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The Northeast Utilities System

NOV 9 1998

Docket No. 50-336

B17491

Re: 10 CFR 2.201

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

Millstone Nuclear Power Station Unit No. 2
Revised Reply to a Notice of Violation
Safety System Functional Inspection
Nuclear Regulatory Commission Inspection Report 50-336/98-202

The purpose of this submittal is to transmit a revised Reply to Notice of Violation (NOV) identified in Nuclear Regulatory Commission (NRC) Inspection Report 50-336/98-202, dated June 11, 1998.⁽¹⁾ After discussing this issue with the NRC and reviewing the original response, Northeast Nuclear Energy Company (NNECO) determined that the original response dated August 3, 1998⁽²⁾, should be revised. This revised response and commitments identified in Attachment 1 supersede the prior response/commitments in its entirety. The inspection was part of a broader NRC activity directed at verifying the effectiveness of NNECO's Configuration Management Program. The NRC inspection report included a Notice of Violation (NOV) citing eight areas where NNECO's activities were not in compliance with NRC regulations.

Since shutting Millstone Unit No. 2 down in 1996, and as indicated by the corrective actions for ACR 07007, NNECO has taken comprehensive steps to restore the design and licensing bases and to ensure that change processes effectively maintain the design and licensing bases. The Configuration Management Project (CMP) is a key element of this effort. It is explicitly directed at aligning plant configuration, procedures and practices with the current design and licensing bases. NNECO has also significantly upgraded the programs, procedures and processes that are necessary to

⁽¹⁾ E. V. Imbro letter to M. L. Bowling, "NOTICE OF VIOLATION AND SAFETY SYSTEM FUNCTIONAL INSPECTION OF MILLSTONE UNIT 2 (NRC INSPECTION REPORT NO. 50-336/98-202)," dated June 11, 1998.

⁽²⁾ M. L. Bowling to US Nuclear Regulatory Commission, "Reply to a Notice of Violation Safety System Functional Inspection Nuclear Regulatory Commission Inspection Report 50-336/98-202," date August 3, 1998.

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assure effective design control and configuration management in the future including the processes that implement the requirements of 10 CFR 50.59 and 10 CFR 50.71(e).

Many of the areas cited for non-compliance with regulatory requirements can be grouped into three broad areas. These are test control, quality of 10 CFR 50.59 safety evaluations, and engineering quality. The following paragraphs summarize some of the broad corrective actions already underway at Millstone Station to correct these previously identified issues.

Test Control

Some examples in this inspection report address weaknesses in the area of test control. A self-assessment performed by the Engineering Assurance Group resulted in the development of a post-modification test plan briefing document which contains excerpts from existing design control procedures. This document goes further to strengthen areas such as purpose of the test, boundaries, special conditions and precautions for tests, testing instructions, and test plans. This document has been distributed to the Unit 2 Engineering Managers.

Quality of 10 CFR 50.59 Safety Evaluation

The standards and expectations for conduct of safe operation, including performance of Safety Evaluations and Safety Evaluation Screens, have been revised since the cited issues occurred. RAC 12 "Safety Evaluations Screens and Safety Evaluations," became effective March 1, 1998, and improved training, which includes what constitutes a change to the FSAR, has increased the overall quality of safety evaluation screens and safety evaluations.

Engineering Quality

Interim initiatives in Engineering have been undertaken to improve the quality of engineering documentation. These include the Station Quality Review Board, Configuration Management training, and the Unit 2 Engineering Review Board which serve to enforce management expectations. In addition, NNECO has also established an Engineering Assurance Group to evaluate design and configuration control activities in order to improve the quality of both engineering products and processes. This organization is monitoring and trending the effectiveness of configuration management related corrective actions. The trends indicate continued improvement in the quality of design changes.

A multi-discipline Configuration Management Team (CMT) has been established to coach and mentor the units and support organizations on configuration management related issues. The CMT also provides periodic feedback on processes and procedures. These initiatives are a central part of the Millstone Unit No. 2 recovery effort.

Supplemental Reviews

NNECO's review of results and findings from the ICAVP inspections to date has prompted an assessment of the Configuration Management Program (CMP) as it relates to Millstone Unit No. 2. Based partly on the overall low safety significance of the findings, NNECO has concluded that CMP has been largely effective in identifying and restoring items to compliance with the NRC approved design and licensing bases; however, NNECO's assessment found the need for supplemental reviews in a limited number of areas. NNECO has initiated additional reviews in the following areas:

- 1) Further review of the processes for translating accident analysis including assumptions and output results into procedures and the unit's Technical Specifications (TS) and Technical Requirements Manual (TRM),
- 2) Review of potential Millstone Unit No. 2 single failure vulnerabilities within systems not possessing fully capable redundant methods (trains of systems) for accident mitigation.

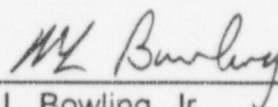
Discrepancies identified during these reviews will be entered into the corrective action program and dispositioned in a manner commensurate with its safety, risk, or regulatory significance.

NNECO's commitments associated with this submittal are contained in Attachment 1. Attachment 2 provides NNECO's response to the NOV items pursuant to the provisions of 10 CFR 2.201. Attachment 3 provides a list of items contained in the inspection report that are not necessarily regulatory commitments but are actions that NNECO is tracking to completion.

Should you have any questions regarding the information contained herein, please contact Mr. Ravindra G. Joshi at (860) 440-2080.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



Martin L. Bowling, Jr.
Recovery Officer - Technical Services

Attachments: See Page 4

Attachments (3)

cc: H. J. Miller, Region I Administrator
W. D. Lanning, Director, Millstone Inspections
D. G. McDonald, Jr., NRC Senior Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2
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Attachment 1

Millstone Nuclear Power Station, Unit No. 2
NNECO Commitments

November 1998

List of Regulatory Commitments

The following table identifies those actions committed to by NNECO in this document. Please notify the Manager - Millstone Unit No. 2 Regulatory Compliance of any questions regarding this document or any associated regulatory commitments.

Commitment Number	Description	Committed Date or Outage
B17491.01	The test plan for PDCR 2-064-95 was revised to incorporate the design requirements.	Complete
B17491.02	Procedure(s) will be developed requiring the RBCCW system flow balance to be verified.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.03	During this outage, NNECO will or has performed testing on the diesel heat exchangers, and vital AC switchgear room cooler and vital DC switchgear room chiller heat exchangers.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.04	NNECO currently plans to test the RBCCW heat exchangers during the shutdown for RFO 13.	Prior to Startup From RFO 13
B17491.05	A test procedure (SPROC EN 98-2-04) has been approved to evaluate the planned pump swapping methodology, the system peak pressure response during swapping/check valve slamming, the ability of the new "soft-seat" relief valves to re-seat if they lift, and to determine if an optimal flow range exists for performing pump swaps. RBCCW system procedure references to system flowrates will be reviewed to ensure that they are consistent and compatible after performance testing utilizing SPROC EN 98-2-04.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.06	An FSAR Change Request (FSARCR 98-MP2-147) has been PORC approved to more accurately reflect the system operation and pump swapping discussion in the Testing and Inspection section.	Complete
B17491.07	The valve identification on Operations Critical Drawing 25203-26017, sh. 2, was corrected by Design Change Notice (DM2-00-0730-97).	Complete

Commitment Number	Description	Committed Date or Outage
B17491.08	<p>An FSAR Change Request (FSARCR) to update Table 9.4-2 will be processed.</p> <p>Electrical and I&C drawings associated with Valve 2-RB-402 will be identified and updated, as required.</p> <p>Procedures associated with Valve 2-RB-402 will be identified and updated, as required.</p>	Prior to Entry into Mode 4 from the Current Shutdown
B17491.09	Corrective actions will require the issuance of a DCN to resolve the separation deficiencies between trays Z12AA20 and Z24LA60 and Z24LA57 and Z16HT35.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.10	MEPL MP2-CD-3675 was issued reclassifying PI-6324, PI-6325 and the associated tubing as Category I. The Production Maintenance Management System (PMMS) database was updated to reflect the Category I classification for PI-6324 and PI-6325.	Complete
B17491.11	<p>A design change notice (DM2-03-0640-97) has been issued to supplement DM2-00-0640-97 and correct the above drawing of concern.</p> <p>DCN DM2-00-1498-98 was issued to revise drawing 25203-22200 SH. 491315E, Rev. 0, and issued a new drawing 25203-22200 SH. 491315F, Rev. 01. These drawing changes are qualified in calculation 98-ENG-02683-C2, Rev. 00.</p>	Complete
B17491.12	A design change notice has been issued. This DCN clarifies SP-ME-730, Rev. 1. It requires that support installations on small bore piping comply with requirements of the specification (e.g., orientation, load capacity, attachment details).	Complete
B17491.13	Table 9.3-1 of the FSAR will be revised to reflect the revised minimum flow value. FSAR sections associated with shutdown cooling and containment air recirculation cooling will be updated, as required to reflect the containment peak temperature reanalysis parameters.	Prior to Entry into Mode 4 from the Current Shutdown

Commitment Number	Description	Committed Date or Outage
B17491.14	After completion of the revised calculation, operating procedures will be revised to limit radiation monitor background and to provide adequate control of setpoint changes. An interim change has already been made to form SP2654K-1 for limiting background.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.15	The bases in the REMODCM for other effluent radiation monitor setpoints will be reviewed to ensure that there are no similar failures to consider the affects of system design on the setpoint calculation. If the review shows other failure, the faulty calculations will be revised using the requirements of DCM, Chapter 5.	Prior to Entry into Mode 4 from the Current Shutdown
B17491.16	AOP 2564 (Loss Of RBCCW) and relevant RBCCW ARP window instructions were modified to clarify actions and ensure consistency between the documents.	Complete
B17491.17	Unit 2 AOPs and their applicable ARP window steps and instructions will be reviewed prior to, or as part of each procedure's Biennial Review to correct actions and wording which are inconsistent. This corrective action will be completed as part of the Biennial Review process.	August 31, 2000
B17491.18	The CDL group reestablished the P&IDs as controlled documents (through the NDS Control Document Section) and verified/updated the P&ID stick file. The CDL was added to the controlled distribution for these P&IDs.	Complete

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Attachment 2

Millstone Nuclear Power Station, Unit No. 2

Revised Reply to a Notice of Violation
Nuclear Regulatory Commission Inspection Report 50-336/98-202

November 1998

Nuclear Regulatory Commission Violation "A" (50-336/98-202-01)

Restatement of the Violation 202-01, A.1

- A. 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires 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 which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above:

1. A post-modification test procedure did not incorporate the requirements contained in design documents. Test procedure SP 21206A, "Instrument Air Accumulator Check Valve Test," Rev. 3, dated November 5, 1997, tested the backup air accumulators for valves 2-RB-13.1A/B but did not incorporate the requirements and acceptance limits contained in calculation 97-ENG-01823-M2, "Verification of Accumulator Size for Valves 2-RB-13.1A and 13.1B," Rev. 0, dated August 13, 1997, and modification PDCR 2-064-95, "Air Accumulator for 2-RB-13.1A & B," Rev. 1, dated August 20, 1997. The test did not verify that the air accumulator leak-tightness was sufficient to hold the valve in the closed position for 90 minutes with a starting pressure of 90 pounds per square inch gauge (psig) and a final pressure of 60 psig.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

The test deficiencies identified were the result of inadequate translation of the design inputs necessary to complete a comprehensive test plan by the assigned test Engineer. Upon review of several other partial design change turnover packages, no other test deficiencies were identified. Therefore, this event was considered an isolated event.

A modification to install backup air accumulators for valves 2-RB-13.1A/B was instituted via PDCR 2-064-95. The intent of the modification was to keep these valves closed during a Safety Injection Actuation Signal (SIAS) coincident with a loss of Instrument Air until these valves received a Sump Recirculation Actuation Signal (SRAS) to open. Valves 2-RB-13.1A/B fail open on a loss of Instrument air. The retest for the modification to these valves verified there was no leakage, via a bubble test, that the valves stayed closed for the specified time (which was one hour at the time) and that the valves stroked acceptably after instrument air was restored. Normal instrument air system pressure is greater than 100 psig. This testing was deemed acceptable at the time. Since this was a new design, testing should have occurred at the values assumed in the calculation, namely, specific starting pressure and a minimum pressure,

to verify the leakage rate (and bottle size) was acceptable. These pressures were not verified.

Corrective Actions and Results Achieved

The test plan for PDCR 2-064-95 was revised to incorporate the design requirements.

As of June 25, 1998, 2-RB-13.1A/B had both been successfully retested in accordance with the test plan, which demonstrated they met design basis requirements.

A review of design change engineering release transmittals in the MP2 control room was completed, and found no other cases where changes were made to test plans that left previously released portions not tested to new requirements.

Corrective Actions to Avoid Future Violations

As a result of a self-assessment performed by the Engineering Assurance Group, a Post Modification Test Plan Briefing document was created and distributed to the Unit 2 Engineering Managers.

Creation of the Quality Review Board as an interim measure for pre-PORC review and approval of Design Change packages, as well as other Engineering documents, also minimizes the potential for future violations of this type.

Date When Full Compliance Will Be Achieved

NNECO is in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Violation "A" (50-336/98-202-01)

Restatement of the Violation 202-01, A.2

- A. 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires 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 which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above:

2. All testing required to demonstrate that the reactor building closed cooling water system (RBCCW) will perform satisfactorily in service was not identified. A periodic test to verify adequate flow to each component serviced by RBCCW had not been established. Procedure SPROC 97-2-19, "RBCCW Building Closed Cooling Water System Flow Balance," Rev. 2, dated March 2, 1998, only required a one-time flow balance be performed.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation resulted from a programmatic deficiency which led to the failure to identify the need for future periodic testing. It improperly determined that once system flow was established and controlled by operations valve lineups, that flow would remain fixed until maintenance was performed. Testing had historically been performed after maintenance or repairs which could effect system flow balance. The need for periodic testing was not recognized by the system engineers.

Corrective Actions and Results Achieved

Procedure(s) will be developed requiring the RBCCW system flow balance to be verified. This action will be completed prior to entry into Mode 4 from the current shutdown.

Corrective Actions to Avoid Future Violations

A review will be performed to determine if there are similar areas where system process flows are utilized to satisfy safety related design inputs. If identified, appropriate procedures will be established for periodic testing.

Date When Full Compliance Will Be Achieved

The creation and approval of a permanent test procedure for validation and retest of the RBCCW flow balance and the programmatic review will be completed prior to entry into Mode 4 from the current shutdown. NNECO will be in full compliance with respect to the cited violation prior to entry into Mode 4 from the current shutdown.

Nuclear Regulatory Commission Violation "A" (50-336/98-202-01)

Restatement of Violation 202-01, A.3

- A. 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires 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 which incorporate the requirements and acceptance limits contained in applicable design documents.

Contrary to the above:

3. A written test procedure did not incorporate acceptance limits. Preventive maintenance procedure MF 2701J-96, "Service Water Cooled Heat Exchangers Subject to GL 89-13," Rev. 3, dated April 21, 1997, provided instructions for periodic maintenance and inspection of the service water cooled heat exchangers. The procedure did not provide acceptance limits for the as-found cleanliness of the RBCCW heat exchangers.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation was caused by inadequate standards for conduct of business. NNECO has depended on frequent inspection and cleaning of heat exchangers for maintenance of heat transfer surfaces since 1990. Maintenance Form MF 2701J-96 was developed to schedule and clean system safety related heat exchangers and provide a means of documenting as found heat exchanger condition. Inspection and hydroblasting activities on the RBCCW and diesel generator heat exchangers have been performed quarterly since 1990 and have shown little evidence of fouling on the heat exchanger surfaces.

Corrective Actions and Results Achieved

As part of the corrective action, Maintenance Form MF 2701J-96 was revised to include acceptance criteria for heat exchanger inspections.

The acceptable heat exchanger fouling changes with the temperature of the service water and tube plugging/design margin of the heat exchanger. It is not meaningful to list quantities of debris as acceptance criteria since this will change with season and with unit evaluated. Therefore, NNECO revised Maintenance Form MF 2701J-96 specifically identifying the acceptance criterion for service water cooled heat exchanger fouling. The as-found acceptance criterion is that there will be no fouling that results in tube blockage. If this acceptance criterion is not met, the form requires that a CR be initiated and component operability be addressed.

NNECO recognizes the importance of performing base line thermal performance tests to further define heat exchanger design and fouling margin as recommended by Generic Letter 89-13. MF 2701J-96 was written to identify macrofouling but was not written to identify microfouling since it cannot be quantified visually. During this outage, NNECO will or has performed testing on the diesel heat exchangers, and vital AC switchgear room cooler and vital DC switchgear room chiller heat exchangers. NNECO currently plans to test the RBCCW heat exchangers during the shutdown for RFO13. This will be the first opportunity when adequate heat loads are present for testing. Completion of the as-found and as-left (after cleaning) testing will assist in establishing the proper frequency for cleaning and will also further define heat exchanger design margin.

Corrective Actions to Avoid Future Violation

Since the time of this deficiency, new leadership has significantly raised expectations and standards, resulting in correction of historical programmatic deficiencies. One area specifically addressed has been in strengthening the design control process.

The individuals responsible for implementation of the GL 89-13 program have been counseled on 10 CFR Part 50, Appendix B, Criterion XI.

Date When Full Compliance Will Be Achieved

NNECO is in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Violation "B" (50-336/98-202-02)

Restatement of the Violation 202-02, B.1

- B. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" requires that conditions adverse to quality be promptly identified and corrected. Procedure RP-4, "Corrective Action Program," Rev. 6, Change 1, dated April 1, 1998, requires that conditions adverse to quality be identified and promptly corrected.

Contrary to the above:

1. A condition adverse to quality had not been adequately corrected. Condition report M2-97-0489, "RBCCW System Design Pressure Can Be Exceeded at Low Flows," dated March 27, 1997, stated that RBCCW system pressure could exceed design pressure during pump swapping. Operating Procedure OP 2330A, "RBCCW System," Rev. 19, dated March 9, 1998, was changed to alleviate the pressure spiking. The procedure was not tested for effectiveness at low flows and was inconsistent with Final Safety Analysis Report (FSAR) Section 9.4.4.2 requirements and with surveillance test requirements.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

The reason for this violation was personnel error, which resulted in the lack of formal testing being developed to address potentially low system flow conditions at which RBCCW pump swaps could occur. In addition, historically personnel on the Unit did not ensure that the FSAR and procedures matched since a procedure change was implemented which allowed routine pump swaps to be performed in a manner that was determined to be inconsistent with the FSAR. This was a result of misinterpretation of the FSAR wording as it affected system component operations.

The RBCCW system has experienced pressure spikes during normal pump swaps. To minimize the pressure spikes during pump swaps, a change to Operating Procedure OP 2330A was initiated which included a maximum flow value for swapping RBCCW pumps. A minimum flow value was not specified, evaluated or tested because the system is not operated at low flows, even though the procedure does not specifically prohibit it. When the system Operating Procedure OP 2330A was revised as recommended by Engineering Technical Evaluation M2-F.√-97-0021, the changes to the procedure were based on a misinterpretation of the wording in the FSAR. The Safety Evaluation (SE) screening sheet associated with the procedure revision did not identify that any changes to the FSAR were necessary.

Corrective Actions and Results Achieved

A test procedure (SPROC EN 98-2-04) has been approved to evaluate the planned pump swapping methodology, the system peak pressure response during swapping/check valve slamming, the ability of the new "soft-seat" relief valves to re-seat if they lift, and to determine if an optimal flow range exists for performing pump swaps.

RBCCW system procedure (OP 2330A) references to system flowrates will be reviewed to ensure that they are consistent and compatible after performance testing utilizing SPROC EN 98-2-04.

An FSAR Change Request (FSARCR 98-MP2-147) has been PORC approved to more accurately reflect the system operation and pump swapping discussion in the Testing and Inspection section.

Corrective Actions to Avoid Future Violations

A refined safety evaluation procedure, RAC 12, "Safety Evaluation Screens and Safety Evaluations," and improved training, which includes what constitutes a change to the FSAR, has increased the overall quality of safety evaluation screens and safety evaluations.

FSAR descriptions of operational, testing, calibration and maintenance activities are being reviewed to ensure that these narratives are correctly reflected in plant procedures. The FSAR procedure review group will review calculations that support FSAR accident analyses, Engineering Design Bases (EDB), and the Key Parameters (as defined in the Design Basis Summaries) to ensure they are up to date with no obvious discrepancies at calculation interfaces.

Date When Full Compliance Will Be Achieved

After completion of SPROC EN 98-2-04 and any subsequent required procedure changes, NNECO will be in full compliance with respect to the cited violation prior to entering Mode 4.

Nuclear Regulatory Commission Notice of Violation B (50-336/202-02)

Restatement of the Violation 202-02, B.2

- B. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" requires that conditions adverse to quality be promptly identified and corrected. Procedure RP-4, "Corrective Action Program," Rev. 6, Change 1, dated April 1, 1998, requires that conditions adverse to quality be identified and promptly corrected.

Contrary to the above:

2. A condition adverse to quality had not been identified nor corrected. Technical Specification (TS) 3.8.1.1 requires two sources of offsite power be supplied to the switchyard, whereas 10 CFR Part 50, "General Design Criterion 17," Appendix A, requires that two sources be supplied to the safety buses. LER 95-035, dated October 5, 1995, reported that the licensee procedures had not required them to enter a TS limiting condition for operation with less than two power paths from the switchyard to the onsite safety busses. The licensee procedures were changed at that time but the need for a TS change was not identified nor corrected.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

The reason for this violation was due to inadequate standards for conduct of business, in that NNECO failed to identify the need for an immediate Technical Specification change.

The NRC Staff in a letter dated August 1, 1975, issued the Millstone Unit No. 2 Operating License and Technical Specifications. The wording contained in LCO 3.8.1.1 at that time is identical to the wording that appears in the current version of the LCO. The original Combustion Engineering Technical Specifications (NUREG-0212) were still in draft form at this time, with Revision 0 being issued on August 20, 1975.

The wording contained in LCO 3.8.1.1 was not questioned until September 6, 1995 when it was discovered that the wording of the LCO was not being interpreted in the context of General Design Criterion 17. As a result of this discovery, Licensee Event Report (LER) 50-336/95-035-00 and a Technical Specification Clarification were written to reflect that the two offsite power sources and their connection to the onsite Class 1E distribution system consisted of the Unit No. 2 RSST connecting to busses 24C and 24D and the Unit No. 1 RSST connecting from bus 14H to 24E. Surveillance procedures were changed to verify the required circuit breaker positions and power availability. No commitment was made in the LER to change LCO 3.8.1.1.

