

February 22, 1995

Mr. John F. Opeka  
Executive Vice President, Nuclear  
Connecticut Yankee Atomic Power Company  
Northeast Nuclear Energy Company  
Post Office Box 270  
Hartford, CT 06141-0270

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. M89518)

Dear Mr. Opeka:

The Commission has issued the enclosed Amendment No.105 to Facility Operating License No. NPF-49 for the Millstone Nuclear Power Station, Unit No. 3, in response to your application dated May 18, 1994.

The proposed amendment modifies the operability requirements for the fuel building exhaust filter system. The amendment will result in modifications to the applicability, surveillance requirement, and bases sections of Technical Specification 3/4.9.12, "Fuel Building Exhaust Filter System."

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,  
Original signed by:

Vernon L. Rooney, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosures: 1. Amendment No.105 to NPF-49  
2. Safety Evaluation

cc w/encls: See next page

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OFFICE	LA:PDI-4	PM:PDI-4	BC:OTSB	BC:SP/B	D:PDI-4	OGC
NAME	SNorris	VRooney:bf	CGrimes	EMcCracken	PMcKee	
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NAME	SNorris	VRooney:bf	CGrimes	EMcCracken	PMcKee	
DATE	01/31/95	02/1/95	01/1/95	01/7/95	01/2/95	01/10/95

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

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Sincerely,

A handwritten signature in black ink, appearing to read "V. Rooney", is written over the typed name.

Vernon L. Rooney, Senior Project Manager  
Project Directorate I-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-423

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2. Safety Evaluation

cc w/encls: See next page

Mr. John F. Opeka  
Northeast Nuclear Energy Company

Millstone Nuclear Power Station  
Unit 3

cc:

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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. 105  
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 May 18, 1994, 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.

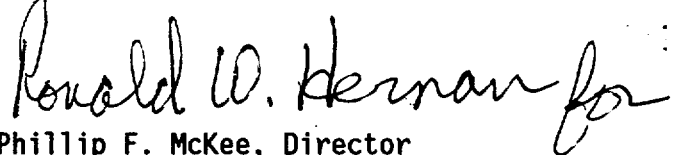
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 105, 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

A handwritten signature in dark ink, appearing to read "Phillip F. McKee", is written over the typed name.

Phillip F. McKee, 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 22, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 105

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.

Remove

3/4 9-13

B3/4 9-3

Insert

3/4 9-13

B 3/4 9-3

## **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**

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4.9.12 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  $\pm 10\%$  and that the system operates for at least 10 continuous hours with the heaters operating;
- b. At least once per 18 months 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:



## REFUELING OPERATIONS

### BASES

---

#### 3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the safety analysis.

#### 3/4.9.12 FUEL BUILDING EXHAUST FILTER SYSTEM

The limitations on the Fuel Building Exhaust Filter System ensure that all radioactive iodine released from an irradiated fuel assembly and storage pool water will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. The filtration system removes radioiodine following a fuel handling or heavy load drop accident. Noble gases would not be removed by the system. Other radionuclides would be scrubbed by the storage pool water. Iodine-131 has the longest half-life: ~8 days. After 60 days decay time, there is essentially negligible iodine and filtration is unnecessary.

#### 3/4.9.13 SPENT FUEL POOL - REACTIVITY

The limitations described by Figure 3.9-1 ensure that the reactivity of fuel assemblies introduced into Region II are conservatively within the assumptions of the safety analysis.

Administrative controls have been developed and instituted to verify that the enrichment and burn-up limits of Figure 3.9-1 have been maintained for the fuel assembly.

#### 3/4.9.14 SPENT FUEL POOL - STORAGE PATTERN

The limitations of this specification ensure that the reactivity conditions of the Region I storage racks and spent fuel pool  $k_{eff}$  will remain less than or equal to 0.95.

The Cell Blocking Devices in the 4th location of the Region I storage racks are designed to prevent inadvertent placement and/or storage of fuel assemblies in the blocked locations. The blocked location remains empty to provide the flux trap to maintain reactivity control for fuel assemblies in adjacent and diagonal locations of the STORAGE PATTERN.

STORAGE PATTERN for the Region I storage racks will be established and expanded from the walls of the spent fuel pool per Figure 3.9-2 to ensure definition and control of the Region I/Region II boundary and minimize the number of boundaries where a fuel misplacement incident can occur.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 105

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 letter dated May 18, 1994, the Northeast Nuclear Energy Company (the licensee), submitted a request for changes to the Millstone Nuclear Power Station, Unit No. 3 Technical Specifications (TS). The requested changes would more clearly define the period when the fuel building exhaust filter system is to be operable. Section 9.4.2.2 of the FSAR for Millstone 3 states that "fuel building filtration is required whenever heavy loads (fuel or other) are moved within or over the spent fuel pool and less than 60-day (decay time) fuel is in the pool." Operation of the filter system during other periods is considered unnecessary and will decrease charcoal adsorption efficiency.

The proposed amendment will result in a modification of the applicability, surveillance requirement, and bases sections to TS 3/4.9.12, "Fuel Building Exhaust Filter System."

The applicability section will be revised to state that the fuel building exhaust filter system is required to be operable whenever irradiated fuel with a decay time of less than 60 days is in the spent fuel pool.

TS 3.9.12, "Applicability," which currently reads:

Whenever irradiated fuel is in the storage pool.

will be revised to read:

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

The surveillance requirement will be revised to require that the system be tested and verified operable no more than 31 days preceding its required use. The fuel building exhaust filter system is required to be operable whenever irradiated fuel that has decayed less than 60 days is in the pool.

TS 4.9.12 which currently reads:

At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying a system flow that the system operates for at least 10 continuous hours with the heaters operating.

will be revised to read:

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  $\pm 10\%$  and that the system operates for at least 10 continuous hours with the heaters operating.

The bases section will be revised to reflect the key assumptions and results of the offsite dose calculation.

TS 3/4.9.12 will be revised to read:

The limitations on the Fuel Building Exhaust Filter System ensure that all radioactive iodine released from an irradiated fuel assembly and storage pool water will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. Operation of the system with the heaters operating for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses. ANSI N510-1980 will be used as a procedural guide for surveillance testing. The filtration system removes radioiodine following a fuel handling or heavy load drop accident. Noble gases would not be removed by the system. Other radionuclides would be scrubbed by the storage pool water. Iodine-131 has the longest half-life: -8 days. After 60 days decay time, there is essentially negligible iodine and filtration is unnecessary.

## 2.0 EVALUATION

The staff evaluated the changes to Millstone 3, TS 3/4.9.12, "Fuel Building Exhaust Filter System," proposed by the licensee to modify the operability requirements for the fuel building exhaust filter system. Currently, the system is required to be operable whenever irradiated fuel is in the spent fuel pool. In addition, the surveillance requirement requires that the system be verified operable every 31 days. The proposed modification will require that the system be operable whenever irradiated fuel which has decayed less

than 60 days is in the spent fuel pool. It will also require that the system be verified operable within 31 days of load movement or fuel movement over the pool that contains fuel which has decayed less than 60 days.

The licensee has reassessed the consequences of a fuel handling accident at two intervals: (1) with irradiated fuel (decayed for 100 hours) in the pool and operation of the fuel building exhaust filter system, and (2) with irradiated fuel (decayed for 60 days) in the pool and no operation of the fuel building exhaust filter system.

The results of the licensee's calculated offsite thyroid doses are shown in Table 1 along with the staff's calculations. The offsite dose calculation for a 60-day decay time is significantly lower than for a 100-hour decay time. All of the calculated doses are within the acceptance criterion of 75 rem stated in NUREG-0800, Section 15.7.4, "Radiological Consequences of Fuel Handling Accidents." Therefore, the staff finds that the licensee's proposed TS changes are acceptable.

TABLE 1 Offsite Dose Calculations for Thyroid Doses (rem)  
Decay Time

	<u>100 hours</u>	<u>60 days</u>
Staff Evaluation	1.8 (0.018 sievert) (NUREG-1031)	0.36 (0.0036 sievert)
Licensee Evaluation (FSAR, Section 9.4.2.2)	7.6 (0.076 sievert)	1.5 (0.015 sievert)
Acceptance Criterion (NUREG-0800, Section 15.7.4)	75 (0.75 sievert)	75 (0.75 sievert)

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Connecticut State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 32234). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 5.0 CONCLUSION

The Commission has 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, (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.

Principal Contributor: J Minns

Date: February 22, 1995