

February , 1990

Docket No. 50-423

Mr. Edward J. Mroczka  
Senior Vice President  
Nuclear Engineering and Operations  
Connecticut Yankee Atomic Power Company  
Northeast Nuclear Energy Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

Dear Mr. Mroczka:

SUBJECT: MILLSTONE UNIT 3 - ISSUANCE OF AMENDMENT (TAC NO. 74110)

The Commission has issued the enclosed Amendment No. 46 to Facility Operating License No. NPF-49 for Millstone Nuclear Power Station, Unit No. 3, in response to your application dated July 20, 1989 as supplemented on October 16, 1989.

The amendment changes the Millstone Unit 3 Technical Specifications (TS) as follows:

- (1) TS 4.2.2.2.2 is changed to revise the  $F_{xy}$  formula for three-loop operation.
- (2) TS 3/4.7.1.5 requires that main steam isolation valves (MSIVs) be OPERABLE in Mode 4. In addition, the action statement and surveillance requirements are revised based upon a recommendation by Westinghouse which allows an MSIV closure time of 120 seconds for Mode 4.
- (3) TS Tables 3.3-6, 3.3-10, 4.3-3 and 4.3-7 are changed to eliminate the inconsistency between the tables, represent the actual function of containment purge exhaust area radiation monitors RE41 and 42 (fuel drop monitors), and avoid any unnecessary shutdown should RE41 or 42 become inoperable.

A copy of the related Safety Evaluation is enclosed. Also enclosed is a Notice of Issuance which has been forwarded to the Office of the Federal Register for publication.

Sincerely,  
/s/

David H. Jaffe, Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 46 to NPF-49
- 2. Safety Evaluation
- 3. Notice

cc w/enclosures:  
See next page

*DFol*  
*11*

OFC	:LA:PDI-4	BC:NRB	:PM:PDI-4	:PD:PDI-4	:OGC	:	:
NAME	:SNorris	R Jones	:DJaffe:tm	:JStolz	:	:	:
DATE	:2/12/90	2/13/90	2/13/90	:2/16/90	:2/20/90	:	:

*CP1*

2003050071 900221  
PDR ADDCK 05000423  
PDC

DATED: February 21, 1990  
AMENDMENT NO. 46 TO FACILITY OPERATING LICENSE NO. NPF-49

DISTRIBUTION:

Docket File

NRC & Local PDR

Plant File

S. Varga (14E4)

B. Boger (14A2)

J. Stolz

S. Norris

D. Jaffe

OGC

D. Hagan (MNBB 3302)

E. Jordan (MNBB 3302)

G. Hill(4) (P1-137)

W. Jones (P-130A)

J. Calvo (11F23)

ACRS (10)

GPA/PA

ARM/LFMB



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

February 21, 1990

Docket No. 50-423

Mr. Edward J. Mrocza  
Senior Vice President  
Nuclear Engineering and Operations  
Connecticut Yankee Atomic Power Company  
Northeast Nuclear Energy Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

Dear Mr. Mrocza:

SUBJECT: MILLSTONE UNIT 3 - ISSUANCE OF AMENDMENT (TAC NO. 74110)

The Commission has issued the enclosed Amendment No. 46 to Facility Operating License No. NPF-49 for Millstone Nuclear Power Station, Unit No. 3, in response to your application dated July 20, 1989 as supplemented on October 16, 1989.

The amendment changes the Millstone Unit 3 Technical Specifications (TS) as follows:

- (1) TS 4.2.2.2.2 is changed to revise the  $F_{xy}$  formula for three-loop operation.
- (2) TS 3/4.7.1.5 requires that main steam isolation valves (MSIVs) be OPERABLE in Mode 4. In addition, the action statement and surveillance requirements are revised based upon a recommendation by Westinghouse which allows an MSIV closure time of 120 seconds for Mode 4.
- (3) TS Tables 3.3-6, 3.3-10, 4.3-3 and 4.3-7 are changed to eliminate the inconsistency between the tables, represent the actual function of containment purge exhaust area radiation monitors RE41 and 42 (fuel drop monitors), and avoid any unnecessary shutdown should RE41 or 42 become inoperable.

A copy of the related Safety Evaluation is enclosed. Also enclosed is a Notice of Issuance which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in black ink, appearing to read "D. H. Jaffe", written over a horizontal line.

