



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

July 21, 2010

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION TO SUPPORT THE REVIEW OF
SETPOINT AND SETPOINT TOLERANCE INCREASES FOR SAFETY RELIEF
VALVES AND SPRING SAFETY VALVES (TAC NO. ME3543)

Dear Sir or Madam:

By letter dated March 15, 2010, Entergy Nuclear Operations, Inc., the licensee for Pilgrim Nuclear Power Station, submitted a license amendment request to revise its Technical Specifications to modify the setpoint and setpoint tolerances for Safety Relief Valves (SRVs) and Spring Safety Valves (SSVs) and changes related to the replacement of (i) four (4) Target Rock Two-Stage SRVs with Three-Stage SRVs, and (ii) two existing Dresser 3.749 inch-throat diameter SSVs with Dresser 4.956 inch-throat diameter SSVs.

The Nuclear Regulatory Commission staff has been reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). A response to this RAI is requested to be provided within 30 days.

Sincerely,

A handwritten signature in black ink, appearing to read "James Kim".

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

Docket No. 50-293

Enclosure:
As stated

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REQUEST FOR ADDITIONAL INFORMATION BY
THE OFFICE OF NUCLEAR REACTOR REGULATION REGARDING
REVISION TO TECHNICAL SPECIFICATION FOR SETPOINT AND SETPOINT
TOLERANCE INCREASES FOR SAFETY RELIEF VALVES (SRVs) AND SPRING SAFETY
VALVES (SSVs), AND RELATED CHANGES
PILGRIM NUCLEAR POWER STATION

The NRC staff requests that the licensee provide the following additional information concerning this request:

1. In Item No. 3 in Table 1: "Proposed TS Changes," of Attachment 1 to the submittal, it was stated that Tailpipe Temperature Indication from Technical Specification (TS) Table 3.2.F and asterisk in Note (5) will be removed, and Note (6) will be revised and relocated to updated final safety analysis report (UFSAR). The staff understands that the limiting conditions for operation (LCOs) for the instrumentation that monitors tail pipe temperature are given in Table 3.2-F. It provides the requirements for number of operable thermocouples (TC) for SRV tail pipe temperature indication. In addition, Note (6) requires that if a TC becomes inoperable, it shall be returned to an operable condition within 31 days, or the reactor shall be placed in a shutdown mode within 24 hours. Please provide the following additional information:
 - a) Provide the language that will be added to the UFSAR.
 - b) Will all of the requirements that currently exist in the TS be maintained after the proposed relocation to the UFSAR? If not, then justify why the requirement is no longer necessary.
 - c) After removal of Tailpipe Temperature Indication from TS Table 3.2.F and asterisk in Note (5), and relocation of Note (6) to UFSAR, explain how the requirements for tailpipe temperature indication, as currently exist in the TS, will be implemented.
 - d) As a follow-up to part (c), the staff believes that LCOs for instrumentation must be located in the TS for appropriate regulatory control. Provide justification if you disagree.
 - e) Are the proposed changes consistent with the Standard Technical Specification (STS)? If so, provide the relevant section numbers of the STS so that the staff can verify.
2. In the second paragraph on page 5 of Attachment 1 to the submittal, it was stated that the existing TS surveillance for the Two-Stage Target Rock SRVs for tailpipe temperature monitoring, as specified in TS 3.6.D.3, 4, and 5, is not required and will be revised and relocated into the UFSAR. The staff understands that the objective of

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these Surveillance Requirements were to detect the leaking SRVs and to make corrective actions, if necessary, according to the LCO. Please provide the following additional information:

- a) Provide the language that will be added to the UFSAR.
 - b) Describe how a potential leak during normal operation in a Three-Stage Target Rock SRV is detected, the corrective actions taken for leaking SRVs, and the LCO. As stated earlier, the staff believes that an LCO should be in the TS, and not in the UFSAR. Justify.
 - c) Are the proposed changes consistent with the STS? If so, provide the relevant STS section numbers for the staff to verify.
3. Results of plant-specific overpressure event for Pilgrim shown in Table 2-2 of the GEH Report, NEDC-33532P, "Pilgrim Nuclear Power Station Safety Valve Setpoint Increase," Rev. 0, March 2010, defines several types of pressure. The staff understands that the "Peak Dome Pressure" is the computer code (ODYN) calculated peak pressure at the vessel dome during the event; and the "Peak Vessel Pressure" is the peak pressure at the bottom of the vessel which is higher than the dome pressure by approximately an amount equal to the weight of fluid inside the vessel. The "Vessel Pressure Limit" is the American Society of Mechanical Engineers overpressure limit of 1375 psig [110% X 1250 psig (vessel design pressure)]. Please provide the following additional information:
- a) Confirm if the staff's understanding, as described above, is accurate. If not, clarify.
 - b) Define the "Dome Pressure Safety Limit." Explain how the parameter is used in the safety analyses, methodology to calculate it, and name of the computer code used. Also, justify the technical basis to arbitrarily increase its value from 1325 psig [106% of design pressure] to 1340 psig [107.2% of design pressure] in order to cover future cycle-to-cycle variation in cycle-specific calculations, and why it should be acceptable.
4. On page 8 of the submittal, it was stated, "All valves reviewed to date were successfully screened with the exception of the reactor core isolation coolant (RCIC) Pump Injection Valve (MO1301-49). This motor-operated valve (MOV) does not demonstrate sufficient margin based on a review of the weak link and torque/thrust analyses. PNPS will modify valve components or replace MOVs as a part of the SRV/SSV modification package to assure that sufficient margin exists prior to implementing the full modification package." Please provide a more specific plan to implement your modification of MOVs.
5. Although the NRC staff has previously reviewed and approved NEDC-31753P, the staff notes that the topical report is based on General Electric (GE) fuel core designs. If Pilgrim core is designed with mixed fuel types and/or includes non-GE fuel design, then demonstrate that the NEDC-31753P evaluation is applicable to the Pilgrim core design.
6. Is debris generated as a result of the safety valve discharge into the drywell? If so, please describe how this is taken into account in the analysis of the Anticipated Transient Without Scram event, especially the effect of the debris on available net positive suction head of the Residual Heat Removal System.

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James Kim, Project Manager
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