

April 12, 1999

Mr. Raymond P. Necci  
Vice President - Nuclear Oversight and Regulatory Affairs  
Northeast Nuclear Energy Company  
c/o Mr. David A. Smith  
Manager - Regulatory Affairs  
P.O. Box 128  
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SUBJECT: ISSUANCE OF AMENDMENT - MILLSTONE NUCLEAR POWER STATION,  
UNIT NO. 2 (TAC NO. MA4580)

Dear Mr. Necci:

The Commission has issued the enclosed Amendment No. 233 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit 2, in response to your application dated January 18, 1999, as supplemented February 3 and March 17, 1999.

The amendment removes Technical Specification (TS) 3/4.6.4.3, "Containment Systems, Hydrogen Purge System," from the TS and allows downgrading the system to a non-safety-related system.

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:

Ronald B. Eaton, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 233 to DPR-65  
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 12, 1999

Mr. Raymond P. Necci  
Vice President - Nuclear Oversight and Regulatory Affairs  
Northeast Nuclear Energy Company  
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Sincerely,

A handwritten signature in black ink, appearing to read "Ronald B. Eaton", is written over a horizontal line.

Ronald B. Eaton, Senior Project Manager, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No. 233 to DPR-65  
2. Safety Evaluation

cc w/encls: See next page

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Millstone Nuclear Power Station  
Unit 2

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

NORTHEAST NUCLEAR ENERGY COMPANY  
THE CONNECTICUT LIGHT AND POWER COMPANY  
THE WESTERN MASSACHUSETTS ELECTRIC COMPANY  
DOCKET NO. 50-336  
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 233  
License No. DPR-65

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 January 18, 1999, as supplemented February 3 and March 17, 1999, 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.

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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. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 233 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



James W. Clifford, Chief, Section 2  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: April 12, 1999

ATTACHMENT TO LICENSE AMENDMENT NO.233

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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.

<u>Remove</u>	<u>Insert</u>
VII	VII
3/4 6-23	3/4 6-23
B 3/4 6-4	B 3/4 6-4

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## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water, and 3) corrosion of metals within containment. This hydrogen control system is consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA."

The post-incident recirculation systems are provided to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 233

TO FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated January 18, 1999, as supplemented by letters dated February 3 and March 17, 1999, the Northeast Nuclear Energy Company, et al. (NNECO, or the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit 2, (Millstone Unit 2) Technical Specification (TS) regarding the hydrogen purge system. Specifically, TS 3/4.6.4.3, "Containment Systems, Hydrogen Purge System," would be deleted from the TS. The supplemental letters provided additional information that was within the scope of the original application and did not change the staff's proposed no significant hazards consideration determination.

2.0 BACKGROUND

The licensee's request includes the removal of information from the TS. Section 182a of the Atomic Energy Act (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 the 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;
- (3) surveillance requirements;
- (4) design features; and
- (5) administrative controls.

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On July 19, 1995, the Commission published revisions to 10 CFR 50.36 specifying what must be included in limiting conditions for operation (LCOs) in the TS (60 FR 36953). The four criteria added to 10 CFR 50.36 for determining whether a particular matter is required to be included in the TS, are 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.

As a result, existing TS LCOs which fall within or satisfy any of the criteria in 10 CFR 50.36 must be retained in the TS, while those TS requirements that do not fall within or satisfy these criteria may be relocated to other, licensee-controlled documents.

The licensee is proposing to remove the hydrogen purge system from the TS requirements, and is proposing to incorporate this system into the maintenance rule risk-significant system program (although the hydrogen purge system will be downgraded to a non-safety-related system).

### 3.0 EVALUATION

The design and licensing bases for the hydrogen control system are contained in the Millstone Unit 2, Final Safety Analysis Report (FSAR) Sections 1.2.7, "Summary Description, Engineered Safety Features System," 1.8.2.2, "Hydrogen Control," 6.6, "Containment Post-Accident Hydrogen Control System," 6.7.3.1, "Enclosure Building Filtration System, Emergency Conditions," and 14.8.3, "Hydrogen Accumulation in Containment," and in TS section 3/4.6.4.3, "Containment Systems, Hydrogen Purge System."

