



Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
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Site Vice President

May 24, 2005

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555-0001

SUBJECT: Entergy Nuclear Operations, Inc.  
Pilgrim Nuclear Power Station  
Docket No: 50-293  
License No: DPR-35

Request for Amendment to the Technical Specifications (TS) - Deletion of Requirement Related to NRC Approval of Engineering Evaluation for Elevated Safety Relief Valve Discharge Pipe Temperature

LETTER NUMBER: 2.05.005

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Nuclear Operations Inc. (Entergy) proposes to amend the Pilgrim Station Facility Operating License, DPR-35. This proposed license amendment deletes the requirement for requesting NRC approval of an engineering evaluation when a Safety Relief Valve discharge pipe temperature exceeds the limit specified in Technical Specifications.

Entergy has reviewed the proposed amendment in accordance with 10 CFR 50.92 and concludes it does not involve a significant hazards consideration. The attachments provide a description of the proposed change and mark-up of the Technical Specification and Bases pages.

Entergy requests approval of the proposed amendment by June 1, 2006. Once approved, Entergy will implement the amendment within 60 days.

The commitments made in this letter are contained in Attachment 3 of this letter.

If you have any questions or require additional information, please contact Bryan Ford at (508) 830-8403.

A001

I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 24th of May 2005.

Sincerely,



Michael A. Balduzzi

WGL/dm  
Attachments

1. Evaluation of the Proposed Change (5 pages)
2. Mark-up of Technical Specification pages (3 pages)
3. Summary of Commitments (1 page)

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ATTACHMENT 1

Evaluation of the Proposed Change

**Subject:** Deletion of Requirement Related to Request for NRC Approval of Engineering Evaluation for Elevated Safety Relief Valve Discharge Pipe Temperature

1. DESCRIPTION
2. PROPOSED CHANGE
3. BACKGROUND
4. TECHNICAL ANALYSIS
5. REGULATORY SAFETY ANALYSIS
  - 5.1 No Significant Hazards Consideration
  - 5.2 Environmental Consideration
6. COORDINATION WITH OTHER PENDING TS CHANGES
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Deletion of Requirement Related to Request for NRC Approval of Engineering Evaluation for Elevated Safety Relief Valve Discharge Pipe Temperature

1. DESCRIPTION

Pursuant to 10 CFR 50.90, Entergy proposes to amend the Technical Specifications (TS) for Pilgrim Nuclear Power Station. This proposed change deletes the TS 3.6.D.4 requirement for NRC approval of an engineering evaluation when a Safety Relief Valve (SRV) discharge pipe temperature exceeds the limit specified in TS 3.6.D.3.

Entergy will continue to comply with the SRV operability requirements and monitor the SRV discharge pipe temperatures as specified in TS 3.6.D.1 and .2 and TS 4.6.D.1 through .4, respectively.

2. PROPOSED CHANGE

Technical Specification 3.6.D.2 Note is deleted. TS 3.6.D.3 and .4 are changed to indicate "Deleted". These changes are made on TS pages 3/4.6-6 and 3/4.6-7.

The last sentence in the last paragraph on TS Bases page B3/4.6-8 is deleted. This page is included for information only.

Attachment 2 provides marked-up TS and Bases pages. A marked-up Bases page is provided for information only.

3. BACKGROUND

Pilgrim has four installed two-stage Target Rock SRVs on the main steam lines inside the primary containment, as listed below:

RV-203-3A	on Main Steam Line A
RV-203-3B	on Main Steam Line D
RV-203-3C	on Main Steam Line D
RV-203-3D	on Main Steam Line B

The SRVs are provided to relieve primary steam to the suppression pool by self-actuation, and each SRV has an ASME rated 898,000 lbs/hour discharge capacity at 1126 psig as part of the reactor vessel overpressure protection design. The SRVs also fulfill the automatic depressurization function of the core standby cooling systems (emergency core cooling system) under design basis accident conditions via an automatic or manual actuation of the electro-pneumatic portion of the automatic depressurization system (ADS). FSAR Section 4.4 describes the design and operational requirements of the SRVs and FSAR Section 14 describes the related safety analysis.

The current Pilgrim TS 3.6.D.1 and .2 provide SRV operability requirements, and TS 3.6.D.3 and .4 require reporting by way of requesting NRC approval of an engineering evaluation for continued reactor operation beyond 90 days with a SRV discharge pipe temperature greater than 212° F for greater than 24 hours.

The Note in TS 3.6.D.2 specifically states that Technical Specifications 3.6.D.2 – 3.6.D.5 apply to the installed two-stage Target Rock SRVs.

TS 3.6.D.3 requires an engineering evaluation justifying continued reactor operation if elevated SRV discharge pipe (tail pipe) temperatures in excess of 212° F occur for a period greater than 24 hours. TS 3.6.D.4 requires NRC approval of the evaluation to continue operation beyond 90 days, and corrective actions (removal, testing, repair, recalibration, and reinstallation of the SRV) at the next cold shutdown of 72 hours or more duration.

TS 3.6.D.1 and .2 (excluding the Note) stipulate SRV operability requirements consistent with those contained in Boiling Water Reactor Standard Technical Specifications (NUREG-1433, Rev. 3) Section 3.4.3 (Reference 1). The requirement for NRC approval of an engineering evaluation is not included in the STS and is adequately addressed by NRC Generic Letter (GL) 91-18, Rev. 1. Accordingly, Entergy proposes to delete TS 3.6.D.3 and .4, with a corresponding revision to the Bases and deletes the Note in TS 3.6.D.2.

#### 4. TECHNICAL ANALYSIS

The SRVs are part of the reactor coolant pressure boundary and operate by power actuation (i.e., ADS) or self-actuation by process high pressure. The SRVs limit peak vessel pressure during overpressure transients to satisfy ASME code requirements. The postulated transients for which safety/relief valve actuation is required are described in Chapters 4 and 14 and in Appendices Q and R of the Updated Final Safety Analysis Report. The ADS provides a means to rapidly depressurize the primary system down to a pressure at which low-pressure cooling systems can provide makeup. In the event of a small or medium break loss of coolant accident (LOCA), the ADS function would be required if the high pressure coolant injection system is unable to maintain vessel water level.

TS 3.6.D.1 and .2 govern the operability requirements for the SRVs. No changes are made to these operability requirements.

TS 3.6.D.1 and .2 require that the SRVs 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. The surveillance requirements 4.6.D.1 and .2 ensure the SRVs are inspected and tested. The surveillance requirement 4.6.D.3 requires that the SRV discharge pipe temperatures be monitored daily. This surveillance assures SRV reliability to perform the intended safety functions and remain operable as required by TS 3.6.D.1 and .2 to perform the safety functions.

The Note in TS 3.6.D.2 and TS 3.6.D.3 and .4 were introduced in License Amendment No. 56, dated March 20, 1982. At that time, NRC GL 91-18, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions," guidance was not available. The TS required engineering evaluation and the corrective actions represent evaluation and resolution of a

non-conforming condition consistent with the guidance later provided by GL 91-18, Rev. 1. Entergy will continue to perform engineering evaluations of non-conforming or degraded conditions of the SRVs. Entergy will revise the SRV surveillance procedure to trigger the performance of an engineering evaluation if the temperature of any SRV discharge pipe exceeds 212°F during reactor operation for a period greater than 24 hours (Attachment 3).

Deleting the requirements for NRC approval of the engineering evaluation does not impact the safety function, reliability, and operability of the SRVs, and does not impact the safety analysis.

## 5. REGULATORY SAFETY ANALYSIS

### 5.1 No Significant Hazards Consideration

Entergy Nuclear Operations, Inc. (Entergy) proposes to delete the Pilgrim Station Technical Specifications (TS) 3.6.D.3 and .4, and delete a Note in TS 3.6.D.2. The proposed change deletes the requirement for NRC approval of an engineering evaluation for continued reactor operation beyond 90 days and corrective actions related to the safety relief valve discharge pipe temperature greater than 212°F for greater than 24 hours.

Entergy has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

This proposed change deletes an administrative requirement for NRC approval of an engineering evaluation to resolve a non-conforming and degraded condition that is required by NRC Generic Letter 91-18 (GL), Rev. 1, "Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions". The SRVs will be maintained operable, inspected, and tested to perform their safety function as required by the current Specifications and any SRV non-conforming or degraded condition will be addressed in accordance with GL 91-18. The proposed change also deletes a Note regarding installed two-stage Target Rock SRVs. The deletion of an administrative requirement and the Note does not change the plant response to the design basis accident and does not increase the probability of inadvertent SRV operation. Therefore, the proposed change does not significantly increase the probability or consequences of any previously evaluated accidents.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The safety function of the SRVs is to provide over-pressure protection of the primary coolant pressure boundary and also for the automatic functions to rapidly depressurize the primary system to a pressure at which low-pressure cooling systems can provide makeup. The proposed change deletes an administrative requirement and a Note related to installed two-stage Target Rock SRVs, and does not introduce any new modes of equipment operation or failure. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The ability of the SRVs to perform their safety function is maintained during operation and will continue to be tested as required in accordance with TS 3/4.13, Inservice Code Testing. The proposed change deletes an administrative requirement that is adequately addressed by following GL 91-18, Rev. 1. Deletion of an administrative requirement does not reduce the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Accordingly, Entergy concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

## 5.2 Environmental Consideration

The proposed change deletes an administrative requirement and a Note applicable to a system/component located within the restricted area, as defined in 10 CFR 20. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

6. COORDINATION WITH OTHER PENDING TS CHANGES

The TS page 3/4.6-7 (Attachment 2) is affected by the TS Change request for Single Recirculation Loop Operation submitted by Entergy Letter No. 2.04.074, dated September 2, 2004. Pilgrim will reconcile this TS page when Single Recirculation Loop Operation TS change is approved.

7. REFERENCES

1. NUREG-1433, "Standard Technical Specifications for General Electric Plants, BWR/4," Section 3.4.3.



ATTACHMENT 2

MARKED-UP TECHNICAL SPECIFICATION AND BASES PAGES

(3 pages)

TS pages: 3/4.6-6 and 3/4.6-7  
TS Bases page: B3/4.6-8

LIMITING CONDITIONS FOR OPERATION

3.6 PRIMARY SYSTEM BOUNDARY (Cont)

- c. With no required leakage detection systems Operable, be in Cold Shutdown within 24 hours.

D. Safety and Relief Valves

1. During reactor power operating conditions and prior to reactor startup from a Cold Condition, or whenever reactor coolant pressure is greater than 104 psig and temperature greater than 340°F, both safety valves and the safety modes of all relief valves shall be operable. The nominal setpoint for the relief/safety valves shall be selected between 1095 and 1115 psig. All relief/safety valves shall be set at this nominal setpoint ± 11 psi. The safety valves shall be set at 1240 psig ± 13 psi.
2. If Specification 3.6.D.1 is not met, an orderly shutdown shall be initiated and the reactor coolant pressure shall be below 104 psig within 24 hours.

Note: Technical Specifications 3.6.D.2 - 3.6.D.5 apply only when two Stage Target Rock SRVs are installed.

3. If the temperature of any safety relief discharge pipe exceeds 212°F during normal reactor power operation for a period of greater than 24 hours, an engineering evaluation shall be performed justifying continued operation for the corresponding temperature increases.

Deleted

SURVEILLANCE REQUIREMENTS

4.6 PRIMARY SYSTEM BOUNDARY (Cont)

D. Safety and Relief Valves

1. Testing of safety and relief/safety valves shall be in accordance with 3.13.
2. At least one of the relief/safety valves shall be disassembled and inspected each refueling outage.
3. Whenever the safety relief valves are required to be operable, the discharge pipe temperature of each safety relief valve shall be logged daily.
4. Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.6 PRIMARY SYSTEM BOUNDARY (Cont)

4.6 PRIMARY SYSTEM BOUNDARY (Cont)

D. Safety Relief Valves (Cont')

4. Any safety relief valve whose discharge pipe temperature exceeds 212°F for 24 hours or more shall 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. 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 3.6.D.3.

*Deleted*

5. The limiting conditions of operation for the instrumentation that monitors tail pipe temperature are given in Table 3.2-F.

*These changes are from Entergy Letter 2.04.074 Single Loop Operation TS change Request.*

E. Jet Pumps

1. Whenever the reactor is in the startup or run modes, all jet pumps shall be operable. If it is determined that a jet pump is inoperable, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours.

*The reactor shall be in Hot Shutdown within 12 hours.*

*See insert* →

E. Jet Pumps

NOTES

1. Not required to be performed until 4 hours after the associated recirculation loop is in operation.
2. Not required to be performed until 24 hours after >25% Rated Thermal Power.

Whenever there is recirculation flow with the reactor in the startup or run modes, jet pump operability shall be checked daily by verifying that no two of the following conditions occur simultaneously.

1. The two recirculation loops have a flow imbalance of 10% or more when the pumps are operated at the same speed.
2. The indicated value of core flow rate varies from the value derived from loop flow measurements by more than 10%.
3. The diffuser to lower plenum differential pressure reading on an individual jet pump varies from established jet pump delta P characteristics by more than 10%.

BASES:

3/4.6 PRIMARY SYSTEM BOUNDARY (Cont)

D. Safety and Relief Valves (Cont)

A main steam line isolation with flux scram has been selected to be used as the safety valve sizing transient since this transient results in the highest peak vessel pressure of any transient when analyzed with an indirect scram. The original FSAR analysis concluded that the peak pressure transient with indirect scram would be caused by a loss of condenser vacuum (turbine trip with failure of the bypass valves to open). However, later observations have shown that the long lengths of steam lines to the turbine buffer the faster stop valve closure isolation and thereby reduce the peak pressure caused by this transient to a value below that produced by a main steam line isolation with flux scram.

Item 3 above indicates that no credit be taken for the primary scram signal generated by closure of the main steam isolation valves. Two other scram initiation signals would be generated, one due to high neutron flux and one due to high reactor pressure. Thus item 3 will be satisfied by assuming a scram due to high neutron flux.

Relieving capacity of 40% (4 relief/safety valves) results in a peak pressure during the transient conditions used in the safety valve sizing analysis which is well below the pressure safety limit.

The relief/safety valve settings satisfy the Code requirements that the lowest safety valve set point be at or below the vessel design pressure range to prevent unnecessary cycling caused by minor transients. The results of postulated transients where inherent relief/safety valve actuation is required are given in Appendices R and Q of the Final Safety Analysis Report.

Experience in safety valve operation shows that a testing of at least 50% of the safety valves per refueling outage is adequate to detect failures or deterioration. The tolerance value of  $\pm 1\%$  is in accordance with Section III of the ASME Boiler and Pressure Vessel Code. An analysis has been performed which shows that with all safety valves set 1% higher, the reactor coolant pressure safety limit of 1375 psig is not exceeded.

The relief/safety valves have two functions; i.e., power relief or self-actuated by high pressure. Power relief is a solenoid actuated function (Automatic Pressure Relief) in which external instrumentation signals of coincident high drywell pressure and low-low water level initiate the valves to open. This function is discussed in Specification 3.5.D. In addition, the valves can be operated manually.

Pilgrim's experience with 2 stage safety/relief valves has demonstrated that minimum leakage exists when the tailpipe temperature is 215° Fahrenheit.

Therefore, a reporting requirement triggered by a temperature of 212° F is conservative, and assures timely reporting before leakage reaches significant proportions.

**ATTACHMENT 3**

**Summary of Commitments**

**(1 page)**

<b>Commitment ID</b>	<b>Description</b>	<b>Due Date</b>
1.	Revise SRV surveillance procedure to include the performance of an engineering evaluation if the temperature of any SRV discharge pipe exceeds 212°F during normal operation for a period greater than 24 hours.	Prior to the implementation of this license amendment.