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



NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NC. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 90 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 April 13, 1983, as supplemented, 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 reculations of the Commission;
 - C. There is reasonable assurance (1) that the activities authorized by this amendment can be conducted without endargering 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.



- 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. 90, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective on the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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James R. Miller, Chief Operating Reactors Branch #3 Division of Licensing

Attachment: Charges to the Technical Specifications

Date of Issuance: December 30, 1983

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ATTACHMENT TO LICENSE AMENDMENT NO. 90

FACILITY OPERATING LICENSE NO. DPR-65

DOCKET NO. 50-336

Remove and 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 provided to maintain document completeness.

Remove	Insert
2-2	2-?
2-4	2-4
3/4 1-26	3/4 1-26
3/4 2-4	3/4 2-4
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2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

REACTOR CORE

2.1.1 The combination of THERMAL POWER, pressurizer pressure, and maximum cold leg coolant temperature shall not exceed the limits shown on Figure 2.1-1.

APPLICABILITY: MODES 1 and 2.

ACTION:

Whenever the point defined by the combination of maximum cold leg temperature and THERMAL POWER has exceeded the appropriate pressurizer pressure line, be in HOT STANDBY within 1 hour.

REACTOR COOLANT SYSTEM PRESSURE

2.1.2 The Reactor Coolant System pressure shall not exceed 2750 psia.

APPLICABILITY: MODES 1, 2, 3, 4 and 5.

ACTION:

MODES 1 and 2

Whenever the Reactor Coolant System pressure has exceeded 2750 psia, be in HOT STANDBY with the Reactor Coolant System pressure within its limit within 1 hour.

MODES 3, 4 and 5

Whenever the Reactor Coolant System pressure has exceeded 2750 psia, reduce the Reactor Coolant System pressure to within its limit within 5 minutes.



TABLE 2.2-1

REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS

FUNCTIONAL UNIT		TRIP SETPOINT	ALLOWABLE VALUES	
1.	Manual Reactor Trip	Not Applicable	Not Applicable	
2.	Power Level-High			
	Four Reactor Coolant Pumps Operating	< 9.6% above THERMAL POWER, with a minimum setpoint of < 14.6% of RATED THERMAL POWER, and a maximum of < 106.6% of RATED THERMAL POWER.	\leq 9.7% above THERMAL POWER, with a minimum of \leq 14.7% of RATED THERMAL POWER, and a maximum of \leq 106.7% of RATED THERMAL POWER.	
3.	Reactor Coolant Flow - Low (1)			
	Four Reactor Coolant Pumps Operating	> 91.7% of reactor coolant flow with 4 pumps operating*.	> 90.1% of reactor coolant flow with 4 pumps operating*.	
4.	Reactor Coolant Pump Speed - Low	<u>></u> 830 rpm	<u>></u> 823 rpm	
5.	Pressurizer Pressure – High	<u><</u> 2400 psia	<u><</u> 2408 psia	
6.	Containment Pressure - High	<u><</u> 4.75 psig	<u><</u> 5.23 psig	
7.	Steam Gonorator Pressure - Low (2) (5)	<u>></u> 500 psia	<u>, 492 psia</u>	
8.	Steam Generator Water Level - Low (5)	<u>></u> 36.0% Water Level - each steam generator	≥ 35.2% Water Level - each steam generator	
9.	Local Power Density - High (3)	Trip setpoint adjusted to not exceed the limit lines of Figures 2.2~1 and 2.2-2 (4).	Trip setpoint adjusted to not exceed the limit lines of Figures 2.2-1 and 2.2-2 (4).	

* Design Reactor Coolant flow with 4 pumps operating is 350,000 gpm.

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SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.2 LIMITING SAFETY SYSTEM SETTINGS

REACTOR TRIP SETPOINTS

2.2.1 The reactor protective instrumentation setpoints shall be set consistent with the Trip Setpoint values shown in Table 2.2-1.

APPLICABILITY: AS SHOWN FOR EACH CHANNEL IN TABLE 3.3-1.

ACTION:

With a reactor protective instrumentation setpoint less conservative than the value shown in the Allowable Values column of Table 2.2-1, declare the channel inoperable and apply the applicable ACTION statement requirement of Specification 3.3.1.1 until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

REACTIVITY CONTROL SYSTEMS

CEA DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full length (shutdown and control) CEA drop time, from a fully withdrawn position, shall be < 2.75 seconds from when electrical power is interrupted to the CEA drive mechanism until the CEA reaches its 90 percent insertion position with:

a. $T_{avg} \geq 515^{\circ}F$, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODE 3.

ACTION:

- a. With the drop time of any full length CEA determined to exceed the above limit, restore the CEA drop time to within the above limit prior to proceeding to MODE 1 or 2.
- b. With the CEA drop times within limits but determined at less than full reactor coolant flow, operation may proceed provided THERMAL POWER is restricted to less than or equal to the maximum THERMAL POWER level allowable for the reactor coolant pump combination operating at the time of CEA drop time determination.

SURVEILLANCE REQUIREMENTS

4.1.3.4 The CEA drop time of full length CEAs shall be demonstrated through measurement prior to reactor criticality:

- a. For all CEAs following each removal of the reactor vessel head,
- b. For specifically affected individual CEAs following any maintenance on or modification to the CEA drive system which could affect the drop time of those specific CEAs, and
- c. At least once per 18 months.

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REACTIVITY CONTROL SYSTEMS

POSITION INDICATOR CHANNELS (Continued)

LIMITING CONDITION FOR OPERATION

- b) The CEA group(s) with the inoperable position indicator is fully inserted, and subsequently maintained fully inserted, while maintaining the withdrawal sequence and THERMAL POWER level required by Specification 3.1.3.6 and when this CEA group reaches its fully inserted position, the "Full In" limit of the CEA with the inoperable position indicator is actuated and verifies this CEA to be fully inserted. Subsequent operation shall be within the limits of Specification 3.1.3.6.
- c. With a maximum of one reed switch position indicator channel per group or one pulse counting position indicator channel per group inoperable and the CEA(s) with the inoperable position indicator channel at either its fully inserted position or fully withdrawn position, operation may continue provided:
 - The position of this CEA is verified immediately and at least once per 12 hours thereafter by its "Full In" or "Full Out" limit (as applicable),
 - The fully inserted CEA group(s) containing the inoperable position indicator channel is subsequently maintained fully inserted, and
 - 3. Subsequent operation is within the limits of Specification 3.1.3.6.
- d. With one or more pulse counting position indicator channels inoperable, operation in MODES 1 and 2 may continue for up to 24 hours provided all of the reed switch position indicator channels are OPERABLE.

SURVEILLANCE REQUIREMENTS

4.1.3.3 Each position indicator channel shall be determined to be OPERABLE by verifying the pulse counting position indicator channels and the reed switch position indicator channels agree within 6 steps at least once per 12 hours except during time intervals when the Deviation circuit is inoperable, then compare the pulse counting position indicator and reed switch position indicator channels at least once per 4 hours.

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Change No. 4 September 26, 1975







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TOTAL PLANAR RADIAL PEAKING FACTOR - F_{xv}^{i}

LIMITING CONDITION FOR OPERATION

3.2.2 The calculated value of F_{xy}^{T} , defined as $F_{xy}^{T} = F_{xy}(1+T_{q})$, shall be limited to \leq 1.615. APPLICABILITY: MODE 1*. ACTION: With F_{xx}^{T} > 1.615, within 6 hours either: Reduce THERMAL POWER to bring the combination of THERMAL POWER a. and F_{XY}^{I} to within the limits of Figure 3.2-3 and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limit of Specification 3.1.3.6; or Be in at least HOT STANDBY. b. SURVEILLANCE REQUIREMENTS 4.2.2.1 The provisions of Specification 4.0.4 are not applicable. 4.2.2.2 F_{xy}^{T} shall be calculated by the expression $F_{xy}^{T} = F_{xy}(1+T_{q})$ and F_{xy}^{T} shall be determined to be within its limit at the following intervals: Prior to operation above 70 percent of RATED THERMAL POWER after a. each fuel loading, At least once per 31 days of accumulated operation in MODE 1, ь. and Within four hours if the AZIMUTHAL POWER TILT (T_a) is > 0.02. c. See Special Test Exception 3.10.2.

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 $\leq \mathbf{F}_{r}^{\mathsf{T}}:\mathbf{F}_{xy}^{\mathsf{T}}\left(\mathbf{F}_{r} \times \left(\mathbf{I} + \mathbf{T}_{q}\right):\mathbf{F}_{xy} \times \left(\mathbf{I} + \mathbf{T}_{q}\right)\right)$



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SURVEILLANCE REQUIREMENTS (Continued)

4.2.2.3 F_{xy} shall be determined each time a calculation of F_{xy}^{T} is required by using the incore detectors to obtain a power distribution map with all full length CEAs at or above the Long Term Steady State Insertion Limit for the existing Reactor Coolant Pump combination. This determination shall be limited to core planes between 15% and 85% of full core height inclusive and shall exclude regions influenced by grid effects.

4.2.2.4 T_q shall be determined each time a calculation of F_{xy}^{T} is required and the value of T_q used to determine F_{xy}^{T} shall be measured value of T_q.

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AZIMUTHAL POWER TILT - Ta

LIMITING CONDITION FOR OPERATION

3.2.4 The AZIMUTHAL POWER TILT (T_q) shall not exceed G.02.

APPLICABILITY: MODE 1 above 50% of RATED THERMAL POWER*.

ACTION:

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- a. With the indicated AZIMUTHAL POWER TILT determined to be > 0.02 but < 0.10, either correct the power tilt within two hours or determine within the next 2 hours and at least once per subsequent 8 hours, that the TOTAL PLANAR RADIAL PEAKING FACTOR (F_{xy}^T) and the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) are within the limits of Specifications 3.2.2 and 3.2.3.
- b. With the indicated AZIMUTHAL POWER TILT determined to be > 0.10, operation may proceed for up to 2 hours provided that the TOTAL INTEGRATED RADIAL PEAKING FACTOR (F_r^T) and TOTAL PLANAR RADIAL PEAKING FACTOR (F_{xy}^T) are within the limits of Specifications 3.2.2 and 3.2.3. Subsequent operation for the purpose of measurement and to identify the cause of the tilt is allowable provided the THERMAL POWER level is restricted to < 20% of the maximum allowable THERMAL POWER level for the existing Reactor Coolant Pump combination.

SURVEILLANCE REQUIREMENT

4.2.4.1 The provisions of Specification 4.0.4 are not applicable.

4.2.4.2 The AZIMUTHAL POWER TILT shall be determined to be within the limit by:

a. Calculating the tilt at least once per 7 days when the Channel High Deviation Alarm is OPERABLE,

See Special Test Exception 3.10.2.

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TOTAL INTEGRATED RADIAL PEAKING FACTOR - F

LIMITING CONDITION FOR OPERATION

3.2.3 The calculated value of F_r^T , defined as $F_r^T = F_r(1+T_q)$, shall be limited to < 1.565.

APPLICABILITY: MODE 1*.

ACTION:

With $F_{\mu}^{T} > 1.565$, within 6 hours either:

- a. Reduce THERMAL POWER to bring the combination of THERMAL POWER and F_r^T to within the limits of Figure 3.2-3 and withdraw the full length CEAs to or beyond the Long Term Steady State Insertion Limits of Specification 3.1.3.6; or
- b. Be in at least HOT STANDBY.

SURVEILLANCE REQUIREMENTS

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 F_r^T shall be calculated by the expression $F_r^T = F_r(1+T_q)$ and F_r^T shall be determined to be within its limit at the following intervals:

- Prior to operation above 70 percent of RATED THERMAL POWER after each fuel loading,
- At least once per 31 days of accumulated operation in MODE 1, and
- c. Within four hours if the AZIMUTHAL POWER TILT (T_{a}) is > 0.020.

4.2.3.3 F_r shall be determined each time a calculation of F_r^T is required by using the incore detectors to obtain a power distribution map with all full length CEAs at or above the Long Term Steady State Insertion Limit for the existing Reactor Coolant Pump Combination.

4.2.3.4 T_q shall be determined each time a calculation of F_r^T is required and the value of T_q used to determine F_r^T shall be the measured value of T_q.

* See Special Test Exception 3.10.2. MILLSTONE - UNIT 2 3/4 2-9

TABLE 3.2-1

DNB MARGIN

LIMITS

Parameter	Four Reactor Coolant Pumps Operating
Cold Leg Temperature	<u><</u> 549°F
Pressurizer Pressure	<u>></u> 2225 psia*
Reactor Coolant Flow Rate	≥ 350,000 gpm
AXIAL SHAPE INDEX	Figure 3.2-4

*Limit not applicable during either a THERMAL POWER ramp increase in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step increase of greater than 10% of RATED THERMAL POWER.

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DNB MARGIN

LIMITING CONDITION FOR OPERATION

3.2.6 The DNB margin shall be preserved by maintaining the cold leg temperature, pressurizer pressure, reactor coolant flow rate, and AXIAL SHAPE INDEX within the limits specified in Table 3.2-1 and Figure 3.2-4.

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters exceeding its specified limits, restore the parameter to within its above specified limits within 2 hours or reduce THERMAL POWER to $\leq 5\%$ of RATED THERMAL POWER within the next 4 hours.

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SURVEILLANCE REQUIREMENTS

4.2.6 The cold leg temperature, pressurizer pressure, reactor coolant flow rate, and AXIAL SHAPE INDEX shall be determined to be within the limits of Table 3.2-1 and Figure 3.2-4 at least once per 12 hours.

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PLANT SYSTEMS

AUXILIARY FEEDWATER PUMPS

LIMITING CONDITION FOR OPERATION

3.7.1.2 At least three steam generator auxiliary feedwater pumps shall be OPERABLE with:

- a. Two feedwater pumps capable of being powered from separate OPERABLE emergency busses, and
- b. One feedwater pump capable of being powered from an OPERABLE steam supply system.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

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- a. With one auxiliary feedwater pump inoperable, restore the required auxiliary feedwater pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
 - b. With two auxiliary feedwater pumps inoperable be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following 6 hours.
 - c. With three auxiliary feedwater pumps inoperable, immediately initiate corrective action to restore at least one auxiliary feedwater pump to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 - 1. Starting each pump from the control room,
 - 2. Verifying that:
 - a) Each motor driven pump develops a discharge pressure of ≥ 1070 psig on recirculation flow, and
 - b) The steam turbine driven pump develops a discharge pressure of >1080 psig on recirculation flow when the secondary steam supply pressure is greater than 800 psig. The provisions of Specification 4.0.4 are not applicable for entry into Mode 3.

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TABLE 4.7-1

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MILLS	STEAM LINE SAFETY VALVES			
TONE -	VALV	E NUMBERS	LIFT SETTING (± 1%)	ORIFICE SIZE
UNIT	a.	2-MS-246 & 2-MS-247	1000 psia	4.515 in. ²
10	b.	2-MS-242 & 2-MS-254	1005 psia	4.515 in. ²
	с.	2-MS-245 & 2-MS-249	1015 psia	4.515 in. ²
	d.	2-MS-241 & 2-MS-252	1025 psta	4.515 in. ²
8/4 7-3	e.	2-MS-244 & 2-MS-251	1035 psta	4.515 in. ²
	·f.	2-MS-240 & 2-MS-250	1045 psia	4.515 in. ²
	g.	2-MS-239, 2-MS-243, 2-MS-248 & 2-MS-253	1050 ps ta	4.515 in. ²
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