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December 18, 1981



Docket No. 50-336

Mr. W. G. Council, Vice President  
Nuclear Engineering & Operations  
Northeast Nuclear Energy Company  
P. O. Box 270  
Hartford, Connecticut 06101

Dear Mr. Council:

The Commission has issued the enclosed Amendment No. 71 to Facility Operating License No. DPR-65 for Millstone Nuclear Power Station, Unit No. 2. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated December 2, 1981.

The changes to the TS modify the operability requirements for two independent shutdown cooling loops previously issued by Amendment No. 69, dated May 19, 1981.

The TS changes made by Amendment No. 69 required a backup shutdown cooling loop to be operable (ready for service) in addition to the normally operating loop required in Modes 3 to 6. However, the licensee has now determined these requirements prevent necessary surveillance testing, such as the reactor building closed cooling water system valve leak check, resulting in lengthening the refueling outages. Therefore, the licensee's proposal of December 2, 1981 presents alternative methods for meeting the concerns expressed in our June 11, 1980 generic letter.

The proposed alternative methods would substitute 370,000 gallons combined available volume of water in both the refueling pool (RP) and the refueling water storage tank (RWST) with the present requirement for 23 feet of water above the reactor pressure vessel flange. The licensee has assured us that the 370,000 gallons and the 23 feet are equivalent. The only difference in the requirements is that a portion of the static head needed for backup coolant (one shutdown cooling loop would normally be in operation) would need to be pumped from the RWST to the RP. The proposed TS would require a low pressure safety injection pump and a high pressure safety injection pump, each fully operable, to transfer the water from the RWST to the RP. Calculations show acceptable reactor core temperatures even in the worst case heatup (only HPSI pump available to transfer water).

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FR Notice  
Amendment

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DATE	12/18/81	12/16/81	12/16/81	12/16/81	12/10/81	12/18/81

In a supplemental application dated December 18, 1981, the licensee proposed to modify TS surveillance requirement 4.9.8.1 by replacing the minimum flow value of 3000 gpm with "...a flow rate consistent with decay heat removal requirements...". The 3000 gpm value is the LPSI pump design flow capacity at 350 ft. head. This value is unrelated to the necessary flow to maintain adequate decay heat removal in shutdown conditions. Therefore, we find this additional change acceptable.

We find the proposed changes in TS continue to meet the concerns expressed in our June 11, 1980 letter and will allow increased operational flexibility over the present TS. Therefore, the proposed TS changes as modified to meet our requirements and agreed to by your staff, are acceptable.

We have evaluated the potential for environmental impact of plant operation in accordance with the enclosed amendment and have determined that it does not authorize a change in effluent types or total amounts nor an increase in power level, and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

The amendment does not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. It does not involve a significant increase in the probability or consequences of an accident, does not involve a significant decrease in a safety margin, and therefore does not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action.

A copy of the related Notice of Issuance is also enclosed.

Sincerely,

Eben L. Conner, Project Manager  
Operating Reactors Branch #3  
Division of Licensing

Enclosures:

- 1. Amendment No. 71 to DPR-65
- 2. Notice of Issuance

cc w/enclosures:  
See next page

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Northeast Nuclear Energy Company

cc:

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Region I Office  
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ATTN: Assistant Director, Research  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NORTHEAST NUCLEAR ENERGY COMPANY  
THE CONNECTICUT LIGHT AND POWER COMPANY  
THE HARTFORD ELECTRIC LIGHT COMPANY  
THE WESTERN MASSACHUSETTS ELECTRIC COMPANY  
DOCKET NO. 50-336  
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2  
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 71  
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Northeast Nuclear Energy Company (the licensee) dated December 2, 1981, as supplemented by letter dated December 18, 1981, 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.

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

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 18, 1981

ATTACHMENT TO LICENSE AMENDMENT NO.71

FACILITY OPERATING LICENSE NO. DPR-65-

DOCKET NO. 50-336

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 also provided to maintain document completeness.

Pages

3/4 9-8  
3/4 9-8a  
B 3/4 9-2

REFUELING OPERATIONS

CRANE TRAVEL - SPENT FUEL STORAGE POOL BUILDING

LIMITING CONDITION FOR OPERATION

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3.9.7 Loads in excess of 1800 pounds shall be prohibited from travel over irradiated fuel assemblies in the storage pool.

APPLICABILITY: DURING ALL CRANE OPERATION.

ACTION:

With the requirements of the above specification not satisfied, place load in a safe condition.

SURVEILLANCE REQUIREMENTS

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4.9.7 Crane interlocks and/or physical stops which prevent crane travel with loads in excess of 1800 pounds over irradiated fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to initiation of irradiated fuel handling operations and at least once per 7 days during irradiated fuel handling operations.

REFUELING OPERATIONS

SHUTDOWN COOLING AND COOLANT CIRCULATION

LIMITING CONDITION FOR OPERATION

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3.9.8.1 At least one shutdown cooling loop shall be in operation\*.

APPLICABILITY: MODE 6 at all reactor water levels.

ACTION:

With less than one shutdown cooling loop in operation, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

3.9.8.2 Two independent shutdown cooling loops shall be OPERABLE\*\*.

APPLICABILITY: MODE 6, whenever all the following conditions are not satisfied:

- a. reactor vessel water level at or above the vessel flange; and
- b. the reactor vessel pit seal installed; and
- c. the combined available volume of water in the refuel pool and refueling water storage tank exceeds 370,000 gallons; and
- d. (1) one LPSI pump not in shutdown cooling service and aligned to take suction from the RWST and deliver flow to the RCS is OPERABLE,\*\*; or  
(2) one HPSI pump aligned to take suction from the RWST and deliver flow to the RCS is OPERABLE.\*\*

ACTION:

With less than the required shutdown cooling loops OPERABLE, initiate corrective action to return the loop(s) to OPERABLE status within one hour.

The provisions of Specification 3.0.3 are not applicable for 3.9.8.1 and 3.9.8.2.

\* The shutdown cooling loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

\*\*The normal or emergency power source may be inoperable for each shutdown cooling loop.

## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS

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4.9.8.1 At least one shutdown cooling loop shall be verified to be in operation and circulating reactor coolant at a flow rate consistent with decay heat requirements at least once per 12 hours.

4.9.8.2 Once per 7 days, the required shutdown cooling loops, if not in operation, shall be determined OPERABLE by verifying correct breaker alignments and indicated power availability for pump and shutdown cooling valves, or:

Verifying that the reactor vessel water level is at or above the vessel flange, the reactor vessel pit seal is installed, and greater than 370,000 gallons of water is available as a heat sink, as indicated by either:

- a. refuel pool level greater than 23 feet above the reactor vessel flange, or
- b. the combined volume of the refuel pool and refueling water storage tank exceeds 370,000 gallons and a flow path is available from the refueling water storage tank to the refuel pool.

## 3/4.9 REFUELING OPERATIONS

### BASES

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#### 3/4.9.1 BORON CONCENTRATION

The limitations on minimum boron concentration ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volumes having direct access to the reactor vessel. The limitation on  $K_{eff}$  of no greater than 0.90 is sufficient to prevent reactor criticality with all full length rods (shutdown and regulating) fully withdrawn.

#### 3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core.

#### 3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

#### 3/4.9.4 CONTAINMENT PENETRATIONS

The requirements on containment penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

#### 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during fuel or CEA movement within the reactor pressure vessel.

## REFUELING OPERATIONS

### BASES

#### 3/4.9.6 CRANE OPERABILITY - CONTAINMENT BUILDING

The OPERABILITY requirements of the cranes used for movement of fuel assemblies ensures that: 1) each crane has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

#### 3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel assembly and CEA over irradiated fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

#### 3/4.9.8 SHUTDOWN COOLING AND COOLANT CIRCULATION

The requirement that at least one shutdown cooling loop be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effects of a boron dilution incident and prevent boron stratification.

The requirement to have two shutdown cooling loops OPERABLE when the refuel pool is unavailable as a heat sink ensures that a single failure of the operating shutdown cooling loop will not result in a complete loss of decay heat removal capability. With the reactor vessel water level at or above the vessel flange, the reactor vessel pit seal installed, and a combined available volume of water in the refueling pool and refueling water storage tank in excess of 370,000 gallons, a large heat sink is readily available for core cooling. Adequate time is thus available to initiate emergency procedures to provide core cooling in the event of a failure of the operating shutdown cooling loop.

#### 3/4.9.9 and 3/4.9.10 CONTAINMENT RADIATION MONITORING AND CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of these systems ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of these systems is required to restrict the release of radioactive material from the containment atmosphere to the environment.

#### 3/4.9.11 and 3/4.9.12 WATER LEVEL-REACTOR VESSEL AND STORAGE POOL WATER LEVEL

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 accident analysis.

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-336NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 71 to Facility Operating License No. DPR-65 issued to the Northeast Nuclear Energy Company, the Connecticut Light and Power Company, the Hartford Electric Light Company, and the Western Massachusetts Electric Company (the licensee), which revised Technical Specifications for operation of the Millstone Nuclear Power Station, Unit No. 2 (the facility) located in the Town of Waterford, Connecticut. The amendment is effective as of its date of issuance.

The amendment changes the Technical Specification to modify the operability requirements for two independent shutdown cooling loops.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

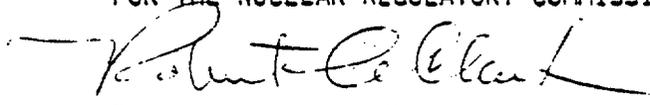
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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the applications for amendment dated December 2 and 18, 1981, (2) Amendment No. 71 to License No. DPR-65, and (3) the Commission's letter dated December 18, 1981. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C., and at the Waterford Public Library, Rope Ferry Road, Waterford, Connecticut. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland this 18th day of December 1981.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing