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Docket No. 50-336

Mr. W. G. Counsil, Vice President  
Nuclear Engineering & Operations  
Northeast Nuclear Energy Company  
P. O. Box 270  
Hartford, Connecticut 06101

Dear Mr. Counsil:

The Commission has issued the enclosed Amendment No. **55** to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2. This amendment authorizes low temperature testing in accordance with your application dated December 27, 1979.

Our review indicated that changes to Technical Specification page 3/4 2-3 needed to be made in order to authorize the proposed testing. These changes have been discussed with and agreed to by your staff.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

*M. Fartile for*

Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

**Enclosures:**

1. Amendment No. **55** to DPR-65
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures: See next page

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*MBF for  
4/29/80*

*Amend. &  
NB Notice  
only*

*GB*

OFFICE	ORB#4:DOR	ORB#4:DOR	C-ORB#4:DOR	A-AD-ORP:DOR	OELD
SURNAME	RIngram	MConner KB	RReid	WGammill	J.R. GRAY
DATE	04/21/80	04/21/80	04/21/80	04/22/80	04/23/80



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

Apr 11 29, 1980

Distribution:  
Docket file  
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ORB#4 Rdg.

Docket No. 50-336

Docketing and Service Section  
Office of the Secretary of the Commission

SUBJECT: **MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2**

Two signed originals of the Federal Register Notice identified below are enclosed for your transmittal to the Office of the Federal Register for publication. Additional conformed copies ( 12 ) of the Notice are enclosed for your use.

- Notice of Receipt of Application for Construction Permit(s) and Operating License(s).
- Notice of Receipt of Partial Application for Construction Permit(s) and Facility License(s): Time for Submission of Views on Antitrust Matters.
- Notice of Availability of Applicant's Environmental Report.
- Notice of Proposed Issuance of Amendment to Facility Operating License.
- Notice of Receipt of Application for Facility License(s); Notice of Availability of Applicant's Environmental Report; and Notice of Consideration of Issuance of Facility License(s) and Notice of Opportunity for Hearing.
- Notice of Availability of NRC Draft/Final Environmental Statement.
- Notice of Limited Work Authorization.
- Notice of Availability of Safety Evaluation Report.
- Notice of Issuance of Construction Permit(s).
- Notice of Issuance of Facility Operating License(s) or Amendment(s).
- Other: Amendment No. 55. Referenced document has been provided PDR.

**Division of Operating Reactors, ORB#4**  
Office of Nuclear Reactor Regulation

Enclosure:  
As Stated

OFFICE →	ORB#4: DOR					
SURNAME →	R. Ingram					
DATE →	04/29/80					



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

April 29, 1980

Docket No. 50-336

Mr. W. G. Council, Vice President  
Nuclear Engineering & Operations  
Northeast Nuclear Energy Company  
P. O. Box 270  
Hartford, Connecticut 06101

Dear Mr. Council:

The Commission has issued the enclosed Amendment No. 55 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2. This amendment authorizes low temperature testing in accordance with your application dated December 27, 1979.

Our review indicated that changes to Technical Specification page 3/4 2-3 needed to be made in order to authorize the proposed testing. These changes have been discussed with and agreed to by your staff.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

*Morton B. Fairtile for*

Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

Enclosures:

1. Amendment No. 55 to DPR-65
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures: See next page

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Northeast Nuclear Energy Company

cc w/enclosure(s):  
William H. Cuddy, Esquire  
Day, Berry & Howard  
Counselors at Law  
One Constitution Plaza  
Hartford, Connecticut 06103

Anthony Z. Roisman  
Natural Resources Defense Council  
917 15th Street, N.W.  
Washington, D.C. 20005

Mr. Lawrence Bettencourt, First Selectman  
Town of Waterford  
Hall of Records - 200 Boston Post Road  
Waterford, Connecticut 06385

Northeast Nuclear Energy Company  
ATTN: Superintendent  
Millstone Plant  
Post Office Box 128  
Waterford, Connecticut 06385

Director, Technical Assessment  
Division  
Office of Radiation Programs  
(AW-459)  
U. S. Environmental Protection Agency  
Crystal Mall #2  
Arlington, Virginia 20460

U. S. Environmental Protection Agency  
Region I Office  
ATTN: EIS COORDINATOR  
John F. Kennedy Federal Building  
Boston, Massachusetts 02203

Waterford Public Library  
Rope Ferry Road, Route 156  
Waterford, Connecticut 06385

Northeast Utilities Service Company  
ATTN: Mr. James R. Himmelwright  
Nuclear Engineering and Operations  
P. O. Box 270  
Hartford, Connecticut 06101

Mr. John T. Shedlosky  
U. S. Nuclear Regulatory Commission  
P. O. Drawer KK  
Niantic, CT 06357

cc w/enclosure(s) and incoming  
dtd.: 12/27/79

Connecticut Energy Agency  
ATTN: Assistant Director, Research  
and Policy Development  
Department of Planning and Energy  
Policy  
20 Grand Street  
Hartford, Connecticut 06106



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

THE CONNECTICUT LIGHT AND POWER COMPANY,  
THE HARTFORD ELECTRIC LIGHT COMPANY,  
WESTERN MASSACHUSETTS ELECTRIC COMPANY, AND  
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 55  
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by The Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees), dated December 27, 1979, 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 Appendices A and B, as revised through Amendment No. 55, are hereby incorporated in the license. The licensees shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*Morton B. Fairlie for*

Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date Of Issuance: April 29, 1980

ATTACHMENT TO LICENSE AMENDMENT NO. 55

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

Page

3/4 2-3

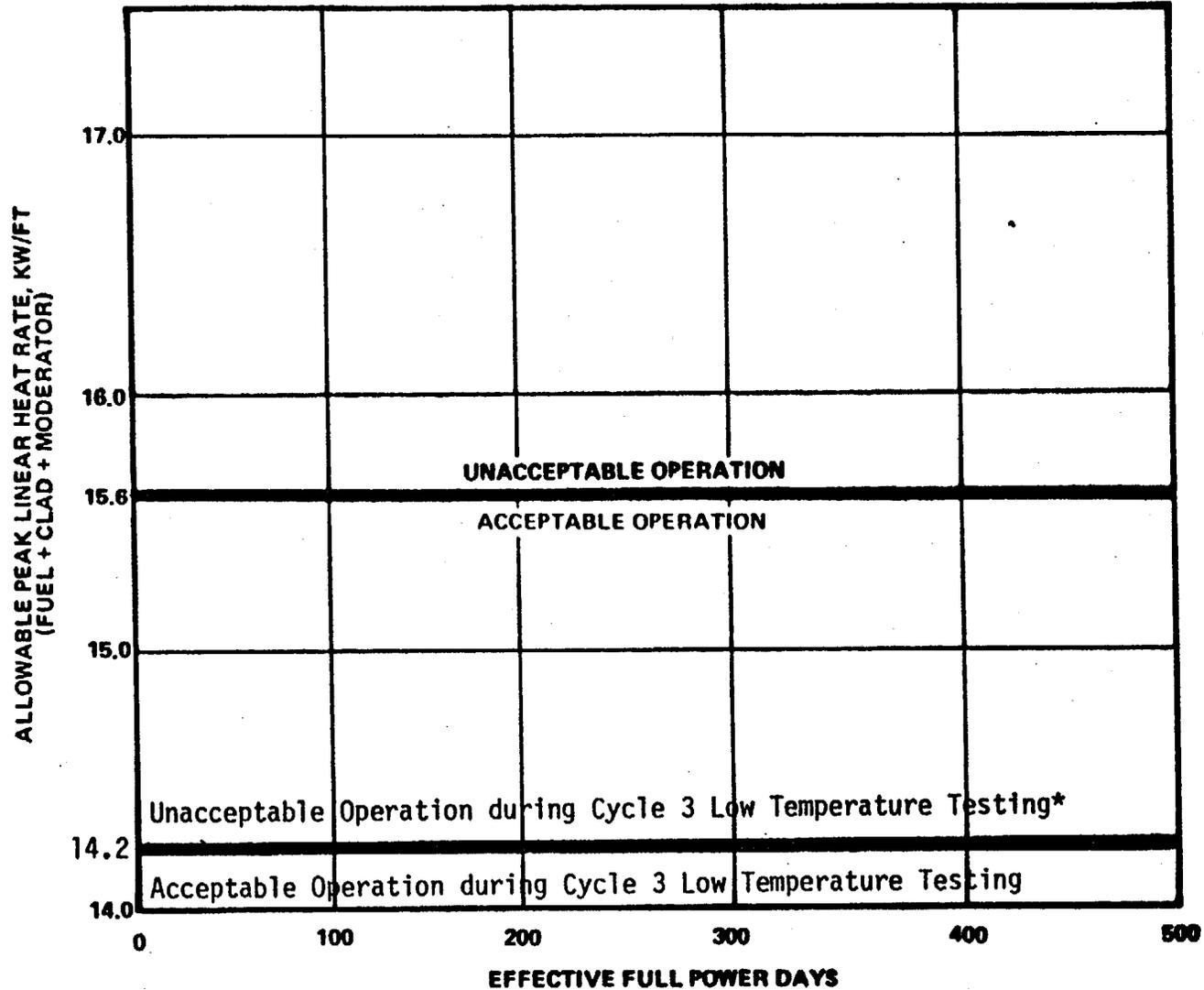


Figure 3.2-1 Allowable Peak Linear Heat Rate vs Burnup

\*During Cycle 3, low temperature testing is authorized for periods not exceeding 24 hours with the inlet temperature greater than or equal to 537°F and without varying the programmed pressurizer level.

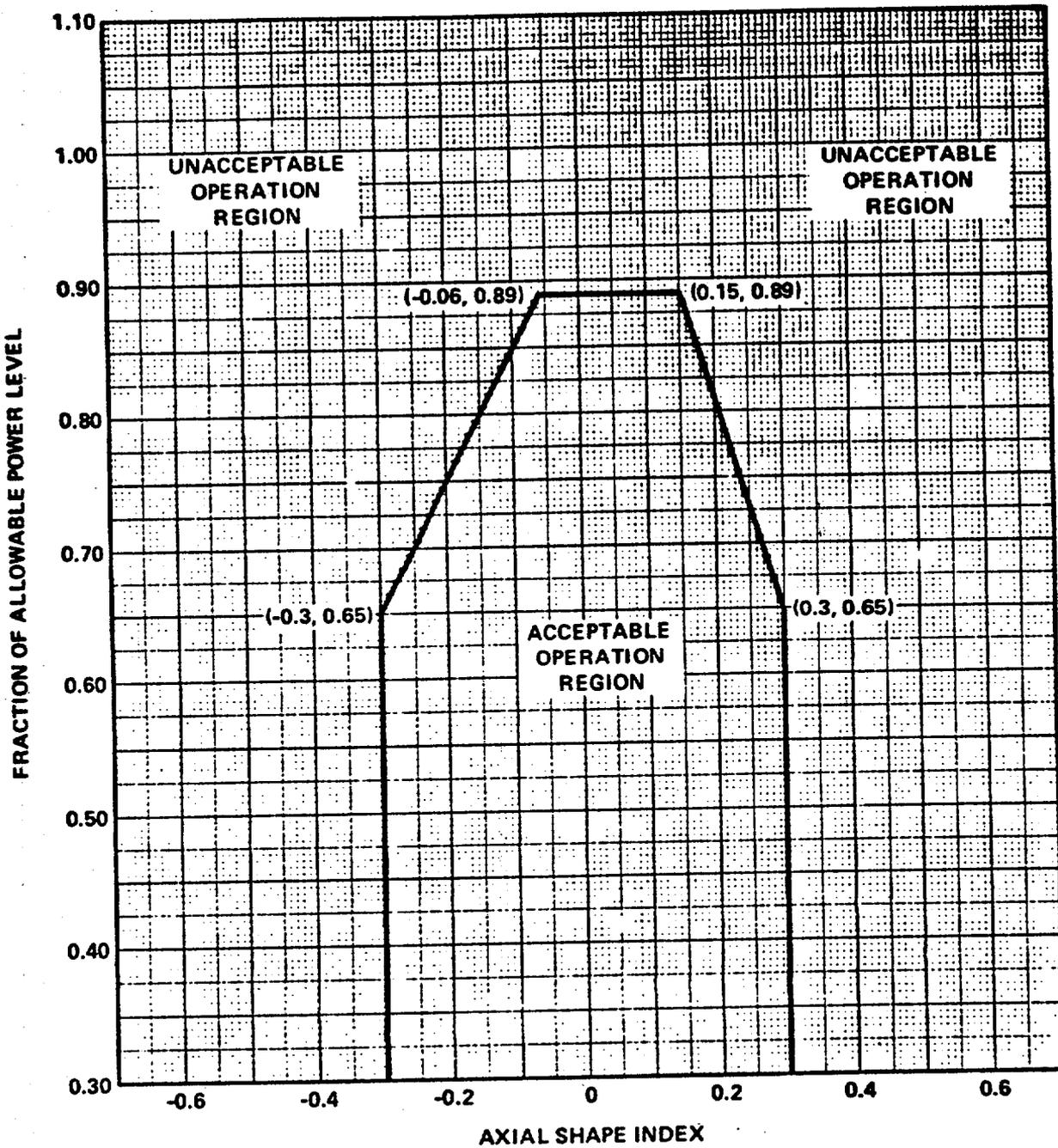


FIGURE 3.2-2 AXIAL SHAPE INDEX vs Fraction of Allowable Power Level per Specification 4.2.1.2c



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 55 TO

FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

Introduction

By application dated December 27, 1979, Northeast Nuclear Energy Company (NNECO or the licensee) proposed low temperature testing to identify turbine generator efficiency losses at Millstone Nuclear Power Station, Unit No. 2 (Millstone-2). This proposed testing would require a change to Facility Operating License No. DPR-65.

Discussion and Evaluation

Currently, Millstone-2 operates with three of its four turbine control valves fully open and the fourth valve partially open. In an effort to quantify losses in secondary plant performance, the licensee wishes to fully open the fourth turbine control valve and thereby determine the throttling loss across the valve. Since this test will be conducted at 100% power, the increased steam flow will be offset by a reduction in steam enthalpy and hence, steam temperature. The reduction in secondary system temperature will result in a reduction in primary system temperature of approximately 10°F according to the licensee. This reduction in core inlet temperature during the test is such that the inlet temperature will not be bounded by docketed safety analyses.

The following areas are evaluated to address the effects of the test and the steps taken to assure conservatism with respect to the existing safety analyses.

Boron Dilution

Conditions during this test will not exceed the bounds of the existing safety analysis.

Control Element Assembly (CEA) Withdrawal

The parameters of interest for this particular transient are Departure from Nucleate Boiling (DNB) and high power level following withdrawal. Due to the lower temperature there is a DNB credit and the Moderator Temperature Coefficient (MTC) is within the analysis bounds; therefore, the consequences of this transient initiated from test conditions would be within the bounds of the analysis.

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### Loss of Load

The effects of this transient, if initiated from test conditions, would be delayed due to the increased energy required to heat the Reactor Coolant System (RCS). Therefore, test conditions would not worsen the transient and it is considered to be within the analysis bounds.

### Loss of Feedwater

The current safety analysis conservatively assumes that reactor trip on low steam generator level is bypassed. Evaluation of the thermal-hydraulic consequences of this event are done by taking credit for the second trip signal, high RCS pressure. According to the licensee, a separate analysis was done to show that an excess of 10 minutes exists for the operator to initiate auxiliary feedwater. Initiation of this event from a lower temperature does not change this conclusion and as with the Loss of Load event, reactor trip could be delayed with minimal effects on the analysis.

### CEA Ejection

Due to the lower RCS temperature, the stored energy in the fuel and clad will be less. Therefore, for the same ejected CEA, the total enthalpy of the fuel and clad following the incident will be lower than in the current analysis.

### Steamline Break

Initiation of this transient from test conditions may slightly increase the cooldown rate because the latent heat of vaporization is higher at the lower steam generator pressure. This non-conservatism is offset for the following reasons. First, the return to criticality concerns brought on by an increased cooldown are bounded by the zero power case which starts at a lower temperature than the test. Second, the more rapid RCS pressure decrease will allow sooner delivery of boron from the High Pressure Safety Injection (HPSI) pumps. Third, the charging system, which is a qualified Emergency Core Cooling System (ECCS) subsystem, is not credited in the analysis. This system can begin immediate boration once the Safety Injection Actuation Signal (SIAS) is generated. These three reasons mitigate the return to criticality concerns caused by an increased cooldown and the consequences of this event remain bounded by the current analysis.

### Loss of Coolant Accident (LOCA)

NNECO states that previously approved sensitivity studies for the Calvert Cliffs Unit No. 1 ECCS analysis (Amendment No. 52 to Facility Operating License No. DPR-53, dated September 9, 1977) showed that for a 1°F reduction in inlet temperature there could be up to a 4°F increase in peak clad temperature (PCT). Calvert Cliffs Unit No. 1 is a sister plant to Millstone-2. The Millstone-2 ECCS analysis has enough margin to PCT to accommodate such an increase, however, the limits of the Calvert Cliffs analysis will be adhered to so as to provide additional conservatism. Specifically, the Linear Heat Rate (LHR) limit will be reduced from 15.6 Kw/ft to 14.2 Kw/ft and the inlet temperature will not be allowed to drop below 537°F. The appli-

cation of these limits to Millstone-2 during this test will assure that the consequences of a LOCA initiated from test conditions will be no more limiting than currently demonstrated.

It has been determined from the review of the safety analyses that accidents and transients which may be initiated from a lower temperature than previously analyzed will in fact be bounded by the results of the current safety analyses. In addition, the short duration of the test significantly reduced the probability of occurrence of any of these events during the test interval. However, the following restraints should be adhered to:

- Test duration not to exceed 24 hours
- Minimum inlet temperature  $\geq 537^{\circ}\text{F}$
- Maximum LHR  $\leq 14.2$  Kw/ft
- Pressurizer level will not be varied with the reduced average temperature

We have concluded, based on the considerations discussed above, that this test may be performed safely and with no adverse consequences and does not involve a significant decrease in safety margin provided Technical Specification Figure 3.2.1 is modified to impose the above limits during the testing.

#### Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: April 29, 1980

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-336NORTHEAST NUCLEAR ENERGY COMPANY,  
THE CONNECTICUT LIGHT AND POWER COMPANY,  
THE HARTFORD ELECTRIC LIGHT COMPANY, AND  
WESTERN MASSACHUSETTS ELECTRIC COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING  
LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 55 to Facility Operating License No. DPR-65 to Northeast Nuclear Energy Company, The Connecticut Light and Power Company, The Hartford Electric Light Company, and Western Massachusetts Electric Company, which revised Technical Specifications for operation of the Millstone Nuclear Power Station, Unit No. 2, located in the Town of Waterford, Connecticut. The amendment is effective as of its date of issuance.

This amendment revises the Technical Specifications to authorize low temperature testing.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated December 27, 1979, (2) Amendment No. 55 to License No. DPR-65, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. and at the Waterford Public Library, Rope Ferry Road, Route 156, Waterford, Connecticut. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 29th day of April, 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

*Morton B. Fairtile*

Morton B. Fairtile, Acting Chief  
Operating Reactors Branch #4  
Division of Operating Reactors