



May 31, 1994

Docket Nos. 50-245
50-336
B14851

Re: 10CFR2.201

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

Millstone Nuclear Power Station, Unit Nos. 1, and 2
Reply to Notice of Violations
Inspection Report Nos. 50-245/94-01; 50-336/94-01; 50-423/94-01

In a letter dated April 22, 1994,⁽¹⁾ the NRC Staff transmitted a Notice of Violations (NOV) relating to Millstone Combined Inspection 50-245/94-01; 50-336/94-01; 50-423/94-01. The report discussed the results of the safety inspection conducted from January 5, 1994, through February 22, 1994, at Millstone Station.

Based on the results of the Staff's inspection, six violations were identified at Millstone Unit Nos. 1 and 2. The two violations that were cited at Millstone Unit No. 1 were: (1) inadequate local storage of safety-related spare components; and (2) inadequate surveillance test procedure for the standby gas treatment system. Although cited in the Inspection Report, the NRC Staff stated that no response is required for the inadequately performed standby gas treatment system operability surveillance. The four violations cited at Millstone Unit No. 2 were: (1) untimely corrective action for vital inverter power supply problems; (2) failure to notify operators of equipment removal from service for maintenance; (3) inadequate design verification of the suitability of replacement parts, and (4) failure to complete technical specification action statements within the allowed outage time.

The Staff requested that Northeast Nuclear Energy Company (NNECO) respond within 30 days of the date of the letter transmitting the

-
- (1) W. D. Lanning letter to J. F. Opeka, "Millstone Combined Inspection 50-245/94-01; 50-336/94-01; 50-423/94-01," dated April 22, 1994.

JEO

U.S. Nuclear Regulatory Commission
B14851/Page 2
May 31, 1994


NOVs. However, during a discussion between NNECO and the Region I Staff on May 17, 1994, it was agreed that this reply would be provided on May 31, 1994. Accordingly, Attachment 1 to this letter provides NNECO's reply to the NOVs on behalf of Millstone Unit Nos. 1 and 2, pursuant to the provisions of 10CFR2.201.

If you have any questions regarding information contained herein, please contact Mr. R. H. Young, at (203) 665-3717.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

FOR: J. F. Opeka
Executive Vice President

BY: 
E. A. DeBarba
Vice President

cc: T. T. Martin, Region I Administrator
J. W. Andersen, NRC Acting Project Manager, Millstone Unit
No. 1
G. S. Vissing, NRC Project Manager, Millstone Unit No. 2
P. D. Swetland, Senior Resident Inspector, Millstone Unit
Nos. 1, 2, and 3

Docket Nos. 50-245
50-336
B14851

Attachment 1

Millstone Nuclear Power Station, Unit Nos. 1 and 2

Reply to Notice of Violations

Inspection Report Nos. 50-245/94-01; 50-336/94-01; 50-423/94-01

May 1994

U.S. Nuclear Regulatory Commission
B14851/Attachment 1/Page 1
May 31, 1994

Millstone Nuclear Power Station, Unit Nos. 1, and 2
Reply to Notice of Violations
Inspection Report Nos. 50-245/94-01; 50-336/94-01; 50-423/94-01

Restatement of Violations:

During an NRC inspection conducted on January 5, 1994 through February 22, 1994, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

- A. 10 CFR 50 Appendix B, Criterion XIII, Handling, Storage and Shipping, requires that measures shall be established to control the storage of material and equipment in accordance with instructions to prevent damage or deterioration. When necessary for particular products special protective environments...shall be specified." Northeast Utilities Quality Assurance Topical Report, Appendix D, commits to ANSI Standard 45.2.2 - 1972, "...Storage and Handling of Items for Nuclear Power Plants." ANSI 45.2.2 - 1972, Paragraph 2.7.2, states in part that items requiring Level B storage require measures for protection from the effects of temperature extremes, humidity and vapors, acceleration forces, physical damage and airborne contamination.

Pursuant to the above, Administrative Control Procedure, ACP QA-4.04, "Instructions for Packaging, Shipping, Receiving, Storage and Handling," requires Level B materials to be stored in secure, environmentally protected areas.

Contrary to the above, on September 7, 1993 and January 21, 1994, respectively, three safety related 4160 volt circuit breakers and several stainless steel globe valves that were specified as requiring Level B storage were found not stored in secure, environmentally protected Level B storage areas. These items were improperly stored for at least several days.

This is a Severity Level IV violation (Supplement I).

- B. 10 CFR Part 50 Appendix B, Criterion XVI requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is

determined and corrective action taken to preclude repetition.

Contrary to the above, from approximately February 6 to February 18, vital inverter #1 was not capable of automatically transferring to its alternate power supply at all times. Vital inverter #3 was similarly affected from January 28 to February 19, 1994. These significant conditions adverse to quality were not corrected until the inability of inverter #1 to automatically transfer to its alternate source was recognized as an operationally limiting condition on February 18, 1994.

This is a Severity Level IV Violation (Supplement I).

- C. Millstone Unit 2 Technical Specification 6.8.1 requires that procedures covering station activities be established and implemented. Station administrative procedure ACP-QA-2.02C, "Work Orders," was established pursuant to the above.

Procedure ACP-QA-2.02C, Section 5.10.1 requires, in part, that the Operations Work Control (OWC) Supervisor shall inform the Shift Supervisor (SS)/Shift Control Operator (SCO) of all work released.

Contrary to the above, on January 18, 1994, the OWC supervisor did not inform the SS/SCO that the facility 2 control room air conditioning unit had been released for corrective maintenance under authorized work order M2-94-00590. Consequently, the operating shift did not know the unit was out of service and that a limiting condition for operation applied with one of two independent control room emergency ventilation systems inoperable.

This is a Severity Level IV Violation (Supplement I).

- D. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires that measures shall be established for the selection and review for suitability of the application of parts that are essential to the safety-related functions of the components. The design control measures shall provide for verifying or checking the adequacy of design.

Contrary to the above, the measures established for review for suitability of the application of replacement solenoid operated valves used in the safety-related emergency diesel generator starting air systems were not adequate, as evidenced by the following examples:

1. The design review for suitability performed in February 1988 for the replacement of valve 2-DG-95B did not verify vendor information used in lieu of valve name plate data and the emergency diesel generator seismic design specification. Consequently, a valve which did not meet the system design criteria was installed from February 1988 until October 8, 1993.
2. The design review for suitability performed on October 8, 1993, for the replacement of valve 2-DG-95B did not verify vendor information used in lieu of the emergency diesel seismic design specification. Consequently, the valve installed on October 8, 1993 had not been shown to adequately meet the system design criteria.
3. The design reviews for suitability performed for the replacement in 1985 of valve 2-DG-96A, and 1986 of valve 2-DG-96B, did not verify the vendor information used in lieu of the emergency diesel generator seismic design specification. Consequently, the valves had not been verified to adequately meet the system design criteria.

This is a Severity Level IV Violation (Supplement I)

- E. Millstone Unit 2 Technical Specification (TS) 3.7.1.1, "Turbine Cycle - Safety Valves," which applies in operating modes one through three, requires that with one or more main steam line code safety valves (MSSV) inoperable, either restore the inoperable valve(s) to operable status or reduce the power level high trip setpoint within four hours. Otherwise, the plant must be placed in at least hot standby within the next six hours and in cold shutdown within the following 30 hours.

Contrary to the above, from May 31, 1992, at 6:50 p.m. until June 1, 1992, at 4:18 a.m., with one or more MSSV inoperable and without reducing the power level high trip setpoint, the plant was not placed in cold shutdown within 40 hours.

This is a Severity Level IV Violation. (Supplement I)

- F. Millstone Unit 1 Technical Specification 4.7.b.3.c requires that when one circuit of the standby gas treatment system becomes inoperable, the other circuit shall be demonstrated to be operable immediately and daily thereafter.

U.S. Nuclear Regulatory Commission
B14851/Attachment 1/Page 4
May 31, 1994

Contrary to the above, on November 11, 1993, with Unit 1 operating at 100 percent power and one circuit of the standby gas treatment system inoperable, the surveillance testing immediately to demonstrate the operability of the other circuit was inadequately performed. Specifically, surveillance procedure SP 646.6, "Functional Test When One Circuit of the Standby Gas Treatment Becomes Inoperable," which was the only test performed, was not conducted at the design flow rate of 1100 scfm and did not verify the functionality of the 5 KW relative humidity heaters.

This is a Severity Level IV Violation (Supplement I). No response is required.

1. Reason For The Violation (Violation A):

NNECO believes that the improper storage of Quality Assurance (QA) designated circuit breakers and stainless steel globe valves was attributable to inadequate guidance and understanding of QA Field Storage requirements.

2. Corrective Steps That Have Been Taken and the Results Achieved (Violation A):

The circuit breakers in question were removed from the maintenance shop and transported to the switchgear area of the turbine building. A nonconformance report was initiated to disposition concerns associated with the storage deficiency. Due to the improper storage, the stainless steel globe valves were rejected and discarded.

Station management met with representatives of Millstone Maintenance and Instrumentation and Controls Departments personnel to make them aware of this issue. Management emphasized that personnel needed to focus on this event and ensure that currently existing procedural requirements were being met.

Also, station management notified the entire station with the newsletter "TO THE POINT" to create a general awareness that a problem existed and what station management's expectations were regarding QA storage requirements.

NNECO had previously committed to make necessary procedure changes by June 1, 1994. Millstone ACP-QA-4.02B has now been revised. The procedure change formalized the time requirement for maintaining QA equipment in work locations. Specifically, the procedure identifies a defined period of time, not to exceed 72 hours, during which a safety related item may remain in a work area, if work related to the item has stopped. Further, the procedure establishes controls that are required to be maintained within the 72 hour period. If work is not expected to resume within a 72 hour window, the item must be returned to a storage area that meets the storage level requirements for the item. ACP-QA-4.02B was also revised to establish training and qualifications responsibilities.

3. Corrective Steps That Will Be Taken to Avoid Further Violations (Violation A):

The changes to ACP-QA-4.02B have been approved and are scheduled to become effective on July 1, 1994, to allow time for training. The line organization will continue to monitor performance to ensure the effectiveness of the actions described. Additionally, Quality and Assessment Services will be specifically requested to periodically assess the effectiveness of the controls on the storage of QA material.

4. Date When Full Compliance Will Be Achieved (Violation A):

NNECO believes that appropriate corrective actions have been implemented and that we are currently in full compliance with storage requirements for QA material.

5. Generic Implications (Violation A):

This NOV reply will be distributed to the Nuclear Group Directors, for discussion with their personnel having responsibility for handling QA materials. Corrective actions planned in response to the deficiencies identified in this reply will be applied to all Millstone units.

1. Reason For The Violation (Violation B):

NNECO believes that the reason for this violation is that Technical Support personnel were unaware of the relationship between the assumptions made in the Main Steam Line Break (MSLB) analysis, which credits feedwater isolation, and the ability of vital AC, normally powered from inverter 1, to automatically transfer to the alternate power from inverter 5 to provide alternate power for some feedwater isolation components.

Since these vital inverters were installed at the beginning of the current fuel cycle, operating experience with them has been limited and procedures for testing and adjusting the inverter synchronizing circuit were not readily available until the vendor was contacted.

2. Corrective Steps That Have Been Taken and the Results Achieved (Violation B):

Personnel have been made aware of the assumptions made in the MSLB analysis which credits normal power from inverters 1 and 3 or transfers to alternate power from inverters 5 and 6.

A method for setpoints readjustment in the inverter synchronization circuits has been developed. The means to identify the need to make a readjustment to these setpoints has been provided to the operations personnel.

During the recent plant shutdown for reactor coolant pump seal replacement, all six inverter synchronization circuit setpoints were rechecked, and adjusted as needed, to ensure automatic transfer capability will be maintained.

NNECO submitted a license amendment request to the NRC Staff for review on May 6, 1994, to add certain components credited in the MSLB analysis to the Unit Technical Specifications.

3. Corrective Steps That Will Be Taken to Avoid Further Violations (Violation B):

During the Millstone Unit No. 2 refueling outage, scheduled to commence in August 1994, modifications to vital inverters will be made which include recalibration of Frequency Limiter circuits of all inverters to provide broader limits recommended by the manufacturer. Additional vendor provided

training has been scheduled for June 13-14, 1994, to assist a new System Engineer in timely troubleshooting activities. The combination of a dedicated, trained, Systems Engineer and additional procedures for recalibration, are expected to significantly reduce the time required to successfully troubleshoot and resolve any future difficulties.

4. Date When Full Compliance Will Be Achieved (Violation B):

Full compliance is expected to be achieved by October 31, 1994 when training and design modifications are complete.

5. Generic Implications (Violation B):

This NOV reply will be distributed to the Technical Support Engineering Managers at Millstone Unit Nos. 1 and 3 and the Haddam Neck Plant. Actions will be evaluated as appropriate.

1. Reason For The Violation (Violation C):

NNECO believes that the reason for this violation was a combination of several factors (e.g., personnel error, inadequate work practice, inadequate communication, and no self-checking).

The Operations Department Work Coordinator a Senior Reactor Operator (SRO) did not adequately review the Automated Work Order (AWO) to determine that all requirements had been checked or reviewed prior to releasing the tagging and the AWO.

The Work Control SRO had not determined that entry into a Technical Specification Action Statement (TSAS) was necessary and consequently, this information was not provided to the on-shift supervising control operator (SCO).

2. Corrective Steps That Have Been Taken and the Results Achieved (Violation C):

When the need to be in a TSAS was determined, a late entry was made in the Shift Supervisor's Log to indicate when the tagging was initiated. The retest of the Facility 1 control room air conditioning system was performed and the TSAS was exited.

On April 25, 1994, the Work Planning and Control Manager (WP&C) issued a memorandum (WP&C2-94-046) to all applicable Millstone Unit No. 2 personnel describing emerging work policies. This memorandum described the controls which will be in place to ensure emergent work activities are performed in a safe and efficient manner. A flowchart has been developed, which describes the reviews and approvals necessary to implement emergent work.

Shift Supervisors and Senior Operations Department personnel have been briefed on their work control responsibilities relative to emergent work. This information was also provided in Revision 4 to Operations Department Instruction, 2-OPS-1.21, "Operations Department Work Control Responsibilities," and these responsibilities were discussed in Licensed Operator Regualification Training (LORT).

The Work Control SRO was counselled as to his responsibility to review AWOs for Technical Specification impact and on three-way communication techniques.

The Work Control SRO's responsibility to inform the SCO, when authorizing work which requires entering a TSAS, has also been reinforced in training and in shift briefings.

3. Corrective Steps That Will Be Taken to Avoid Further Violations (Violation C):

NNECO believes that the corrective steps taken, as described above in Section 2, are comprehensive and are expected to avoid further violations. We will monitor these actions for effectiveness and take further actions as appropriate.

4. Date When Full Compliance Will Be Achieved (Violation C):

NNECO is presently in full compliance.

5. Generic Implications (Violation C):

This NOV reply will be distributed to the WP&C Managers at Millstone Unit Nos. 1 and 3. Actions will be evaluated as appropriate.

1. Reason For The Violation (Violation D):

NNECO believes that the reason for this violation is the inadequate identification and assessment of the seismic design capabilities for solenoid operated valves (SOVs) to fully meet their original seismic design requirements.

Replacement solenoids have several critical characteristics, including seismic qualifications, that must be reviewed and satisfied during the selection of a replacement. During the review of seismic requirements, original seismic calculations performed by the diesel vendor for the original air start solenoids were not considered. Since the reviewers believed that the replacement SOVs were equivalent to the original SOVs, they considered them to be seismic equivalents.

2. Corrective Steps That Have Been Taken and the Results Achieved (Violation D):

The seismic requirements review process for replacement components has been modified. A replacement component with seismic requirements is required to have either a seismic test report or a specific analysis performed, that demonstrates the replacement item will perform satisfactorily.

3. Corrective Steps That Will Be Taken to Avoid Further Violations (Violation D):

The Replacement Item Evaluation (RIE) procedure, Nuclear Engineering and Operations (NEO 6.12), has been modified to provide the necessary design criteria to be verified, when replacing solenoid valves.

The revision to the RIE procedure is currently in internal review and is expected to be approved by July 30, 1994.

Several internal group meetings have been held to discuss the seismic qualification issues relative to the history with the SOV replacement evaluations. A recently issued technical guide, "Seismic Evaluation Guidance for the Procurement of New and Replacement Items for Safe Shutdown Equipment," which is based on the Electric Power Research Institute - Seismic Technical Evaluation of Replacement Items (EPRI-STERI) guidelines (NP-7484), will enhance the Seismic Qualification Review process. This document provides additional guidance, specific to seismic

evaluation, to that provided in NEO 6.11 and 6.12 on commercial grade items and replacement part evaluations.

4. Date When Full Compliance Will Be Achieved (Violation D):

Details on this violation will be distributed to Design and Technical Support Engineering staffs to make all aware of the importance in reviewing seismic requirements for a replacement item prior to its installation. This will be accomplished by providing copies to all staff members by June 14, 1994.

5. Generic Implications (Violation D):

This NOV will be distributed to Millstone Unit Nos. 1, 2, and 3 and the Haddam Neck Technical Support Engineering Managers and Plant Design Engineering Managers for their review. Actions will be evaluated based on applicability.

1. Reason For The Violation (Violation E):

NNECO believes that the reason for this violation is a combination of three factors (e.g., an ambiguously worded section of a technical specification, a different interpretation of that section, and ineffective communication).

On May 30, 1992, Millstone Unit No. 2 was in the process of a unit shutdown in preparation for a refueling outage and steam generator replacement. During testing of main steam safety valves (MSSV), in Mode 3, nine of sixteen MSSVs failed surveillance testing (lifted outside the allowable setpoint) and were declared inoperable. Technical Specification (TS) 3.7.1.1 action 'a' which requires placing the unit in cold shutdown within 40 hours was entered.

A review of Technical Specifications shows that TS 3.7.1.1 is applicable only in Modes 1, 2, and 3. Technical Specification 3.0.1 states that compliance with the Limiting Condition for Operations (LCO) is required during the operation modes specified. In addition, the Bases for Specification 3.0.1 states that 3.0.1 establishes the Applicability statement within each specification as the requirement for when (i.e., in which Operational Mode), conformance to the LCO is required. Therefore, as discussed in the Bases for 3.0.1, if actions are not completed within the allowed outage time, 3.0.1 establishes that a shutdown is required to place the facility in a mode where the specification no longer applies.

After completion of surveillance testing of the MSSVs, the unit proceeded to cold shutdown in accordance with the planned outage schedule. Included in the outage schedule was a primary system cleanup evolution designed to reduction reactor coolant system (RCS) radiation levels in preparation for steam generator replacement. This evolution required extended operation at various reactor coolant system temperatures. After the unit reached Mode 4, less than 300 degrees, TS 3.7.1.1 was exited, since the TS does not apply in Mode 4. The primary system cleanup evolution continued as scheduled, and then the unit cooled down to Mode 5, cold shutdown, in preparation for the refueling outage.

2. Corrective Steps That Have Been Taken and the Results Achieved (Violation E):

This issue was discussed in detail in NRC Combined Inspection Report 50-336/92-14, dated July 22, 1992.⁽¹⁾ Although the inspector acknowledged NNECO's reasons for not going to Mode 5 (due to the conduct of the special evolution) and our interpretation of TS 3.0.1, he initiated an unresolved issue pending NRC: Office of Nuclear Reactor Regulation (NRR) review and interpretation of the required actions.

Millstone Unit No. 2 personnel initiated a proposed change to Technical Specification in August 1992 to increase the allowable MSSV setpoint tolerance from 1% to 3%, which had been previously approved by the Staff for another Combustion Engineering plant on November 14, 1988. Later in November 1993, NNECO combined this change with another safety valve proposed change relating to removal of the orifice size, which was also in progress. Neither of these two changes addressed the apparent ambiguity regarding Mode applicability.

In an NRC memorandum, dated January 11, 1994, that was mentioned in the Inspection Report which cited this violation, NRR Division of Reactor Projects stated that the required action to be in Mode 5 in 30 hours does not terminate in Mode 4 enroute to Mode 5. It goes on to discuss the apparent conflict in the wording of the TS, since the existing specification would allow going [back] to Mode 4 immediately after going to Mode 5. It stated that the licensee needs to submit a TS change, if supported by analysis, to remove this discrepancy. The memorandum concluded with:

Correction of the inconsistency is not urgent and can be processed with other changes in future amendment requests.

After the January 11, 1994, memorandum from NRR:DRP was received and shared with NNECO staff, the unit again reviewed the MSSV technical specification. As recommended in the NRR memorandum, a second technical specification change was initiated on January 25, 1994 to eliminate the

(1) A. R. Blough letter to J. F. Opeka, "Millstone Combined Inspection 50-245/92-13; 50-336/92-14; 50-423/92-13," dated July 22, 1992.

apparent conflict with the specification mode applicability, as further discussed in the NRR memorandum. NNECO believes that these pending changes to Technical Specifications were discussed with the resident inspection Staff.

Regarding the proposed changes to technical specification, both of the proposed changes discussed above are currently in technical review. The setpoint tolerance change and the mode applicability changes are proceeding with a normal priority, behind the refuel outage preparation and current outage related technical support workload.

With respect to the ineffective communications, NNECO has assigned additional resources to our Site Licensing group, in part, to increase communication effectiveness with the resident inspection staff.

2. Corrective Steps That Will Be Taken to Avoid Further Violations (Violation E):

The proposed changes to technical specifications will be submitted for Staff review following completion of NNECO technical review. These changes are expected to reduce the number of MSSVs which will be found out of tolerance and change the operating Mode in which the unit will be placed, if the MSSV(s) are determined to be inoperable.

3. Date When Full Compliance Will Be Achieved (Violation E):

NNECO is presently in full compliance with TS 3.7.1.1. It was in compliance when Mode 5 was reached during the 1992 shutdown for the start of the refuel outage.

4. Generic Implications (Violation E):

This NOV reply will be distributed to the Nuclear Licensing staffs at Millstone Unit Nos. 1 and 3. Actions will be evaluated as appropriate.