October 12, 1994

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

SUBJECT: MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2 - EXEMPTION TO 10 CFR 50, APPENDIX J (TAC NO. M90458)

Dear Mr. Opeka:

The Commission has issued the enclosed schedular exemption from certain requirements of 10 CFR 50, Appendix J for the Millstone Nuclear Power Station, Unit No. 2, in response to your letter dated September 26, 1994. The exemption permits a one-time extension of the test period for the Type B and C tests until the end of the current refueling outage which began on October 1, 1994.

A copy of the Exemption is being forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:

Guy S. Vissing, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. ~~40~~ 50-336

Enclosures: 1. Exemption
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
NORTHEAST NUCLEAR ENERGY COMPANY	)	Docket No. 50-336
	)	
(Millstone Nuclear Power Station, Unit No. 2)	)	

EXEMPTION

I.

The Northeast Nuclear Energy Company (NNECO, the licensee) is the holder of Facility Operating License No. DPR-65 which authorizes operation of Millstone Nuclear Power Station, Unit No. 2. The license provides, among other things, that Millstone Unit 2 is subject to all rules, regulations, and Orders of the Commission now or hereafter in effect.

The plant is a pressurized water reactor located at the licensee's site in New London County, Connecticut.

II.

One of the conditions of all operating licenses for water-cooled power reactors, as specified in 10 CFR 50.54(o), is that primary reactor containments shall meet the containment leakage test requirements set forth in 10 CFR Part 50, Appendix J. More specifically the following sections require that:

10 CFR Part 50, Appendix J, Section III.D.2(a)

Type B tests, except tests for air locks, shall be performed during reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than 2 years.

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10 CFR Part 50, Appendix J, Section III.D.3

Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than 2 years.

By letter dated September 26, 1994, NNECO requested schedular exemptions from the above requirements. NNECO recently conducted a review of the Type B and Type C test data and on September 23, 1994, determined that a number of components, for which Type B and Type C testing is required, have exceeded their respective 24 month interval by up to approximately four months. Previously, Millstone Unit 2 considered the Type B and Type C tests to constitute one group such that the 2-year surveillance window began after the last component test was completed during the refueling outage. A review of this rationale and discussions with industry counterparts and the NRC staff determined that this was not the appropriate interpretation. Rather, each Type B or C test of a penetration or valve should be considered unique, each with its own 2-year surveillance window. Using the appropriate interpretation, NNECO determined on September 23, 1994, that a number of Type B and Type C tests have exceeded their required 24-month test interval by up to approximately 4 months. The requirement to perform Type B and Type C local leak rate tests (LLRTs) on September 23, 1994, when NNECO discovered the misinterpretation of the requirement, would require an unscheduled plant shutdown, given the current Millstone Unit 2 refueling outage schedule. The total schedular delay in testing components will accumulate to be as much as 4 months before the plant is shutdown for refueling.

III.

By letter dated September 26, 1994, NNECO requested an exemption to the requirements of Section III.D.2(a) and III.D.3 which require that Type B and C testing be performed during each reactor shutdown for refueling but in no case

at intervals greater than 2 years. In their submittal and in a phone conference between the staff and NNECO on September 24, 1994, NNECO stated that they recently conducted a review of the Type B and Type C test data and on September 23, 1994, determined that a number of components, for which Type B and Type C testing is required, have exceeded their respective 24-month interval by up to approximately 4 months. The previously refueling was lengthy (approximately 7 months) due the the replacement of both steam generators. The LLRTs during the outage, were conducted from June 1992 through December 1992. Previously, NNECO considered the Type B and Type C tests to constitute one group such that the 2-year surveillance window began after the last component test was completed during the refueling outage. A review of this rationale and discussions with industry counterparts and the NRC staff determined that this was not the appropriate interpretation. Rather, each Type B or C test of a penetration or valve should be considered unique, each with its own 2-year surveillance window. Using the appropriate interpretation, NNECO determined on September 23, 1994, that a number of Type B and Type C tests have exceeded their required 24-month test interval by up to approximately 4 months. The requirement to perform Type B and Type C LLRTs on September 23, 1994, when NNECO discovered the misinterpretation of the requirement, would require an unscheduled plant shutdown, given the current Millstone Unit 2 refueling outage schedule. The total schedular delay in testing components will accumulate to be as much as 4 months before the plant is shutdown for refueling.

NNECO stated in their submittal that they had completed the second Type A test for the present 10-year service period successfully on December 24, 1992. The "As-Found" and "As-Left" integrated leakage rate test ILRT results were 0.2809 weight percent per day and 0.2577 weight percent per day

respectively. Each ILRT result was below the Technical Specifications limit which demonstrates the overall leak-tightness of the containment. In addition, as of December 1992, the total Type B and C "As-Found" and "As-Left" leakage results were 0.049 weight percent per day and 0.008 weight percent per day. These values represent approximately 16.3% and 2.7% of the Technical Specification limit respectively. The results of these tests demonstrate that Millstone Unit 2 has maintained control of containment integrity by maintaining a conservative margin between the acceptance criterion and the "As-Found" and "As-Left" leakage rates. Subsequent to this ILRT, during Cycle 12, maintenance on several containment isolation valves was performed. the post-maintenance retest requirements were accomplished by successful performance of Type C test. Thus, the previous Type A, B and C tests and prior post-maintenance retests of selected valves have demonstrated the leak-tightness of the containment and the reliability of the penetrations/valves.

Based on the above evaluation, the staff finds there is reasonable assurance that the containment leakage-limiting function will be maintained and that a forced outage to perform Type B and C tests is not necessary. Therefore, the staff finds the requested temporary exemption, to allow the Type B and C test intervals to be extended to the end of the 12th refueling outage which began on October 1, 1994, to be acceptable.

IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the requested exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Further, the Commission finds that the special circumstances required by 10 CFR 50.12(a)(2)(ii) are present. Application of

the regulation in these particular circumstances is not necessary to achieve the underlying purpose of the rule in that, as discussed in Section III, the containment leakage-limiting function will be maintained.

An exemption is hereby granted from the requirements of Sections III.D.2(a) and III.D.3 of Appendix J to 10 CFR Part 50, which require that Type B and C tests be performed during each reactor shutdown for refueling but in no case at intervals greater than 2 years until end of the current refueling outage.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this Exemption will have no significant impact on the quality of the human environment (59 FR 50928).

This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Walter R. Butler, Acting Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 12th day of October 1994.

*SEE PREVIOUS CONCURRENCE
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OFFICE	LA:PDI-4	*	PM:PDI-4	*	D:SCSB	*	D:PDI-4	*	OGC	*
NAME	SNorris		GVissing:cn		RBarrett		PMcKee		EHoller	
DATE	10/05/94		10/05/94		10/08/94		10/12/94		10/11/94	
OFFICE	D:DRPE									
NAME	SVarga for WB.									
DATE	10/12/94									

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An exemption is hereby granted from the requirements of Sections III.D.2(a) and III.D.3 of Appendix J to 10 CFR Part 50, which require that Type B and C tests be performed during each reactor shutdown for refueling but in no case at intervals greater than 2 years until end of the current refueling outage.

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NAME	SVarga for WB.									
DATE	10/12/94									

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TEMPORARY EXEMPTION FROM 10 CFR PART 50, APPENDIX J TYPE B AND C

LOCAL LEAK RATE TESTING OF CONTAINMENT PENETRATIONS

NORTHEAST NUCLEAR ENERGY COMPANY

THE CONNECTICUT LIGHT AND POWER COMPANY

THE WESTERN MASSACHUSETTS ELECTRIC COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2

DOCKET NO. 50-336

1.0 INTRODUCTION

By letter dated September 26, 1994, the Northeast Nuclear Energy Company (NNECO or the licensee) requested a one-time schedular exemption from the requirements of 10 CFR Part 50, Appendix J, Sections II.D.2(a) and III.D.3. The temporary schedular exemption would extend the interval for Type B and C local leak rate testing (LLRT) of containment penetrations at the Millstone Nuclear Power Station, Unit No. 2 beyond the 2-year limit of 10 CFR Part 50, Appendix J until the end of the current refueling outage (12th refueling outage).

Appendix J requires these tests to be performed at every refueling outage, but with the interval not to exceed 2 years. On September 23, 1994, NNECO discovered that Type B and C containment leak rate tests for certain containment penetrations had not been performed within the 24 months as required by Technical Specification (TS) Surveillance Requirement (SR) 4.6.1.2.d. The specific Action Statement for Limited Conditions for Operations 3.6.1.2 applies and requires that containment integrity to be restored within 1 hour or place the plant in hot standby within the next 6 hours, and in cold shutdown within the following 30 hours. Since SR 4.6.1.2.d was inadvertently missed, SR 4.0.3 was invoked at approximately 1:00 p.m. on September 23, 1994. This SR permits the action requirements to be delayed for up to 24 hours to permit the completion of a missed surveillance when the allowable outage time limits of the action requirements are less than 24 hours. Since the Type C test cannot be performed while at power and the Type B tests that have exceeded the 24-month period cannot be completed within the 24 hour window, Millstone Unit 2 would be forced to shutdown to comply with the requirements of the Millstone Unit 2 TS.

