

May 8, 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: MILLSTONE NUCLEAR POWER STATION, UNIT 3 - EXEMPTION FROM 10 CFR
PART 50, APPENDIX J (TAC NO. M90597)

Dear Mr. Opeka:

By letter dated September 28, 1994, as supplemented February 24, 1995, Northeast Nuclear Energy Company requested a partial exemption and a scheduler exemption from the requirements of Section III.D.1.(a) of 10 CFR Part 50, Appendix J. The NRC staff has reviewed the information provided in support of your exemption request.

We find that granting the exemption from the requirements of 10 CFR Part 50, Appendix J, Section III.D.1.(a), is authorized by law, will not present an undue risk to public health and safety, is consistent with the common defense and security, and meets the special circumstances described in 10 CFR 50.12(a)(2)(ii). Accordingly, your requests are granted for an exemption to extend the 10-year Appendix J Type A test interval until refueling outage 6, a nominal increase of 12 months, and an exemption to separate the performance of the third Type A test in a 10-year test period from the 10-year American Society of Mechanical Engineers inservice inspections. This will have the effect of permitting you to delay the performance of the next Type A test until the sixth refueling outage.

A copy of the Exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,
Original signed by
Phillip F. McKee, Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423
Enclosure: Exemption
cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 8, 1995

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Executive Vice President, Nuclear
Connecticut Yankee Atomic Power Company
Northeast Nuclear Energy Company
Post Office Box 270
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Sincerely,

A handwritten signature in dark ink, appearing to read "V. Rooney", is written over a horizontal line.

Vernon L. Rooney, Senior Project Manager
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-423

Enclosure: Exemption

cc w/encl: See next page

Mr. John F. Opeka
Northeast Nuclear Energy Company

Millstone Nuclear Power Station
Unit 3

cc:

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
NORTHEAST NUCLEAR ENERGY COMPANY)	Docket No. 50-245
)	
(Millstone Nuclear Power Station,)	
Unit No. 3))	

EXEMPTION

I.

Northeast Nuclear Energy Company (NNECO, the licensee) is the holder of Facility Operating License No. NPF-49, which authorizes operation of Millstone Nuclear Power Station, Unit No. 3 (the facility). The license provides, among other things, that Millstone Unit 3 is subject to all rules, regulations, and Orders of the U.S. Nuclear Regulatory Commission (the Commission or NRC) now or hereafter in effect.

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

II.

Section III.D.1.(a) of Appendix J to 10 CFR Part 50 requires the performance of three Type A containment integrated leakage rate tests (ILRTs), at approximately equal intervals during each 10-year service period of the primary containment. The third test of each set shall be conducted when the plant is shutdown for the 10-year inservice inspection of the primary containment.

III.

By letter dated September 28, 1994, as supplemented February 24, 1995, Northeast Nuclear Energy Company requested exemptions from 10 CFR Part 50, Appendix J, Section III.D.1.(a) for Millstone Unit 3 (1) to eliminate the requirement to perform the third Type A test coincident with the 10-year American Society of Mechanical Engineers (ASME) inservice inspections, and (2) to extend the 10-year Appendix J test until refueling outage 6, a nominal increase of 12 months. These exemptions would permit the licensee to perform the third Type A test of the first 10-year period during refueling outage 6 scheduled for April 1997 rather than during the refueling outage 5.

The licensee's request cites the special circumstance of 10 CFR 50.12(a)(2)(ii), as the basis for these exemptions. This special circumstance states that the application of the regulation in this particular circumstance is not necessary to achieve the underlying purpose of the rule.

IV.

Section III.D.1.(a) of Appendix J to 10 CFR Part 50 states that a set of three Type A leakage rate tests shall be performed at approximately equal intervals during each 10-year service period. Section III.D.1.(a) also requires that the third Type A test of each 10-year service period be conducted when the plant is shutdown for the 10-year plant inservice inspections.

The licensee proposes two exemptions to this section. These exemptions would (1) extend the 10-year Appendix J test interval to refueling outage 6, a nominal increase of 12 months, and (2) eliminate the requirement to

perform the third Type A test coincident with the 10-year ASME inservice inspections.

The Commission has determined, for the reasons discussed below, that pursuant to 10 CFR 50.12(a)(1) this 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. The Commission further determines that special circumstances, as provided in 10 CFR 50.12(a)(2)(ii), are present justifying the exemption; namely, that application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule. The underlying purpose of the requirement to perform Type A containment leak rate tests at intervals during the 10-year service period is to ensure that any leakage through the containment boundary is identified within a limited time span that prevents significant degradation from continuing or becoming unknown.

The NRC staff has reviewed the basis and supporting information provided by the licensee in the exemption request. The NRC staff notes that the licensee has a good record of ensuring a leak-tight containment. All Type A tests have passed with significant margin and the licensee has noted that the results of the Type A testing have been confirmatory of the Type B and C tests which will continue to be performed. The licensee has stated to the NRC Project Manager that the general containment inspection will be performed during refueling outage 5 although it is only required by Appendix J (Section V.A.) to be performed in conjunction with Type A tests. The NRC staff considers that these inspections, though limited in scope, provide an

important added level of confidence in the continued integrity of the containment boundary.

The NRC staff has also made use of the information in a draft staff report, NUREG-1493 "Performance-Based Containment Leak-Test Program," which provides the technical justification for the present Appendix J rulemaking results of the effort which includes a 10-year test interval for Type A tests. The integrated leakage rate test, or Type A test, measures overall containment leakage. However, operating experience with all types of containments used in this country demonstrates that essentially all containment leakage can be detected by local leakage rate tests (Type B and C). According to results given in NUREG-1493, out of 180 ILRT reports covering 110 individual reactors and approximately 770 years of operating history, only 5 ILRT failures were found which local leakage rate testing could not detect. This is 3% of all failures. This study agrees well with previous NRC staff studies which show that Type B and C testing can detect a very large percentage of containment leaks. The Millstone Unit 3 experience has also been consistent with these results.

The Nuclear Management and Resources Council (NUMARC), now the Nuclear Energy Institute (NEI), collected and provided the NRC staff with summaries of data to assist in the Appendix J rulemaking effort. NUMARC collected results of 144 ILRTs from 33 units; 23 ILRTs exceeded $1.0L_g$. Of these, only nine were not due to Type B or C leakage penalties. The NEI data also added another perspective. The NEI data show that in about one-third of the cases exceeding allowable leakage, the as-found leakage was less than $2L_g$; in one case the leakage was found to be approximately $2L_g$; in one case the as-found leakage

was less than $3L_g$; one case approached $10L_g$; and in one case the leakage was found to be approximately $21L_g$. For about half of the failed ILRTs the as-found leakage was not quantified. These data show that, for those ILRTs for which the leakage was quantified, the leakage values are small in comparison to the leakage value at which the risk to the public starts to increase over the value of risk corresponding to L_g (approximately $200L_g$, as discussed in NUREG-1493).

The licensee also addressed the possible increase in risk due to extending this test interval. The licensee concluded that any increase in risk would be negligible. This is consistent with independent staff studies documented in NUREG-1493.

Therefore, based on these considerations, it is unlikely that an extension of one cycle for the performance of the Appendix J, Type A test at Millstone Unit 3 would result in significant degradation of the overall containment integrity. Likewise, performance of the third test in a refueling outage other than when the plant is shutdown for the 10-year plant in-service inspections has no connection to the detection of overall containment degradation. As a result, the application of the regulation in these particular circumstances is not necessary to achieve the underlying purpose of the rule.

The preoperational Type A test required by Appendix J was performed in July 1985. Millstone Unit 3 started commercial operation on April 23, 1986. The staff considers this date to also be the start of the licensee's first 10-year Type A test period. The extension of the Type A test interval for Millstone Unit 3 discussed in this document is referenced to this starting date. Based on generic and plant specific data, the NRC staff finds the basis for the licensee's proposed exemptions to be acceptable.

Pursuant to 10 CFR 51.32, the Commission has determined that granting this Exemption will have no significant impact on the quality of the human environment (60 FR 22415).

This Exemption is effective upon issuance and shall expire at the completion of the 1997 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by

Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland,
this 8th day of May 1995

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