



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 20, 2008

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE:  
ADOPTION OF TSTF-448, REVISION 3, CONTROL ROOM ENVELOPE  
HABITABILITY (TAC NO. MD7497)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 231 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated November 29, 2007.

The amendment would revise the Technical Specification (TS) requirements related to control room envelope habitability in TS 3.7.B.2 "Control Room High Efficiency Air Filtration System (CRHEAFS)" and TS Section 5.5 "Administrative Controls - Programs and Manuals" consistent with Technical Specification Task Force (TSTF)-448, Revision 3. The availability of TS improvement was announced in the *Federal Register* on January 17, 2007 (72 FR 2022), including a model safety evaluation and model no significant hazards consideration determination, as part of the consolidated line item improvement process.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* Notice.

Sincerely,

A handwritten signature in black ink that reads "James Kim".

James S. Kim, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:

1. Amendment No. 231 to License No. DPR-35
2. Safety Evaluation

cc w/encls: Distribution via ListServ



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENERGY NUCLEAR GENERATION COMPANY

ENERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-293

PILGRIM NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 231  
License No. DPR-35

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by Entergy Nuclear Operations, Inc. (the licensee) dated November 29, 2007, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B of Facility Operating License No. DPR-35 is hereby amended to read as follows:
  - B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 231, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. Further, Facility Operating License No. DPR-35 will be amended to add the following license condition 3.N, to read as follows:
  - N. Upon Implementation of Amendment No. 231 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage required by SR 4.7.B.2.e in accordance with TS 5.5.8.c.(i), the assessment of CRE habitability as required by Specification 5.5.8.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.8.d shall be considered met as follows.
    - (a) The first performance of SR 4.7.2.B.5.e in accordance with Specification 5.5.8.c.(i) shall be within the specified frequency of 6 years, plus the 18-month allowance as defined by SURVEILLANCE INTERVAL measured from December 5, 2005; the date of the most recent successful tracer gas test, as stated in Entergy's letter "Follow-Up Response to NRC Generic Letter 2003-01" (ENO 2.06.019), dated March 20, 2006, or within 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
    - (b) The first performance of the periodic assessment of CRE habitability Specification 5.5.8.c.(ii) shall be within 3 years, plus the 9-month allowance of SURVEILLANCE INTERVAL as measured from December 5, 2005, the date of the most recent successful tracer gas test, as stated in Entergy's letter "Follow-Up Response to NRC Generic Letter 2003-01" (ENO 2.06.019), dated March 20, 2006, or within 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
    - (c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.8.d shall be within 24 months, plus the 180-day allowance of the SURVEILLANCE INTERVAL as measured from the date of the most recent successful pressure measurement test or within 180 days if not performed previously.
4. This license amendment is effective as of the date of issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Mark Kowal, Chief  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the License and  
Technical Specifications

Date of Issuance: November 20, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 231

FACILITY OPERATING LICENSE NO. DPR-35

DOCKET NO. 50-293

Replace the following page of the Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

3  
6  
7

Insert

3  
6  
7

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4.7-14  
3/4.7-15  
3/4.7-16  
-  
5.0-10  
-  
5.0-11  
5.0-12  
5.0-13  
5.0-14  
5.0-15

Insert

3/4.7-14  
3/4.7-15  
3/4.7-16  
3/4.7-17  
5.0-10  
5.0-11  
5.0-12  
5.0-13  
5.0-14  
5.0-15  
5.0-16

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 231, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. Records

ENO shall keep facility operating records in accordance with the requirements of the Technical Specifications.

D. Equalizer Valve Restriction - DELETED

E. Recirculation Loop Inoperable - DELETED

F. Fire Protection

ENO shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated December 21, 1978 as supplemented subject to the following provision:

ENO may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

G. Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Pilgrim Nuclear Power Station Physical Security, Training and Qualification, and Safeguards Contingency Plan, Revision 0" submitted by letter dated October 13, 2004, as supplemented by letter dated May 15, 2006.

- (b) Operations to mitigate fuel damage considering the following:
  - 1. Protection and use of personnel assets
  - 2. Communications
  - 3. Minimizing fire spread
  - 4. Procedures for implementing integrated fire response strategy
  - 5. Identification of readily-available pre-staged equipment
  - 6. Training on integrated fire response strategy
  - 7. Spent fuel pool mitigation measures
  
- (c) Actions to minimize release to include consideration of:
  - 1. Water Spray scrubbing
  - 2. Dose to onsite responders
  
- M. The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that required incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.
  
- N. Upon Implementation of Amendment No. 231 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage required by SR 4.7.B.2.e in accordance with TS 5.5.8.c.(i), the assessment of CRE habitability as required by Specification 5.5.8.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.8.d shall be considered met as follows.
  - (a) The first performance of SR 4.7.2.B.5.e in accordance with Specification 5.5.8.c.(i) shall be within the specified frequency of 6 years, plus the 18-month allowance as defined by SURVEILLANCE INTERVAL measured from December 5, 2005; the date of the most recent successful tracer gas test, as stated in Entergy's letter "Follow-Up Response to NRC Generic Letter 2003-01" (ENO 2.06.019), dated March 20, 2006, or within 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
  - (b) The first performance of the periodic assessment of CRE habitability Specification 5.5.8.c.(ii) shall be within 3 years, plus the 9-month allowance of SURVEILLANCE INTERVAL as measured from December 5, 2005, the date of the most recent successful tracer gas test, as stated in Entergy's letter "Follow-Up Response to NRC Generic Letter 2003-01" (ENO 2.06.019), dated March 20, 2006, or within 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
  - (c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.8.d shall be within 24 months, plus the 180-day allowance of the SURVEILLANCE INTERVAL as measured from the date of the most recent successful pressure measurement test or within 180 days if not performed previously.
  
- 4. This license is subject to the following condition for the protection of the environment: Boston Edison shall continue, for a period of five years after initial power operation of the facility, an environmental monitoring program similar to that presently existing with the Commonwealth of Massachusetts (and described generally in Section C-III of Boston Edison's Environmental Report, Operating License Stage dated

September, 1970) as a basis for determining the extent of station influence on marine resources and shall mitigate adverse effects, if any, on marine resources.

5. Boston Edison has not completed as yet construction of the Rad Waste Solidification System and the Augmented Off-Gas System. Limiting conditions concerning these systems are set forth in the Technical Specifications.
6. Pursuant to Section 105c(8) of the Act, the Commission has consulted with the Attorney General regarding the issuance of this operating license. After said consultation, the Commission has determined that the issuance of this license, subject to the conditions set forth in this subparagraph 6, in advance of consideration of and findings with respect to matters covered in Section 105c of the Act, is necessary in the public interest to avoid unnecessary delay in the operation of the facility. At the time this operating license is being issued an antitrust proceeding has not been noticed. The Commission, accordingly, has made no determination with respect to matters covered in Section 105c of the Act, including conditions, if any, which may be appropriate as a result of the outcome of any antitrust proceeding. On the basis of its findings made as a result of an antitrust proceeding, the Commission may continue this license as issued, rescind this license or amend this license to include such conditions as the Commission deems appropriate. Boston Edison and others who may be affected hereby are accordingly on notice that the granting of this license is without prejudice to any subsequent licensing action, including the imposition of appropriate conditions, which may be taken by the Commission as a result of the outcome of any antitrust proceeding. In the course of its planning and other activities, Boston Edison will be expected to conduct itself accordingly.
7. This license is effective as of the date of issuance and shall expire June 8, 2012.

FOR THE ATOMIC ENERGY COMMISSION

Original Signed by A. Giambusso

A. Giambusso, Deputy Director for Reactor Projects  
Directorate of Licensing

Attachments:

Appendix A - Technical Specifications  
(Radiological)

Date of Issuance: September 15, 1972

## LIMITING CONDITIONS FOR OPERATION

### 3.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (Cont.)

##### 2. Control Room High Efficiency Air Filtration System (CRHEAFS)

-----NOTE-----

The main control room envelope (CRE) boundary may be opened intermittently under administrative control.

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a. Except as specified in Specification 3.7.B.2.c, 3.7.B.2.e, 3.7.B.2.f, or 3.7.B.2.g below, both trains of the Control Room High Efficiency Air Filtration System used for the processing of inlet air to the control room under accident conditions shall be OPERABLE when in the Run, Startup, and Hot Shutdown MODES, during movement of recently irradiated fuel assemblies in the secondary containment, and during operations with a potential for draining the reactor vessel (OPDRVs), otherwise, the reactor shall be in cold shutdown within the next 36 hours.

b. 1. The results of the in-place cold DOP tests on HEPA filters shall show  $\geq 99\%$  DOP removal. The results of the halogenated hydrocarbon tests on charcoal adsorber banks shall show  $\geq 99.9\%$  halogenated hydrocarbon removal when test results are extrapolated to the initiation of the test.

2. The results of the laboratory carbon sample analysis shall show  $\geq 97.5\%$  methyl iodide removal at 70% R.H. and 86°F. The carbon sample shall be obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978 and tested in accordance with ASTM D3803-1989. The analysis results

## SURVEILLANCE REQUIREMENTS

### 4.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (Cont.)

##### 2. Control Room High Efficiency Air Filtration System (CRHEAFS)

a. At least once per operating cycle the pressure drop across each combined filter train shall be demonstrated to be less than 6 inches of water at 1000 cfm or the calculated equivalent.

b. 1. The tests and analysis of Specifications 3.7.B.2.b shall be performed once per operating cycle or following painting, fire or chemical release in any ventilation zone communicating with the system while the system is operating.

2. In-place cold DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing which could affect the HEPA filter bank bypass leakage.

3. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank or after any structural maintenance on the system housing which could affect the charcoal adsorber bank bypass leakage.

4. Each train shall be operated with the heaters in automatic for at least 15 minutes every month.

## LIMITING CONDITIONS FOR OPERATION

### 3.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (CRHEAFS) (Cont)

are to be verified as acceptable within 31 days after sample removal, or declare that train inoperable and take the actions specified in 3.7.B.2.c.

- c. From and after the date that one train of the CRHEAFS is made or found to be inoperable for any reason other than 3.7.B.2.f, reactor operation is permissible only during the succeeding 7 days providing that within 2 hours all active components of the other CRHEAFS train are verified to be OPERABLE and the diesel generator associated with the OPERABLE train is OPERABLE. If the system is not made fully OPERABLE within 7 days, reactor shutdown shall be initiated and the reactor shall be in cold shutdown within the next 36 hours.
- d. Fans shall operate within  $\pm 10\%$  of 1000 cfm.
- e. From and after the date that one train of the CRHEAFS is made or found to be inoperable for any reason other than 3.7.B.2.g, movement of recently irradiated fuel assemblies and operations with a potential for draining the reactor vessel (OPDRVs) are permissible during the succeeding 7 days providing that within 2 hours all active components of the other train are verified to be OPERABLE and the diesel generator associated with the OPERABLE train is OPERABLE. If the system is not made fully OPERABLE within 7 days,
  - i) perform surveillance 4.7.B.2.b.4 for the OPERABLE CRHEAF train every 24 hours

OR

  - ii) immediately suspend movement of recently irradiated fuel assemblies

## SURVEILLANCE REQUIREMENTS

### 4.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (CRHEAFS) (Cont)

- 5. The test and analysis of Specification 3.7.B.2.b.2 shall be performed after every 720 hours of system operation.
- c. At least once per operating cycle demonstrate that the inlet heaters on each train are OPERABLE and capable of an output of at least 14 kw.
- d. Perform an instrument functional test on the humidistats controlling the heaters once per operating cycle
- e. Perform required CRE unfiltered air inleakage testing at the specified frequency, in accordance with the Control Room Habitability Program.

## LIMITING CONDITIONS FOR OPERATION

### 3.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (CRHEAFS) (Cont)

in secondary containment and initiate actions to suspend OPDRVs. Any fuel assembly movement in progress may be completed.

f. Upon discovery that one or more trains of CRHEAFS are inoperable due to an inoperable CRE boundary when in the Run, Startup and Hot Shutdown MODES:

i.) Immediately initiate actions to mitigate the cause of the inoperable CRE boundary.

AND

ii.) Within 24 hours, verify the effectiveness of the mitigating actions to ensure CRE occupant exposures to radiological, chemical, and smoked hazards will not exceed limits.

AND

iii.) Within 90 days restore the CRE boundary to OPERABLE status.

Otherwise be in Hot Shutdown within 12 hours and in Cold Shutdown within the following 24 hours.

g. Upon discovery that:

both trains of CRHEAFS are inoperable,

OR

one or more trains of CRHEAFS are inoperable due to an inoperable CRE boundary

during movement of recently irradiated fuel assemblies and operations with a potential for draining the reactor vessel (OPDRVs), immediately suspend movement of recently irradiated fuel assemblies in secondary containment and initiate actions to suspend OPDRVs. Any fuel assembly movement in progress may be completed.

## SURVEILLANCE REQUIREMENTS

### 4.7 CONTAINMENT SYSTEMS (Cont.)

#### B. Standby Gas Treatment System and Control Room High Efficiency Air Filtration System (CRHEAFS) (Cont)

## LIMITING CONDITIONS FOR OPERATION

### 3.7 CONTAINMENT SYSTEMS (Cont.)

#### C. Secondary Containment

1. Secondary containment shall be OPERABLE when in the Run, Startup and Hot Shutdown MODES, during movement of recently irradiated fuel assemblies in the secondary containment, and during operations with a potential for draining the reactor vessel (OPDRVs).
2. a. With Secondary Containment inoperable when in the Run, Startup and Hot Shutdown MODES, restore Secondary Containment to OPERABLE status within 4 hours.  
b. Required Action and Completion Time of 2.a not met, be in HOT Shutdown in 12 hours AND Cold Shutdown within 36 hours.  
c. With Secondary Containment inoperable during movement of recently irradiated fuel assemblies in the secondary containment and during OPDRVs, immediately:
  1. Suspend movement of recently irradiated fuel assemblies in the secondary containment.

AND

2. Initiate actions to suspend OPDRVs.

## SURVEILLANCE REQUIREMENTS

### 4.7 CONTAINMENT SYSTEMS (Cont.)

#### C. Secondary Containment

1. Each refueling outage prior to refueling, secondary containment capability shall be demonstrated to maintain 1/4 inch of water vacuum under calm wind (5 mph) conditions with a filter train flow rate of not more than 4000 cfm.

## 5.5 Programs and Manuals

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### 5.5.7 Configuration Risk Management Program (CRMP)

CRMP provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to technical specification structures, systems, or components for which a risk-informed allowed outage time has been granted.

The CRMP includes the following elements:

- a. Provisions for the control and implementation of a Level 1 at power internal event PRA-informed methodology. The assessment is capable of evaluating the applicable plant configuration.
- b. Provisions for performing an assessment prior to entering the LCO Action Statement for preplanned activities.
- c. Provisions for performing an assessment after entering the LCO Action Statement for unplanned entry into the LCO Action Statement activities.
- d. Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action Statement.
- e. Provisions for considering other applicable risk significant contributors such as Level 2 issues and external events, quantitatively or qualitatively.

### 5.5.8 Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Main Control Room Heating, Ventilation and Air Conditioning System, CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body 5 rem total effective dose equivalent (TEDE) for the duration of the accident. The program shall include the following elements:

- a. The definition of the CRE and the CRE boundary.
- b. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.
- c. Requirements for (i) determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197.

5.5 Programs and Manuals

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"Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

- d. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the Main Control Room Heating, Ventilation and Air Conditioning System, operating at the flow rate required by the Ventilation Filter Testing Program (VFTP), at a Frequency of 24 months on a STAGGERED TEST BASIS. The results shall be trended and used as part of the 24 month assessment of the CRE boundary.
  - e. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph c. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
  - f. Each Surveillance Requirement shall be performed within the specified SURVEILLANCE INTERVAL with a maximum allowable extension not to exceed 25 percent of the specified SURVEILLANCE INTERVAL. The SURVEILLANCE INTERVAL requirement is applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs c and d, respectively.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.6 Reporting Requirements

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The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Not Used

5.6.2 Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include a summary of the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

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5.6 Reporting Requirements

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5.6.3 Radioactive Effluent Release Report

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a by May 15th of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and process control procedures and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

5.6.4 Not Used

5.6.5 Core Operating Limits Report (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
  1. Table 3.1.1 – APRM High Flux trip level setting
  2. Table 3.2.C –APRM Upscale trip level setting
  3. 3.11.A – Average Planar Linear Heat Generation Rate (APLHGR)
  4. 3.11.B – Linear Heat Generation Rate (LHGR)
  5. 3.11.C –Minimum Critical Power Ratio (MCPR)
  6. 3.11.D – Power/Flow Relationship During Power Operation
  
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:
  1. NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (through the latest NRC approved amendment at the time the reload analyses are performed as specified in the COLR).

(Continued)

## 5.6 Reporting Requirements

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### 5.6.5 (continued)

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as shutdown margin, transient analysis limits, and accident analysis limits) of the safety analysis are met.
  - d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.7 High Radiation Area

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5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is  $> 100$  mrem/hr but  $< 1000$  mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., radiation protection personnel) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates  $\leq 1000$  mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the radiation protection manager in the RWP.

5.7.2 In addition to the requirements of Specification 5.7.1, areas with radiation levels  $\geq 1000$  mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the SRO on duty or radiation protection supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work areas and the maximum allowable stay times for individuals in those areas. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by

(Continued)

5.7 High Radiation Area

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5.7.2 (continued)

personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

5.7.3 For individual high radiation areas with radiation levels of > 1000 mrem/hr, accessible to personnel, that are located within large areas such as reactor containment, where no enclosure exists for purposes of locking, or that cannot be continuously guarded, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded and conspicuously posted, and a flashing light shall be activated as a warning device.

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 231 TO FACILITY OPERATING LICENSE NO. DPR-35  
ENERGY NUCLEAR GENERATION COMPANY  
ENERGY NUCLEAR OPERATIONS, INC.  
PILGRIM NUCLEAR POWER STATION  
DOCKET NO. 50-293

1.0 INTRODUCTION

By application dated November 29, 2007 (Agencywide Documents and Management System (ADAMS) Accession No. ML073460062), Entergy Nuclear Operations, Inc. (the licensee) requested changes to the Technical Specifications (TS) for the Pilgrim Nuclear Power Station (PNPS).

On August 8, 2006, the commercial nuclear electrical power generation industry owners group Technical Specifications Task Force (TSTF) submitted a proposed change, TSTF-448, Revision 3, to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and appropriate action, surveillance, and administrative STS requirements related to ensuring the habitability of the control room envelope (CRE).

In Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS Surveillance Requirements (SRs) for the Control Room Envelope Emergency Ventilation System may not be adequate. Specifically, the results of American Society for Testing and Materials (ASTM) E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address existing TS as follows:

Provide confirmation that your technical specifications verify the integrity [i.e., operability] of the CRE [boundary], and the assumed [unfiltered] inleakage rates of potentially contaminated air. If you currently have a differential pressure surveillance requirement to demonstrate CRE [boundary] integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your differential pressure surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g. ASTM E741), and 2) making any necessary modifications to your CRE [boundary] so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

To promote standardization and to minimize the resources that would be needed to create and process plant-specific amendment applications in response to the concerns described in the GL, the industry and the NRC proposed revisions to CRE habitability system requirements contained in the STS, using the STS change traveler process. This effort culminated in Revision 3 to traveler TSTF-448, "Control Room Habitability," which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG-1433, the licensee proposed revising action and SRs in Specification 3.7.B.2, "Control Room High Efficiency Air Filtration System (CRHEAFS)," and adding a new administrative controls program, Specification 5.5.8, "Control Room Envelope Habitability Program." The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

Some editorial and plant-specific changes were incorporated into this safety evaluation (SE) resulting in minor deviations from the model SE text in TSTF-448, Revision 3.

## 2.0 REGULATORY EVALUATION

### 2.1 Control Room and Control Room Envelope

NRC Regulatory Guide (RG) 1.196, "Control Room Habitability at Light-water Nuclear Power Reactors," Revision 0, May 2003, (Reference 4) uses the term "control room envelope" in addition to the term "control room" and defines each term as follows:

**Control Room:** The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under normal conditions and to maintain the reactor in a safe condition during accident situations. It encompasses the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.

**Control Room Envelope:** The plant area, defined in the facility licensing basis, that in the event of an emergency, can be isolated from the plant areas and the environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.

NRC RG 1.197, "Demonstrating Control Room Envelope Integrity At Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities, this environment is limited to the control room; at others, it is the CRE. In this SE, consistent with the proposed changes to the STS, the CRE will

be used to designate both. For consistency, facilities should use the term CRE with an appropriate facility-specific definition derived from the above CRE definition.

## 2.2 Control Room High Efficiency Air Filtration System (CRHEAFS)

The CRHEAFS (the term used at PNPS for the Control Room Envelope Emergency Ventilation System) provides a protected environment from which operators can control the unit, during airborne challenges from radioactivity, hazardous chemicals, and fire byproducts, such as fire suppression agents and smoke, during both normal and accident conditions.

The CRHEAFS is designed to maintain a habitable environment in the control room envelope for 30 days of continuous occupancy after a design-basis accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body or a 5 rem total effective dose equivalent (TEDE).

The CRHEAFS consists of two redundant trains, each capable of maintaining the habitability of the CRE. The CRHEAFS is considered operable when the individual components necessary to limit operator exposure are operable in both trains. A CRHEAFS train is considered operable when the associated:

- Fan is operable;
- High efficiency particulate air (HEPA) filters and charcoal absorbers are not excessively restricting flow, and are capable of performing their filtration functions;
- Heater, demister, ductwork, valves, and dampers are operable, and air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both trains).

The CRE boundary is considered operable when the measured unfiltered air inleakage is less than or equal to the inleakage value assumed by the licensing basis analyses of DBA consequences to CRE occupants.

## 2.3 Regulations Applicable to Control Room Habitability

In Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. A summary of these GDCs follows.

GDC 1, "Quality Standards and Records," requires that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed.

GDC 2, "Design Basis for Protection Against Natural Phenomena," requires that SSCs important to safety be designed to withstand the effects of earthquakes and other natural hazards.

GDC 3, "Fire Protection," requires SSCs important to safety be designed and located to minimize the effects of fires and explosions.

GDC 4, "Environmental and Dynamic Effects Design Bases," requires SSCs important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents (LOCAs).

GDC 5, "Sharing of Structures, Systems, and Components," requires that SSCs important to safety not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, the orderly shutdown and cool down of the remaining units.

GDC 19, "Control Room," requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal conditions and to maintain the reactor in a safe condition under accident conditions, including a LOCA. Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of specified values.

Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:

- NUREG-1430, TS 3.7.10, "Control Room Emergency Ventilation System (CREVS);"
- NUREG-1431, TS 3.7.10, "Control Room Emergency Filtration System (CREFS);"
- NUREG-1432, TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS);"
- NUREG-1433, TS 3.7.4, "[Main Control Room Environmental Control (MCREC) System;" and
- NUREG-1434, TS 3.7.3, "[Control Room Fresh Air (CRFA)] System."

In these specifications, the SR associated with demonstrating the operability of the CRE boundary requires verifying that one CRHEAFS train can maintain a positive pressure relative to the areas adjacent to the CRE during the pressurization mode of operation at a makeup flow rate. Facilities that pressurize the CRE during the emergency mode of operation of the CRHEAFS have similar SRs. Other facilities that do not pressurize the CRE have only a system flow rate criterion for the emergency mode of operation. Regardless, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance (or the alternative surveillance at non-pressurization facilities) is not a reliable method for demonstrating CRE boundary operability. That is, licensees were able to obtain differential pressure and flow measurements satisfying the SR limits even though unfiltered inleakage was determined to exceed the value assumed in the safety analyses.

In addition to an inadequate SR, the action requirements of these specifications were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit; e.g., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," (AL 98-10) states that " the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition,"

which is defined in NRC Inspection Manual Chapter 9900; see latest guidance in Regulatory Information Summary (RIS) 2005-20 (Reference 3). "Imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term corrective action. The NRC staff expects that, following the imposition of administrative controls, an amendment to the inadequate TS, with appropriate justification and schedule, will be submitted in a timely fashion."

Licensees that have found unfiltered leakage in excess of the limit assumed in the safety analyses and have yet to either reduce the leakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on GL 2003-01 and AL 98-10, the NRC staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered leakage in order to satisfy 10 CFR 50.36(d)(3), which requires a facility's TS to include SRs, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that limiting conditions for operation will be met." (Emphasis added.)

The NRC staff also expects facilities to propose unambiguous remedial actions, consistent with 10 CFR 50.36(d)(2), for the condition of not meeting the limiting condition for operation (LCO) due to an inoperable CRE boundary. The action requirements should specify a reasonable completion time to restore conformance to the LCO before requiring a facility to be shut down. This completion time should be based on the benefits of implementing mitigating actions to ensure CRE occupant safety and sufficient time to resolve most problems anticipated with the CRE boundary, while minimizing the chance that operators in the CRE will need to use mitigating actions during accident conditions.

#### 2.4 Adoption of TSTF-448, Revision 3, by PNPS

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the CRHEAFS is met by demonstrating unfiltered leakage into the CRE is within limits; i.e., the operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) described in RG 1.197, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE between performances of the ASTM E741 test. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE unfiltered leakage is found to exceed the analysis assumption.

The changes made by TSTF-448 to the STS requirements for the CRHEAFS and the CRE boundary conform to 10 CFR 50.36(d)(2) and 10 CFR 50.36(d)(3). Their adoption will better assure that PNPS's CRE will remain habitable during normal operation and DBA conditions. These changes are, therefore, acceptable from a regulatory standpoint.

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. The emergency operational mode of the CRHEAFS at PNPS pressurizes the CRE to minimize unfiltered air leakage. The proposed changes are consistent with this design.

### 3.1 Proposed Changes

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3.7.B.2, CRHEAFS and adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform with the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Except for plant specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. The staff verified that differences from the STS were adequately justified on the basis of plant-specific design or retention of current licensing basis. The NRC staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. However, TS 5.5.6, "TS Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.B.2 refer to specific guidance in Nuclear Energy Institute (NEI) 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001 (Reference 6), which the NRC staff has formally endorsed, with exceptions, through RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003 (Reference 4).

### 3.2 Editorial Changes

The licensee proposed editorial changes to TS 3.7.B.2, "CRHEAFS," to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," and "radiological, chemical, and smoke hazards (or challenges)" in place of various phrases to describe the hazards that CRE occupants are protected from by the CRHEAFS. These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.

### 3.3 TS 3.7.B.2, CRHEAFS

The licensee proposed to establish new action requirements in TS 3.7.B.2, "CRHEAFS," for an inoperable CRE boundary. Currently, if one CRHEAFS train is determined to be inoperable due to an inoperable CRE boundary, existing actions would require restoring the train (and the CRE boundary) to operable status in 7 days. If two trains are determined to be inoperable due to an inoperable CRE boundary, existing actions specifies no time to restore the trains (and the CRE boundary) to operable status, and requires shutdown actions. These existing Actions are more restrictive than would be appropriate in situations for which CRE occupant implementation of compensatory measures or mitigating actions would temporarily afford adequate CRE occupant protection from postulated airborne hazards. To account for such situations, the licensee proposed to revise the action requirements to add a new action for when one or more CRHEAFS trains is inoperable due to inoperable CRE boundary in Run, Startup, and Shutdown Modes. New actions would allow 90 days to restore the CRE boundary (and consequently, the affected CRHEAFS trains) to operable status, provided that mitigating actions are immediately implemented and within 24 hours are verified to ensure, that in the event of a DBA, CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis

analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke.

The 24-hour completion time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90-day completion time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day completion is a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, proposed actions are acceptable.

The licensee also proposed to modify the CRHEAFS LCO by adding a NOTE allowing the CRE boundary to be opened intermittently under administrative controls. As stated in the LCO Bases, this NOTE "only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated." The allowance of this NOTE is acceptable because the administrative controls will ensure that the opening will be quickly sealed to maintain the validity of the licensing basis analyses of DBA consequences.

The licensee proposed to add an action for when one or more CRHEAFS trains are inoperable due to an inoperable CRE boundary or for when two CRHEAFS trains are inoperable during movement of recently irradiated fuel assemblies or during operations with a potential for draining the reactor vessel (OPDRVs). This change will ensure that actions are specified for an inoperable CRE boundary or for when both trains are inoperable during refueling and OPDRVs.

The licensee proposed to add an inleakage measurement SR and a CRE Habitability Program in TS Section 5.5, in accordance with the approved version of TSTF-448. The proposed CRE inleakage measurement SR states, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 5.5.8, requires that the program include "Requirements for determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0 (Reference 5)." This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has proposed to follow this method. Therefore, the proposed CRE inleakage measurement SR is acceptable.

### 3.4 TS 5.5.8, CRE Habitability Program

The proposed administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. This program is intended to ensure the operability of the CRE boundary, which as part of an operable CRHEAFS will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and

occupancy of the CRE under DBA conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body or 5 rem TEDE for the duration of the accident.

A CRE Habitability Program TS acceptable to the NRC staff requires the program to contain the following elements:

Definitions of CRE and CRE boundary. This element is intended to ensure that these definitions accurately describe the plant areas that are within the CRE, and also the interfaces that form the CRE boundary, and are consistent with the general definitions discussed in Section 2.1 of this SE. Establishing what is meant by the CRE and the CRE boundary will preclude ambiguity in the implementation of the program.

Configuration control and preventive maintenance of the CRE boundary. This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in RG 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.

Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of RG 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of RG 1.197. This element is intended to ensure that the plant assesses CRE habitability consistent with Sections C.1 and C.2 of RG 1.197. Assessing CRE habitability at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability. Determination of CRE inleakage at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

Measurement of CRE pressure with respect to all areas adjacent to the CRE boundary at designated locations for use in assessing the CRE boundary at a frequency of 24 months on a staggered test basis (with respect to the CRHEAFS trains). This element is intended to ensure that CRE differential pressure is regularly measured to identify changes in pressure warranting evaluation of the condition of the CRE boundary. Obtaining and trending pressure data provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

Quantitative limits on unfiltered inleakage. This element is intended to establish the CRE inleakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of DBAs. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.B.2, will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 3.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage), and paragraph number d (measurement of CRE differential pressure). This

statement is needed to avoid confusion. SR 3.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 3.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 3.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 5.5.8 states that (1) a CRE Habitability Program shall be established and implemented, (2) the program shall include all of the NRC staff required elements, as described above, and (3) the provisions of SR 3.0.2 shall apply to program frequencies. Therefore, TS 5.5.8, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

### 3.5 Implementation of New Surveillance and Assessment Requirements by the Licensee

The licensee has proposed license conditions regarding the initial performance of the new surveillance and assessment requirements. The new license conditions adopted the conditions in Section 2.3 of the model application published in the *Federal Register* on January 17, 2007, (72 FR 2022). Plant-specific changes were made to the proposed license conditions. The proposed plant-specific license conditions are consistent with the model application, and are acceptable.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Massachusetts State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (73 FR 5218). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. NRC GL 2003-01, "Control Room Habitability," dated June 12, 2003, (GL 2003-01).
2. ASTM E 741 - 00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000, (ASTM E741).
3. NRC Regulatory Issue Summary 2005-20: Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," dated September 26, 2005 (RIS 2005-20).
4. RG 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003.
5. RG 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003.
6. NEI 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

Principal Contributor: A. Lewin

Date: ~~November~~ 20, 2008

November 20, 2008

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
600 Rocky Hill Road  
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT RE:  
ADOPTION OF TSTF-448, REVISION 3, CONTROL ROOM ENVELOPE  
HABITABILITY (TAC NO. MD7497)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 231 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. This amendment is in response to your application dated November 29, 2007.

The amendment would revise the Technical Specification (TS) requirements related to control room envelope habitability in TS 3.7.B.2 "Control Room High Efficiency Air Filtration System (CRHEAFS)" and TS Section 5.5 "Administrative Controls - Programs and Manuals" consistent with Technical Specification Task Force (TSTF)-448, Revision 3. The availability of TS improvement was announced in the *Federal Register* on January 17, 2007 (72 FR 2022), including a model safety evaluation and model no significant hazards consideration determination, as part of the consolidated line item improvement process.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* Notice.

Sincerely,

/RA/  
James S. Kim, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-293

Enclosures:

1. Amendment No. 231 to License No. DPR-35
2. Safety Evaluation

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\*See memo dated May 26, 2008

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