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July 22, 1994

Docket No. 50-423
B14905

Re: 10CFR50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Millstone Nuclear Power Station, Unit No. 3
Proposed Revision to Technical Specifications
Maximum Allowable Power Range Neutron Flux High Setpoint with
Inoperable Main Steam-Line Safety Valves

Introduction

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License No. NPF-49 by incorporating the changes identified herein into the Technical Specifications of Millstone Unit No. 3. These proposed changes will revise Tables 3.7-1 and 3.7-2 and Bases Section 3/4.7.1.1 of the Millstone Unit No. 3 Technical Specifications. They are being revised to respond to a Westinghouse determination that the current setpoints in Tables 3.7-1 and 3.7-2 of the Millstone Unit No. 3 Technical Specifications may not provide adequate steam generator overpressure protection for a Loss of Load/Turbine Trip transient at reduced power levels under certain conditions with typical safety analysis assumptions. These tables allow Millstone Unit No. 3 to operate with a reduced number of main steam-line safety valves (MSSVs) at a reduced power level, as determined by the high neutron flux setpoint.

Description of the Proposed Changes

NNECO is proposing to revise Tables 3.7-1 and 3.7-2 and Bases Section 3/4.7.1.1 of the Millstone Unit No. 3 Technical Specifications. Westinghouse has determined that the current setpoints in Tables 3.7-1 and 3.7-2 of the Millstone Unit No. 3 Technical Specifications may not provide adequate steam generator overpressure protection for a Loss of Load/Turbine Trip transient at reduced power levels under certain conditions with typical safety analysis assumptions. These tables allow Millstone Unit No. 3 to operate with a reduced number of main steam-line safety valves (MSSVs) at a reduced power level, as determined by the high neutron flux setpoint. Table 3.7-1 applies to four loop operation, and Table 3.7-2 applies to three loop operation.

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The proposed changes to the maximum allowable power range neutron flux high setpoint are noted in Tables 1 and 2.

Table 1 - Changes to Technical Specification Table 3.7-1 (Four Loop Operation)

| Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator | Current Technical Specification Requirement for the Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of Rated Thermal Power) | Proposed Technical Specification Requirement for the Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of Rated Thermal Power) |
|---|---|--|
| 1 | 87 | 65 |
| 2 | 65 | 46 |
| 3 | 43 | 28 |

Table 2 - Changes to Technical Specification Table 3.7-2 (Three Loop Operation)

| Maximum Number of Inoperable Safety Valves on Any Operating Steam Generator | Current Technical Specification Requirement for the Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of Rated Thermal Power) | Proposed Technical Specification Requirement for the Maximum Allowable Power Range Neutron Flux High Setpoint (Percent of Rated Thermal Power) |
|---|---|--|
| 1 | 64 | 47 |
| 2 | 48 | 33 |
| 3 | 32 | 19 |

Because the proposed values for the maximum allowable power range neutron flux high setpoint were determined utilizing a methodology different from that presented in Bases Section 3/4.7.1.1, NNECO is proposing to replace the outdated methodology denoted in Bases Section 3/4.7.1.1 with the current methodology.

NNECO is proposing an additional change to Bases Section 3/4.7.1.1. Currently, the section states: "The total relieving capacity for

all valves on all of the steam lines is 1.579×10^7 lbs/h which is 105% of the total secondary steam flow of 1.504×10^7 lbs/h at 100% RATED THERMAL POWER." NNECO proposes to clarify this statement by denoting that this is actually "the design minimum total relieving capacity."

Attachments 1 and 2 provide the marked-up and retyped versions of the Millstone Unit No. 3 Technical Specifications, respectively.

Safety Assessment

Westinghouse has identified a potential safety issue regarding plant operation within Technical Specification Tables 3.7-1 and 3.7-2. These tables allow plant operation with a reduced number of operable MSSVs at a reduced power level, as determined by the power range neutron flux high setpoint. Table 3.7-1 applies to four loop operation and Table 3.7-2 applies to three loop operation. As seen from the basis for Technical Specification 3/4.7.1.1, the power range neutron flux high setpoint is determined by an equation rather than from plant specific accident analysis.

Westinghouse has determined that under certain conditions with typical safety analysis assumptions, the current setpoints in Tables 3.7-1 and 3.7-2 may not provide adequate steam generator overpressure protection for a Loss of Load/Turbine Trip transient at reduced power levels. At reduced power levels, a reactor trip may not be actuated early in the transient. An overtemperature ΔT trip may not be generated since the core thermal margins are increased at lower power levels. The power operated relief valves (PORVs) and pressurizer spray may control reactor coolant system (RCS) pressure such that a high pressurizer pressure trip isn't generated. The reactor would eventually trip on low steam generator water level, but this may not occur before steam pressure exceeds 110% of the design value if one or more MSSVs are inoperable.

To address this issue, Westinghouse has developed a new method for determination of the required power range neutron flux high setpoint. The new setpoint is based upon the heat removal capability of the operable MSSVs, rather than the previous method based only on flow capacity. The new equation is shown in the proposed changes to the Technical Specification Bases. This new method has been developed by Westinghouse generically and a Millstone Unit No. 3 specific calculation has been performed. The new setpoints are being incorporated in this proposed Technical Specification change.

The new method includes several conservative assumptions. The equation is developed assuming that the maximum number of inoperable MSSVs applies to each loop. For example, for four loop operation, the maximum allowable power range neutron flux high setpoint of 65% is based upon four inoperable MSSVs, one per steam generator. Thus, in the event that only one MSSV is inoperable, the application of the new setpoint is very conservative. In addition, the setpoint is based upon the assumption that the largest capacity MSSV is inoperable. For the case where one of the lower capacity MSSVs is inoperable, the setpoint will be conservative.

The method of calculating the setpoint provides assurance that the heat removal capability of the operable MSSVs is sufficient for reactor power up to the power range neutron flux high setpoint taking into account instrument and channel uncertainties. Consequently, steam generator pressure will remain below 110% of design.

Significant Hazards Consideration

In accordance with 10CFR50.92, NNECO has reviewed the attached proposed changes and has concluded that they do not involve a significant hazards consideration (SHC). The basis for this conclusion is that the three criteria of 10CFR50.92(c) are not compromised. The proposed changes do not involve an SHC because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

Technical Specification Tables 3.7-1 and 3.7-2 are being revised to reflect a reduction in the maximum allowable power range neutron flux high setpoint with inoperable steam generator safety valves. The new setpoints reflect a change in the methodology for calculating the setpoints.

Westinghouse has determined that under certain conditions with typical safety analysis assumptions, the current setpoints in Tables 3.7-1 and 3.7-2 may not provide adequate steam generator overpressure protection for a Loss of Load/Turbine Trip transient at reduced power levels. At reduced power levels, a reactor trip may not be actuated early in the transient. An overtemperature ΔT trip may not be generated since the core thermal margins are increased at lower power levels. The PORVs and pressurizer spray may control RCS pressure such that a high pressurizer pressure trip isn't generated. The reactor would eventually trip on low steam generator water level, but this may not occur before steam

pressure exceeds 110% of the design value if one or more MSSVs are inoperable.

To address this issue, Westinghouse has developed a new method for determination of the required power range neutron flux high setpoint. The new setpoint is based upon the heat removal capability of the operable MSSVs, rather than the previous method based only on flow capacity. The new equation is shown in the proposed changes to the Technical Specification basis. This new method has been developed by Westinghouse generically and a Millstone Unit No. 3 specific calculation has been performed. The new setpoints are being incorporated in this proposed Technical Specification change.

The new method includes several conservative assumptions. The equation is developed assuming that the maximum number of inoperable MSSVs applies to each loop. For example, for four loop operation, the maximum allowable power range neutron flux high setpoint of 65% is based upon four inoperable MSSVs, one per steam generator. Thus, in the event that only one MSSV is inoperable, the application of the new setpoint is very conservative. In addition, the setpoint is based upon the assumption that the largest capacity MSSV is inoperable. For the case where one of the lower capacity MSSVs is inoperable, the setpoint will be conservative.

The method of calculating the setpoint provides assurance that the heat removal capability of the operable MSSVs is sufficient for reactor power up to the power range neutron flux high setpoint taking into account instrument and channel uncertainties. Consequently, steam generator pressure will remain below 110% of design in the event of the limiting overpressurization transient, the Loss of Load/Turbine Trip.

Reducing the power range neutron flux high setpoint and consequently the allowable reduced power level has no impact on the consequences of any other accident. In addition, since the proposed changes only involve a reduction in the allowable power range neutron flux high setpoint, and operation at a lower power level, they cannot affect the probability of any design basis accident.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

Since the proposed changes just reduce the existing limit on the power range neutron flux high setpoint with inoperable MSSVs, the change cannot create the possibility for a new or different kind of accident.

3. Involve a significant reduction in the margin of safety.

The reduced setpoint provides additional assurance that the steam generator pressure will remain below 110% of design for the limiting overpressurization transient, the Loss of Load/Turbine Trip. Thus, the proposed changes do not reduce the margin of safety.

The Commission has provided guidance concerning the application of the standards of 10CFR50.92 by providing certain examples (51 FR 7751, March 6, 1986) of amendments that are not considered likely to involve a SHC. NNECO's proposals to modify Tables 3.7-1 and 3.7-2 of the Millstone Unit No. 3 Technical Specifications are enveloped by example (ii), a change that constitutes an additional limitation, restriction, or control not presently included in the technical specifications. While NNECO is proposing to revise a technical specification that currently exists, the proposal will incorporate more stringent control of operations by reducing the limit on the power range neutron flux high setpoint with inoperable MSSVs. The proposed changes to Bases Section 3/4.7.1.1 are necessary to denote the methodology used to calculate the new setpoints.

Environmental Considerations

NNECO has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, NNECO concludes that the proposed changes meet the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an environmental impact statement.

Nuclear Review Board

The Millstone Unit No. 3 Nuclear Review Board has reviewed and concurred with the above determinations.

Notification of the State of Connecticut

In accordance with 10CFR50.91(b), we are providing the State of Connecticut with a copy of this proposed amendment.

Schedule for NRC Approval and Issuance

Currently, the MSSVs are operable. Therefore, this request is not necessary for continued plant operation. As such, no specific schedule for approval and issuance is requested. However, we

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request issuance of the license amendment at your earliest convenience with the amendment effective as of the date of issuance, to be implemented within 30 days of the date of issuance.


Should you have any questions regarding this submittal, please contact Mr. R. G. Joshi at (203) 665-3844.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: J. F. Opeka
Executive Vice President

BY:

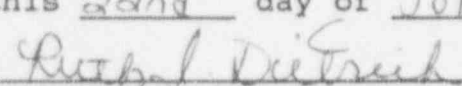

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Subscribed and sworn to before me

this 22nd day of July, 1994



Date Commission Expires: 3/31/95