

JUN 24 1977

DISTRIBUTION:

Docket	TBAbernathy
NRC PDR	JRBuchanan
Local PDR	File
ORB#3 Rdg	Xtra Copies
VSteTb	
KRGoller/TJCarter	
CParrish	
DJaffe	
OELD	
OI&E (5)	
BJones (4)	
BScharf (15)	
JMcGough	
DEisenhut	
ACRS (16)	
CMiles	
DRoss	

Docket No. 50-336

Northeast Nuclear Energy Company
ATTN: Mr. D. C. Switzer, President
P. O. Box 270
Hartford, Connecticut 06101

Gentlemen:

The Commission has issued the enclosed Amendment No. 29 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2. The amendment consists of changes to the Technical Specifications in response to your applications dated February 11, 1977 and March 25, 1977.

The amendment will provide (1) a modification of the action required to be taken, as stated in Technical Specification 3.1.1.5, in the event that the Reactor Coolant System (RCS) temperature becomes less than 515°F, and (2) a change in the limits of RCS pressure as a function of temperature as given in Technical Specification 3.4.9.1.

Copies of the Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

Original signed by

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:

1. Amendment No. 29
2. Safety Evaluation
3. FEDERAL REGISTER Notice

cc w/enclosures:
See next page

Const. 1
GD

*SEE PREVIOUS YELLOW FOR CONCURRENCES

OFFICE	ORB#3	ORB#3	OELD	ORB#3	
SURNAME	*CParrish	*DJaffe:acr	J.R. GRAY	GLear	
DATE	6/ 177	6/ 177	6/ 22 177	6/ 24 177	

DISTRIBUTION:

Docket TBAbernathy
 NRC PDR JRBuchanan
 Local PDR File
 ORB#3 Rdg Xtra Copies
 VStello
 KRGoller
 CParrish
 DJaffe
 OELD
 OI&E (5)
 BJones (4)
 BScharf (15)
 MJcGough
~~XXXXXXXX~~ DEisenhut
~~XXXX~~ ACRS (16)
 CMiles
 DRoss

Docket No. 50-336

Northeast Nuclear Energy Company
 ATTN: Mr. D. C. Switzer, President
 P. O. Box 270
 Hartford, Connecticut 06101

Gentlemen:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2. The amendment consists of changes to the Technical Specifications in response to your applications dated February 11, 1977, March 25, 1977, and April 4, 1977.

The amendment will provide (1) a modification of the action required to be taken, as stated in Technical Specification 3.1.1.5, in the event that the Reactor Coolant System (RCS) temperature becomes less than 515°F, (2) a change in the limits of RCS pressure as a function of temperature as given in Technical Specification 3.4.9.1, and (3) an extension of the calibration from June 15, 1977 to December 31, 1977, for the in-core detectors.

Copies of the Safety Evaluation and the FEDERAL REGISTER Notice are also enclosed.

Sincerely,

George Lear, Chief
 Operating Reactors Branch #3
 Division of Operating Reactors

Enclosures:

1. Amendment No.
2. Safety Evaluation
3. FEDERAL REGISTER Notice

cc w/encls:
 See next page

OFFICE >	ORB#3	ORB#3	OELD	ORB#3		
SURNAME >	CParrish	DJaffe		GLear		
DATE >	6/3/77	5/7/77	5/ /77	5/ /77		

cc: William H. Cuddy, Esquire
Day, Berry & Howard
Counselors At Law
One Constitution Plaza
Hartford, Connecticut 06103

Anthony Z. Roisman, Esquire
Roisman, Kessler and Cashdan
1025 15th Street, N. W.
5th Floor
Washington, D. C. 20005

Robert Bishop
Department of Planning & Energy Policy
20 Grand Street
Hartford, Connecticut 06115

Mr. Albert L. Partridge, First Selectman
Town of Waterford
Hall of Records - 200 Boston Post Road
Waterford, Connecticut 06385

Northeast Nuclear Energy Company
ATTN: Superintendent
Millstone Plant
P. O. Box 128
Waterford, Connecticut 06385

Chief, Energy Systems Analysis Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, N. W.
Washington, D. C. 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



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. 29
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications 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 February 11, 1977, and March 25, 1977, comply 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.