David H. Jaffe, Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No.46 to NPF-49
2. Safety Evaluation
3. Notice

cc w/enclosures:  
See next page

Mr. E. J. Mrocza  
Northeast Nuclear Energy Company

Millstone Nuclear Power Station  
Unit No. 3

cc:

Gerald Garfield, Esquire  
Day, Berry and Howard  
Counselors at Law  
City Place  
Hartford, Connecticut 06103-3499

R. M. Kacich, Manager  
Generation Facilities Licensing  
Northeast Utilities Service Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

W. D. Romberg, Vice President  
Nuclear Operations  
Northeast Utilities Service Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

D. O. Nordquist  
Manager of Quality Assurance  
Northeast Nuclear Energy Company  
Post Office Box 270  
Hartford, Connecticut 06141-0270

Kevin McCarthy, Director  
Radiation Control Unit  
Department of Environmental Protection  
State Office Building  
Hartford, Connecticut 06106

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

Bradford S. Chase, Under Secretary  
Energy Division  
Office of Policy and Management  
80 Washington Street  
Hartford, Connecticut 06106

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

S. E. Scace, Station Superintendent  
Millstone Nuclear Power Station  
Northeast Nuclear Energy Company  
Post Office Box 128  
Waterford, Connecticut 06385

W. J. Raymond, Resident Inspector  
Millstone Nuclear Power Station  
c/o U. S. Nuclear Regulatory Commission  
Post Office Box 811  
Niantic, Connecticut 06357

C. H. Clement, Unit Superintendent  
Millstone Unit No. 3  
Northeast Nuclear Energy Company  
Post Office Box 128  
Waterford, Connecticut 06385

M. R. Scully, Executive Director  
Connecticut Municipal Electric  
Energy Cooperative  
30 Stott Avenue  
Norwich, Connecticut 06360

Ms. Jane Spector  
Federal Energy Regulatory Commission  
825 N. Capitol Street, N.E.  
Room 8608C  
Washington, D.C. 20426

Mr. Alan Menard, Manager  
Technical Services  
Massachusetts Municipal Wholesale  
Electric Company  
Post Office Box 426  
Ludlow, Massachusetts 01056

Burlington Electric Department  
c/o Robert E. Fletcher, Esq.  
271 South Union Street  
Burlington, Vermont 05402



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

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 46  
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 July 20, 1989 as supplemented by letter dated October 16, 1989 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.

9003050075 900221  
PDR ADCK 05000423  
P PDC

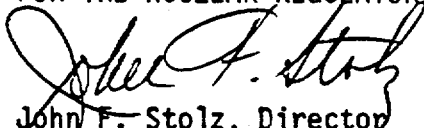
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.46 , 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Director  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: February 21, 1990

ATTACHMENT TO LICENSE AMENDMENT NO.46

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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 areas of change. The corresponding overleaf pages are provided to maintain document completeness.

Remove

3/4 2-12  
3/4 3-18  
3/4 3-19  
3/4 3-36  
3/4 3-37  
3/4 3-38  
3/4 7-9  
3/4 3-43  
3/4 3-44  
3/4 3-45  
3/4 3-60  
3/4 3-62

Insert

3/4 2-12  
3/4 3-18  
3/4 3-19  
3/4 3-36  
3/4 3-37  
3/4 3-38  
3/4 7-9  
3/4 3-43  
3/4 3-44  
3/4 3-45  
3/4 3-60  
3/4 3-62

## POWER DISTRIBUTION LIMITS

### SURVEILLANCE REQUIREMENTS

---

4.2.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2.2  $F_{xy}$  shall be evaluated to determine if  $F_Q(Z)$  is within its limit by:

- a. Using the movable incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER,
- b. Increasing the measured  $F_{xy}$  component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5% to account for measurement uncertainties,
- c. Comparing the  $F_{xy}$  computed ( $F_{xy}^C$ ) obtained in Specification 4.2.2.2.2b, above to:
  - 1) The  $F_{xy}$  limits for 65% of RATED THERMAL POWER ( $F_{xy}^{0.65 RTP}$ ) for the appropriate measured core planes given in Specification 4.2.2.2.2e. and f., below, and
  - 2) The relationship:

$$F_{xy}^L = F_{xy}^{0.65 RTP} [1 + M_{F_{xy}} (0.65 - P)],$$

Where  $F_{xy}^L$  is the limit for fractional THERMAL POWER operation expressed as a function of  $F_{xy}^{0.65 RTP}$ ,  $M_{F_{xy}}$  is the  $F_{xy}$  multiplier, and P is the fraction of RATED THERMAL POWER at which  $F_{xy}$  was measured.

d. Remeasuring  $F_{xy}$  according to the following schedule:

- 1) When  $F_{xy}^C$  is greater than the  $F_{xy}^{0.65 RTP}$  limit for the appropriate measured core plane but less than the  $F_{xy}^L$  relationship, additional power distribution maps shall be taken and  $F_{xy}^C$  compared to  $F_{xy}^{0.65 RTP}$  and  $F_{xy}^L$  either:
  - a) Within 24 hours after exceeding by 20% of RATED THERMAL POWER or greater, the THERMAL POWER at which  $F_{xy}^C$  was last determined, or
  - b) At least once per 31 Effective Full Power Days (EFPD), whichever occurs first.



TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
<b>2. Containment Spray (CDA) (Continued)</b>					
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3, 4	14
c. Containment Pressure-- High-3	4	2	3	1, 2, 3, 4	17
<b>3. Containment Isolation</b>					
a. Phase "A" Isolation					
1) Manual Initiation	2	1	2	1, 2, 3, 4	19
2) Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3, 4	14
3) Safety Injection	See Item 1. above for all Safety Injection initiating functions and requirements.				
b. Phase "B" Isolation					
1) Manual Initiation	2	1 with 2 coincident switches	2	1, 2, 3, 4	19
2) Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3, 4	14

MILLSTONE - UNIT 3

3/4 3-18

Amendment No. 46

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
3. Containment Isolation (Continued)					
3) Containment Pressure--High-3	4	2	3	1, 2, 3, 4	17
4. Steam Line Isolation					
a. Manual Initiation					
1) Individual	1/steam line	1/steam line	1/operating steam line	1, 2, 3, 4	24
2) System	2	1	2	1, 2, 3, 4	23
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1, 2, 3, 4	22
c. Containment Pressure--High-2	3	2	2	1, 2, 3, 4	15*
d. Steam Line Pressure--Low	3/steam line in each operating loop	2/steam line in any operating loop	2/steam line in each operating loop	1, 2, 3#	15*
e. Steam Line Pressure - Negative Rate--High	3/steam line in each operating loop	2/steam line in any operating loop	2/steam line in each operating loop	3****	15*

TABLE 4.3-2

**ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION**  
**SURVEILLANCE REQUIREMENTS**

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
<b>1. Safety Injection (Reactor Trip, Feedwater Isolation, Control Building Isolation (Manual Initiation Only), Start Diesel Generators, and Service Water)</b>								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-1	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Pressurizer Pressure Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Line Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
<b>2. Containment Spray</b>								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-3	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION  
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
<b>3. Containment Isolation</b>								
<b>a. Phase "A" Isolation</b>								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
<b>b. Phase "B" Isolation</b>								
1) Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) Automatic Actuation Logic Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
3) Containment Pressure-High-3	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
<b>4. Steam Line Isolation</b>								
<b>a. Manual Initiation</b>								
1) Individual	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
2) System	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATIONSURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>	
<b>4. Steam Line Isolation (Continued)</b>									
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4	
c. Containment Pressure-High-2	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4	
d. Steam Line Pressure-Low	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3	
e. Steam Line Pressure-Negative Rate-High	S	R	M	N.A.	N.A.	N.A.	N.A.	3	
<b>5. Turbine Trip and Feedwater Isolation</b>									
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2	
b. Steam Generator Water Level-High-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2	
c. Safety Injection Actuation Logic	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2	
d. T <sub>ave</sub> Low Coincident with Reactor Trip (P-4)	N.A.	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2	

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

---

3.7.1.5 Each main steam line isolation valve (MSIV) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

MODE 1:

With one MSIV inoperable but open, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within 4 hours; otherwise be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

MODES 2, 3, and 4:

With one MSIV inoperable, subsequent operation in MODE 2 or 3 or 4 may proceed provided the isolation valve is maintained closed. Otherwise, be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

---

4.7.1.5 Each MSIV shall be demonstrated OPERABLE by verifying the isolation times when tested pursuant to Specification 4.0.5. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

<u>FUNCTIONAL UNIT</u>	<u>CHANNELS TO TRIP/ALARM</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>ACTION</u>
1. Containment					
a. Containment Area Purge and Exhaust Isolation	1	2	5, 6	≤ 1 R/h	26
b. RCS Leakage Detection					
1) Particulate Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	29
2) Gaseous Radioactivity	N.A.	1	1, 2, 3, 4	N.A.	29
2. Fuel Storage Pool Areas					
a. Criticality-Radiation Level	1	2	*	≤ 15 mR/h	28

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

- \* With fuel in the fuel storage pool areas.

ACTION STATEMENTS

- ACTION 26 - With less than the Minimum Channels OPERABLE requirement, fuel movement may continue provided the containment purge and exhaust valves are maintained closed. The containment radiation monitoring channels required for containment area purge and exhaust isolation are not required to be OPERABLE during the performance of Type A containment leakage rate tests.
- ACTION 27 - Not used.
- ACTION 28 - With less than the Minimum Channels OPERABLE requirement, fuel movement may continue for up to 30 days provided an appropriate portable continuous monitor with the same Alarm Setpoint is provided in the fuel storage pool area. Restore the inoperable monitors to OPERABLE status within 30 days or suspend all operations involving fuel movement in the fuel storage pool areas.
- ACTION 29 - With the number of OPERABLE Channels less than the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.



TABLE 4.3-3RADIATION MONITORING INSTRUMENTATION FOR PLANT  
OPERATIONS SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
1. Containment				
a. Containment Area Purge and Exhaust Isolation	S	R	M	5, 6
b. RCS Leakage Detection				
1) Particulate Radio- activity	S	R	M	1, 2, 3, 4
2) Gaseous Radioactivity	S	R	M	1, 2, 3, 4
2. Fuel Storage Pool Areas				
a. Criticality-Radiation Level	S	R	M	*

TABLE NOTATIONS

\* With fuel in the fuel storage pool area.

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>MINIMUM CHANNELS OPERABLE</u>
1. Containment Pressure		
a. Normal Range	2	1
b. Extended Range	2	1
2. Reactor Coolant Outlet Temperature - T <sub>HOT</sub> (Wide Range)	2	1
3. Reactor Coolant Inlet Temperature - T <sub>COLD</sub> (Wide Range)	2	1
4. Reactor Coolant Pressure - Wide Range	2	1
5. Pressurizer Water Level	2	1
6. Steam Line Pressure	2/steam generator	1/steam generator
7. Steam Generator Water Level - Narrow Range	1/steam generator	1/steam generator
8. Steam Generator Water Level - Wide Range	1/steam generator	1/steam generator
9. Refueling Water Storage Tank Water Level	2	1
10. Demineralized Water Storage Tank Water Level	2	1
11. Auxiliary Feedwater Flow Rate	2/steam generator	1/steam generator
12. Reactor Coolant System Subcooling Margin Monitor	2	1
13. Containment Water Level (Wide Range)	2	1
14. Core Exit Thermocouples	4/core quadrant	2/core quadrant
15. DELETED		

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Containment Pressure		
a. Normal Range	M	R
b. Extended Range	M	R
2. Reactor Coolant Outlet Temperature - T <sub>HOT</sub> (Wide Range)	M	R
3. Reactor Coolant Inlet Temperature - T <sub>COLD</sub> (Wide Range)	M	R
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. Steam Generator Water Level - Wide Range	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Demineralized Water Storage Tank Water Level	M	R
11. Auxiliary Feedwater Flow Rate	M	R
12. Reactor Coolant System Subcooling Margin Monitor	M	R
13. Containment Water Level (Wide Range)	M	R
14. Core Exit Thermocouples	M	R
15. DELETED		



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 46

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 application for license amendment dated July 20, 1989 as supplemented by letter dated October 16, 1989, Northeast Nuclear Energy Company, et al. (the licensee), requested changes to Millstone Unit 3 Technical Specifications (TS). The proposed amendment would change the Millstone Unit 3 TS Cycle 3 operation as follows: (1) TS 4.2.2.2.2 would be changed to revise the  $F_{xy}$  formula for three-loop operation, (2) TS 3.4.7.1.5 would require that main steam isolation valves (MSIVs) be OPERABLE in Mode 4; in addition, the action statement and surveillance requirements would be revised based upon a recommendation by Westinghouse which allows an MSIV closure time of 120 seconds for Mode 4, and (3) TS Tables 3.3-6, 3.3-10, 4.3-3, and 4.3-7 would be changed to eliminate the inconsistency between the tables, represent the actual function of containment purge exhaust area radiation monitors RE41 and 42 (fuel drop monitors), and avoid any unnecessary shutdown should RE41 or 42 become inoperable.

2.0 DISCUSSION AND EVALUATION

Power Distribution Limits ( $F_{xy}$ )

The relationship for determining power distribution limits, with three reactor coolant loops in operation, is currently defined in TS 4.2.2.2.2.C.2 as

$$F_{xy}^L = F_{xy}^{0.65 \text{ RTF}} + M_{xy} [1 - P]$$

During the initial development of the Millstone Unit No. 3 Technical Specifications P was to be defined such that full four-loop and three-loop power would both result in  $P = 1.0$ . This was considered to be confusing; therefore, the definition of P was modified such that full three-loop power resulted in  $P = 0.65$ . This revised definition was not included in the  $F_{xy}^L$  equation of the final draft of the Millstone Unit No. 3 Technical Specification Section 4.2.2.2.2.C.2. As a result, an inconsistency between  $F_{xy}^L$  and  $F_{xy}^{0.65 \text{ RTP}}$  remained in the Millstone Unit No. 3 Technical Specifications. It is noted that  $F_{xy}^L$  and  $F_{xy}^{0.65 \text{ RTP}}$  are intended to be equal at full power. The proposed change is intended to correct this discrepancy.

With the proposed  $F_{xy}^L$  relationship,  $F_{xy}^L = F_{xy}^{0.65 \text{ RTP}} [1 + M_{F_{xy}}(0.65 - P)]$ ,  $F_{xy}^L$  will be equal to  $F_{xy}^{0.65 \text{ RTP}}$  at full three-loop power.

The relationship between  $F_{xy}^L$  and  $F_{xy}^{0.65 \text{ RTP}}$  forms the basis for the surveillance given in Section 4.2.2.2.2.d. This section compares the computed  $F_{xy}^C$  to  $F_{xy}^L$  and  $F_{xy}^{0.65 \text{ RTP}}$ . If  $F_{xy}^C$  falls between them, additional surveillance is required. The proposed  $F_{xy}^L$  relationship in TS 4.2.2.2.2.C.2 would eliminate the need for additional, unnecessary, surveillance. We have reviewed the licensee's proposed change to TS 4.2.2.2.2 and conclude that it is consistent with the approved methodology for calculation of power distribution limits and is acceptable.

#### Main Steam Isolation Valves

With regard to the MSIV-related TS, an evaluation of the MSIV closure time for Mode 4 on the main steam line break (MSLB) accident was performed by Westinghouse. This evaluation included the effect of the change on core response, mass and energy release/containment response, and radiological consequences. It was concluded that with respect to core response, a postulated MSLB in the

lower operational modes is bounded by the hot zero power (HZP) case. Based upon the MSLB evaluation, it was determined that the MSIVs should be required, by the TS, to be operational in Mode 4 (Hot Shutdown); currently, TS 3/4.7.1.5 requires operability in Modes 1, 2 and 3. The proposed closure time in Mode 4 was established by Westinghouse to be 120 seconds. As a consequence of the proposal to require the MSIVs to be operable in Mode 4, the licensee has also proposed changes to TS Tables 3.3-3 and 4.3-2 to achieve consistency within the TS between the MSIV operability/surveillance and MSIV initiating instrumentation operability/surveillance.

The proposed changes to the TS, related to the MSIVs and related instrumentation adequately reflect the conclusions of the Westinghouse analysis of the MSLB at HZP. Accordingly, the proposed changes to the TS are acceptable.

#### Radiation Monitors

The licensee has proposed a change to TS Tables 3.3-6, 3.3-10, 4.3-3, and 4.3-7 to: (1) eliminate the inconsistency among the tables, (2) represent the actual function of containment purge exhaust area radiation monitors RE41 and 42 (fuel drop monitors), and (3) avoid any unnecessary shutdown should RE41 or 42 become inoperable.

An inconsistency in the Technical Specification requirements for the Containment Purge Exhaust Area Radiation Monitors RE41 and 42 (Fuel Drop Monitors) was identified by the licensee. The monitors are listed in two locations. Tables 3.3-6, "Radiation Monitoring Instrumentation for Plant Operations," requires that they be operable in all modes and, if inoperable, the ACTION statement requires that the containment purge exhaust valves be maintained closed.

Table 3.3-10, "Accident Monitoring Instrument," lists the monitors as Accident Monitors, required for Modes 1, 2, and 3, and the ACTION statements require a plant shutdown should the monitors be inoperable.

These monitors (RE41 and 42) only provide one safety-related function which is to isolate the Containment Purge Exhaust Valves following a fuel-handling accident in the containment. They are not accident monitors (i.e., they are not required to provide post-accident information on containment radiation levels).

This function is provided by RE-05, R-04A, and RE-05A, and 1 Kaman and 2 GA containment high-range radiation monitors. These high-range monitors are listed as Item 16 on Table 3.3-10 and have a higher range than RE41 and 42. Hence, the Purge Exhaust Area Monitors, Item 15, can be deleted from Table 3.3-10 and the corresponding Surveillance Table 4.3-7.

The containment purge isolation capabilities of RE41 and 42 are not required in Modes 1-4, as Technical Specification 3.6.1.7 requires that the purge supply and exhaust valves be locked closed in these modes. Hence, in Table 3.3-6, the required modes should be changed from ALL to 5, 6.

The clarification to the ACTION statements for both the Containment Purge Exhaust and Fuel Storage Pool monitors make it clear that the function of these monitors is to control potential releases from fuel-handling accidents. They have no safety function related to power operation.

Based upon the above, the proposed changes to TS Tables 3.3-6, 3.3-10, 4.3-3, and 4.3-7 are acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, and environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on February 21, 1990 (55 FR 6135). Accordingly, based upon the environmental assessment, we have determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

4.0 CONCLUSION

We have 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, and (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.

Dated: February 21, 1990

Principal Contributor: D. Jaffe



UNITED STATES NUCLEAR REGULATORY COMMISSIONNORTHEAST NUCLEAR ENERGY COMPANYDOCKET NO. 50-423NOTICE OF ISSUANCE OF AMENDMENT TOFACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 46 to Facility Operating License No. NPF-49 issued to Northeast Nuclear Energy Company (the licensee), which revised the Technical Specifications for operation of the Millstone Nuclear Power Station, Unit No. 3 located in New London County, Connecticut. The amendment is effective as of the date of issuance.

The amendment changes the Millstone Unit 3 Technical Specifications (TS) as follows: (1) TS 4.2.2.2.2 is changed to revise the  $F_{xy}$  formula for three-loop operation, (2) TS 3/4.7.1.5 requires that main steam isolation valves (MSIVs) be OPERABLE in Mode 4; in addition, the action statement and surveillance requirements are revised based upon a recommendation by Westinghouse which allows an MSIV closure time of 120 seconds for Mode 4, and (3) TS Tables 3.3-6, 3.3-10, 4.3-3, and 4.3-7 are changed to eliminate the inconsistency between the tables, represent the actual function of containment purge exhaust area radiation monitors RE41 and 42 (fuel drop monitors), and avoid any unnecessary shutdown should RE41 or 42 become inoperable.

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.

9003050079 900221  
FDR ADOCK 05000423  
P FDC

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on November 17, 1989 (54 FR 47845). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated July 20, 1989, and supplemented October 16, 1989, (2) Amendment No.46 to License No. NPF-49, (3) the Commission's related Safety Evaluation, and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street N.W., Washington, D.C. and at the Waterford Public Library, 49 Rope Ferry Road, Waterford, Connecticut 06385. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects - I/II.

Dated at Rockville, Maryland this 21st day of February 1990.

FOR THE NUCLEAR REGULATORY COMMISSION



David H. Jaffe, Project Manager,  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation