

(NPA - PD - LR)

**From:** Ram Subbaratnam  
**To:** Christopher Sydnor; Ganesh Cheruvenki  
**Date:** 8/16/2006 10:36:35 AM  
**Subject:** RAI on Chapter 4.0 TLAAs

Ganesh/Chris:

These are the only RAIs so far on chapter 4.0 (from Simon). As I am wrapping up my RAIs for Pilgrim (I thank you all for the very prompt and pro-active cooperation in providing me insight related to your assignment), I will very much appreciate it if you can let me know if you have any further Qs on Chapter 4.0.

Thanking you.

Ram Subbaratnam  
PM Pilgrim LRA  
(301) 415 1478

**CC:** Kimberly Gruss; Matthew Mitchell

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**Creation Date** 8/16/2006 10:36:35 AM  
**From:** Ram Subbaratnam

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July 31, 2006

Mr. Michael Kansler  
President  
Entergy Nuclear Operations, Inc.  
440 Hamilton Avenue  
White Plains, NY 10601-1839

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION (TAC  
MC9669)

Dear Mr. Kansler:

By letter dated January 25, 2006, Entergy Nuclear Operations, Inc. submitted an application pursuant to 10 CFR Part 54, to renew the operating license for Pilgrim Nuclear Power Station for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. These requests for additional information address Sections B.1.3 Control Rod Drive Return Nozzle, B.1.26 Reactor Vessel Surveillance Program and time-limited aging analysis aspects for Reactor Vessel Fluence (Section 4.2.1).

These questions were discussed with a member of your staff, Bryan Ford, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1478 or e-mail [RXS2@nrc.gov](mailto:RXS2@nrc.gov).

Sincerely,

**/RA/**

Ram Subbaratnam, Project Manager  
License Renewal Branch A  
Division of License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:  
Requests for Additional Information

cc w/encl: See next page

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/RA/

Ram Subbaratnam, Project Manager  
 License Renewal Branch A  
 Division of License Renewal  
 Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosure:  
 Requests for Additional Information

**ADAMS Accession No.: ML062120752**

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NAME	RSubbaratnam	IKing	LLund
DATE	7/ 26 /06	7/ 21 /06	7/ 26 /06

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Letter to Michael Kansler from Ram Subbaratnam dated July 31, 2006

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SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE  
PILGRIM NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION (TAC  
MC9669)

**HARD COPY**

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## Pilgrim Nuclear Power Station -2-

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**REQUESTS FOR ADDITIONAL INFORMATION (RAIs)**  
**PILGRIM NUCLEAR POWER STATION**  
**LICENSE RENEWAL APPLICATION SECTIONS B.1.3, B.1.26 and 4.2.1**

**B.1.26 Reactor Vessel Surveillance Program**

**RAI-B.1.26-1**

The applicant in the updated final safety analysis report (UFSAR) supplement A.2.1.28, "Reactor Vessel Surveillance Program," and in the aging management program (AMP) B.1.26, "Reactor Vessel Surveillance," states that it will implement the Boiling Water Reactor Vessel and Internals Project (BWRVIP) integrated surveillance program (ISP) at the Pilgrim Nuclear Power Station (PNPS) as specified in BWRVIP-116, "BWR Vessel Internals Project Integrated Surveillance Program Implementation for License Renewal." By letter dated March 1, 2006, the staff has issued the final safety evaluation (SE) for the BWRVIP-116 report and therefore, the staff requests that the applicant include the following statement in UFSAR supplement Section A.2.1.28 and in AMP B.1.26 of the license renewal application (LRA).

"The BWRVIP-116 report which was approved by the staff will be implemented at PNPS with the conditions documented in Sections 3 and 4 of the staff's final SE dated March 1, 2006, for the BWRVIP-116 report."

**RAI-B.1.26-2**

Title 10 of the Code Federal Regulations Part 50 (10 CFR Part 50), Appendix H requires that an ISP used as a basis for a licensee implemented reactor vessel surveillance program be reviewed and approved by the NRC staff. The ISP to be used by the applicant is a program that was developed by the BWRVIP. The applicant will apply the BWRVIP ISP as the method by which the PNPS unit will comply with the requirements of 10 CFR Part 50, Appendix H. The BWRVIP ISP identifies capsules that must be tested to monitor neutron radiation embrittlement for all licensees participating in the ISP and identifies capsules that need not to be tested (standby capsules). Table 3-3 of the BWRVIP-116 report indicates that the standby capsule from PNPS unit is not to be tested. This untested capsule was originally part of the applicant's plant-specific surveillance program and has received significant amounts of neutron radiation.

The staff requests that the applicant include the following statement in the UFSAR supplement Section A.2.1.28 of the LRA.

"If the PNPS standby capsule is removed from the reactor vessel without the intent to test it, the capsule will be stored in a manner which maintains it in a condition which would permit its future use, including during the period of extended operation, if necessary."

Enclosure

### **B.1.3-1 Control Rod Drive (CRD) Return Nozzle**

#### **RAI-B.1.3-1**

Provide information regarding the type of inspection and the inspection frequency of the capped CRD return line nozzle weld overlay during the extended period of operation.

#### **RAI-B.1.3-2**

The applicant states that it will take the following exception to the inspection requirements for the CRD return line nozzle weld as mandated by the American Society of Mechanical Engineers (ASME) Code, Section XI.

PNPS proposes to examine ½" of the volume on either side of the widest part of the N10 nozzle-to-vessel weld in lieu of ½ the vessel wall thickness as required by the ASME Code, Section XI, 1998 Edition, 2000 Addenda, Figure IAB-2500-7(b).

The staff requests that the applicant provide information regarding the state of stress that is present in the volume of the subject weld that will not be included in the future examinations. Clarify whether the highly stressed volume of the weld, where cracks can initiate, will be examined effectively with the proposed alternative. The staff believes that the applicant should obtain prior approval from the staff for implementing the proposed alternative examination under the provisions of 10 CFR 50.55a before entering into the extended period of operation. Provide information whether the proposed alternative examination of the CRD return line nozzle weld has previously been submitted to the staff for review and approval for the current ISI interval.

### **4.2.1 Reactor Vessel Fluence**

#### **RAI 4.2.1-1**

Section 4.2.1 of the submittal indicates that PNPS used the radiation analysis modeling application code for the calculation of the 54 effective full-power year (EFPY) vessel fluence values. Section 4.2.2 states that recent calculations done per Regulatory Guide 1.190 confirm that the fluence for 54 EFPY is less than the fluence used to calculate the pressure and temperature limits in Reference 4.2-5, "Pilgrim Nuclear Power Station - Issuance of Amendment Re: Pressure-Temperature Limit Curves (TAC NO.MB0561)," letter dated April 13, 2001, Wang, A., to M. Bellamy.

Please provide information to substantiate this statement, preferably in the form of a contractor's report that documented these fluence calculations.