

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NUREG-401 NUCLEAR ENERGY COMPANY

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November 18, 1992

Docket No. 50-423
B14288

Re: 10CFR50.12

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 3
10CFR50, Appendix J, Request for Exemption

On January 22, 1991, and February 5, 1991, Northeast Nuclear Energy Company (NNECO) commenced the most recent containment local leak rate testing in accordance with the 10CFR50, Appendix J, Type B and C periodic testing requirements, respectively, for Millstone Unit No. 3 during the 1991 refueling outage. As a result of an unusually long maintenance outage (service water system work and erosion/corrosion work) during 1991, and 2 limited duration outages in 1992, NNECO has rescheduled the Millstone Unit No. 3 refueling outage from November 1992 to approximately September 1993. Increasing the interval between refueling outages will cause Millstone Unit No. 3 to exceed the Type B and Type C periodic Appendix J testing intervals of 24 months by approximately 8 to 10 months, if performed during the 1993 refueling outage. To accommodate this schedule change, NNECO hereby submits a request for a schedular exemption from the requirements of 10CFR50, Appendix J, Section III.D.2(a) and III.D.3 for Millstone Unit No. 3.

It is our understanding that the NRC is in the process of amending 10CFR50, Appendix J, to update the criteria and clarify questions of interpretation with regard to leakage rate testing of containments of nuclear power plants. Among major modifications proposed to Appendix J, the revised rule contemplates changes in Type A, B, and C test frequencies. Specifically, based on the trend from 18-month toward 24-month refueling cycles, the wording in the proposed rule may be revised to provide greater flexibility in this area. The exemptions proposed herein are consistent with the intent of these contemplated changes.

This exemption will provide temporary relief from the schedular requirements for Type B and Type C periodic retest schedules until the 1993 refueling outage. The request for schedular exemptions until the 1993 refueling outage is included in Attachment 1. As described in Attachment 1, Type B testing of all penetrations

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except one (i.e., fuel transfer canal blind flange) will be completed by January 22, 1993. It should be noted that the fuel transfer canal blind flange was Type B tested on March 18, 1991; therefore, its testing interval would not be exceeded until March 18, 1993. Also, Attachment 1 indicates that Type C testing of 31 penetrations has been completed in 1992. Therefore, this scheduler exemption covers only one penetration for a Type B test and 37 penetrations for Type C tests. In addition, Attachment 2 provides a summary of the corrective actions performed during the 1991 refueling outage.

The Commission's regulations, specifically 10CFR50.12(a), provide that exemptions may be granted from the regulations in 10CFR50 provided they are "authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security."

Based on the information provided in Attachments 1 and 2, NNECO concludes that exemptions from the requirements of 10CFR50, Appendix J, are justified pursuant to 10CFR50.12, entitled, "specific exemptions," Sections (a)(1), (a)(2)(ii), (a)(2)(iii), and (a)(2)(v) in that:

- These exemptions "will not present an undue risk to the public health and safety."
 - The proposed exemptions do not change, modify, or restrict existing plant safety settings, systems, or operations.
 - The changes do not impact the design basis of containment or modify its response during a design basis accident.
- "Application of the regulation in the particular circumstances is not necessary to achieve the underlying purpose of the rule."
 - NNECO's commitment to improve containment integrity over the past 6 years (as demonstrated by historically very low Type B and Type C leakages) meet the intent of Appendix J.
- "Compliance would result in costs that are significantly in excess of those contemplated when the regulation was adopted."
 - Current replacement energy costs associated with a mid-cycle shutdown were not contemplated when the regulation was adopted.
- "The exemption would provide only temporary relief from the applicable regulations and the licensee applicant has made a good-faith effort to comply with the regulations."
 - These exemptions apply to the next series of Type B and C tests only.

- Without the unusually long maintenance outage in 1991 and 2 limited outages in 1992, these exemptions would not be necessary and Type B and C tests would be conducted per the original schedule.
- In addition, in January, May, and October 1992, while shut down, Type C testing was satisfactorily performed on 31 penetrations. This represents approximately 45 percent of total Type C testing. The total Type B and C leakage as of October 31, 1992, is 166,161.7 SCCM, which represents approximately 26.6 percent of the technical specification limit of 624,762.67 SCCM (0.6L_a). In addition, Type B testing of all penetrations except one will be completed during the 24-month interval specified in Appendix J.

In addition to this exemption request, NNECO requires a one-time change to the Millstone Unit No. 3 Technical Specification sections 4.6.1.2.d and 4.6.1.2.e to allow the Type B and C testing interval to be extended for this cycle only. This required technical specification change is being submitted via a separate license amendment request to the NRC Staff for review and approval. It is noted that the technical specification change and the schedular exemption related to the Type B and Type C testing requirements similar to those proposed herein have been approved by the NRC for the Haddam Neck Plant in a letter dated August 28, 1991.⁽¹⁾ A similar Appendix J schedular exemption was granted by the NRC for Millstone Unit No. 1 in a letter dated April 4, 1991.⁽²⁾

In summary, NNECO has concluded that the exemptions discussed in Attachment 1 are warranted under the standards of 10CFR50.12. NNECO's commitment to improve containment integrity since the plant's initial startup has been demonstrated by very low Type B and C leakages over the past six years. Further, Type C testing performed during 1992 on 31 penetrations demonstrates NNECO's good faith efforts to satisfy the requirements of Appendix J. With respect to the schedule for review of this exemption request, NNECO respectfully requests approval of this exemption request prior to February 5, 1993, which is when the currently required 24-month testing interval would be exceeded.

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- (1) A. B. Wang letter to E. J. Mroczka, "Exemption to Appendix J - Extension of the Type B and C Leak Rate Test Period," dated August 28, 1991.
 - (2) M. L. Boyle letter to E. J. Mroczka, "Exemption to Appendix J - Extension of the Type B and C Leak Rate Test Period (TAC No. 79700)," dated April 4, 1991.

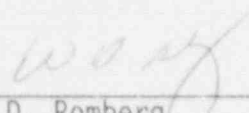
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We trust you will find this information satisfactory, and we remain available to answer any questions you may have.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: J. F. Opeka
Executive Vice President

BY: 

W. D. Romberg
Vice President

cc: T. T. Martin, Region I Administrator
V. L. Rooney, NRC Project Manager, Millstone Unit No. 3
P. D. Swetland, Senior Resident Inspector, Millstone Unit Nos. 1, 2,
and 3

Docket No. 50-423
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Attachment 1

Millstone Nuclear Power Station, Unit No. 3

10CFR50, Appendix J, Request for Scheduling Exemptions
From Related Type B and C Test Requirements

November 1992

Attachment 1
Millstone Nuclear Power Station, Unit No. 3
10CFR50, Appendix J, Request for Scheduling Exemptions
From Related Type B and C Test Requirements

A. Exemption Request

Section III.D.2(a) of 10CFR50, Appendix J, requires that:

"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."

Millstone Unit No. 3's last refueling outage commenced in February 1991. Type B testing commenced on January 22, 1991. There are 84 Type B penetrations. Of these 84 penetrations, 80 are electrical penetrations which can be tested at power. Of the four remaining penetrations, two penetrations, i.e., the equipment hatch, and equipment hatch manway, were tested on November 16, 1991, and January 28, 1992, respectively. Current plans are to begin testing of the above electrical penetrations in November 1992, and complete testing prior to January 22, 1993. The third penetration, the personnel air lock, is covered under Technical Specification 3.6.1.3 and is therefore not the subject of this exemption request. Only one penetration that cannot be tested at power will require a scheduling exemption. This penetration is the fuel transfer canal blind flange. Type B testing on this penetration was last performed on March 18, 1991. NNECO hereby requests a scheduling exemption until the next refueling outage, currently scheduled to commence in September 1993, be granted for testing of this penetration because the next scheduled refueling outage will exceed the provisions of this requirement by approximately eight to ten months.

The exemption is being requested to prevent an early shutdown and to allow performance of this test during the 1993 refueling outage.

1. Evaluation

NNECO has evaluated the regulatory requirements concerning Type B periodic testing and is not questioning the validity of conducting the test itself, rather the required time frame of "...in no case at intervals greater than 2 years."

NNECO's Type B local leak rate test (LLRT) leakage, historically, has not been a source of significant "as-found" leakage.

NNECO contends that our commitment to improve containment integrity and historically very low Type B leakage are sufficient to allow the two-year test interval requirement to be exceeded by approximately eight to ten months and still meet the intent of Appendix J.

2. Justification of Exemption

NNECO's exemption request from the requirements of 10CFR50, Appendix J, III.D.2.(a), will not result in undue risk to the health and safety of public:

- a. The proposed exemption does not change, modify, or restrict existing plant safety limits, safety settings, or operations. The change does not impact the design basis of containment or modify its response during a design basis accident (DBA).
- b. There are no undue adverse safety effects associated with the exemption.
- c. During the unusually long maintenance outage during 1991 and two limited duration outages in 1992, which comprise approximately thirteen months, plant components were not exposed to the potentially degrading normal operating temperatures, pressure and radiation conditions. The time interval of 24 months, specified in Appendix J, was based, in part, on the expected degradation of components exposed to the environment resulting from a full 24 months of normal plant operation. The total exposure time for containment to a normal plant operations environment at Millstone Unit No. 3 would be about 19 months, until September 1993.

3. Conclusion

Based on the above information, NNECO concludes that the requested exemption is warranted and that the underlying purpose of the regulation would still be met.

B. Exemption Request

Section III.d.3 of 10CFR50, Appendix J, requires that:

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

Millstone Unit No. 3's last refueling outage commenced in February 1991. Type C testing commenced on February 5, 1991, and was completed during the last refueling outage. There are 68 mechanical penetrations that require Type C testing to be performed during each reactor shutdown for refueling, but in no case at intervals greater than two years. In January, May, and October 1992, while shut down, Type C testing was satisfactorily performed on 31 penetrations. This represents approximately 45 percent of total Type C testing. NNECO hereby requests a schedular exemption until the next refueling outage, currently scheduled to commence in September 1993,

be granted for testing of the remaining penetrations (37) because the next scheduled refueling outage will exceed the provisions of this requirement by approximately eight to ten months.

The exemption is being requested to prevent an early shutdown and to allow performance of this testing during the 1993 refueling outage.

1. Evaluation

NNECO has reviewed the regulatory requirements concerning Type C periodic testing and is not questioning the validity of conducting the test itself, rather the required time frame of "...in no case at intervals greater than 2 years..."

In January and May of 1992, while shut down, Type C testing was successfully performed on 21 penetrations. In addition, in October 1992, while shut down, Type C testing was completed on an additional ten penetrations. The request covers only the remaining penetrations (37), whose last Type C tests were performed in the last refueling outage. The total Type B and C leakage as of October 31, 1992, is 166,161.7 SCCM, which represents approximately 26.6 percent of the technical specification limit of 624,762.67 SCCM (0.6 L_a). The total Type B and C bypass leakage is 18,552.0 SCCM, which represents approximately 42.4 percent of the technical specification limit of 43,735 SCCM (0.042 L_a). In addition, the past Millstone Unit No. 3 local leak rate test data (Type B and C), in general has demonstrated good leak rate test results. Specifically, during the last refueling outage, the total Type B and C leakage rate was 233,679.2 SCCM. This value is approximately 37.5 percent of the technical specification limit of 624,762.67 SCCM (0.6L_a). The total bypass B and C leakage value was approximately 17,810 SCCM, which is approximately 40.7 percent of the technical specification limit of 43,735 SCCM (0.042 L_a).

