



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. 59  
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 February 26, 1990, as supplemented April 30, December 6 and 19, 1990, 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.

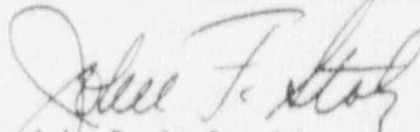
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 59, 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: January 25, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 59

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.

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## 3/4.6 CONTAINMENT SYSTEMS

### 3/4.6.1 PRIMARY CONTAINMENT

#### CONTAINMENT INTEGRITY

#### LIMITING CONDITION FOR OPERATION

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3.6.1.1 Primary CONTAINMENT INTEGRITY shall be maintained.

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

ACTION:

Without primary CONTAINMENT INTEGRITY, restore CONTAINMENT INTEGRITY within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.1.1 Primary CONTAINMENT INTEGRITY shall be demonstrated:

- a. At least once per 31 days by verifying that all penetrations\* not capable of being closed by OPERABLE containment automatic isolation valves or operator action during periods when containment isolation valves are opened under administrative control,\*\* and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in their positions.
- b. By verifying that each containment air lock is in compliance with the requirements of Specification 3.6.1.3; and
- c. After each closing of each penetration subject to Type B testing, except the containment air locks, if opened following a Type A or B test, by leak rate testing the seal with gas at a pressure not less than  $P_a$ , 53.27 psia (38.57 psig), and verifying that when the measured leakage rate for these seals is added to the leakage rates determined pursuant to Specification 4.6.1.2d. for all other Type B and C penetrations, the combined leakage rate is less than  $0.60 L_a$ .

\* Except valves, blind flanges, and deactivated automatic valves which are located inside the containment and are locked, sealed, or otherwise secured in the closed position. These penetrations shall be verified closed during each COLD SHUTDOWN except that such verification need not be performed more often than once per 92 days.

\*\* The following manual valves may be opened on an intermittent basis under administrative control. 3FPW-V661, 3FPW-666, 3SSP-V13, 3SSP-V14, 3HCS-V2, 3HCS-V3, 3HCS-V9, 3HCS-V10, 3HCS-V6, 3HCS-V13, 3SAS-V875, 3SAS-V50, 3CHS-V371, 3CCP-V886, 3CCP-V887, 3CVS-V13.

## CONTAINMENT SYSTEMS

### CONTAINMENT LEAKAGE

#### LIMITING CONDITION FOR OPERATION

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3.6.1.2 Containment leakage rates shall be limited to:

- a. An overall integrated leakage rate of less than or equal to  $L_a$ , 0.65% by weight of the containment air per 24 hours at  $P_a$ , 53.27 psia (38.57 psig);
- b. A combined leakage rate of less than  $0.60 L_a$  for all penetrations and valves subject to Type B and C tests, when pressurized to  $P_a$ ; and
- c. A combined leakage rate of less than or equal to  $0.042 L_a$  for all penetrations identified in Table 3.6-1 as Enclosure Building bypass leakage paths when pressurized to  $P_a$ .

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

#### ACTION:

With the measured overall integrated containment leakage rate exceeding  $0.75 L_a$ , or the measured combined leakage rate for all penetrations and valves subject to Type B and C tests exceeding  $0.60 L_a$ , or the combined bypass leakage rate exceeding  $0.042 L_a$ , restore the overall integrated leakage rate to less than  $0.75 L_a$ , the combined leakage rate for all penetrations subject to Type B and C tests to less than  $0.60 L_a$ , and the combined bypass leakage rate to less than  $0.042 L_a$  prior to increasing the Reactor Coolant System temperature above 200°F.

#### SURVEILLANCE REQUIREMENTS

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4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR Part 50 using methods and provisions of ANSI N45.4-1972 (Total Time Method) and/or ANSI/ANS 56.8-1981 (Mass Point Method):

- a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at  $40 \pm 10$  month intervals during shutdown at a pressure not less than  $P_a$ , 53.27 psia (38.57 psig) during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection;
- b. If any periodic Type A test fails to meet  $0.75 L_a$ , the test schedule for subsequent Type A tests shall be reviewed and approved by the Commission. If two consecutive Type A tests fail to meet  $0.75 L_a$ , a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet  $0.75 L_a$  at which time the above test schedule may be resumed;



## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- c. The accuracy of each Type A test shall be verified by a supplemental test which:
- 1) Confirms the accuracy of the test by verifying that the supplemental test results,  $L_s$ , minus the sum of the Type A and the superimposed leak,  $L_o$ , is equal to or less than  $0.25 L_a$ ;
  - 2) Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test; and
  - 3) Requires that the rate at which gas is injected into the containment or bled from the containment during the supplemental test is between  $0.75 L_a$  and  $1.25 L_a$ .
- d. Type B and C tests shall be conducted with gas at  $P_a$ , 53.27 psia (38.57 psig), at intervals no greater than 24 months except for tests involving:
- 1) Air locks
- e. The combined bypass leakage rate shall be determined to be less than or equal to  $0.042 L_a$  by applicable Type B and C tests at least once per 24 months except for penetrations which are not individually testable; penetrations not individually testable shall be determined to have no detectable leakage when tested with soap bubble while the containment is pressurized to  $P_a$ , 53.27 psig (38.57 psig), during each Type A test;
- f. Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3;
- g. Purge supply and exhaust isolation valves shall be demonstrated OPERABLE by the requirements of Specifications 4.6.3.2.c and 4.9.9.
- h. The provisions of Specification 4.0.2 are not applicable.



TABLE 3.6-1

ENCLOSURE BUILDING BYPASS LEAKAGE PATHS

<u>PENETRATION</u>	<u>DESCRIPTION</u>	<u>RELEASE LOCATION</u>
14	N <sub>2</sub> to Safety Injection Tanks	Ground Release
15	Primary Water to Pressurizer Relief Tanks	Ground Release
35	Vacuum Pump Suction	Plant Vent
36	Vacuum Pump Suction	Plant Vent
37	Air Ejector Suction	Plant Vent
38	Chilled Water Supply	Plant Vent
45	Chilled Water Return	Plant Vent
52	Service Air	Turbine Building Roof Exhaust
54	Instrument Air	Turbine Building Roof Exhaust
56	Fire Protection	Ground Release
59	Fuel Pool Purification	Ground Release
60	Fuel Pool Purification	Ground Release
70	Demineralized Water	Ground Release
72	Chilled Water Supply	Plant Vent
85	Containment Purge	Ground Release
86	Containment Purge	Plant Vent
116	Chilled Water Return	Plant Vent
124	Nitrogen to Containment	Plant Vent

## CONTAINMENT SYSTEMS

### CONTAINMENT AIR LOCKS

#### LIMITING CONDITION FOR OPERATION

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- 3.6.1.3 The containment air lock shall be OPERABLE with:
- a. Both doors closed except when the air lock is being used for normal transit entry and exit through the containment, then at least one air lock door shall be closed, and
  - b. An overall air lock leakage rate of less than or equal to  $0.05 L_a$  at  $P_a$ , 53.27 psia (38.57 psig).

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

#### ACTION:

- a. With one containment air lock door inoperable:
  1. Maintain at least the OPERABLE air lock door closed\* and either restore the inoperable air lock door to OPERABLE status within 24 hours or lock the OPERABLE air lock door closed,
  2. Operation may then continue until performance of the next required overall air lock leakage test provided that the OPERABLE air lock door is verified to be locked closed at least once per 31 days,
  3. Otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, and
  4. The provisions of Specification 3.0.4 are not applicable.
- b. With the containment air lock inoperable, except as the result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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\*Except during entry to repair an inoperable inner door, for a cumulative time not to exceed 1 hour per year.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

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4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

- a. 1) Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying no detectable seal leakage by pressure decay when the volume between the door seals is pressurized to greater than or equal to  $P_a$ , 53.27 psia (38.57 psig), for at least 15 minutes;  
  
or
  - 2) Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying that the seal leakage is less than 0.01 L as determined by precision flow measurements when measured for at least 30 seconds with the volume between the seals at a constant pressure of greater than or equal to  $P_a$ , 53.27 psia (38.57 psig);  
  
or
  - 3) Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by completing an overall air lock leakage test per 4.6.1.3.b.
- b. By conducting overall air lock leakage tests at not less than  $P_a$ , 53.27 psia (38.57 psig), and verifying the overall air lock leakage rate is within its limit:
    - 1) At least once per 6 months,\* and
    - 2) Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.\*\*
  - c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

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\*The provisions of Specification 4.0.2 are not applicable.

\*\*This represents an exemption to Appendix J, paragraph III.D.2.(b)(ii), of 10 CFR Part 50.

## CONTAINMENT SYSTEMS

### CONTAINMENT PRESSURE

#### LIMITING CONDITION FOR OPERATION

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3.6.1.4 Primary containment pressure shall be maintained greater than or equal to 10.6 psia and less than or equal to 14.0 psia.

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

#### ACTION:

With the containment pressure less than 10.6 psia or greater than 14.0 psia, restore the containment pressure to within the limits within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.6.1.4 The primary containment pressure shall be determined to be within the limits at least once per 12 hours.

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## 3/4.6 CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1 PRIMARY CONTAINMENT

##### 3/4.6.1.1 CONTAINMENT INTEGRITY

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the dose guidelines of 10 CFR Part 100 during accident conditions and the control room operators dose to within the guidelines of GDC 19.

##### 3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure,  $P_a$ . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to  $0.75 L_a$  during performance of the periodic test to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50.

##### 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.

##### 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).



## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.1.6 CONTAINMENT STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 60 psia in the event of a LOCA. A visual inspection in conjunction with the Type A leakage tests is sufficient to demonstrate this capability.

#### 3/4.6.1.7 CONTAINMENT VENTILATION SYSTEM

The 42-inch containment purge supply and exhaust isolation valves are required to be locked closed during plant operation since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves closed during plant operations ensures that excessive quantities of radioactive materials will not be released via the Containment Purge System. To provide assurance that these containment valves cannot be inadvertently opened, the valves are locked closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator.

The Type C testing frequency required by 4.6.1.2d is acceptable, provided that the resilient seats of these valves are replaced every other refueling outage.

#### 3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

##### 3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT QUENCH SPRAY SYSTEM and RECIRCULATION SPRAY SYSTEM

The OPERABILITY of the Containment Spray Systems ensures that containment depressurization and iodine removal will occur in the event of a LOCA. The pressure reduction, iodine removal capabilities and resultant containment leakage are consistent with the assumptions used in the safety analyses.

##### 3/4.6.2.3 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the Spray Additive System ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 7.0 and 7.35 for the solution recirculated within containment after a LOCA. This pH band minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.