September 20, 1996

Mr. Ted C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer
Northeast Utilities Service Company
c/o Mr. Terry L. Harpster
Director - Nuclear Licensing Services
P.O. Box 128
Waterford, CT 06385

SUBJECT: ISSUANCE OF AMENDMENT RELATING TO PERFORMANCE-BASED CONTAINMENT LEAKAGE TESTING - MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2 (TAC NO. M94507)

Dear Mr. Feigenbaum:

The Commission has issued the enclosed Amendment No.203 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2, in response to your application dated January 16, 1996.

The amendment changes the Technical Specification (TS) Limiting Condition for Operation Section 3.6.1 and Surveillance Requirement Section 4.6.1, "Primary Containment," and the corresponding Bases, as well as, adds Administrative Controls Section 6.19, "Containment Leakage Rate Testing Program." These changes will allow the use of the performance-based containment leakage testing requirements described in 10 CFR Part 50, Appendix J, Option B, for Type A, B, and C testing.

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)

Daniel G. McDonald Jr., Sr. Project Manager
Northeast Utilities Project Directorate
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-336

Enclosures: 1. Amendment No.203 to DPR-65
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

| | |
|---|---|
| Docket File | CGrimes |
| PUBLIC | CBerlinger |
| PDI-3 Plant | ACRS |
| SVarga | JDurr, RI |
| PMcKee | |
| LBerry | |
| DMcDonald | |
| OGC | |
| GHill (2) | |

DF01 1/1

230063

NRC FILE CENTER COPY

DOCUMENT NAME: G:\MCDONALD\M94507.AMD

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

| OFFICE | PD2-2:LA | C | NUPD:PM | E | NRR:DSSA | E | OGC | | NUPD:D | |
|---|---|---|---|---|---|---|---|---|---|---|
| NAME | LBerry | | DMcDonald | | CBerlinger | | CMarco | | PMcKee | |
| DATE | 08/27/96 | | 08/27/96 | | 09/04/96 | | 09/09/96 | | 09/12/96 | |

OFFICIAL RECORD COPY

9609250291 960920
PDR ADOCK 05000336
P PDR

cc:

Lillian M. Cuoco, Esq.
Senior Nuclear Counsel
Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270

Mr. John Buckingham
Department of Public Utility Control
Electric Unit
10 Liberty Square
New Britain, CT 06051

Mr. Kevin T. A. McCarthy, Director
Monitoring and Radiation Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Mr. Allan Johanson, Assistant Director
Office of Policy and Management
Policy Development and Planning Division
80 Washington Street
Hartford, CT 06106

Mr. S. E. Scace, Vice President
Nuclear Reengineering Implementation
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

First Selectmen
Town of Waterford
Hall of Records
200 Boston Post Road
Waterford, CT 06385

Mr. P. D. Swetland, Resident Inspector
Millstone Nuclear Power Station
c/o U.S. Nuclear Regulatory Commission
P.O. Box 513
Niantic, CT 06357

Mr. D. B. Miller, Jr.
Senior Vice President
Nuclear Safety and Oversight
Northeast Utilities Service Company
P.O. Box 270
Waterford, CT 06141-0270

P. M. Richardson, Nuclear Unit Director
Millstone Unit No. 2
Northeast Nuclear Energy Company
P.O. Box 128
Waterford, CT 06385

Charles Brinkman, Manager
Washington Nuclear Operations
ABB Combustion Engineering
12300 Twinbrook Pkwy, Suite 330
Rockville, MD 20852

Mr. E. A. DeBarba
Vice President - Nuclear Technical Services
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

Mr. F. C. Rothen
Vice President - Nuclear Work Services
Northeast Utilities Service Company
P.O. Box 128
Waterford, CT 06385

Ernest C. Hadley, Esq.
1040 B Main Street
P.O. Box 549
West Wareham, MA 02576

Mr. B. D. Kenyon
President - Nuclear Group
Northeast Utilities Service Company
P. O. Box 128
Waterford, CT 06385

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. 203
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 16, 1996, 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.

