

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

August 28, 1997

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M98681)

Dear Mr. Carns:

The Commission has issued the enclosed Amendment No.147 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated May 5, 1997.

Technical Specification Surveillance 4.5.2.b.1 requires that the emergency core cooling system piping be verified full of water at least once per 31 days. The amendment revises the surveillance to exempt the operating charging pump(s) and associated piping from the requirement to be verified full of water and moves the description of the verification method from the surveillance to the Bases section.

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. 147 to NPF-49
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

August 28, 1997

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Sincerely,

A handwritten signature in black ink, appearing to be "JW Andersen", 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. 147 to NPF-49
2. Safety Evaluation

cc w/encls: See next page

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Millstone Nuclear Power Station
Unit 3

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Northeast Nuclear Energy Company

Millstone Nuclear Power Station
Unit 3

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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. 147
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 May 5, 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. 147 , 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: August 28, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 147

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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

Remove

3/4 5-4

B 3/4 5-2

-

Insert

3/4 5-4

B 3/4 5-2

B 3/4 5-2a*

* overflow page - no change

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
3SIH*MV8806	RWST Supply to SI Pumps	OPEN
3SIH*MV8802A	SI Pump A to Hot Leg Injection	CLOSED
3SIH*MV8802B	SI Pump B to Hot Leg Injection	CLOSED
3SIH*MV8835	SI Cold Leg Master Isolation	OPEN
3SIH*MV8813	SI Pump Master Miniflow Isolation	OPEN
3SIL*MV8840	RHR to Hot Leg Injection	CLOSED
3SIL*MV8809A	RHR Pump A to Cold Leg Injection	OPEN
3SIL*MV8809B	RHR Pump B to Cold Leg Injection	OPEN

- b. At least once per 31 days by:

- 1) Verifying that the ECCS piping, except for the operating centrifugal charging pump(s) and associated piping, the RSS pump, the RSS heat exchanger and associated piping, is full of water, and
- 2) Verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

- 1) For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
- 2) At least once daily of the areas affected (during each day) within containment by containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

- d. At least once each REFUELING INTERVAL by:

- 1) Verifying automatic interlock action of the RHR System from the Reactor Coolant System by ensuring that with a simulated or actual Reactor Coolant System pressure signal greater than or equal to 390 psia the interlocks prevent the valves from being opened.

EMERGENCY CORE COOLING SYSTEMS

BASES

ECCS SUBSYSTEMS (Continued)

The limitation for a maximum of one centrifugal charging pump and one safety injection pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps except the required OPERABLE charging pump to be inoperable below 350°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance Requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Surveillance Requirement 4.5.2.b.1 requires verifying that the ECCS piping is full of water except for the operating centrifugal charging pump(s) and associated piping, and the RSS pump, the RSS heat exchanger and associated RSS piping. The ECCS pumps are normally in a standby, nonoperating mode, with the exception of the operating centrifugal charging pump(s). As such, the ECCS flow path piping has the potential to develop voids and pockets of entrained gases. Maintaining the piping from the ECCS pumps to the RCS full of water ensures that the system will perform properly when required to inject into the RCS. This Surveillance Requirement is met by venting ECCS pump casings and the accessible discharge piping high points except for: (1) the RSS pump, RSS heat exchanger and associated RSS piping that is not maintained filled with water during plant operation is excluded from the Surveillance Requirement, (2) the operating centrifugal charging pump(s) and associated piping is also excluded as an operating pump is self venting and cannot develop voids and pockets of entrained gases, and (3) the nonoperating centrifugal charging pumps do not have casing vent connections and the pump manufacturer indicates that venting the suction pipe will assure that the pump casing does not contain voids and pockets of entrained gases. The venting of the nonoperating centrifugal charging pumps is accomplished by venting with the suction line test connection.

Surveillance Requirement 4.5.2.C.2 requires that the visual inspection of the containment be performed at least once daily if the containment has been entered that day and when the final containment entry is made. This will reduce the number of unnecessary inspections and also reduce personnel exposure.

EMERGENCY CORE COOLING SYSTEMS

BASES

3/4.5.4 REFUELING WATER STORAGE TANK

The OPERABILITY of the refueling water storage tank (RWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on RWST minimum volume and boron concentration ensure that: (1) sufficient water is available within containment to permit recirculation cooling flow to the core, and (2) the reactor will remain subcritical in the cold condition following mixing of the RWST and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.0 and 7.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The maximum/minimum solution temperatures for the RWST in MODES 1, 2, 3 and 4 are based on analysis assumptions.



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 147

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 May 5, 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). TS Surveillance 4.5.2.b.1 requires that the emergency core cooling system (ECCS) piping be verified full of water at least once per 31 days. The proposed amendment would revise the surveillance to exempt the operating charging pump(s) and associated piping from the requirement to be verified full of water and move the description of the verification method from the surveillance to the Bases section.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act of 1954, as amended (the "Act"), requires applicants for nuclear power plant operating licenses to state TS to be included as part of the license. The Commission's regulatory requirements related to the content of TS are set forth in 10 CFR 50.36. That regulation requires that the TS include items in five specific categories, including (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TS.

The Commission has provided guidance for the contents of TS in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" ("Final Policy Statement"), 58 FR 39132 (July 22, 1993), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TS to licensee-controlled documents, consistent with the standard enunciated in *Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 273 (1979). In that case, the Atomic Safety and Licensing Appeal Board indicated that "technical specifications are to be reserved for those matters as to which the imposition of rigid conditions or limitations upon reactor operation is deemed necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety."

Consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether particular safety functions are required to be included in the TS, as follows: (1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary; (2) a process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; (3) a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier; and (4) a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety. The Commission recently adopted amendments to 10 CFR 50.36, pursuant to which the rule was revised to codify and incorporate these criteria. (See Final Rule, "Technical Specifications," 60 FR 36593 (July 19, 1995).) As a result, TS requirements which fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TS, while those TS requirements which do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

The Commission's policy statement provides that those existing TS LCOs which do not satisfy these four specified criteria may be relocated to the Updated Final Safety Analysis Report (UFSAR), such that future changes could be made to these provisions pursuant to 10 CFR 50.59. Other requirements may be relocated to more appropriate documents (e.g., Security Plan, Quality Assurance (QA) Plan, and Emergency Plan) and controlled by the applicable regulatory requirement. Similarly, while the required content of TS administrative controls is specified in 10 CFR 50.36(c)(5), particular details of administrative controls may be relocated to licensee-controlled documents where 10 CFR 50.54, 10 CFR 50.59, or other regulations provide adequate regulatory control.

While the criteria specifically apply to LCOs, in adopting the revision to the rule, the Commission indicated that the intent of these criteria can be utilized to identify the optimum set of administrative controls in the TS (60 FR 36958). Addressing administrative controls, 10 CFR 50.36 states that they "are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure safe operation of the facility in a safe manner." The specific content of the administrative controls section of the TS is therefore that information that the Commission deems essential for the safe operation of the facility that is not already adequately covered by other regulations. Accordingly, the staff has determined that requirements that are not specifically required under 10 CFR 50.36(c)(5) and which are not otherwise necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety, can be removed from the administrative controls section.

3.0 EVALUATION

TS Surveillance 4.5.2.b.1 currently states that the ECCS piping, except for the recirculation spray system (RSS) pump, heat exchanger and associated piping, be verified full of water by venting the ECCS pump casings and accessible discharge piping high points. In its letter dated May 5, 1997, the licensee proposed to modify the TS surveillance by exempting the operating centrifugal charging pump(s) and associated piping from the requirement to be vented at least once per 31 days. The licensee stated that this surveillance is intended for systems and components that have the potential to develop voids and pockets of entrained gases due to their not being in service. An operating centrifugal charging pump and the associated piping is self venting and cannot develop voids and pockets of entrained gases.

The licensee also proposed moving the description of the venting method from the surveillance to the Bases section. The licensee stated that the venting description would be expanded when moved to the Bases to include an exclusion for the above described operating centrifugal charging pump(s) and associated piping and the venting method used for nonoperating centrifugal charging pump(s). The centrifugal charging pumps have top mounted suction and discharge nozzles and do not have casing vents. The pump manufacturer has indicated that venting the pump suction pipe will assure that the pump is full of water. This venting of the nonoperating centrifugal charging pumps is accomplished by using a pump suction line test connection.

The NRC staff has reviewed the licensee's proposed changes and has determined that exempting the operating centrifugal charging pump(s) and associated piping from the requirement to be vented is acceptable since (1) the operating pump(s) and associated piping is self venting and cannot develop voids and pockets of entrained gases, and (2) the surveillance requirement continues to require that the nonoperating centrifugal charging pump(s) be vented every 31 days. In addition, since the operating centrifugal charging pump(s) and associated piping is self venting and would not contain voids or pockets of entrained gases, it should perform properly when called upon to inject water into the reactor coolant system. Stopping the operating centrifugal charging pump(s) to vent it as currently required by the TS would not (1) identify a significant abnormal degradation of the reactor coolant pressure boundary, (2) present a challenge to the integrity of a fission product barrier, (3) be necessary to ensure that the charging system would be able to mitigate a design basis accident or transient, or (4) result in a significant impact to public health and safety. Therefore, excluding the operating charging pump(s) from TS Surveillance 4.5.2.b.1 satisfies the four criteria in the Final Policy Statement on TS.

The staff has determined that moving the description of the venting method from the surveillance to the Bases is acceptable in that the surveillance requirement continues to require that the venting be accomplished every 31 days. The Bases will contain how the venting will be accomplished. The description of how the venting will be accomplished is not otherwise required

to be included in the TS pursuant to 10 CFR 50.36, in that it does not satisfy the criteria in the Commission's Final Policy Statement. Changes which might be made to the venting method will be adequately controlled by the licensee. Therefore, moving the description of the venting method from the surveillance to the Bases is acceptable. The staff notes that excluding the operating centrifugal charging pump(s) and the placement of the venting method description in the Bases is consistent with the Standard Technical Specifications for Westinghouse Plants (NUREG-1431).

The NRC staff has reviewed the proposed change to Bases Section 3/4.5.2 and 3/4.5.3 and has no objection to the wording.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes surveillance requirements. 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 30638 dated June 4, 1997). 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: J. Andersen

Date: **August 28, 1997**