The post-accident hydrogen control system includes independent and fully redundant subsystems to (a) measure the hydrogen concentration in the containment, (b) mix the atmosphere in the containment, and (c) control combustible gas concentrations without relying on purging of the containment atmosphere following a loss-of-coolant accident. These subsystems function to maintain the concentration of locally accumulated hydrogen below four volume percent. The post-accident hydrogen control system meets the recommendations of Safety Guide 7. Combustible gas control is achieved using two full capacity electric recombiners which meet the recommendations of Safety Guide 7. A controlled containment hydrogen purge system is also provided, as a backup to the recombiner system, in accordance with the recommendations of Safety Guide 7.

In the January 18, 1999, letter, the licensee proposes to downgrade the Hydrogen Purge System to non-safety-related. The licensee states that the Hydrogen Purge System is credited in the event that both safety-related hydrogen recombiners fail or in severe accident management scenarios. These scenarios are beyond the design basis. The staff agrees that numerous risk studies, such as NUREG-1150 and NUREG/CR-5662, have shown that the risk associated with hydrogen combustion is due to beyond-design-basis scenarios that lead to containment failure, not design-basis scenarios. In a February 3, 1999, supplemental letter, the licensee states that the purge system, if it remains available post-accident, may be used as necessary during an event which is outside the existing licensing basis.

In further support of downgrading the purge system to non-safety-related status the licensee referenced Regulatory Guide 1.7, Rev. 2, Section (C), Item (4), which states:

"All water-cooled power reactors should also have the installed capability for a controlled purge of the containment atmosphere to aid in cleanup. The purge or ventilation system may be a separate system or part of an existing system. It need not be redundant or be designated Seismic Category I (see Regulatory Guide 1.29), except insofar as portions of the system constitute part of the primary containment boundary or containment filters."

Based on the above, the staff supports the licensee's contention that the Hydrogen Purge System can be downgraded to a non safety-related system except portions of the system which constitute part of the primary containment boundary. The non-safety-related parts of the Hydrogen Purge System are the parts located in the enclosure building down stream from the second containment isolation valves 2-EB-92 and 2-EB-99. As a result of this downgrade the staff agrees that the Hydrogen Purge System no longer meets the criteria of 10 CFR 50.36, "Technical Specifications," Section c(2)(ii). Therefore, the staff finds the proposed changes to delete the TS related to the Hydrogen Purge system from the Millstone Unit 2 TSs to be acceptable. The proposed changes affect TS 3/4.6.4.3, "Containment Systems, Hydrogen Purge System," Index Page VII, and the associated Bases.

The Hydrogen Purge System is still needed to support the plant's severe accident management guidelines. Because the system will no longer be supported by TSs, the staff believes that an appropriate availability and reliability control is needed. In a letter dated March 17, 1999, the licensee responded to the staff's concern. The licensee stated that, since the Hydrogen Purge System is still an integral part of the Emergency Operating Procedures, NNECO will continue to maintain the system as a maintenance rule risk-significant system as before. The staff finds this commitment to continue to maintain the Hydrogen Purge System as a maintenance rule risk-significant system to be acceptable, thereby providing an appropriate availability and reliability control.

The staff has reviewed the licensee's TSs amendment request and finds it to be acceptable. The staff concludes that the Hydrogen Purge System is needed in the event that both safety-related hydrogen recombiners were to fail or in support of severe accident management. Since these scenarios are beyond the design basis of the plant, the Hydrogen Purge System can be downgraded to non-safety-related and its associated TS can be deleted. However, the Hydrogen Purge System is still needed to support the plant's severe accident management guidelines. The staff finds the licensee's commitment to continue to maintain the Hydrogen

Purge System as a maintenance rule risk-significant system more appropriate and to be an acceptable alternative to including the operability and surveillance requirements for the Hydrogen Purge System within the TSs.

#### 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 requirements with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20 and 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 (64 FR 6704, February 10, 1999). 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: M. Snodderly

Date: April 12, 1999