9609250297 960920
PDR ADOCK 05000336
P PDR

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. 203 , 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Phillip F. McKee, Director
Northeast Utilities Project Directorate
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 20, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 203

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.

| Remove | Insert |
|---|---|
| 3/4 6-1 | 3/4 6-1 |
| 3/4 6-2 | 3/4 6-2 |
| 3/4 6-3 | 3/4 6-3 |
| 3/4 6-4 | 3/4 6-4 |
| 3/4 6-6 | 3/4 6-6 |
| 3/4 6-7 | 3/4 6-7 |
| 3/4 6-11 | 3/4 6-11 |
| B 3/4 6-1 | B 3/4 6-1 |
| -- | 6-26 |

## 3/4.6 CONTAINMENT SYSTEMS

### 3/4.6.1 PRIMARY CONTAINMENT

### CONTAINMENT INTEGRITY

**LIMITING CONDITION FOR OPERATION**

3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

Without primary CONTAINMENT INTEGRITY*, restore CONTAINMENT INTEGRITY within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next 30 hours.

**SURVEILLANCE REQUIREMENTS**

4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

a. At least once per 31 days by verifying that all penetrations not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions, except as provided in Table 3.6-2 of Specification 3.6.3.1,

b. At least once per 31 days by verifying the equipment hatch is closed and sealed.

c. By verifying the containment air lock is OPERABLE per Specification 3.6.1.3.

d. After each closing of a penetration subject to type B testing (except the containment air lock), if opened following a Type A or B test, by leak rate testing in accordance with the Containment Leakage Rate Testing Program.

*Operation within the time allowances of the ACTION statements of Specification 3.6.1.3 does not constitute a loss of CONTAINMENT INTEGRITY.

## CONTAINMENT LEAKAGE

### LIMITING CONDITION FOR OPERATION

3.6.1.2 Containment leakage rates shall be limited to:

a. An overall integrated leakage rate of < $L_a$, 0.50 percent by weight of the containment air per 24 hours at $P_a$, 54 psig.

b. A combined leakage rate of < 0.60 $L_a$ for all penetrations and valves subject to Type B and C tests when pressurized to $P_a$.

c. A combined leakage rate of < 0.017 $L_a$ for all penetrations identified in Table 3.6-1 as secondary containment bypass leakage paths when pressurized to $P_a$.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With either (a) the measured overall integrated containment leakage rate exceeding 0.75 $L_a$, or (b) with the measured combined leakage rate for all penetrations and valves subject to Types B and C tests exceeding 0.60 $L_a$, or (c) with the combined bypass leakage rate exceeding 0.017 $L_a$, restore the leakage rate(s) to within the limit(s) prior to increasing the Reactor Coolant System temperature above 200°F.

### SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated in accordance with the Containment Leakage Rate Testing Program.

This Page Intentionally Deleted

This Page Intentionally Deleted

## CONTAINMENT AIR LOCKS

### LIMITING CONDITION FOR OPERATION

3.6.1.3 The containment air lock shall be OPERABLE with:

a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and

b. An overall air lock leakage rate of $\leq$ 0.05 $L_a$ at $P_a$ (54 psig).

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one containment air lock door inoperable:

1. Maintain at least the OPERABLE air lock door closed and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed.

2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days.

3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4. Entry into an OPERATIONAL MODE or other specified condition under the provisions of Specification 3.0.4 shall not be made if the inner air lock door is inoperable.

b. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.1.3 Each containment air lock shall be demonstrated OPERABLE in accordance with the Containment Leakage Rate Testing Program.

This Page Intentionally Deleted

b. Removing one wire from a dome, a vertical and a hoop tendon checked for lift off force pursuant to Specification 4.6.1.6.1.a and determining that over the entire length of the removed wire that:

1. The tendon wires are free of corrosion.

2. There are no changes in physical appearance of the sheathing filler grease.

3. A minimum tensile strength of 11,760 pounds for at least three wire samples (one from each end and one at mid-length) cut from each removed wire. Failure of any one of the wire samples to meet the minimum tensile strength test is evidence of abnormal degradation of the containment structure.

4.6.1.6.2 End Anchorages and Adjacent Concrete Surfaces The structural integrity of the end anchorages and adjacent concrete surfaces shall be demonstrated by determining through inspection that no apparent changes or degradation has occurred in the visual appearance of the end anchorage concrete exterior surfaces or as indicated by the concrete crack patterns adjacent to the end anchorages. Inspections of the concrete shall be performed concurrent with the containment tendon surveillance (reference Specification 4.6.1.6.1).

4.6.1.6.3 Liner Plate The structural integrity of the containment liner plate shall be determined in accordance with the Containment Leakage Rate Testing Program.

4.6.1.6.4 Reports In lieu of any other report required by Specification 6.6.1, an initial report of any abnormal degradation of the containment structure detected during the above required tests and inspections shall be made within 10 days after completion of the surveillance requirements of this specification and the detailed report shall be submitted pursuant to Specification 6.9.2 within 90 days after completion. This report shall include a description of the condition of the concrete (especially at tendon anchorages), the inspection procedure, the tolerances on cracking, and the corrective actions taken.

## 3/4.6.1 PRIMARY CONTAINMENT

### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions.

### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure of $P_a$. As an added conservatism, the measured overall integrated leakage rate is further limited to < 0.75 $L_a$ during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates is in accordance with the Containment Leakage Rate Testing Program.

### 3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and leak rate given in Specifications 3.6.1.1 and 3.6.1.2. The limitations on the air locks allow entry and exit into and out of the containment during operation and ensure through the surveillance testing that air lock leakage will not become excessive through continuous usage.

## 6.19 CONTAINMENT LEAKAGE RATE TESTING PROGRAM

A program shall be established to implement the leakage rate testing of the primary containment as required by 10CFR50.54(o) and 10CFR50, Appendix J, Option B as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995.

The peak calculated primary Containment internal pressure for the design basis loss of coolant accident is $P_a$.

The maximum allowable primary containment leakage rate, $L_a$, at $P_a$, is 0.5% of primary containment air weight per day.

Leakage rate acceptance criteria are:

a. Primary containment overall leakage rate acceptance criterion is $< 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60\ L_a$ for the combined Type B and Type C tests, and $< 0.75\ L_a$ for Type A tests;

b. Air lock testing acceptance criteria are:

   1. Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$.

   2. For each door, pressure decay is $\leq 0.1$ psig when pressurized to $\geq 25$ psig for at least 15 minutes.

The provisions of SR 4.0.2 do not apply for test frequencies specified in the Primary Containment Leakage Rate Testing Program.

The provisions of SR 4.0.3 are applicable to the Primary Containment Leakage Rate Testing Program.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 203

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

On September 12, 1995, the U.S. Nuclear Regulatory Commission (NRC) approved issuance of a revision to 10 CFR Part 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," which was subsequently published in the Federal Register on September 26, 1995, and became effective on October 26, 1995. The NRC added Option B "Performance-Based Requirements" to allow licensees to voluntarily replace the prescriptive testing requirements of 10 CFR Part 50, Appendix J, with testing requirements based on both overall leakage rate performance and the performance of individual components.

By letter dated January 16, 1996, the Northeast Nuclear Energy Company, et al. (the licensee) submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 2, Technical Specifications (TSs). The requested changes would change the TS Limiting Condition for Operation Section 3.6.1 and Surveillance Requirement Section 4.6.1, "Primary Containment," and the corresponding Bases, as well as, add a TS Administrative Controls Section 6.19, "Containment Leakage Rate Testing Program."

The proposed changes would permit implementation of 10 CFR Part 50, Appendix J, Option B. The licensee has established a "Containment Leakage Rate Test Program" and proposed adding this program to the TSs. The program references Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak Test Program," dated September 1995, which specifies a method acceptable to the NRC for complying with Option B.

9609250298 960920
PDR ADOCK 05000336
P PDR

## 2.0 BACKGROUND

Compliance with Appendix J provides assurance that the primary containment, and those systems and components that penetrate the primary containment, do not exceed the allowable leakage rate values specified in the TSs and Bases. The allowable leakage rate is determined so that the leakage assumed in the safety analyses is not exceeded.

On February 4, 1992, the NRC published a notice in the Federal Register (57 FR 4166) discussing a planned initiative to eliminate requirements marginal to safety which impose a significant regulatory burden. 10 CFR Part 50, Appendix J, "Primary Containment Leakage Testing for Water-Cooled Power Reactor," was considered for this initiative and the staff undertook a study of possible changes to this regulation. The study examined the previous performance history of domestic containments and examined the effect on risk of a revision to the requirements of Appendix J. The results of this study are reported in NUREG-1493, "Performance-Based Leak-Test Program."

Based on the results of this study, the staff developed a performance-based approach to containment leakage rate testing. On September 12, 1995, the NRC approved issuance of this revision to 10 CFR Part 50, Appendix J, which was subsequently published in the Federal Register on September 26, 1995, and became effective on October 26, 1995. The revision added Option B, "Performance-Based Requirements," to Appendix J to allow licensees to voluntarily replace the prescriptive testing requirements of Appendix J with testing requirements based on both overall and individual component leakage rate performance.

RG 1.163, September 1995, "Performance-Based Containment Leak Test Program," was developed as a method acceptable to the NRC staff for implementing Option B. This RG states that the Nuclear Energy Institute (NEI) document NEI 94-01, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," provides methods acceptable to the NRC staff for complying with Option B with four exceptions, which are described therein.

Option B requires that the RG or other implementation document used by a licensee to develop a performance-based leakage testing program must be included, by general reference, in the plant TSs.

RG 1.163 specifies an extension in Type A test frequency from three approximately equally spaced tests in 10 years to at least one test in 10 years based upon two consecutive successful tests. Type B tests may be extended up to a maximum of 10 years based upon completion of two consecutive successful tests and Type C tests may be extended up to 5 years based on two consecutive successful tests.

By letter dated October 20, 1995, NEI proposed model TSs implementing Option B. After some discussion, the staff and NEI agreed on a set of model TSs, which were transmitted to NEI in a letter dated November 2, 1995. These TSs are to serve as a model for licensees to develop plant specific TSs in preparing amendment requests to implement Option B.

In order for a licensee to determine the performance of each component, factors that are indicative of or affect performance, such as an administrative leakage limit, must be established. The administrative limit is selected to be indicative of the potential onset of component degradation. Although these limits are subject to NRC inspection to assure that they are selected in a reasonable manner, they are not TS requirements. Failure to meet an administrative limit requires the licensee to return to the minimum test interval for that component.

Option B requires that the licensee maintain records to show that the criteria for Type A, B, and C tests have been met. In addition, the licensee must maintain comparisons of the performance of the overall containment system and the individual components to show that the test intervals are adequate. These records are subject to NRC inspection.

## 3.0 EVALUATION

The licensee's January 16, 1996, letter to the NRC proposed TS changes to permit the use of Option B of the revised 10 CFR Part 50, Appendix J. Option B permits a licensee to choose Type A; or Type B, and C; or Type A, B and C testing to be done on a performance basis. The licensee has selected to perform Type A, B, and C testing on a performance basis. The proposed TS changes refer to RG 1.163, September 1995, "Performance-Based Containment Leak Test Program," which specifies a method acceptable to the NRC for complying with Option B. This requires changes to TSs 4.6.1.1.d, 3.6.1.2.a through 3.6.1.2.c, 4.6.1.2.a through 4.6.1.2.h, 4.6.1.3.a through 4.6.1.3.c, 4.6.1.6.3, Bases 3/4.6.1.2, and the addition of a TS Section 6.19.

The proposed changes replace specific surveillance requirements related to primary containment leakage rate testing and the corresponding acceptance criteria and test methods with a requirement to perform the testing required by 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions, in accordance with the guidelines provided in RG 1.163, September 1995. The licensee chose to include its performance testing program in the TSs as an administrative program, which is consistent with the guidance in the November 2, 1995, letter to NEI discussed above. The staff has reviewed the licensee's proposed changes and finds them consistent with the requirements of 10 CFR Part 50, Appendix J, Option B, in that the changes include general reference in the TSs to RG 1.163 used by the licensee to develop the performance-based leakage testing program for the Millstone Nuclear Power Station, Unit No. 2. There are no current exemptions that would affect the adoption of Option B.

The staff has determined that the proposed TS changes, as detailed above, are in compliance with the requirements of 10 CFR Part 50, Appendix J, Option B, consistent with the guidance in RG 1.163 and the guidance provided in the November 2, 1995, letter and, therefore are acceptable.

## 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 a requirement 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 amendment also relates to changes in recordkeeping,. reporting, or administrative procedures or 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 (61 FR 5816 as corrected 61 FR 7825). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). 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: D. McDonald

Date: September 20, 1996