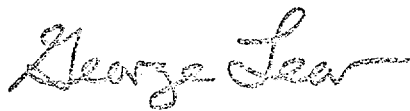
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-65 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 29, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 24, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 29

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

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

Pages

3/4 1-7

3/4 4-19a

3/4 4-19b

REACTIVITY CONTROL SYSTEMS

MINIMUM TEMPERATURE FOR CRITICALITY

LIMITING CONDITION FOR OPERATION

3.1.1.5 The Reactor Coolant System temperature (T_{avg}) shall be $\geq 515^{\circ}\text{F}$ when the reactor is critical.

APPLICABILITY: MODES 1 and 2*#.

ACTION:

With the Reactor Coolant System temperature (T_{avg}) $< 515^{\circ}\text{F}$, restore T_{avg} to within its limit within 15 minutes or be in ~~HOT~~ HOT STANDBY within the next 15 minutes.

SURVEILLANCE REQUIREMENTS

4.1.1.5 The Reactor Coolant System temperature (T_{avg}) shall be determined to be $\geq 515^{\circ}\text{F}$:

- a. Within 15 minutes prior to making the reactor critical, and
- b. At least once per hour when the reactor is critical and the Reactor Coolant System temperature (T_{avg}) is $< 525^{\circ}\text{F}$.

* See Special Test Exception 3.10.3

With $K_{eff} \geq 1.0$.

REACTIVITY CONTROL SYSTEMS

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths and one associated heat tracing circuit shall be OPERABLE:

- a. A flow path from the boric acid storage tank via either a boric acid pump or a gravity feed connection to a charging pump to the Reactor Coolant System if only the boric acid storage tank in specification 3.1.2.7a is OPERABLE, or
- b. The flow path from the refueling water storage tank via either a charging pump or a high pressure safety injection pump to the Reactor Coolant system if only the refueling water storage tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILITY: MODES 5 and 6.

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one injection path is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Exercising all testable power operated valves in the flow path required for boron injection through at least one complete cycle,
 2. Verifying that the temperature of the heat traced portion of the flow path is above the temperature limit line shown on Figure 3.1-1 when a flow path from the concentrated boric acid tanks is used, and

This page intentionally left blank.

