

August 4, 2006

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

SUBJECT: PILGRIM NUCLEAR POWER STATION - ISSUANCE OF AMENDMENT
RE: DELETION OF REQUIREMENT RELATED TO NUCLEAR REGULATORY
COMMISSION (NRC) APPROVAL OF ENGINEERING EVALUATION FOR
ELEVATED RELIEF VALVE DISCHARGE PIPE TEMPERATURE (TAC NO.
MC7053)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 222 to Facility Operating License No. DPR-35 for the Pilgrim Nuclear Power Station. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 24, 2005, which was subsequently revised by letter dated May 2, 2006. Specifically, this amendment revises the requirement for NRC approval of the licensee operability evaluation for elevated safety relief valve discharge pipe temperature.

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 J. Shea, 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. 222 to License No. DPR-35
2. Safety Evaluation

cc w/encls: See next page

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ENTERGY NUCLEAR GENERATION COMPANY

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-293

PILGRIM NUCLEAR POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 222
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 May 24, 2005, subsequently revised by letter dated May 2, 2006, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter 1;
 - 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 license and 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. 222, are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, 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: August 4, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 222

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 a marginal line indicating the area of change.

Remove
3

Insert
3

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
3/4.6-6
3/4.6-7

Insert
3/4.6-6
3/4.6-7

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 222 TO FACILITY OPERATING LICENSE NO. DPR-35

ENTERGY NUCLEAR GENERATION COMPANY

ENTERGY NUCLEAR OPERATIONS, INC.

PILGRIM NUCLEAR POWER STATION

DOCKET NO. 50-293

1.0 INTRODUCTION

By letter dated May 24, 2005 (ADAMS Accession No. ML051520473) Entergy Nuclear Operations, Inc. (the licensee) submitted a request for changes to the Pilgrim Nuclear Power Station (Pilgrim) Technical Specifications (TSs) which was subsequently revised by letter dated May 2, 2006 (ADAMS Accession No. ML061320018). The May 2, 2006, letter reduced the scope of the application as originally noticed. Hence, there is no change to the NRC staff's original proposed no significant hazards consideration determination (70 FR 48205; August 16, 2005). This amendment as revised removes the requirement for Nuclear Regulatory Commission (NRC) approval of the licensee's operability evaluation for elevated safety relief valve discharge pipe temperature.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50.55a(2) require systems and components of boiling and pressurized water-cooled nuclear power reactors to meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code). The ASME Code requires that each vessel designed to meet Section III of the Code be protected from pressure in excess of the vessel design pressure.

The Pilgrim vessel pressure relief system includes two safety valves and four relief valves (commonly referred to as the safety relief valves (SRVs)), all of which are located on the main steam lines within the drywell. The safety valves provide protection against overpressure of the nuclear system and discharge directly to the interior space of the drywell.

The SRVs, which discharge directly to the suppression pool, provide the following protective functions:

1. Overpressure relief operation. The valves are opened (self-actuated or pressure switch operation) to limit the pressure rise and prevent safety valve opening.
2. Overpressure safety operation. The valves augment the safety valves by opening (self-actuated operation only) in order to prevent Nuclear System overpressurization.

3. Depressurization operation. The required valves are opened automatically or manually by indirectly operated devices, as part of the Core Standby Cooling System, for "small" and "intermediate" breaks in the nuclear system process barrier.

The SRVs at Pilgrim are two stage Target Rock valves which were installed prior to Cycle 5 operation. During subsequent surveillance testing, it was noted that excessive valve leakage had contributed to setpoint drift. Amendment No. 56 to the Pilgrim Facility Operating License was issued on March 20, 1982. The amendment required additional SRV testing, reporting requirements, and an engineering evaluation, approved by the NRC, for continued operation beyond 90 days when valve tail pipe temperatures exceeded 212 °F for greater than 24 hours. SRV tail pipe temperatures up to 212 °F is considered minimal valve leakage which would not affect valve setpoint drift. These additional restrictions on operation assured timely identification and resolution of valve leakage problems reducing the potential for setpoint drift.

3.0 TECHNICAL EVALUATION

3.1 Current Pilgrim TS Requirements

TS 3.6.D.1 provides the operability requirements for both safety valves and SRVs and requires that they be operable during reactor power operations and prior to reactor startup from cold condition or whenever reactor coolant pressure is greater than 104 psig and temperature greater than 340 °F. TS 3.6.D.2 provides the required actions if the operability requirements of TS 3.6.D.1 are not met.

TS 3.6.D.3 and 3.6.D.4 provide actions required if any Target Rock SRV discharge pipe temperature exceeds 212 °F for 24 hours or more. TS 3.6.D.3 requires an engineering evaluation justifying continued reactor operation with an SRV discharge pipe temperature greater than 212 °F for greater than 24 hours. TS 3.6.D.4 requires that the SRV whose discharge temperature exceeds 212 °F for 24 hours or more be removed at the next cold shutdown of 72 hours or more, tested in the as-found condition, and recalibrated as necessary prior to reinstallation. It also states that power operation shall not continue beyond 90 days from the initial discovery of discharge pipe temperatures in excess of 212 °F for more than 24 hours without prior NRC approval of the engineering evaluation delineated in TS 3.6.D.3.

TS 3.6.D.5 specifies limiting conditions for operation for the instrumentation that monitors tail pipe temperature.

Surveillance Requirements (SRs) 4.6.D.1 and 4.6.D.2 ensure both safety and relief valves are inspected and tested. SR 4.6.D.3 requires that the SRV discharge pipe temperatures be monitored daily as a means to verify that they are not experiencing any degradation. TS 4.6.D.4 specifies the calibration requirements for the instrumentation.

3.2 Proposed Changes to the Pilgrim TS Requirements

The licensee proposed to remove the required NRC approval of the engineering evaluation for continued operation beyond 90 days from TS 3.6.D.4 when an SRV tail pipe temperature exceeds 212 °F for more than 24 hours. The licensee also proposed to correct administrative errors associated with TS 3.6.D.2 for clarification and to provide consistency with section 3.4.3 of the Improved Standard Technical Specifications (STS) (NUREG-1433, Revision 3).

3.3 Staff Evaluation

Approximately 24 years of operating experience has been gained since the requirement for NRC approval of the engineering evaluation, for elevated SRV tail pipe temperature was incorporated into Pilgrim's TSs. Occasionally one or more SRV(s) experienced an elevated tailpipe temperature for which an engineering evaluation and NRC approval is required to continue operating beyond 90 days. The licensee stated that in virtually every case the engineering evaluation and the basis for justifying continued operation was essentially the same and an upper temperature limit was specified that, if exceeded for a stated time period, would require reactor shutdown. Similarly, in virtually every case, the basis for approval by the NRC to continue operating beyond 90 days was the same.

Last year, the licensee completed corrective actions aimed at reducing the probability of elevated SRV tailpipe temperatures including an insulation modification for all SRVs to minimize temperature gradients. This involved improving the method and reliability of fastening the insulation to the valve bodies and piping. It is suspected that temperature gradients caused by improper installation of insulation, including mis-positioned or improperly fastened insulation, play a role in increasing the probability of valve leakage. Industry data appears to corroborate this theory. Additionally, Pilgrim examined the specifications and tolerances for valve rebuilds and replaced the valve bodies on some valves instead of welding new seats into the old bodies. Pilgrim implemented these changes during the 2005 spring refueling outage to improve valve performance.

SRV leakage is not unique to Pilgrim. Operating experience has shown that SRV leakage manifests itself in a consistent way. Therefore, evaluations of the leakage condition and valve operability have also been consistent in the industry. Deleting the unique Pilgrim requirement for NRC approval of the engineering evaluation justifying continued operation required by Pilgrim TS 3.6.D.4, does not impact the safety function, reliability, or operability of the SRVs, and does not impact the plant safety analyses. In addition this unique Pilgrim requirement to obtain NRC approval to continue operating beyond 90 days has been an unnecessary resource burden to both the licensee and the NRC.

Pilgrim along with the nuclear industry in general have made significant advancements in the past 24 years in the processes for evaluating degraded and non-conforming conditions including the development of industry guidance, NRC guidance, and licensee corrective action programs. Future SRV leakage evaluations and their results will be available for NRC review as needed.

The proposed separated stand alone Note under TS 3.6.D.2 is consistent with the standard TS format and adds clarity with no change to the current TS requirements.

The NRC staff concludes that the requirement to obtain NRC approval of the licensee's engineering evaluation for Target Rock SRVs is no longer necessary, and therefore, the portion of Pilgrim TS 3.6.D.4 which delineates such requirement can be deleted. However, the licensee shall continue to perform the engineering evaluation as required by TS 3.6.D.3; and the evaluations and their results will be available for NRC review.

The change to the content and relocation of the Note currently placed under TS 3.6.D.2 is editorial to add clarity and correct a previous error. Therefore, the NRC staff finds the proposed changes to the Pilgrim TSs TS 3.6.D.2 and TS 3.6.D.4 to be 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. 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 (70 FR 48205; August 16, 2005). 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.

Principal Contributor: M. Razzaque

Date: August 4, 2006

Pilgrim Nuclear Power Station

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