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. 177
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 August 5, 1999, 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. 177, 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 issuance, and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James W. Clifford

James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: November 15, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 177

FACILITY OPERATING LICENSE NO. NPF-49

DOCKET NO. 50-423

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

| Remove | Insert |
|---|---|
| 3/4 6-12 | 3/4 6-12 |
| 3/4 6-13 | 3/4 6-13 |
| 3/4 8-7 | 3/4 8-7 |
| 3/4 8-18 | 3/4 8-18 |
| 3/4 9-13 | 3/4 9-13 |
| B 3/4 3-2 | B 3/4 3-2 |
| B 3/4 4-27 | B 3/4 4-27 |
| B 3/4 6-1a | B 3/4 6-1a |
| B 3/4 8-3 | B 3/4 8-3 |

## 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

### CONTAINMENT QUENCH SPRAY SYSTEM

### LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent Containment Quench Spray subsystems shall be OPERABLE.

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

ACTION:

With one Containment Quench Spray subsystem inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Quench Spray subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days:

1) Verifying that each valve (manual, power operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position; and

2) Verifying the temperature of the borated water in the refueling water storage tank is between 40°F and 50°F.

b. By verifying that each pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5;

c. At least once each REFUELING INTERVAL, by:

1) Verifying that each automatic valve in the flow path actuates to its correct position on a CDA test signal, and

2) Verifying that each spray pump starts automatically on a CDA test signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

## RECIRCULATION SPRAY SYSTEM

### LIMITING CONDITION FOR OPERATION

3.6.2.2 Two independent Recirculation Spray Systems shall be OPERABLE.

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

ACTION:

With one Recirculation Spray System inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Recirculation Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

### SURVEILLANCE REQUIREMENTS

4.6.2.2 Each Recirculation Spray System shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;

b. By verifying that each pump's developed head at the test flow point is greater than or equal to the required developed head when tested pursuant to Specification 4.0.5;

c. At least once each REFUELING INTERVAL by verifying that on a CDA test signal, each recirculation spray pump starts automatically after a 660 ±20 second delay;

d. At least once each REFUELING INTERVAL, by verifying that each automatic valve in the flow path actuates to its correct position on a CDA test signal; and

e. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

8) Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 5335 kW;

9) Verifying the diesel generator's capability to:

a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,

b) Transfer its loads to the offsite power source, and

c) Be restored to its standby status.

10) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;

11) Verifying that the fuel transfer pump transfers fuel from each fuel storage tank to the day tank of each diesel via the installed cross-connection lines;

12) Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within ± 10% of its design interval; and

13) Verifying that the following diesel generator lockout features prevent diesel generator starting:

a) Engine overspeed,

b) Lube oil pressure low (2 of 3 logic),

c) Generator differential, and

d) Emergency stop.

h. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting both diesel generators simultaneously, during shutdown, and verifying that both diesel generators achieve generator voltage and frequency at 4160 ± 420 volts and 60 ± 0.8 Hz in less than or equal to 11 seconds; and

i. At least once per 10 years by draining each fuel oil storage tank, removing the accumulated sediment and cleaning the tank using a sodium hypochlorite solution.

LIMITING CONDITION FOR OPERATION

3.8.3.2 As a minimum, one train (A or B) of the following electrical busses shall be OPERABLE:

a. Train - "A" consisting of:

1) One 4160 volt AC Emergency Bus #34C, and
2) Four 480 volt AC Emergency Busses #32R, #32S, #32T, #32Y, and
3) Two 120 volt AC Vital Busses consisting of:

a) Bus #VIAC-1 energized from Inverter #INV-1 connected to DC Bus #301A-1, and
b) Bus #VIAC-3 energized from Inverter #INV-3 connected to DC Bus #301A-2, and

4) Two 125 volt DC Busses consisting of:

a) Bus #301A-1 energized from Battery Bank #301A-1, and
b) Bus #301A-2 energized from Battery Bank #301A-2.

OR

b. Train - "B" consisting of

1) One 4160 volt AC Emergency Bus #34D, and^[
2) Four 480 volt AC Emergency Busses #32U, #32V, #32W, #32X, and
3) Two 120 volt AC Vital Busses consisting of:

a) Bus #VIAC-2 energized from Inverter #INV-2 connected to DC Bus #301B-1, and
b) Bus #VIAC-4 energized from Inverter #INV-4 connected to DC Bus #301B-2, and

4) Two 125 volt DC Busses consisting of:

a) Bus #301B-1 energized from Battery Bank #301B-1, and

b) Bus #301B-2 energized from Battery Bank #301B-2.

APPLICABILITY: MODES 5 and 6.

ACTION:

With any of the above required electrical busses not energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, crane operation with loads over the fuel storage pool, or operations with a potential for draining the reactor vessel, initiate corrective action to energize the required electrical busses in the specified manner as soon as possible.

REFUELING OPERATIONS

3/4.9.12 FUEL BUILDING EXHAUST FILTER SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 Two independent Fuel Building Exhaust Filter Systems shall be OPERABLE. At least one Fuel Building Exhaust Filter System shall be in operation whenever any evolution involving movement of fuel within the storage pool or crane operations with loads over the storage pool is in progress.

APPLICABILITY: Whenever irradiated fuel with less than 60 days decay is in the storage pool.

ACTION:

a. With one Fuel Building Exhaust Filter System inoperable, fuel movement within the storage pool or crane operation with loads over the storage pool may proceed provided the OPERABLE Fuel Building Exhaust Filter System is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With no Fuel Building Exhaust Filter System OPERABLE, suspend all operations involving movement of fuel within the storage pool or crane operation with loads over the storage pool until at least one Fuel Building Exhaust Filter System is restored to OPERABLE status.

c. The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12.1 The above required Fuel Building Exhaust Filter Systems shall be demonstrated OPERABLE:

a. Within 31 days prior to moving fuel within or loads over the storage pool when irradiated fuel with less than 60 days decay is present by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers, and verifying a system flow rate of 20,700 cfm ±10% and that the system operates for at least 10 continuous hours with the heaters operating;

b. At least once each REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM INSTRUMENTATION and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION (Continued)

The methodology, as defined in WCAP-10991 to derive the Nominal Trip Setpoints, is based upon combining all of the uncertainties in the channels. Inherent in the determination of the Nominal Trip Setpoints are the magnitudes of these channel uncertainties. Sensors and other instrumentation utilized in these channels should be capable of operating within the allowances of these uncertainty magnitudes. Occasional drift in excess of the allowance may be determined to be acceptable based on the other device performance characteristics. Device drift in excess of the allowance that is more than occasional, may be indicative of more serious problems and would warrant further investigation.

The above Bases do not apply to the two radiation monitors in the ESF Table (Item 3C and Item 7E). For these radiation monitors the allowable values are essentially nominal values. Due to the uncertainties involved in radiological parameters, the methodologies of WCAP-10991 were not applied. Actual trip setpoints will be reestablished below the allowable value based on calibration accuracies and good practices.

The measurement for response time at the specified frequencies provides assurance that the Reactor trip and the Engineered Safety Features actuation associated with each channel is completed within the time limit assumed in the safety analyses. The RTS and ESF response times are included in the "Technical Requirements Manual." Any changes to the RTS and ESF response times shall be in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operations Review Committee. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping, or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response time. Detector response times may be measured by the in situ on line noise analysis-response time degradation method described in the Westinghouse Topical Report, "The Use of Process Noise Measurements To Determine Response Characteristics of Protection Sensors in U.S. Plants," August 1983.

## 3/4.4.10 STRUCTURAL INTEGRITY

The inservice inspection and testing programs for ASME Code Class 1, 2, and 3 components ensure that the structural integrity and operational readiness of these components will be maintained at an acceptable level throughout the life of the plant. These programs are in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g).

Components of the Reactor Coolant System were designed to provide access to permit inservice inspections in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, 80 Edition and Addenda through Winter.

## 3/4.4.11 REACTOR COOLANT SYSTEM VENTS

Reactor Coolant System vents are provided to exhaust noncondensible gases and/or steam from the Reactor Coolant System that could inhibit natural circulation core cooling. The OPERABILITY of least one Reactor Coolant System vent path from the reactor vessel head and the pressurizer steam space ensures that the capability exists to perform this function. The reactor vessel head vent path consists of two parallel flow paths with redundant isolation valves (3RCS*SV8095A, 3RCS*SV8096A and 3RCS*SV8095B, 3RCS*SV8096B) in each flow path. The pressurizer steam space vent path consists of two parallel paths with a power operated relief valve (PORV) and PORV block valve in series (3RCS*PCV455A, 3RCS*MV800A and 3RCS*PCV456, 3RCS*MV8000B).

The valve redundancy of the Reactor Coolant System vent paths serves to minimize the probability of inadvertent or irreversible actuation while ensuring that a single failure of a vent valve, power supply, or control system does not prevent isolation of the vent path.

The function, capabilities, and testing requirements of the Reactor Coolant System vents are consistent with the requirements of Item II.B.1 of NUREG-0737, "Clarification of TMI Action Plant Requirements," November 1980.

3/4.6.1.2 CONTAINMENT LEAKAGE (continued)

are representative of those which would occur at accident pressure while meeting the intent of the LCO. This test methodology is consistent with the guidance provided in ANSI/ANS 56.8-1981 for meeting the requirements set forth in Appendix J.

The surveillance testing for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50. A partial exemption has been granted from the requirements of 10CFR50, Appendix J, Section III.D.1(a). The exemption removes the requirement that the third Type A test for each 10-year period be conducted when the plant is shut down for the 10-year plant inservice inspection (Reference License Amendment No. 111).

The enclosure building bypass leakage paths are listed in the "Technical Requirements Manual." The addition or deletion of the enclosure building bypass leakage paths shall be made in accordance with Section 50.59 of 10CFR50 and approved [by the Plant Operation Review Committee.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provides assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests. While the leakage rate limitation is specified at accident pressure, $P_a$, the actual surveillance testing is performed by applying a pressure greater than or equal to $P_a$. This higher pressure accounts for test instrument uncertainties and test volume stabilization changes which occurs under actual test conditions. This method of performing surveillance testing is consistent with the guidance provided in ANSI 56.8-1981 and ensures that the leakage rate measured meets the intent of the LCO and Appendix J.

3/4.6.1.4 and 3/4.6.1.5 AIR PRESSURE and AIR TEMPERATURE

The limitations on containment pressure and average air temperature ensure that: (1) the containment structure is prevented from exceeding its design negative pressure of 8 psia, and (2) the containment peak pressure does not exceed the design pressure of 60 psia during LOCA conditions. Measurements shall be made at all listed locations, whether by fixed or portable instruments, prior to determining the average air temperature. The limits on the pressure and average air temperature are consistent with the assumptions of the safety analysis. The minimum total containment pressure of 10.6 psia is determined by summing the minimum permissible air partial pressure of 8.9 psia and the maximum expected vapor pressure of 1.7 psia (occurring at the maximum permissible containment initial temperature of 120°F).

## 3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers provide assurance of breaker reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker. Each manufacturer's molded case and metal case circuit breakers are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers are tested. If a wide variety exists within any manufacturer's brand of circuit breakers, it is necessary to divide that manufacturer's breakers into groups and treat each group as a separate type of breaker for surveillance purposes.

Long-time trip elements are tested by injecting a test current (300% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer. Short-time trip elements are tested by injecting a test current (150% of the pickup) in accordance with the manufacturer's specifications and verifying that the circuit breaker operates within the time delay band width for that current as specified by the manufacturer.

The molded case circuit breakers and unitized starters will be tested in accordance with Manufacturer's Instructions.

The OPERABILITY of the motor-operated valves thermal overload protection and integral bypass devices ensures that the thermal overload protection will not prevent safety-related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of the thermal overload protection are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

"Technical Requirements Manual," lists containment penetration conductor overcurrent protective devices and thermal overload protection bypassed only under accident conditions and thermal overload protection not bypassed under accident conditions. The addition or deletion of any device shall be made in accordance with Section 50.59 of 10CFR50 and approved by the Plant Operation Review Committee.