In addition, the last Millstone Unit No. 3 containment integrated leakage rate test (ILRT) completed on July 7, 1989, indicated that the "As-Left" ILRT leakage rate, which measures the leakage of all potential paths including Type B and Type C penetrations, was 0.29 weight percent per day. This value is 44.6 percent of the technical specification limit of 0.65 weight percent per day (L_a), thereby demonstrating that the overall leak tightness of containment and its protective boundaries is maintained.

NNECO contends that the above results are sufficient to allow the two-year test interval to be exceeded by approximately eight to ten months and still meet the intent of Appendix J.

2. Justification of Exemption

NNECO's exemption request from requirements of 10CFR50, Appendix J (III.D.3), will not result in undue risk to the health or safety of the public:

- a. The proposed exemption does not change, modify or restrict existing plant safety limits, safety settings, or operations. The changes do not impact the design basis of containment or modify its response during a DBA.
- b. There are no undue adverse safety effects associated with this exemption.
- c. During the unusually long maintenance outage during 1991, and two limited duration outages in 1992, which comprise approximately 13 months, plant components were not exposed to the potentially degrading normal operating temperature, pressure and radiation conditions. The time interval of 24 months, specified in Appendix J, was based, in part, on the expected degradation of components exposed to the environment resulting from a full 24 months of normal plant operation. The total exposure time for containment to a normal plant operations environment at Millstone Unit No. 3 would be approximately 19 months, until September 1993.

3. Conclusion

Based on the above information, NNECO concludes that the requested exemption is warranted and that the underlying purpose of the regulation would still be met.

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Attachment 2

Millstone Nuclear Power Station, Unit No. 3
10CFR50, Appendix J

Summary of Corrective Actions

November 1992

Attachment 2
Millstone Nuclear Power Station, Unit No. 3
10CFR50, Appendix J

Summary of Corrective Actions

During the third refueling outage, four containment isolation valves failed their "as found" local leak rate test (LLRT) because of leakage rates which exceeded technical specification limits. These valves include the residual heat removal (RHR) system suction valve 3RHS* MV8702A, containment recirculation spray system (RSS) check valve 3RSS* V6, reactor plant chilled water system valve 3CDS* CTV91B, and containment recirculation spray system valve 3RSS* MOV23B. In each case, the root cause of the valve failure, corrective action, and how the containment integrity was maintained has been documented in the Licensee Event Report (LER) #91-004-01.

1. RHR System Suction Valve 3RHS* MV8702A

During the third refueling outage, this valve failed its LLRT because of improper valve seating due to buildup of boric acid crystals. The penetration was flushed with water and the valve retested satisfactorily. In addition, in January 1992, this valve was Type C tested and the leak rate was within the technical specification limit and therefore this valve is not a subject of this exemption request.

2. RSS Check Valve 3RSS* V6

The valve 3RSS* V6 failed its LLRT because of improper valve seating due to boric acid crystal buildup. The valve seat was cleaned, the valve was reassembled and an "As-Left" LLRT was satisfactorily performed. Containment integrity is also maintained by outboard containment isolation valve, RSS* MOV20B.

3. Reactor Plant Chilled Water System Valve 3CDS* CTV91B

The failure of 3CDS* CTV91B resulted from excessive tightening of the T-ring set screws during valve seat adjustment, which caused failure of the T-ring. The T-ring was replaced, the valve was reassembled and was retested satisfactorily prior to startup from the third refueling outage. In addition, in May 1992, while the plant was shut down, the valve was Type C tested and the leak rate was within the technical specification limit. This valve is not the subject of this exemption request.

4. Containment Recirculation Spray System Valve, 3RSS* MOV23B

During the third refueling outage, Valve 3RSS* MOV23B failed because of separation of the vulcanized rubber seat from the valve body mounting surface. The valve was removed from the system and sent to the manufacturer for overhaul. It was subsequently reinstalled and retested satisfactorily prior to startup. The "As Left" leak test was satisfactory.