAMS Accession No. ML062080589)
July 21, 2006	NRC Staff's Response to July 14, 2006 Licensing Board Order (ADAMS Accession No. ML062020795)
July 21, 2006	Massachusetts Attorney General's Brief - Regarding Relevance to this Proceeding of Regulatory Guide's Definition of "New and Significant Information." (ADAMS Accession No. ML062080171)
July 21, 2006	Email: (PA) Fwd: Re: RAI for Section 3.5 (ADAMS Accession No. ML062090383)
July 23, 2006	Pilgrim - Email to Judge Young from Molly Bartlett (ADAMS Accession No. ML062060617)
July 24, 2006	Email: (PA) Re: Any Correspondences from PNPS on LRA Changes. (ADAMS Accession No. ML062090387)
July 24, 2006	Email: FW: Pilgrim LRA Amendment 5. (ADAMS Accession No. ML063070318)
July 25, 2006	Email: (PA) Pilgrim AMP/AMR Audit Report (ADAMS Accession No. ML062510296)
July 25, 2006	Email: (PA) Re: FWD: FYI: Forwarding What We Want DCI/FEB to Work at for the Pilgrim Flaw Growth Analysis. (ADAMS Accession No. ML062480362)
July 25, 2006	NRC Request for Additional Information, Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML062070240)
July 26, 2006	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC No. MC9669). (ADAMS Accession No. ML062120464)
July 26, 2006	Email: Request for Additional information on LRA Section 2.1 Scoping and Screening. (ADAMS Accession No. ML063070241)
July 26, 2006	Letter from Entergy to NRC informing that Entergy has already fully addressed the points raised in the Massachusetts Attorney General's brief - Regarding new and significant information. (ADAMS Accession No. ML062130443)

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Date	Subject
July 26, 2006	Massachusetts Attorney General's Reply Brief - Regarding Relevance to This Proceeding of Regulatory Guide's Definition of "New and Significant Information." (ADAMS Accession No. ML062130446)
July 26, 2006	Email: (PA) Revised AMR 3.4 Input (ADAMS Accession No. ML062480388)
July 27, 2006	Email: Pilgrim - Judge Nicholas Trikouros disclosure statement. (ADAMS Accession No. ML062120730)
July 27, 2006	Email: (PA) PNPS Q&A (ADAMS Accession No. ML062510355)
July 27, 2006	Email: Pilgrim Nuclear Power Station Hearing Files Information Request (7/1/06-7/31/06). (ADAMS Accession No. ML063070245)
July 27, 2006	Official Transcript of Entergy Nuclear Generation Company Oral Arguments via Telephone Conference. (ADAMS Accession No. ML062130024)
July 27, 2006	Email: Fwd: FYI: Attaching File with my Assessment Tracking the Status of Our Metal Fatigue Questions - Jim. (ADAMS Accession No. ML063070246)
July 27, 2006	Email: (PA) PNPS Q&Q (ADAMS Accession No. ML062510306)
July 31, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML062120662)
July 31, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML062120743)
July 31, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML062120752)
July 31, 2006	Email: (PA) Urgent - Revised Section 3.0.4 Input for QA program (ADAMS Accession No. ML062510299)
July 31, 2006	Email: (PA) Updated Section 4.3, Metal Fatigue for PNPS LRA (ADAMS Accession No. ML062510302)
July 31, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application. (ADAMS Accession No. ML061940015)
July 31, 2006	Email: Fwd: PNPS Q&A Data Base. (ADAMS Accession No. ML063070232)

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Date	Subject
August 2, 2006	FAX: From: R. Subbaratnam To: B. Ford/ F. Mogolesko 8/02/2006 RE: Supplement 3. (ADAMS Accession No. ML063070332)
August 2, 2006	Email: (PA) AMR Audit Report Section 3.3 (ADAMS Accession No. ML062480391)
August 2, 2006	FAX: From: R. Subbaratnam to Brian Ford/Fred Mogolesko. ADAMS Accession No. ML062510324)
August 2, 2006	Email: (PA) Email to James Davis from Duc Nguyen on 08/02/2006 at 3:50 4:43 pm (No Subject) (ADAMS Accession No. ML062480361)
August 3, 2006	Email: (PA) FYI: Forwarding Attachment 1 & Attachments 3-7 on Audit Report TLAA Sections. (ADAMS Accession No. ML062480383)
August 3, 2006	Email: (PA) TLAA Input (ADAMS Accession No. ML062480381)
August 3, 2006	Email: (PA) TLAA Section 4.3 Input (ADAMS Accession No. ML062480395)
August 3, 2006	Email: Fwd: Pilgrim ASLB Hearing: from Ram Subbaratnam 8/3/06 10:55am. (ADAMS Accession No. ML063070234)
August 3, 2006	Email: Fwd: Pilgrim ASLB Hearing. (ADAMS Accession No. ML063070236)
August 3, 2006	Email: (PA) Duc's Audit and Review Report Input (ADAMS Accession No. ML062480385)
August 4, 2006	Motion on Behalf of Pilgrim Watch for Disqualification of Judge Nicholas Trikouros. (ADAMS Accession No. ML062500138)
August 4, 2006	Massachusetts Attorney General's Motion for Disqualification of Judge Nicholas Trikouros. (ADAMS Accession No. ML062210100)
August 7, 2006	Email Re: RAM: From Fred Mogolesko 8/7/06 12:01pm. (ADAMS Accession No. ML063070219)
August 7, 2006	Email: FW: RAM. (ADAMS Accession No. ML063070220)
August 7, 2006	Email: Fwd: RAM: from Ram Sabbaratnam 8/7/06 9:13am. (ADAMS Accession No. ML063070239)
August 9, 2006	Notice of Appearance for Marian L. Zobler (Pilgrim Nuclear Power Plant) and Certificate of Service (ADAMS Accession No. ML062210250)
August 10, 2006	Email: FW: Requested Pilgrim Isl Information. (ADAMS Accession No. ML063070222)

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Date	Subject
August 10, 2006	Email: FW: Requested Information from Pilgrim License Renewal Program Document PRPD-06. (ADAMS Accession No. ML063070225)
August 11, 2006	Email: Draft RAIs on Section 2.4 of Pilgrim LRA. (ADAMS Accession No. ML063070228)
August 11, 2006	Email: (PA) RAI for the Three Flaw Issues for the Pilgrim LRA (ADAMS Accession No. ML062510343)
August 14, 2006	NRC Requests for Additional Information For the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML062290474)
August 14, 2006	Email: (PA) LRA B.1.1, Boraflex Program (ADAMS Accession No. ML062510350)
August 14, 2006	Email: (PA) RAIs 3.5.1-1 and 3.5.1-2 (ADAMS Accession No. ML062510346)
August 14, 2006	Entergy's Response to Motions for Disqualification of Judge Nicholas Trikouros. (ADAMS Accession No. ML062340098)
August 15, 2006	Summary of Public Audit Status Briefing with Entergy Nuclear Operations, Inc., on License Renewal Scoping and Screening Methodology and the Aging Management Program and the Aging Management Review Audits for the Pilgrim Nuclear Power Station. (ADAMS Accession No. ML062280218)
August 16, 2006	Email: (NPA-PD-LR) RAI on Chapter 4.0 TLAAs (from Ram Subbaratnam). (ADAMS Accession No. ML063040463)
August 16, 2006	Updated Schedule of Submittal of License Renewal Applications for Entergy Plants. (ADAMS Accession No. ML062330008)
August 18, 2006	Email: Formal RAIs for Pilgrim License Renewal Application on Sections 3.5 & 3.6. (ADAMS Accession No. ML063070230)
August 21, 2006	Email: Additional draft (draft RAIs) the audit team requests (August 21, 2006). (ADAMS Accession No. ML063070188)
August 21, 2006	Email: (NPA-PD-LR) RAIs from Audit by Danhoang & Erach. (ADAMS Accession No. ML062990442)
August 21, 2006	Email: (NPA-PD-LR) Requested RAI on Pilgrim LRA. (ADAMS Accession No. ML062990253)

APPENDIX B: CHRONOLOGY	
Date	Subject
August 22, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML062350440)
August 22, 2006	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 6. (ADAMS Accession No. ML062420060)
August 23, 2006	Email: Questions From Fred Mogolesko 8/23/2006 9:29am. (ADAMS Accession No. ML063070190)
August 23, 2006	Email: (NPA-PD-LR) Fwd: FW: Pilgrim License Renewal Application Amendment 6 (RAI Responses from Entergy on Pilgrim LRA). (ADAMS Accession No. ML063050296)
August 23, 2006	Email: FW: Pilgrim License Renewal Application Amendment 6. (ADAMS Accession No. ML063070217)
August 25, 2006	Email: (NPA-PD-LR) Final RAI on Section 2.4 - Scoping and Screening Structures for the Pilgrim LRA. (ADAMS Accession No. ML062980322)
August 25, 2006	Summary of August 1, 2006 Telephone Conference with Entergy Nuclear Operations, Inc. (ADAMS Accession No. ML062410379)
August 25, 2006	Letter from D. Curran to NRC - Regarding Petition for Rulemaking PRM 50-10 to Amend 10 C.F.R. Part 51, on behalf of the Massachusetts Attorney General. (ADAMS Accession No. ML062640409)
August 25, 2006	Email: (PA) Pilgrim Audit Report Peer Review AMP Sections (ADAMS Accession No. ML062510307)
August 28, 2006	Email: Preparation for Region 1 Inspection at Pilgrim: from: Fred Mogolesko 8/28/06 10:17 am. (ADAMS Accession No. ML063070367)
August 28, 2006	Email: Meeting Summary for your information: from Ram Subbaratnam 8/28/06 9:18am. (ADAMS Accession No. ML063070375)
August 28, 2006	Email: Draft Pilgrim RAIs on Section 4.2.1 - TLAAs on RV Internals, Neutron Fluence. (ADAMS Accession No. ML063070361)
August 30, 2006	Letter from D. R. Lewis of Pillsbury, Winthrop, Shaw and Pittman to NRC - Regarding Massachusetts Attorney General's Petition for Rulemaking PRM-51-10 to Amend 10 CFR Part 51 (August 25, 2006). (ADAMS Accession No. ML062650221)
August 30, 2006	Email: (PA) SER Input. (ADAMS Accession No. ML062980258)

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Date	Subject
August 30, 2006	LB Notice of Reconstitution (ADAMS Accession No. ML062420469)
August 30, 2006	LB Notice of Recusal of Judge Nicholas Trikouros (ADAMS Accession No. ML062420487)
August 30, 2006	Letter from Entergy to NRC - Regarding Entergy's Response to Massachusetts Attorney General's Petition for Rulemaking to Amend 10 C.F.R. Part 51 (Aug. 25, 2006). (ADAMS Accession No. ML062480366)
August 30, 2006	Entergy Response to Requests for Additional Information re License Renewal Application Amendment 7. (ADAMS Accession No. ML062500117)
August 31, 2006	Email: (Intergovernmental) Pilgrim NPS EIS - info request. (ADAMS Accession No. ML063470471)
September 1, 2006	Email: (Intergovernmental) Re: Pilgrim NPS EIS - info request. (ADAMS Accession No. ML063470473)
September 5, 2006	Email: (NPA-PD-LR) Pilgrim LRA - RAI Responses from Entergy (NRC-03-03-038, Task Order 24). (ADAMS Accession No. ML063110209)
September 7, 2006	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC No. MC9669). (ADAMS Accession No. ML062490501)
September 7, 2006	Email: Final RAI on Pilgrim LRA Section 4.3.2.1. (ADAMS Accession No. ML063060595)
September 8, 2006	Email: (Intergovernmental) Re: Plymouth Population & Buildout Data. (ADAMS Accession No. ML063470479)
September 8, 2006	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669) Section 3.2. (ADAMS Accession No. ML062500431)
September 8, 2006	NRC Requests for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML062500401)
September 8, 2006	Email: (NPA-PD-LR) Fwd: Final RAI on Pilgrim LRA Sections 3.2.1 and 4.2.1. (ADAMS Accession No. ML062990446)
September 13, 2006	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 8. (ADAMS Accession No. ML062650072)

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Date	Subject
September 13, 2006	Email: Entergy Memo of 9/13/2006 - Pilgrim. (ADAMS Accession No. ML063070420)
September 15, 2006	Memorandum (Signed by B. Rogers) to P.T. Kuo, NRC, Audit Trip Report - Regarding Entergy Nuclear Operations Inc. License Renewal Application for Pilgrim Nuclear Power Station, dated January 25, 2006. (ADAMS Accession No. ML062580162)
September 26, 2006	LB Memorandum (Notice of Expected Date for Decision) (ADAMS Accession No. ML062690345)
October 3, 2006	Email: (PA-LR) Information from the Conference call on 9/26/06. (ADAMS Accession No. ML063050380)
October 6, 2006	Email: (NPA-PD-LR) Fwd: Pilgrim LRA Amendment 9 10/6/2006. (ADAMS Accession No. ML063110171)
October 6, 2006	Letter from Entergy to NRC, Pilgrim License Renewal Application Amend 9, Revised List of Regulatory Commitments & Response to RAIs on Aging Management Review in LRA Section 3.2 Engineered Safety Features & Time Limiting Aging Analysis in LRA Section 4.2 Reactor Vessel.... (ADAMS Accession No. ML062910173)
October 10, 2006	Commission Order (CLI-06-26) (ADAMS Accession No. ML062830327)
October 16, 2006	Entergy Response to NRC Request for Additional Information Related to Proposed License Amendment to Change P-T Curves (TAC No. MD1218). (ADAMS Accession No. ML062970147)
October 16, 2006	LB Memorandum and Order (Ruling on Standing and Contentions of Petitioners Massachusetts Attorney General and Pilgrim Watch) (LBP-06-23) (ADAMS Accession No. ML062890259)
October 19, 2006	Email: (PA-LR) FW: Figure 2-1. (ADAMS Accession No. ML063050385)
October 19, 2006	Email: (PA-LR) FW: Drawing. (ADAMS Accession No. ML063050392)
October 19, 2006	Email: (PA-LR) FW: Figure 3-1. (ADAMS Accession No. ML063050388)
October 23, 2006	Summary of October 10, 2006 Telephone Conference with Entergy Nuclear Operations. Inc., to Clarify Information Sent to the NRC in Response to Requests for Additional Information - Regarding the Pilgrim License Renewal Application (TAC NO. MC9669). (ADAMS Accession No. ML062850407)

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Date	Subject
October 23, 2006	Email: (PA-LR) Re: Pilgrim - Amendments to the LRA. (ADAMS Accession No. ML063050501)
October 24, 2006	Email from S. Uttal, OGC requesting to ASLBP Judges to reschedule telephone conference. (ADAMS Accession No. ML063000239)
October 24, 2006	LB Order - Regarding Prehearing Telephone Conference and Schedule for Proceeding (ADAMS Accession No. ML062970412)
October 24, 2006	Email from M. Lampert to ASLBP Judges requesting rescheduling of telephone conference. (ADAMS Accession No. ML063000247)
October 25, 2006	LB Order (Granting Staff Request to Reschedule Telephone Conference) (ADAMS Accession No. ML062980380)
October 26, 2006	Letter from NRC Staff to Administrative Judges - Regarding Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station) (ADAMS Accession No. ML063000300)
October 30, 2006	Letter from NRC Staff to Administrative Judges informing Board and Parties of Estimation dates for SER and SEIS. (ADAMS Accession No. ML063050353)
October 31, 2006	Massachusetts Attorney General's Brief on Appeal of LBP-06-23. (ADAMS Accession No. ML063120343)
October 31, 2006	Pilgrim Watch Brief on Appeal of LBP-06-23. (ADAMS Accession No. ML063120552)
October 31, 2006	Notice of Appeal of Order LBP-06-23 by Pilgrim Watch. (ADAMS Accession No. ML063120336)
November 1, 2006	Audit and Review Report for Plant Aging Management Reviews and Programs Pilgrim Nuclear Power Station. (ADAMS Accession No. ML063110278)
November 2, 2006	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML062900231)
November 2, 2006	Email: (PD) Draft RAI. (ADAMS Accession No. ML063480351)
November 3, 2006	Town of Duxbury Request and Notice of Intent to Participate in Hearing. (ADAMS Accession No. ML063170052)
November 6, 2006	Email: (PD) Fwd: Entergy Nuclear Cultural Resources Protection Plan. (ADAMS Accession No. ML063480402)

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Date	Subject
November 6, 2006	Notice of the Town of Plymouth of Participation in Certain Contentions. (ADAMS Accession No. ML063190311)
November 7, 2006	Summary of September 25, 2006 Telephone Conference with Entergy Nuclear Operations, Inc. (ADAMS Accession No. ML062760508)
November 7, 2006	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669) (Section B.1.16.1). (ADAMS Accession No. ML062960274)
November 8, 2006	Email dated from David R. Lewis notifying parties and Board in agreement that set schedule for Model Milestones could be met. (ADAMS Accession No. ML063180264)
November 8, 2006	Email from Judge Young to parties requesting information - Regarding scheduling of upcoming telephone conference. (ADAMS Accession No. ML063240353)
November 10, 2006	Entergy's Opposition to Pilgrim Watch's Appeal of LBP-06-23. (ADAMS Accession No. ML063200503)
November 10, 2006	Entergy's Brief in Opposition to Massachusetts Attorney General's Appeal of LBP-06-23. (ADAMS Accession No. ML063200505)
November 11, 2006	Email: (PA) Request for Additional Information (RAI) - Regarding Severe Accident Mitigation Alternatives (SAMA) for Pilgrim Nuclear Power Station, May 22, 2006. (ADAMS Accession No. ML063450084)
November 13, 2006	NRC Staff's Brief in Opposition to Massachusetts Attorney General's Petition for Review of LBP-06-23. (ADAMS Accession No. ML063200152)
November 13, 2006	NRC Staff's Brief in Opposition to Pilgrim Watch's Appeal of LBP-06-023. (ADAMS Accession No. ML063200174)
November 14, 2006	Memorandum (Signed by K. Chang) to L. Lund, NRC, Audit and Review Report for the Pilgrim Nuclear Generating Station License Renewal Application (TAC NO. MC7624). (ADAMS Accession No. ML063100404)
November 14, 2006	Joint Stipulation and Motion on Disclosure. (ADAMS Accession No. ML063260461)
November 14, 2006	Email: (PA) Re: Request for Additional Information (RAI) - Regarding Severe Accident Mitigation Alternatives (SAMA). (ADAMS Accession No. ML063450081)
November 15, 2006	NRC Staff Notice of Appearance for David E. Roth. (ADAMS Accession No. ML063200368)

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Date	Subject
November 15, 2006	Initial Disclosure Statement by Pilgrim Watch. (ADAMS Accession No. ML063310309)
November 15, 2006	Entergy's Initial Disclosures. (ADAMS Accession No. ML063280030)
November 15, 2006	Letter from NRC Staff to Administrative Judges and the parties that the hearing file and mandatory disclosures are available. (ADAMS Accession No. ML063200344)
November 16, 2006	Letter from OGC/Staff to the Administrative Judges notifying them of a new hearing file and providing Affidavit of Perry Buckberg. (ADAMS Accession No. ML063240423)
November 16, 2006	LB ORDER (Administrative Matters - Regarding Telephone Conference) (ADAMS Accession No. ML063200345)
November 17, 2006	Entergy Response to NRC Request for Additional Information - Regarding Emergency Plan Changes to Emergency Response Organization. (ADAMS Accession No. ML063320549)
November 17, 2006	Email: (PD) WP copy of RAI Letter. (ADAMS Accession No. ML063480328)
November 20, 2006	Official Transcript of Entergy Nuclear Operations, Inc. Pre-Hearing Conference. (ADAMS Accession No. ML063280126)
November 29, 2006	LB ORDER - Regarding Schedule for Proceeding and Related Matters (ADAMS Accession No. ML063330391)
November 30, 2006	Email:(PD) Your Upcoming LR Inspection at Pilgrim. (ADAMS Accession No. ML063460530)
November 30, 2006	Email: (PA) Your Upcoming LR Inspection at Pilgrim. (ADAMS Accession No. ML070120084)
December 1, 2006	Letter from Entergy to the Administrative Judges providing SEI, and SER status. (ADAMS Accession No. ML063350216)
December 4, 2006	Email: (PD) Conference Call Request - From Perry Buckberg to : Doug Ellis 12/04/06 2:25:00 PM. (ADAMS Accession No. ML070100094)
December 4, 2006	Email: (PD) Conference Call Request. (ADAMS Accession No. ML063460517)
December 6, 2006	Email: (PD) Conference Call - 12/12/06 @ 12:30. (ADAMS Accession No. ML063460536)

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Date	Subject
December 6, 2006	Email: (PD) Conference Call - 12/02/06. (ADAMS Accession No. ML070100101)
December 8, 2006	Notice of Availability of the Draft Plant-Specific Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS) - Regarding Pilgrim. (ADAMS Accession No. ML063410493)
December 8, 2006	Email from Molly Bartlett, Esq. For Pilgrim Watch to Judge Young re: scheduling site visit and limited appearance session. (ADAMS Accession No. ML063450162)
December 8, 2006	Email: (PD) PNPS Draft SEIS. (ADAMS Accession No. ML070110583)
December 8, 2006	Notice of Availability of the Draft Plant-Specific Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants - Regarding Pilgrim Nuclear Power Station. (ADAMS Accession No. ML063410331)
December 12, 2006	Letter from Entergy to NRC dated 12 December, 2006 (including attached PNPS MACCS2 Input Files -attached CD) - Regarding License Renewal Application amendment for Pilgrim Station operating license. (ADAMS Accession No. ML070100410)
December 12, 2006	Email from Susan L. Uttal to the Administrative Judges informing that on 12/08/06, the Draft Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 29 (draft SEIS)...was issued (ADAMS Accession No. ML070040079)
December 13, 2006	Email: (PA) RE: 12/12/2006 Conference Call Record - From: Ellis, Doug To: Perry Buckberg - 12/13/2006 3:14:29 PM. (ADAMS Accession No. ML070100073)
December 13, 2006	Email: (PD) Dec 12 Conference Call Record - From: Perry Buckberg To: Doug Ellis. (ADAMS Accession No. ML070100223)
December 13, 2006	Email: (PD) Pilgrim RAI Follow Up - From: Perry Buckberg To: Doug Ellis - 12/13/2006 2:55:32 PM. (ADAMS Accession No. ML070100239)
December 13, 2006	Email: (PD) 12/12/2006 Conference Call Record - From: Perry Buckberg To: Doug Ellis 2:50:52 PM. (ADAMS Accession No. ML070100228)

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Date	Subject
December 14, 2006	Federal Register Notice - Entergy Nuclear Operations, Inc. Pilgrim Nuclear Power Station; Notice of Availability of the Draft Supplement 29 to the Generic Environmental Impact Statement for License Renewal of Nuclear Plants and Public Meeting for the... (ADAMS Accession No. ML070330554)
December 18, 2006	Letter from Molly L. Barkman notifying the Administrative Judges with the addendum to the index of Supplement 1 (Accession No. ML063530304)
December 18, 2006	Email: (PD) Conference Call - From: Perry Buckberg To: Doug Ellis; Edwin Forrest - 12/18/2006 12:57:25 PM. (ADAMS Accession No. ML070100272)
December 19, 2006	G20061071/LTR-06-0668 - Mary Lampert Ltr. Re Concerns Pilgrim Nuclear Power Station. (ADAMS Accession No. ML070030207)
December 28, 2006	Letter from S. Uttal to Administrative Judges re: Staff Review Schedule (ADAMS Accession No. ML063630334)
December 29, 2006	Summary of December 12, 2006 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding Pilgrim Nuclear Power Station License Renewal (ADAMS Accession No. ML063480053)
December 31, 2006	NUREG-1437, Supp 29, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 29 - Regarding Pilgrim Nuclear Power Station," Draft Report. (ADAMS Accession No. ML063260173)
January 4, 2007	Email: (PD) FW: Pilgrim in the News. (ADAMS Accession No. ML070440359)
January 5, 2007	Letter from NRC to B. Simon - Regarding Pilgrim Nuclear Power Station License Renewal Application Review (SHPO NO. RC 36661). (ADAMS Accession No. ML063480099)
January 10, 2007	Email: (PA) Pilgrim LRA Amendment 11. (ADAMS Accession No. ML070380551)
January 10, 2007	Email: (PA) FW: Pilgrim LRA Amendment 11. (ADAMS Accession No. ML070380577)
January 10, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 11. (ADAMS Accession No. ML070250175)
January 12, 2007	NRC Press Release-I-07-002: NRC to Hold Public Meetings on Draft Environmental Impact Report for Pilgrim Nuclear Plant License Renewal Application. (ADAMS Accession No. ML070120427)

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Date	Subject
January 16, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 12. (ADAMS Accession No. ML070230286)
January 16, 2007	Email: (PD) Fwd: Documents from Pilgrim. (ADAMS Accession No. ML070370589)
January 17, 2007	Email: (PD) Fwd: Entergy Info on Drywell Liner UT Measurements. (ADAMS Accession No. ML070370587)
January 17, 2007	Email: (PD) Pilgrim LRA Amendment 12. (ADAMS Accession No. ML070380227)
January 17, 2007	Notice of Meeting Between NRC Staff & Entergy Management to Inform Entergy Management of Results of NRC Team Inspection Covering Scoping & Aging Management Portions of Pilgrim Nuclear Power Station Application For A Renewed License. (ADAMS Accession No. ML070170610)
January 17, 2007	Email: (PA) FW: Pilgrim License Renewal Application Amendment 12. (ADAMS Accession No. ML070380549)
January 18, 2007	Summary of December 18, 2006 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML063540010)
January 18, 2007	Email: (PD) Fwd: FW: Drawing. (ADAMS Accession No. ML070380092)
January 18, 2007	Email: (PA) FW: Drawing. (ADAMS Accession No. ML070380545)
January 22, 2007	Email: (PD) Drywall Air Gap Foam. (ADAMS Accession No. ML070380088)
January 23, 2007	NRC Press Release-I-07-004: NRC to Discuss Preliminary Results of License Renewal Inspection for Pilgrim Nuclear Power Plant. (ADAMS Accession No. ML070230491)
January 24, 2007	DSEIS Meeting Presentation, Preliminary Results of Environmental Review Pilgrim Nuclear Power Station. (ADAMS Accession No. ML070330562)
January 26, 2007	Email: (PA) Scan001 (30).pdf. (ADAMS Accession No. ML070440356)
January 29, 2007	Email: (PD) DLR Briefs. (ADAMS Accession No. ML070370295)
January 29, 2007	Email: (PA) PNPS Meeting 1.30.07?. (ADAMS Accession No. ML070380579)

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Date	Subject
January 29, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 13. (ADAMS Accession No. ML070370413)
January 29, 2007	Email: (PA) FW: Pilgrim LRA Amendment 13. (ADAMS Accession No. ML070380543)
January 30, 2007	Email: (PD) Re: Pilgrim SEIS. (ADAMS Accession No. ML070440402)
January 30, 2007	Email: (PD) Pilgrim LRA Amendment 13. (ADAMS Accession No. ML070370298)
January 30, 2007	Email: (PD) FSAR Excerpt. (ADAMS Accession No. ML070370272)
January 30, 2007	Pilgrim License Renewal Inspection Exit Meeting Slides. (ADAMS Accession No. ML070440323)
January 31, 2007	Email: (PD) Re: Inspection Exit Meeting - Plymouth - 01.30.07. (ADAMS Accession No. ML070370290)
January 31, 2007	Email: (PD) Re: Inspection Exit Meeting - Plymouth - 01.30.07 (from M. Lampert). (ADAMS Accession No. ML070370286)
January 31, 2007	Email: (PD) Pilgrim Follow Up Information. (ADAMS Accession No. ML070440406)
February 1, 2007	Letter from Entergy to Administrative Judges Notifying Them of No Changes in Final SAIS (Pilgrim) (ADAMS Accession No. ML070320201)
February 2, 2007	Letter from NRC to Entergy - Regarding Audit and Review Report for Plant Aging Management Reviews and Programs for the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669). (ADAMS Accession No. ML063480333)
February 7, 2007	Email: Error in Pilgrim letter dated 01/04/07 (Pilgrim letter number 2.07.004). (ADAMS Accession No. ML070380424)
February 16, 2007	Summary of January 23, 2007 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML070300793)
February 23, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 14. (ADAMS Accession No. ML0706503500)
March 1, 2007	NRC Letter Transmitting the Safety Evaluation Report With Open Items Related to the License Renewal of PNPS (ADAMS Accession No. ML070600795)

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Date	Subject
March 13, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 15. (ADAMS Accession No. ML070790316)
March 15, 2007	Summary of February 26, 2007 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML070600567)
March 26, 2007	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669) (Section 4.2). (ADAMS Accession No. ML070780058)
March 28, 2007	Letter from Entergy to NRC - Comments on Draft Safety Evaluation Report, dated March 2007. (ADAMS Accession No. ML071380190)
March 29, 2007	Email: (PD) FW: Entergy-Preliminary Durability Performance Evaluation. (ADAMS Accession No. ML0710203190)
April 4, 2007	Transcript of ACRS Meeting of Plant License Renewal Subcommittee on April 4, 2007 in Rockville, MD. Pages 1 - 193. (Accession No. ML071090564)
April 27, 2007	Summary of April 2, 2007 Telephone Conferences with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML071030053)
April 28, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Annual Update. (ADAMS Accession No. ML071160152)
May 1, 2007	Summary of March 14, 2007 and March 15, 2007 Telephone Conferences with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML071030093)
May 1, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 16. (ADAMS Accession No. ML071280251)
May 17, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 17. (ADAMS Accession No. ML071550310)
June 8, 2007	Summary of May 10, 2007 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML071310069)
June 21, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 18. (ADAMS Accession No. ML071730467)
June 28, 2007	NRC Letter Transmitting the Safety Evaluation Report Related to the License Renewal of PNPS (ADAMS Accession No. ML071410438)

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Date	Subject
July 26, 2007	NRC Request for Additional Information for the Review of the Pilgrim Nuclear Power Station License Renewal Application (TAC MC9669) (Section 4.3.3) (ADAMS Accession No. ML072000407)
July 30, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 19. (ADAMS Accession No. ML072190611)
August 23, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Commitment 47. (ADAMS Accession No. ML072530516)
August 28, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Amendment 20. (ADAMS Accession No. ML072470403)
August 31, 2007	Summary of August 23, 2007 and August 27, 2007 Telephone Conferences with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML072390007)
September 6, 2007	Transcript of ACRS Meeting of Plant License Renewal Subcommittee on September 6, 2007 in Rockville, MD. Pages 1 - 283. (Accession No. ML072560775)
September 7, 2007	Summary of August 30, 2007 Telephone Conference with Entergy Nuclear Operations, Inc., - Regarding the Pilgrim License Renewal Application. (ADAMS Accession No. ML072430264)
September 12, 2007	Letter from Entergy to NRC - Regarding License Renewal Application Commitment 47. (ADAMS Accession No. ML072700723)

APPENDIX C

PRINCIPAL CONTRIBUTORS

This appendix lists the principal contributors for the development of this supplemental safety evaluation report and their areas of responsibility.

Appendix C: Principal Contributors	
Name	Responsibility
P. Buckberg	Project Manager
K. Chang	GALL Audit and Review
J. Davis	Materials Engineering
D. Hoang	Structural Engineering
K. Hsu	Mechanical Engineering
P.T. Kuo	Management Oversight
L. Lund	Management Oversight
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CONTRACTORS

Name	Responsibility
Legin Group, Inc.	SER Support
Advance Technologies and Laboratories	Engineering

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