

October 8, 1996

Mr. Ted C. Feigenbaum
Executive Vice President - Nuclear
Northeast Nuclear Energy Company
c/o Mr. Terry L. Harpster
P. O. Box 128
Waterford, Connecticut 06385

SUBJECT: INSPECTION NOS. 50-245/96-04; 50 34; 50-423/96-04

Dear Mr. Feigenbaum:

This letter refers to your letter dated July 17, 1996, in response to our June 6, 1996 letter.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

Sincerely,

Original Signed By:

Jacque P. Durr, Chief
Reactor Projects Branch No. 6
Division of Reactor Projects

Docket Nos. 50-245; 50-336; 50-423

cc w/encl:

P. Richardson, Nuclear Unit 2 Director
M. Brothers, Nuclear Unit 3 Director
L. Cuoco, Esquire
Senior Vice President, Nuclear Safety and Oversight
W. Riffer, Nuclear Unit 1 Director
Vice President, Reengineering
Vice President, Nuclear Technical Services
F. Rothen, Vice President, Maintenance Services

cc w/cy of Licensee's Response Letter:

V. Juliano, Waterford Library
J. Buckingham, Department of Public Utility Control
S. B. Comley, We The People
State of Connecticut SLO Designee

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Mr. Ted C. Feigenbaum

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Northeast
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July 17, 1996

Docket Nos. 50-336
B15783

Re: 10CFR2.201

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

Millstone Nuclear Power Station, Unit No. 2
Reply to a Notice of Violation
NRC Combined Inspection 50-245/96-04

In a letter dated June 6, 1996,⁽¹⁾ the NRC Staff transmitted a Notice of Violation (NOV) relating to NRC Inspection Report Nos. 50-245/96-04; 50-336/96-04; and 50-423/96-04. The report discussed the results of the safety inspection conducted on March 19, 1996 through May 6, 1996, at the Millstone Station. Based on the results of the Staff's inspection, one violation was cited at Millstone Unit No. 2, for an inadequate retest of a safety injection system solenoid valve following its replacement, thereby failing to reveal that the valve was inoperable due to a missing part.

The Staff requested that Northeast Nuclear Energy Company (NNECO) respond within 30 days of receipt of the letter transmitting the NOV. Accordingly, Attachment 1 to this letter provides NNECO's reply to the NOV, on behalf of Millstone Unit No. 2, pursuant to the provisions of 10CFR2.201.

The following are NNECO's commitments made within this letter. All other statements are for information only.

(1) W. D. Lanning letter to T. C. Feigenbaum, "NRC Combined Inspection 50-245/96-04; 50-336/96-04; 50-423/96-04 and Notice of Violation," dated June 6, 1996.

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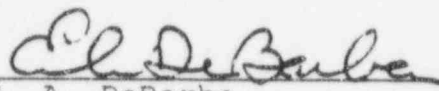
Unit 2 - Violation

- B15783-1 Surveillance Procedure SP 2604P, "Engineered Safety Features Equipment Response Time Testing", will be changed to require verifying that 2-SI-610, 2-SI-628, 2-SI-638, and 2-SI-648 close to satisfy the Technical Specification Table 3.3.5 time requirements. This is scheduled to be completed by August 31, 1996.
- B15783-2 An appropriate statement prohibiting disassembly of the Solenoid Operated Valve (SOV) will be placed in the "Caution Note" section of PMMS for the 94 safety related Air Operated Valves (AOV). This is scheduled to be completed by October 31, 1996.
- B15783-3 A site wide effort is in progress to upgrade the Post Maintenance Testing procedure guidelines provided in CWPC 3. This is scheduled to be completed by December 31, 1996.

If you have any questions regarding information contained herein, please contact Mr. M. D. Ehredt at (860) 440-2142.

Very truly yours

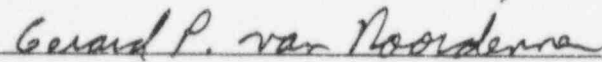
NORTHEAST NUCLEAR ENERGY COMPANY
FOR: T. C. Feigenbaum
Executive Vice President and
Chief Nuclear Officer

By: 
E. A. DeBarba
Vice President

cc: T. T. Martin, Region I Administrator
D. G. McDonald Jr., NRC Project Manager, Millstone Unit
No. 2
P. D. Swetland, Senior Resident Inspector, Millstone
Unit No. 2

Subscribed and sworn to before me

this 17th day of July, 1996



Date Commission Expires: 12/31/97

Docket No. 50-336
B15783

Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Reply to a Notice of Violation

Inspection 50-336/96-04

July 1996

Restatement of Violation A

Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion XI, "Test Control," requires that a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures that incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above, the retest of the 2-SI-618 solenoid valve, following its replacement on February 14, 1989, was inadequate in that it failed to demonstrate that the valve would perform as designed. The failure of valve 2-SI-618 to promptly close in a response to a safety injection actuation signal is of concern because a portion of a safety injection flow to the reactor coolant system would have been diverted.

This is a severity Level IV Violation (Supplement I) against DN 50-336.

Reason For Violation

The reason for the violation was a combination of personnel error, specifically, poor work practices, and inadequate retest criteria.

Poor Work Practices:

On February 28, 1996, at 1505 hours, with the plant in Mode 5 at 0% power, the Loop 1A Check Leakoff Drain Stop Valve, 2-SI-618, failed its Operational Readiness Test per Surveillance Procedure SP21136. This valve is one of four Safety Injection System (SIS) air operated valves (AOV) that receive a Safety Injection Actuation Signal (SIAS) to close in order to prevent the bypass of safety injection flow to the Safety Injection Tank (SIT) recirculation header. These AOVs have a controller/positioner that modulates valve position and a solenoid operated valve that is located in the air line between the controller/positioner and the valve operator. During normal operation, the solenoid valve is energized in a position which allows the controller/positioner to modulate control air to the AOV and thereby position the valve. When the SOV is deenergized (the accident condition), the control air from the controller/positioner is shut off and the AOV air pressure is vented which causes the AOV to fail closed (the required accident condition).

The solenoid valve associated with 2-SI-618, was replaced on February 14, 1989 under work order M2-88-13141. Because this solenoid valve is Environmental Equipment Qualified (EEQ), it is required to be vertically mounted so that the weight of the de-energized core, acting through the valve lever and the lower disk stem, will position the exhaust port on the solenoid valve to the open position thereby venting the AOV and failing it to the closed position. Because a "close" 90 degree elbow was used to connect the air tubing, it was necessary to remove the exhaust valve disc guide cap on the solenoid during valve replacement. When the exhaust valve disc guide cap is removed, the following parts come out of the solenoid valve exhaust port: 1) the lower spring, 2) the lower valve disk, and 3) the lower disk stem. It is postulated that the lower disk stem on 2-SI-618 was lost during the solenoid replacement on February 14, 1989. The missing lower disk stem did not affect the operation of the upper valve port, when the SOV was energized, remaining open to provide a path for modulated air from the valve positioner to open and close the 2-SI-618 valve. The "fast vent" portion of the solenoid operation did not function when the SOV was de-energized.

The additional work performed during the replacement of the solenoid valve in 1989, was outside of the approved job scope. Also, supervision was not informed of the additional actions necessary to replace the solenoid valve.

Inadequate Retest Requirements:

The Inservice Testing Program (IST), required by Technical Specification 4.0.5, contains testing requirements for "Fail Safe Valves" per ASME Section XI, IWV-3415. Per IWV-3415, testing is performed every 3 months during cold shutdown. IWV-3415 states: "When practical, valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of actuator power." Prior to June 12, 1995, the fail-safe feature of valve 2-SI-618 was tested by disconnecting the air supply and verifying that the valve went to its fail-safe position. This testing met all existing code requirements.

The "Integrated Test of Facility 1(2) Components", SP SP2613G(H), verified that 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648 closed following a SIAS signal, but the procedures did not require timing of the valve closure. Previous testing using this procedure indicated that 2-SI-618 did close at some time within a 50 second period. (If the valve had not closed within 50 seconds, an annunciator on Main Control Board C01 would have actuated.

Corrective Steps That Have Been Taken and Results Achieved

Poor Work Practices

The following corrective actions have been taken:

Corrective Action:

- Prior to the discovery of the 2-SI-618 problem, Station Procedure WC-1, "Work Control Process", had been modified so that pre-job briefings would take place in accordance with the requirements of 29 CFR 1910.269(c), Subpart R. The pre-job briefings ensure that the workers understand the job scope prior to beginning the work including the work procedures involved. In addition, step 1.7 of WC-1 states the conditions under which performance of a Work Order is required to be stopped. This includes intent changes to the job description or changes to the work boundary.

Results Achieved:

Changes to the Work Control Process, both procedural and cultural, have resulted in improved job control conditions over that which existed in 1989 when the initial installation problem occurred. Evidence of this was illustrated during the March 1996 replacement of the solenoid valve for 2-SI-618, after its failed Operational Readiness Test. The mechanic replacing the solenoid valve, upon discovering that the air line elbow adapter interfered with the lower disk guide cap on the valve, immediately stopped work and informed supervision. This was the basis for determining the original timeframe of the event and cause of the missing lower disk stem.

Inadequate Retest Requirements

Corrective Action:

On June 12, 1995, prior to the discovery of the 2-SI-618 problem, Surveillance Procedure SP 21136, Rev. 9, "Safety Injection And Containment Spray System Valve Operational Readiness Test", was changed to require that, based on engineering judgement, power must be removed from the solenoid valves for 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648 in order to adequately test the fail-closed aspects of these valves.

Results Achieved:

On February 28, 1996, when 2-SI-618 was undergoing its normally scheduled surveillance test, per SP 21136, the valve failed to close rapidly when the fuses for the associated solenoid were removed. This is the event which precipitated the repair activities for 2-SI-618. The change in the surveillance procedure would now reveal a non-conforming condition.

Corrective Action:

In June of 1995, prior to the discovery of the 2-SI-618 problem, Plant Incident Report 2-94-016 prompted a review of all dual function AOVs. A list was completed that indicated that there are 94 air operated valves that receive safety related signals. The identified valves fell into two categories: single-function and dual-function. Single function valves (81) are those that operate the associated AOV by either energizing or de-energizing. The associated AOV does not have a modulation function. Dual function valves (13) are those for which the associated AOVs are modulated in addition to receiving a safety actuation. A review of the Inservice Test Requirements for the dual function valves completed on June 9, 1995, indicated that the test requirements for 4 of the valves were not adequate. These valves were 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648. The procedure governing the surveillance testing requirements, SP21136 for 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648, was revised to require that power be removed from the associated solenoids for testing. On June 20, 1996, the original list of valves was verified to be complete. It was also verified that all 4 of the valves in question had passed the revised surveillance tests.

Results Achieved:

All 4 of the affected valves have satisfactorily passed the new surveillance tests.

Corrective Steps That Will Be Taken To Avoid Further Violations

Corrective Action:

Surveillance procedures SP2613G(H), "Integrated Test of Facility 1(2) Components, currently verify that 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648 close following a SIAS

signal, but the procedures do not time the valve closure times to verify that they satisfy the requirements of Technical specification Table 3.3.5, "Engineered Safety Features Response Times". To correct this condition, Surveillance Procedure SP 2604P, "Engineered Safety Features Equipment Response Time Testing", will be changed to require verifying that 2-SI-618, 2-SI-628, 2-SI-638, and 2-SI-648 close to satisfy the Technical Specification Table 3.3.5 time requirements. This is scheduled to be completed by August 31, 1996.

Corrective Action:

An appropriate statement prohibiting disassembly of the Solenoid Operated Valve (SOV) will be placed in the "Caution Note" section of PMMS for the 94 safety related Air Operated Valves (AOV). This is scheduled to be completed by October 31, 1996.

Corrective Action:

A review of Post Maintenance Test problems has identified a large number of items in this area. A site wide effort is in progress to upgrade the Post Maintenance Testing procedure, CWPC 3. This is scheduled to be completed by December 31, 1996.

Date When Full Compliance Will Be Achieved

Full compliance with all retest requirements for the affected valves was met on March 3, 1996, when the solenoid valve associated with 2-SI-618 was replaced and successfully tested in accordance with SP 21136, Rev. 9.

Requested Additional Information

The NRC Staff also requested NNECO to address (1) removing the solenoid exhaust valve disk guide was outside the scope of the work order that replaced the solenoid and, (2) Routine surveillance tests were inadequate in that they collectively failed to verify the ability of valve 2-SI-618 to perform its intended safety function.

These items are addressed in the preceding discussions concerning corrective actions.