May 15, 1978

Docket No.: 50-336

Docket File ✓
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Northeast Nuclear Energy Company
ATTN: Mr. D. C. Switzer, President
P. O. Box 270
Hartford, Connecticut 06101

Gentlemen:

The Commission has issued the enclosed Amendment No. 41 to Facility Operating License No. DPR-65 for the Millstone Nuclear Power Station, Unit No. 2. The amendment consists of changes to the Technical Specifications in accordance with your request dated April 6, 1978, and supplementing information dated April 11, 1978 and May 5, 1978.

The Technical Specification change eliminates the monthly visual inspection of all inaccessible hydraulic snubbers with non-ethylene-propylene seal materials for the remainder of Cycle 2. The visual inspection of such inaccessible snubbers is required if plant conditions allow access or if inspections of accessible snubbers reveal evidence of seal degradation.

A portion of your proposed Technical Specification has been modified to meet our requirements. This modification has been discussed with and agreed to by your staff.

Copies of the Safety Evaluation and Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:
1. Amendment No. 41 to DPR-65
2. Safety Evaluation
3. Notice

cc w/enclosures: See next page

Const. 1

OFFICE	ORB#4:DOR	ORB#4:DOR	OELD	C-ORB#4:DOR	STSG	EB
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DATE	5/12/78	5/13/78	5/15/78	5/15/78	5/15/78	5/15/78

NRC FORM 318 (9-76) NRCM 0240 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

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Mr. Albert L. Partridge, First Selectman
Town of Waterford
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Waterford, Connecticut 06385

Northeast Nuclear Energy Company
ATTN: Superintendent
Millstone Plant
P. O. Box 128
Waterford, Connecticut 06385

Chief, Energy Systems Analysis Branch (AW-459)
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Washington, D. C. 20460

U. S. Environmental Protection Agency
Region I Office
ATTN: EIS COORDINATOR
John F. Kennedy Federal Building
Boston, Massachusetts 02203

Waterford Public Library
Rope Ferry Road, Route 156
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cc w/enclosures & incoming dtd:
4/26/78, 4/11/78 & 5/5/78
Connecticut Energy Agency
ATTN: Assistant Director, Research
and Policy Development
Department of Planning and Energy
Policy
20 Grand Street
Hartford, Connecticut 06106

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

THE CONNECTICUT LIGHT AND POWER COMPANY,
THE HARTFORD ELECTRIC LIGHT COMPANY,
WESTERN MASSACHUSETTS ELECTRIC COMPANY, AND
NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-336

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 41
License No. DPR-65

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by The Connecticut Light and Power Company, The Hartford Electric Light Company, Western Massachusetts Electric Company, and Northeast Nuclear Energy Company (the licensees), dated April 26, 1978, as supplemented by letters dated April 11 and May 5, 1978, 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. 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. 41, 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 W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 15, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 41

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.

Pages

3/4 7-21
3/4 7-22

PLANT SYSTEMS

3/4.7.8 HYDRAULIC SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All hydraulic snubbers listed in Table 3.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one or more hydraulic snubbers inoperable, restore the inoperable snubber(s) 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

4.7.8.1 Hydraulic snubbers shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program:

a. Each hydraulic snubber with seal material fabricated from ethylene propylene or other materials demonstrated compatible with the operating environment and approved as such by the NRC, shall be determined OPERABLE at least once after not less than 4 months but within 6 months of initial criticality and in accordance with the inspection schedule of Table 4.7-3 thereafter, by a visual inspection of the snubber. Visual inspections of the snubbers shall include, but are not necessarily limited to, inspection of the hydraulic fluid reservoirs, fluid connections, and linkage connections to the piping and anchors. Initiation of the Table 4.7-3 inspection schedule shall be made assuming the unit was previously at the 6 month inspection interval.

*b. Each hydraulic snubber with seal material not fabricated from ethylene propylene or other materials demonstrated compatible with the operating environment shall be determined OPERABLE at least once per 31 days by a visual inspection of the snubber. Visual inspections of the snubbers shall include, but are not necessarily limited to, inspection of the hydraulic fluid reservoirs, fluid connections, and linkage connections to the piping and anchors.

* See page 3/4 7-22.

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months during shutdown, a representative sample of at least 10 hydraulic snubbers or at least 10% of all snubbers listed in Table 3.7-1, whichever is less, shall be selected and functionally tested to verify correct piston movement, lock up and bleed. Snubbers greater than 50,000 lb. capacity may be excluded from functional testing requirements. Snubbers selected for functional testing shall be selected on a rotating basis. Snubbers identified as either "Especially Difficult to Remove" or in "High Radiation Zones" may be exempted from functional testing provided these snubbers were demonstrated OPERABLE during previous functional tests. Snubbers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each snubber found inoperable during these functional tests, an additional minimum of 10% of all snubbers or 10 snubbers, whichever is less, shall also be functionally tested until no more failures are found or all snubbers have been functionally tested.

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* This specification is not applicable for inaccessible hydraulic snubbers during Cycle 2 unless plant conditions allow access to these snubbers for a minimum of 12 hours. Should inspections of accessible snubbers reveal evidence of seal degradation, the inaccessible snubbers shall be inspected within 72 hours.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 41 TO FACILITY OPERATING LICENSE NO. DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

Introduction

By letter dated April 11, 1978, Northeast Nuclear Energy Company (NNECO or the licensee) notified us that 40% of the inaccessible safety-related hydraulic snubbers for Millstone Unit No. 2 have valve block seal materials which have not been approved by the NRC and therefore, require a reactor shutdown every 31 days for inspection. As a result of subsequent discussions and a request for additional information dated April 26, 1978, NNECO submitted an amendment request and supplemental information dated April 26, 1978, and May 5, 1978, respectively. The requested amendment would revise the Technical Specifications to eliminate the monthly visual inspection of all inaccessible hydraulic snubbers with non-ethylene-propylene (EP) seal materials for the remainder of Cycle 2.

Background

The existing Technical Specifications (TS) surveillance requirements for hydraulic snubbers (specification 4.7.8.1) require monthly visual inspection of all snubbers with seal materials which have not been demonstrated compatible with the operating environment and approved as such by the NRC.

Discussion and Evaluation

NNECO has requested that we approve non-EP seal material for the valve block O-rings in 27 inaccessible safety-related hydraulic snubbers installed at Millstone Unit No. 2. All piston and cylinder seals in inaccessible snubbers are made of the approved EP material. The requested approval is for the duration of Cycle 2 operation. They have committed to replace the seal material in these snubbers to EP prior to Cycle 3 operation. NNECO has also committed to inspect all

inaccessible non-EP seal material snubbers within 72 hours should any visual inspection (required each 31 days) of accessible non-EP seal material snubbers reveal evidence of seal degradation. These commitments have been included as requirements in the proposed TS. Since the environment for the accessible and inaccessible snubbers is significantly different, these TS requirements provide protection from the time dependent degradation of the seal materials only.

The subject hydraulic snubbers have been in service for about three years with no adverse seal leakage observed during the inspections required by the TS. NNECO has estimated that the ambient temperature during operation in the location of 23 snubbers is below 100°F. Three of these snubbers are in the reactor coolant system loop areas where the combined neutron and gamma radiation level is estimated to be 50 Rem per hour. The remaining four snubbers could be exposed to ambient operating temperature up to 120°F for one and 140°F for the other three snubbers. These three snubbers support the main steamline at the top of the steam generator cubicles. The estimated combined radiation levels in these cubicles is less than 5 Rem per hour. We agree with NNECO that evaluating the affect of the operating environment on the valve block seal O-rings of these two groups of three snubbers each will bound any adverse affect that may exist for all non-EP inaccessible snubbers.

The non-EP seal material used in the valve blocks of the 27 inaccessible snubbers is molythane. We have extrapolated available data from similar seal materials to evaluate the properties of molythane. The gamma radiation stability of this material should be relatively good up to approximately 1.7×10^5 rem. At 1×10^7 rem, molythane should have the marginal acceptable properties of approximately a 55% deterioration in compression set, a 16% loss in elongation, and a 1% increase in hardness. These property changes relate to radiation exposure at 96°F in air. However, these materials do not degrade as rapidly when immersed in snubber fluids. The three reactor coolant system loop area snubbers located in an environment of 100°F and 50 rem per hour will have a total exposure of 9.7×10^5 rem by the end of Cycle 2. We find that these valve block seal O-rings will have acceptable physical properties through the end of Cycle 2 operation.

Using the extrapolated data, we find that the molythane seal material will have acceptable physical properties at 96°F and is stable at temperatures up to 170°F for short periods of time (about 500 hours). The three main steamline snubbers in a radiation area of less than 5 rem per hour will accumulate a total exposure of only 9.7×10^4 rem by the end of Cycle 2. The maximum operating temperature of 140°F falls within the data points quoted above. It is our conclusion that these valve block seal O-rings will perform satisfactorily through the end of Cycle 2 operation. This conclusion is further supported by the past operating performance of these snubbers.

NNECO has pointed out that no snubber seal failures have ever been experienced, nor have there been any indications of excessive leakage or other anomalies to suggest abnormal seal degradation at Millstone Unit No. 2. We understand that the hydraulic snubber operating in a 120°F maximum temperature zone (a 3-3/4 inch snubber supporting the feedwater line to steam generator no. 1) and one of the three previously discussed main steamline snubbers (10 inch size) were tested during the core reload outage in December 1977. The test revealed no appreciable seal leakage and normal operation of the snubber lock-up device. We conclude that this test data further supports the use of non-EP seal material in the valve blocks for safety related hydraulic snubbers, inaccessible during reactor operation, for the remainder of Cycle 2 operation of Millstone Unit No. 2.

Environmental Consideration

We have determined that the amendment 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, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: May 15, 1978

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-336

NORTHEAST NUCLEAR ENERGY COMPANY,
THE CONNECTICUT LIGHT AND POWER COMPANY,
THE HARTFORD ELECTRIC LIGHT COMPANY, AND
WESTERN MASSACHUSETTS ELECTRIC COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 41 to Facility Operating License No. DPR-65 to Northeast Nuclear Energy Company, The Connecticut Light and Power Company, The Hartford Electric Light Company, and Western Massachusetts Electric Company, which revised Technical Specifications for operation of the Millstone Nuclear Power Station, Unit No. 2, located in the Town of Waterford, Connecticut. The amendment is effective as of its date of issuance.

This amendment revises the Technical Specifications to eliminate the monthly visual inspection of all inaccessible hydraulic snubbers with non-ethylene-propylene seal materials for the remainder of Cycle 2. The visual inspection of such inaccessible snubbers is required if plant conditions allow access or if inspections of accessible snubbers reveal evidence of seal degradation.

The application for 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.

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 application for amendment dated April 26, 1978, as supplemented by letters dated April 11 and May 5, 1978, (2) Amendment No. 41 to License No. DPR-65, and (3) the Commission's related Safety Evaluation. 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, Route 156, 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 Operating Reactors.

Dated at Bethesda, Maryland, this 15th day of May 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors