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

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

DOCKET NO. 50-423

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
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 March 29, 1995, 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.

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. 120 , 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Phillip F. McKee, Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 18, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 120

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

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 2-5	3/4 2-5
3/4 2-6	3/4 2-6
3/4 2-8	3/4 2-8
3/4 2-11	3/4 2-11
3/4 2-12	3/4 2-12
3/4 2-13	3/4 2-13
3/4 2-15	3/4 2-15
3/4 2-17	3/4 2-17
6-20	6-20

POWER DISTRIBUTION LIMITS

3/4.2.2 HEAT FLUX HOT CHANNEL FACTOR - $F_Q(Z)$

FOUR LOOPS OPERATING

LIMITING CONDITION FOR OPERATION

3.2.2.1 $F_Q(Z)$ shall be limited by the following relationships:

$$F_Q(Z) \leq \frac{F_Q^{RTP}}{P} K(Z) \text{ for } P > 0.5$$

$$F_Q(Z) \leq \frac{F_Q^{RTP}}{0.5} K(Z) \text{ for } P \leq 0.5$$

F_Q^{RTP} = the F_Q limit at RATED THERMAL POWER (RTP) provided in the core operating limits report (COLR).

Where: $P = \frac{\text{THERMAL POWER}}{\text{RATED THERMAL POWER}}$, and

K(Z) = the normalized $F_Q(Z)$ as a function of core height specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

With $F_Q(Z)$ exceeding its limit:

a. For RAOC operation with $F_Q(Z)$ outside the applicable limit specified in the COLR:

(1) Within 15 minutes, control the AFD to within new AFD limits which are determined by reducing the applicable AFD limits by 1% AFD for each percent $F_Q(Z)$ exceeds its limits. Within 8 hours, reset the AFD alarm setpoints to these modified limits, or

LIMITING CONDITION FOR OPERATION (Continued)

(2) Reduce THERMAL POWER at least 1% for each 1% $F_Q(Z)$ exceeds the limit within 15 minutes and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next 4 hours; POWER OPERATION may proceed for up to a total of 72 hours; subsequent POWER OPERATION may proceed provided the Overpower ΔT Trip Setpoints have been reduced at least 1% for each 1% $F_Q(Z)$ exceeds the limit, or

(3) Verify that the requirements of Specification 4.2.2.1.3 for base load operation are satisfied and enter base load operation.

Where it is necessary to calculate the percent that $F_Q(Z)$ exceeds the limits for items (1) and (2) above, it shall be calculated as the maximum percent over the core height (Z) that $F_Q(Z)$ exceeds its limit by the following expression:

$$\left[\left[\frac{F_Q^M(Z) \times W(Z)}{\frac{F_Q^{RTP}}{P} \times K(Z)}\right] - 1\right] \times 100 \text{ for } P \geq 0.5$$

$$\left[\left[\frac{F_Q^M(Z) \times W(Z)}{\frac{F_Q^{RTP}}{0.5} \times K(Z)}\right] - 1\right] \times 100 \text{ for } P < 0.5$$

b. For base load operation outside the applicable limit specified in the COLR, perform either of the following actions:

(1) Place the core in an equilibrium condition where the limit in 4.2.2.1.2.C is satisfied, and remeasure $F_Q^M(Z)$, or

SURVEILLANCE REQUIREMENTS (Continued)

c. Satisfying the following relationship:

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{P \times W(Z)} \quad for\ P > 0.5$$

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{W(Z) \times 0.5} \quad for\ P \leq 0.5$$

where $F_Q^M(Z)$ is the measured $F_Q(Z)$ increased by the allowances for manufacturing tolerances and measurement uncertainty, F_Q^{RTP} is the F_Q limit, K(Z) is the normalized $F_Q(Z)$ as a function of core height, P is the relative THERMAL POWER, and W(Z) is the cycle-dependent function that accounts for power distribution transients encountered during normal operation. F_Q^{RTP}, K(Z), and W(Z) are specified in the CORE OPERATING LIMITS REPORT as per Specification 6.9.1.6.

d. Measuring $F_Q^M(Z)$ according to the following schedule:

(1) Upon achieving equilibrium conditions after exceeding by 10% or more of RATED THERMAL POWER, the THERMAL POWER at which $F_Q(Z)$ was last determined,* or

(2) At least once per 31 Effective Full Power Days, whichever occurs first.

e. With the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) increasing since the previous determination of $F_Q^M(Z)$, either of the following actions shall be taken:

(1) $F_Q^M(Z)$ shall be increased over that specified in Specification 4.2.2.1.2c by an appropriate factor specified in the COLR, or

* During power escalation at the beginning of each cycle, power level may be increased until a power level for extended operation has been achieved and power distribution map outlined.

SURVEILLANCE REQUIREMENTS (Continued)

e. With the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) increasing since the previous determination of $F_Q^M(Z)$, either of the following actions shall be taken:

(1) $F_Q^M(Z)$ shall be increased over that specified in 4.2.2.1.4.c by an appropriate factor specified in the COLR, or

(2) $F_Q^M(Z)$ shall be measured at least once per 7 Effective Full Power Days until 2 successive maps indicate that the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) is not increasing.

f. The limits specified in 4.2.2.1.4.c and 4.2.2.1.4.e are not applicable in the following core plane regions:

(1) Lower core region 0% to 15%, inclusive.
(2) Upper core region 85% to 100%, inclusive.

4.2.2.1.5 When $F_Q(Z)$ is measured for reasons other than meeting the requirements of Specifications 4.2.2.1.2 or 4.2.2.1.4, an overall measured $F_Q(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5% to account for measurement uncertainty.

POWER DISTRIBUTION LIMITS

HEAT FLUX HOT CHANNEL FACTOR - $F_Q(Z)$

THREE LOOPS OPERATING

LIMITING CONDITION FOR OPERATION

3.2.2.2 $F_Q(Z)$ shall be limited by the following relationships:

$$F_Q(Z) \leq \frac{F_Q^{RTP}}{P} [K(Z)] \text{ for } P > 0.375$$

$$F_Q(Z) \leq \left[\frac{F_Q^{RTP}}{0.375}\right] [K(Z)] \text{ for } P \leq 0.375$$

F_Q^{RTP} = The F_Q limit at RATED THERMAL POWER (RTP) specified in the CORE OPERATING LIMITS REPORT (COLR).

$$\text{Where: } P = \frac{\text{THERMAL POWER}}{\text{RATED THERMAL POWER}}, \text{ and}$$

K(Z) = the normalized $F_Q(Z)$ as a function of core height specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

With $F_Q(Z)$ exceeding its limit:

a. For RAOC operation with $F_Q(Z)$ outside the applicable limit specified in the COLR:

(1) Within 15 minutes, control the AFD to within new AFD limits which are determined by reducing the applicable AFD limits by 1% AFD for each percent $F_Q(Z)$ exceeds its limits. Within 8 hours, reset the AFD alarm setpoints to these modified limits, or

(2) Reduce THERMAL POWER at least 1% for each 1% $F_Q(Z)$ exceeds the limit within 15 minutes and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next 4 hours; POWER OPERATION may proceed for up to a total of 72 hours; subsequent

LIMITING CONDITION FOR OPERATION (Continued)

POWER OPERATION may proceed provided the Overpower ΔT Trip Setpoints have been reduced at least 1% for each 1% $F_Q(Z)$ exceeds the limit. The Overpower ΔT Trip Setpoint reduction shall be performed with the reactor in at least HOT STANDBY, or

(3) Verify that the requirements of Specification 4.2.2.1.3 for base load operation are satisfied and enter base load operation.

Where it is necessary to calculate the percent that $F_Q(Z)$ exceeds the limits for items (1) and (2) above, it shall be calculated as the maximum percent over the core height (Z) that $F_Q(Z)$ exceeds its limit by the following expression:

$$\left[\left[\frac{F_Q^M(Z) \times W(Z)}{\frac{F_Q^{RTP}}{P} \times K(Z)}\right] - 1\right] \times 100 \text{ for } P \geq 0.375$$

$$\left[\left[\frac{F_Q^M(Z) \times W(Z)}{\frac{F_Q^{RTP}}{0.375} \times K(Z)}\right] - 1\right] \times 100 \text{ for } P < 0.375$$

b. For base load operation outside the applicable limit specified in the COLR, perform either of the following actions:

(1) Place the core in an equilibrium condition where the limit in 4.2.2.2.2.C is satisfied, and remeasure $F_Q^M(Z)$, or

(2) Reduce THERMAL POWER at least 1% for each 1% $F_Q(Z)$ exceeds the limit within 15 minutes and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next 4 hours; POWER OPERATION may proceed for up to a total of 72 hours; subsequent POWER OPERATION may proceed provided the Overpower ΔT Trip Setpoints have been reduced at least 1% for each 1% $F_Q(Z)$ exceeds the limit. The Overpower ΔT Trip Setpoint reduction shall be performed with the reactor in at least HOT STANDBY. The percent that F_Q exceeds the limit shall be calculated as the maximum percent over the core height (Z) that $F_Q(Z)$ exceeds the limit using the following expression:

SURVEILLANCE REQUIREMENTS (Continued)

d. Measuring $F_Q^M(Z)$ according to the following schedule:

(1) Upon achieving equilibrium conditions after exceeding by 10% or more of RATED THERMAL POWER, the THERMAL POWER at which $F_Q(Z)$ was last determined,* or

(2) At least once per 31 Effective Full Power Days, whichever occurs first.

e. With the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) increasing since the previous determination of $F_Q^M(Z)$, either of the following actions shall be taken:

(1) $F_Q^M(Z)$ shall be increased over that specified in Specification 4.2.2.2.2c by an appropriate factor specified in the COLR, or

(2) $F_Q^M(Z)$ shall be measured at least once per 7 Effective Full Power Days until two successive maps indicate that the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) is not increasing.

f. The limits specified in Specifications 4.2.2.2.2c and 4.2.2.2.2e are not applicable in the following core plane regions:

(1) Lower core region from 0% to 15%, inclusive.
(2) Upper core region from 85% to 100%, inclusive.

*During power escalation at the beginning of each cycle, the power level may be increased until a power level for extended operation has been achieved and power distribution map obtained.

c. Satisfying the following relationship:

$$F_Q^M(Z) \leq \frac{F_Q^{RTP} \times K(Z)}{P \times W(Z)_{BL}} \text{ for } P > APL^{ND}$$

where: $F_Q^M(Z)$ is the measured $F_Q(Z)$. The F_Q^{RTP} is the F_Q limit, the normalized $F_Q(Z)$ as a function of core height. P is the relative THERMAL POWER. $W(Z)_{BL}$ is the cycle-dependent function that accounts for limited power distribution transients encountered during base load operation. F_Q^{RTP}, K(Z), and $W(Z)_{BL}$ are specified in the COLR as per Specification 6.9.1.6.

d. Measuring $F_Q^M(Z)$ in conjunction with target flux difference determination according to the following schedule:

(1) Prior to entering base load operation after satisfying Section 4.2.2.2.3, unless a full core flux map has been taken in the previous 31 Effective Full Power Days with the relative THERMAL POWER having been maintained above APL^{ND} for the 24 hours prior to mapping, and

(2) At least once per 31 Effective Full Power Days.

e. With the maximum value of

$$\frac{F_Q^M(Z)}{K(Z)}$$

over the core height (Z) increasing since the previous determination of $F_Q^M(Z)$, either of the following actions shall be taken:

(1) $F_Q^M(Z)$ shall be increased over that specified in 4.2.2.2.4.c by an appropriate factor specified in the COLR, or

CORE OPERATING LIMITS REPORT (Cont.)

2. Shutdown Rod Insertion Limit for Specification 3/4.1.3.5,

3. Control Rod Insertion Limits for Specification 3/4.1.3.6,

4. Axial Flux Difference Limits, target band, and APL^{ND} for Specifications 3/4.2.1.1 and 3/4.2.1.2,

5. Heat Flux Hot Channel Factor, K(z), W(z), APL^{ND}, and $W(z)_{BL}$ for Specifications 3/4.2.2.1 and 3/4.2.2.2.

6. Nuclear Enthalpy Rise Hot Channel Factor, Power Factor Multiplier for Specification 3/4.2.3.

6.9.1.6.b The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in:

1. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (W Proprietary). (Methodology for Specifications 3.1.1.3--Moderator Temperature Coefficient, 3.1.3.5--Shutdown Bank Insertion Limit, 3.1.3.6--Control Bank Insertion Limits, 3.2.1--Axial Flux Difference, 3.2.2--Heat Flux Hot Channel Factor, 3.2.3--Nuclear Enthalpy Rise Hot Channel Factor.)

2. WCAP-8385, "Power Distribution Control and Load Following Procedures - Topical Report," September 1981 (W Proprietary).

3. T. M. Anderson to K. Kniel (Chief of Core Performance Branch, NRC), January 31, 1980--Attachment: Operation and Safety-Analysis Aspects of an Improved Load Follow Package.

4. NUREG-800, Standard Review Plan, U.S. Nuclear Regulatory Commission, Section 4.3, Nuclear Design, July 1981 Branch Technical Position CPB 4.3-1, Westinghouse Constant Axial Offset Control (CAOC), Revision 2, July 1981.

5. WCAP-10216-P-A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL FQ SURVEILLANCE TECHNICAL SPECIFICATION," Rev. 1, October 1993 (W Proprietary). (Methodology for Specifications 3.2.1--Axial Flux Difference [Relaxed Axial Offset Control] and 3.2.2--Heat Flux Hot Channel Factor [W(z) surveillance requirements for F_Q Methodology].)

6. WCAP-9561-P-A, ADD. 3, Rev. 1, "BART A-1: A COMPUTER CODE FOR THE BEST ESTIMATE ANALYSIS OF REFLOOD TRANSIENTS--SPECIAL REPORT: THIMBLE MODELING W ECCS EVALUATION MODEL," July 1986 (W Proprietary). (Methodology for Specification 3.2.2--Heat Flux Hot Channel Factor.)

7. WCAP-10266-P-A, Rev. 2, "THE 1981 VERSION OF WESTINGHOUSE EVALUATION MODEL USING BASH CODE," March 1987 (W Proprietary). (Methodology for Specification 3.2.2--Heat Flux Hot Channel Factor.)