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NNECO determined that the 24-month testing requirement had been exceeded for a number of Type B and Type C components by up to approximately 4 months.

3.0 EVALUATION

As justification for the requested exemption, NNECO provided the following rationale:

1. One of the conditions of all operating licenses for water-cooled power reactors, as specified in 10 CFR 50.54(o), is that primary reactor containments shall meet the containment leakage test requirements set forth in 10 CFR Part 50, Appendix J. More specifically the following sections require that:

   10 CFR Part 50, Appendix J, Section III.D.2(a)

   Type B tests, except tests for air locks, shall be performed during reactor shutdown for refueling, or other convenient intervals, but in no case at intervals greater than 2 years.

   10 CFR Part 50, Appendix J, Section III.D.3

   Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than 2 years.

   By letter dated September 26, 1994, NNECO requested schedular exemptions from the above requirements. NNECO recently conducted a review of the Type B and Type C test data and on September 23, 1994, determined that a number of components, for which Type B and Type C testing is required, have exceeded their respective 24 month interval by up to approximately four months. On September 23, 1994, NNECO discovered that Type B and C tests for certain containment penetrations had not been performed within the last 24 months.

   Previously, Millstone Unit 2 considered the Type B and Type C tests to constitute one group such that the 2 year surveillance window began shortly after the last component test was completed during the refueling outage. A review of this rationale and discussions with industry counterparts and the NRC staff determined that this was not the appropriate interpretation. Rather, each Type B or C test of a penetration or valve should be considered unique, each with its own 2 year surveillance window. Using this interpretation, NNECO determined on September 23, 1994, that a number of Type B and Type C tests had not been conducted in accordance with the requirements of SR 4.6.1.2.d and 10 CFR Part 50, Appendix J. Since the Type C tests cannot be performed while at power and the Type B tests that have exceeded the 24 month period cannot be completed within a 24 hour window, Millstone Unit 2 would be forced to shutdown to comply with the Millstone Unit 2 TS.

2. Historical results of previous Type A, B and C tests have demonstrated the leak-tightness of the containment and the reliability of the penetrations/valves.

   NNECO stated in their submittal that they had completed the second Type A test for the present 10-year service period successfully on December 24, 1992. The "As-Found" and "As-Left" integrated leakage rate test ILRT results were 0.2809 weight percent per day and 0.2577 weight percent per day respectively. Each ILRT result was below the Technical specifications limit which demonstrates the overall leak-tightness of the containment. In addition, as of December 1992, the total Type B and C "As-Found" and "As-Left" leakage results were 0.049 weight percent per day and 0.008 weight percent per day. These values represent approximately 16.3% and 2.7% of the Technical Specification limit respectively. The results of these tests demonstrate that Millstone Unit No. 2 has maintained control of containment integrity by maintaining a conservative margin between the acceptance criterion and the "As-Found" and "As-Left" leakage rates. Subsequent to this ILRT, during Cycle 12, maintenance on several containment isolation valves was performed. The post-maintenance retest requirements were accomplished by successful performance of Type C tests. Thus, the previous Type A, B and C tests and prior post-maintenance retests of selected valves have demonstrated the leak-tightness of the containment and the reliability of the penetrations/valves.

3. If Millstone Unit 2 was required to shutdown prematurely, it would severely impact activities planned to occur during the week before the scheduled shutdown and during the planned shutdown. Such activities were planned to reduce worker exposure during the refueling outage. These include reactor coolant system (RCS) cleanup to reduce RCS activity and degassification of the RCS prior to shutdown to reduce containment activity during shutdown. Also, avoiding an early shutdown of Millstone Unit 2 would allow NNECO to test motor-operated valves and main steamline isolation valves during shutdown that would preclude the additional transients if these valves were tested during startup due to the potential for discovery of valve conditions that would require resolution. In addition, as a result of NNECO shutdown risk analysis to minimize risk, NNECO has developed plans to maximize safe controlled operation during service water system outages and reduced inventory conditions.

The staff notes that the 2 year interval requirement for Type B and C components is intended to be often enough to prevent significant deterioration from occurring and long enough to permit the tests to be performed during the plant outages. Leak rate testing of the penetrations during plant shutdown is preferable because of the lower radiation exposures to plant personnel. Moreover, some penetrations cannot be tested at power. For penetrations that

cannot be tested during power operation, or for which testing at power is inadvisable, the increase in confidence in containment integrity following a successful test is not significant enough to justify a plant shutdown specifically to perform the tests within the 2 year period.

Based on the above evaluation, the staff has determined that the proposed Exemption is acceptable.

Principal Contributor: G. Vissing

Date: October 12, 1994