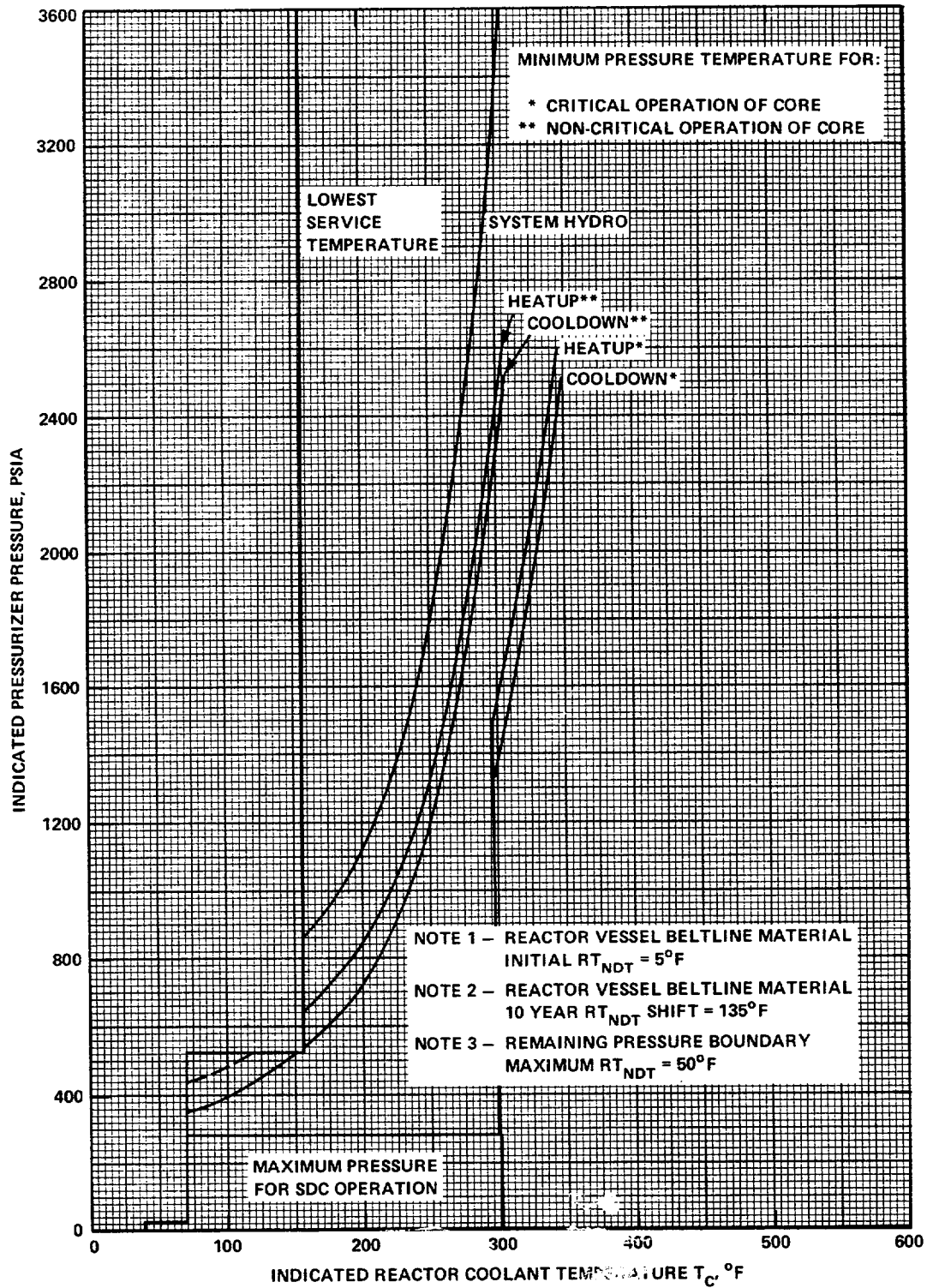


FIGURE 3.4-2b

Reactor Coolant System Pressure Temperature
Limitations March 4, 1977 to 10 Years
of Full Power Operation



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING LICENSE AMENDMENT NO. 29 TO FACILITY OPERATING LICENSE NO. DPR-65
NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2
DOCKET NO. 50-336

Introduction

By applications dated February 11, 1977, and March 25, 1977 Northeast Nuclear Energy Company (NNECO) requested changes to the Technical Specifications for Millstone Unit No. 2. The proposed changes provide for (1) a modification of the action required to be taken, as stated in Technical Specification 3.1.1.5, in the event that the Reactor Coolant System (RCS) temperature becomes less than 515°F, and (2) a change in the limits of RCS pressure as a function of temperature as given in Technical Specification 3.4.9.1.

In the course of our review we found it necessary to change the proposed Technical Specifications in order to meet our requirements. These changes were discussed with and concurred in by NNECO.

Discussion and Evaluation

A discussion and our evaluation of NNECO's proposed changes is contained in the following sections.

1. Action to be Taken if RCS Temperature is Less than 515°F

Technical Specification 3.1.1.5 presently requires that the reactor be immediately tripped if the RCS temperature becomes less than 515°F. The Basis for this requirement as contained in the Technical Specifications state:

"The MTC (Moderator Temperature Coefficient) is expected to be slightly negative at operating conditions. However, at the beginning of the fuel cycle, the MTC may be slightly positive at operating conditions and since it will become more

positive at lower temperatures, this specification is provided to restrict reactor operation when T_{avg} is significantly below the normal operating temperature."

By application dated February 11, 1977, NNECO has requested that Technical Specification 3.1.1.5 be changed to allow 15 minutes for the RCS temperature to be restored within its limits or be in Hot Standby (reactor subcritical with RCS temperature greater than 300°F) within the next 15 minutes.

The proposed change, as requested by NNECO provides for a reasonable period to restore RCS temperature within acceptable limits or to orderly shutdown the reactor. In this regard, an orderly shutdown of the reactor is preferable to a reactor trip in all but emergency conditions in that it avoids the system stresses associated with the rapid shutdown (trip) of the reactor. Moreover, as stated in the Technical Specification Basis, the requirement for reactor operation above 515°F is associated with the existence of a positive Moderator Temperature Coefficient (MTC) near the beginning of the fuel cycle. Our evaluation of operating data indicates that the MTC is positive near operating conditions for a very brief period at the beginning of the first fuel cycle and rarely, if ever, after that time. Thus, the probability of an unacceptable reactor transient resulting from a positive MTC during the 30 minutes when the RCS temperature is below 515°F, prior to reactor shutdown, is acceptably small. Accordingly, NNECO's proposed change to Technical Specification 3.1.1.5, which allows 15 minutes to restore RCS temperature above 515°F or be in Hot Standby within the next 15 minutes, is acceptable.

2. Change in the RCS Pressure Limits

By letter dated February 23, 1977, we informed NNECO that the existing RCS pressure/temperature limits contained in Technical Specification 3.4.9.1 did not have sufficient margin to assure compliance with 10 CFR Part 50, Appendix G, entitled, "Fracture Toughness Requirements". Specifically, the existing limits on pressure and temperature did not conservatively account for the decreased fracture toughness of those areas of the reactor pressure vessel near geometric discontinuities, such as nozzles and flanges, as required by 10 CFR Part 50, Appendix G, Section IV.A.2.b. Our letter of February 23, 1977 requested that NNECO submit proposed Technical Specifications to assure compliance with 10 CFR Part 50, Appendix G.

NNECO responded to the Commission's request in their March 25, 1977 application. NNECO proposes that the RCS pressure/temperature limits, applicable from 0 to 2 years of full power reactor operation be replaced by those limits that would have been applicable during the period from 2 to 10 years of full power operation. This change is appropriate and conservative because reactor pressure vessel material toughness, i.e., resistance to brittle fracture, decreases over the life of the facility due to neutron irradiation induced material changes. Thus, the limits applicable later in reactor vessel life (i.e., 2 to 10 year period), require RCS temperatures that have to be increased over the previous limits in order to achieve the same margin to brittle fracture associated with the same RCS pressure.

Based upon the above discussion, we conclude that NNECO's proposed change in pressure/temperature limits provide sufficient margin to brittle fracture to assure compliance with 10 CFR Part 50, Appendix G. Moreover, with continued neutron irradiation of the reactor vessel, the "belt line region" (an initially lower stressed region, adjacent to the reactor core) will lose fracture toughness at a greater rate, due to the higher neutron flux, than the higher stressed regions such as the nozzles which are exposed to lower neutron flux. Thus, after continued irradiation the beltline region will become limiting and the initially high stressed regions will not be influential with regard to determining brittle fracture effects on operation.

Accordingly, NNECO's proposal to implement at this time the 2 to 10 years period of full power RCS pressure/temperature limits, in Technical Specification 3.4.9.1, is acceptable.

Environmental Considerations

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 changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes do 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: June 24, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-336

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

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 29 to Facility Operating License No. DPR-65 issued 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 the date of issuance.

The amendment will provide (1) a modification of the action required to be taken, as stated in Technical Specification 3.1.1.5, in the event that the Reactor Coolant System (RCS) temperature becomes less than 515°F, and (2) a change in the limits of RCS pressure as a function of temperature as given in Technical Specification 3.4.9.1.

The applications for the amendment comply 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

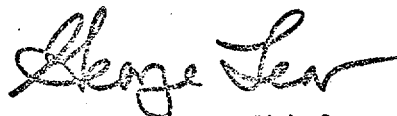
findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

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 a 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 applications for amendment dated February 11, 1977 and March 25, 1977, (2) Amendment No. 29 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, Waterford, Connecticut 06385. 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 24 day of June 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors