

Mr. Neil S. Carns  
Senior Vice President  
and Chief Nuclear Officer  
Northeast Nuclear Energy Company  
c/o Ms. Patricia A. Loftus  
Director - Regulatory Affairs  
P.O. Box 128  
Waterford, CT 06385

July 10, 1997

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M98415)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No. 143 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated April 14, 1997.

Technical Specification 3.4.9.3 requires, in part, that two residual heat removal suction relief valves be operable to protect the reactor coolant system from overpressurization when any reactor coolant system cold leg is less than 350°F. The amendment revises the setpoint of the residual heat removal suction relief valves.

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,

Original signed by:

James W. Andersen, Project Manager  
Special Projects Office - Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 143 to NPF-49  
2. Safety Evaluation

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

July 10, 1997

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Sincerely,

A handwritten signature in black ink, appearing to be "JW Andersen", is written over the typed name.

James W. Andersen, Project Manager  
Special Projects Office - Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No. 143 to NPF-49  
2. Safety Evaluation

cc w/encls: See next page

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Northeast Nuclear Energy Company

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

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 143  
License No. NPF-49

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Northeast Nuclear Energy Company, et al. (the licensee) dated April 14, 1997, 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 I;
  - 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.

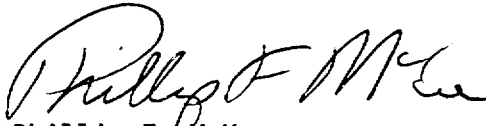
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 143 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance, to be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Phillip F. McKee  
Deputy Director for Licensing  
Special Projects Office  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: July 10, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 143

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following page of the Appendix A, Technical Specifications, with the attached page. The revised page is identified by amendment number and contains vertical lines indicating the areas of change.

Remove

3/4 4-38

Insert

3/4 4-38

## REACTOR COOLANT SYSTEM

### OVERPRESSURE PROTECTION SYSTEMS

#### LIMITING CONDITION FOR OPERATION

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3.4.9.3 An Overpressure Protection System shall be OPERABLE with either a or b below:

- a. Two relief valves, as follows:
  1. Two power-operated relief valves (PORVs) with lift settings which do not exceed the limit established in Figure 3.4-4a or Figure 3.4-4b, as appropriate, or
  2. Two residual heat removal (RHR) suction relief valves with setpoints  $\geq 426.8$  psig and  $\leq 453.2$  psig, or
  3. One PORV with lift settings within the limits specified in Figure 3.4-4a or Figure 3.4-4b, as appropriate and one RHR suction relief valve with a setpoint  $\geq 426.8$  psig and  $\leq 453.2$  psig.
- b. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 5.4 square inches.

APPLICABILITY: MODE 3 when the temperature of any RCS cold leg is less than or equal to 350°F and MODE 4; MODE 5, and MODE 6 when the head is on the reactor vessel.

#### ACTION:

- a. With one of two required relief valves inoperable in MODE 3 or 4, restore two relief valves to OPERABLE status within 7 days or depressurize and vent the RCS through at least a 5.4 square inch vent within the next 8 hours.
- b. With one of two required relief valves inoperable in MODE 5 OR 6, either (1) restore two relief valves to OPERABLE status within 24 hours, or (2) complete depressurization and venting of the RCS through at least a 5.4 square inch vent within a total of 32 hours.
- c. With both of the required relief valves inoperable, complete depressurization and venting the RCS through at least a 5.4 square inch vent within 8 hours.
- d. With the RCS vented per ACTIONS a, b or c, verify the vent pathway at least once per 31 days when the pathway is provided by a valve(s), that is locked, sealed or otherwise secured in the open position; otherwise, verify the vent pathway every 12 hours.





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 143

TO FACILITY OPERATING LICENSE NO. NPF-49

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

By letter dated April 14, 1997, the Northeast Nuclear Energy Company, et al. (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS). Technical Specification 3.4.9.3 requires, in part, that two relief valves be operable to protect the reactor coolant system from overpressurization when any reactor coolant system cold leg is less than 350°F. The proposed amendment would revise the setpoint of the residual heat removal (RHR) suction relief valves from 450 psig  $\pm$  3% to 440 psig  $\pm$  3%.

2.0 EVALUATION

TS 3.4.9.3 requires that an overpressure protection system be operable when any reactor coolant system cold leg is less than 350°F. This ensures that the reactor coolant system (RCS) will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50. This requirement is satisfied at Millstone Unit 3 by requiring either (1) two power-operated relief valves (PORVs) to be operable (TS 3.4.9.3.a.1), (2) two RHR suction relief valves to be operable (TS 3.4.9.3.a.2), (3) one PORV and one RHR suction relief valve to be operable (TS 3.4.9.3.a.3), or (4) the RCS depressurized with an RCS vent of greater than or equal to 5.4 square inches (TS 3.4.9.3.b). In addition, TS 3.4.9.3.a.2 currently requires that the two RHR suction relief valves have setpoints of 450 psig.

In its letter dated April 14, 1997, the licensee requested that the RHR suction relief valve setpoint be lowered to 440 psig and a tolerance band be added ( $\pm$  3%) since the setpoint cannot be set at a specific value. In its letter, the licensee stated:

The decrease in the residual heat removal (RHR) suction relief valves setpoint was the result of recent reviews of the Millstone Unit No. 3 design bases. The review revealed that the original setpoint of 450 psig (with [an] ASME Code tolerance of  $\pm$  3%) of the RHR suction relief valves was modified in 1985 when it was determined that the setpoint was too high to prevent potential overpressurization of the RHR

and RCS when the RHR is unisolated from the RCS. The setpoint was lowered to 440 psig (with [an] ASME Code tolerance of  $\pm 3\%$ ), in 1985 prior to the issuance of Millstone Unit No. 3 operating license. Although the operating procedures and most design documents were modified to indicate the 440 psig  $\pm 3\%$  setpoint, the setpoint listed in Technical Specification 3.4.9.3 for the suction relief valves was not changed.

Final Safety Analysis Report (FSAR) Section 5.4.7.2.4 describes the RHR suction relief valves. The FSAR states that these relief valves relieve the combined flow of two charging pumps at the relief valve set pressure. These relief valves also protect the system from inadvertent overpressurization during plant cooldown or startup. Each valve has a relief flow capacity of 800 gpm at a set pressure of 440 psig.

In its April 14 letter, the licensee stated that the decrease in the relief valve setpoint was evaluated against the valve's ability to mitigate a postulated RCS cold overpressurization event. The evaluation calculated the maximum expected RCS pressure during a cold overpressurization event to be 547 psig with the relief valves set conservatively at their upper limit of 453.2 psig (440 psig + 3%). The 547 psig RCS pressure is 11 psig less than the 10 CFR Part 50, Appendix G allowable pressure of 558 psig. The evaluation concluded that an RHR relief valve setpoint of 440 psig  $\pm 3\%$  ( $\geq 426.8$  psig and  $\leq 453.2$  psig) is adequate to ensure that the 10 CFR Part 50, Appendix G requirements are not exceeded during a postulated cold overpressurization event.

Additionally, the licensee stated that the decrease in the relief valve setpoint was evaluated against the pressure in which the RHR is unisolated from the RCS. Each RHR loop is isolated from the RCS on the suction side by three normally closed, motor-operated valves. Two of the valves are interlocked to prevent opening if the RCS pressure is above 375 psig. This provides adequate margin between the minimum relief valve setpoint and the maximum RCS pressure. The evaluation concluded that an RHR relief valve setpoint of 440 psig  $\pm 3\%$  ( $\geq 426.8$  psig and  $\leq 453.2$  psig) provides sufficient allowance to minimize the probability of an inadvertent valve opening.

The staff has reviewed the licensee's request and has determined that lowering the RHR suction relief valve setpoint to 440 psig  $\pm 3\%$  is acceptable. The staff's determination is based on (1) the fact that the upper limit of the setpoint is conservatively set so that the maximum expected RCS pressure during a postulated cold overpressurization event is below the Appendix G requirements, and (2) the fact that the lower limit is conservatively higher than the maximum RCS pressure when the RHR system is put into service. Further, the staff has determined that the addition of a tolerance band is acceptable in that a relief valve setpoint cannot be set to an exact value.

### 3.0 STATE CONSULTATION

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

### 4.0 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 (62 FR 30634). 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.

### 5.0 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: J. Andersen

Date: July 10, 1997