In a letter dated January 18, 1996, NNECO informed the NRC Staff that the Millstone Unit No. 2 Technical Specifications would be converted to the Improved Standard Technical Specifications based on Revision 1 of NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." NNECO had intended for the conversion to Improved Standard Technical Specifications to resolve any wording issues that existed currently in LCO 3.8.1.1. The converted Technical Specifications were expected, at that time, to be submitted in June of 1997. The conversion to Improved Standard Technical Specifications was begun in the second quarter of 1996 but work was halted in the last quarter of 1996 due to the reallocation of resources necessary to recover the Licensing and Design Basis of the unit. In a letter dated January 20, 1997, NNECO informed the NRC Staff of the delay. In a letter dated March 27, 1997, NNECO submitted the Millstone Unit No. 2 Operational Readiness Plan to the NRC. Within this submittal, NNECO stated that the conversion to Improved Standard Technical Specifications would be performed after return to operation and completion of actions to restore compliance with the licensing and design basis.

Corrective Actions and Results Achieved

A license amendment request to revise Technical Specification 3.8.1.1 to be consistent with General Design Criterion 17 was submitted to the NRC on July 17, 1998.

Corrective Actions to Avoid Future Violations

New management leadership has established higher standards of performance with respect to the Corrective Action Program.

A review of the Millstone Unit No. 2 technical specifications has been conducted during this outage and has resulted in several technical specification amendment requests correcting similar wording discrepancies.

Date When Full Compliance Will Be Achieved

Based upon the clarification to the Unit No. 2 Technical Specifications, as contained within the Technical Requirements Manual, and the Surveillance Procedures used to verify operability of the offsite power sources using circuit breaker positions and power availability, NNECO is currently in full compliance with General Design Criterion 17. NNECO will be in compliance with respect to the cited violation when the license amendment request to revise Technical Specification 3.8.1.1 is approved by the NRC and implemented.

Nuclear Regulatory Commission Violation "C" (50-336/98-202-03)

Restatement of the Violation 202-03, C

- C. 10 CFR Part 50, Appendix B, Criterion VIII, "Identification and Control of Materials, Parts, and Components," requires that measures be established for the identification and control of materials, parts, and components, and that the identification be maintained.

Contrary to the above, the identification and control of a valve was not maintained. In several databases, letdown heat exchanger RBCCW outlet temperature control valve, 2-RB-402, had two different identification numbers. The valve was identified as 2-RB-402 and 2-CH-223. Valve 2-RB-402 was identified as safety-related, whereas 2-CH-223 was not.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This historic discrepant condition occurred as a result of personnel error; i.e., the lack of attention to detail, which resulted in a loss of configuration control.

The valve number was changed from 2-CH-223 to 2-RB-402 by Design Change Notice (DCN) DM2-S-0473-93. DCN DM2-S-0473-93 did not address all affected drawings and design documents.

Corrective Actions and Results Achieved

The valve identification on Operations Critical Drawing 25203-26017, sh. 2, was corrected by Design Change Notice (DM2-00-0730-97).

An FSAR Change Request (FSARCR) to update Table 9.4-2 will be processed.

Electrical and I&C drawings associated with Valve 2-RB-402 will be identified and updated, as required.

Procedures associated with Valve 2-RB-402 will be identified and updated, as required.

In addition, ACR 8761 was initiated to identify and investigate configuration control deficiencies, and focus on why Millstone Unit No. 2 drawings and specifications do not match the actual plant configuration. If these corrective actions identify similar configuration issues, our corrective action program will address the items.

Corrective Actions to Avoid Future Violations

Since the time of this deficiency, new leadership has significantly raised expectations and standards, resulting in correction of historical programmatic deficiencies. One area specifically addressed has been in strengthening the design control process.

The DCM has been revised to include more rigorous review and approval processes for changes to the facility design basis.

Date When Full Compliance Will Be Achieved

NNECO will be in full compliance with respect to the cited violation prior to entry into Mode 4.

Nuclear Regulatory Commission Violation "D" (50-336/98-202-04)

Restatement of the Violation 202-04, D.1

- D. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that activities affecting quality be prescribed by documented instructions and be accomplished in accordance with those instructions.

Contrary to the above:

1. An instance was noted where the two RBCCW pump trains (Facilities 1 and 2) did not meet the electrical separation criteria specified in FSAR Section 8.7 and the licensee specification SP-M2-EE-0016, "Electrical Separation Specification-Millstone Unit 2," Rev. 1, dated September 9, 1997. The separation criteria required 18 inches of free air space horizontally between redundant cable trays. For cables Z12AA20, Z2LAA20, Z24LA60, and Z16HT35 on Standards drawing 25203-34031, Rev. 7, there was approximately 9 inches of free air space horizontally.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation resulted from a failure of initial construction crews to follow the original Bechtel Design Basis Electrical Separation Criteria (25203-33002 Rev. 1, dated 7/27/72). This specified a minimum cable tray separation of 4 feet vertical and 18 inches horizontal. The above referenced drawing acknowledged that the plant design could have locations where the minimum specified separation dimensions could not be met and included provisions to allow the use of barriers (i.e. covers or Marinite board) to protect the physical and electrical integrity of the cables. The installation drawings for the cable trays (25203-34000 series) depict the location of the trays but do not identify the locations where cable tray covers should be installed. The lack of design drawings to control and maintain cable tray cover installations resulted in either the tray covers not being installed or the tray covers being removed and not replaced during plant modification or maintenance activities.

Corrective Actions and Results Achieved

Corrective actions will require the issuance of a DCN to resolve the separation deficiencies between trays Z12AA20 and Z24LA60 and Z24LA57 and Z16HT35.

Corrective Actions to Avoid Future Violations

An electrical separation walk down has been initiated to identify additional areas where the minimum separation requirements for cable trays, as specified in SP-M2-EE-006 Rev. 1, are not present. Based upon the walk downs completed to date, additional minimum separation discrepancies have been identified. Each identified discrepancy will be evaluated on a case-by-case basis and corrections made as required.

If the solution involves the addition of covers or Marinite board, they will be installed in accordance with standard design control procedures and the location of all the barriers properly identified on design drawings for future reference.

Date When Full Compliance Will Be Achieved

The Unit will be in full compliance with respect to electrical cable tray separation prior to entering Mode 4 operation.

Nuclear Regulatory Commission Violation "D" (50-336/98-202-04)

Restatement of the Violation 202-04, D.2

- D. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that activities affecting quality be prescribed by documented instructions and be accomplished in accordance with those instructions.

Contrary to the above:

2. Two pressure indicators, PI-6324 and PI-6325, and their respective tubing were incorrectly classified as non-safety-related and non-seismic. FSAR section 5.2.8.2.1 and specification SP-ME-668, Rev. 4, dated May 23, 1997, required these instruments and tubing to be seismic and safety-related.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation resulted from a programmatic deficiency that led to a personnel error, which led to the failure to recognize that the instruments are within the containment isolation boundary.

FSAR Section 5.2.8.2.1 states that containment boundary instrument lines, up to and including the pressure retaining parts of the instrument, are Seismic Class 1. PI-6324 and PI-6325 appear on FSAR Figure 5.2-33 as forming part of the containment pressure boundary. MEPL MP2-CD-3486 was issued on December 19, 1997 and incorrectly classified PI-6324, PI-6325 and the associated tubing as non-QA.

Corrective Actions and Results Achieved

MEPL MP2-CD-3675 was issued reclassifying PI-6324, PI-6325 and the associated tubing as Category I.

Nonconformance Report (NCR) 2-98-0169 was issued to review past work order history and purchasing history for PI-6324, PI-6325 and the associated tubing. The NCR was dispositioned as "use-as-is" for PI-6324 and PI-6325 as a result of these reviews. The NCR was closed on July 7, 1998.

The Production Maintenance Management System (PMMS) database was updated to reflect the Category I classification for PI-6324 and PI-6325.

Similar configurations were reviewed and no other discrepancies were found.

Corrective Actions to Avoid Future Violations

The MEPL process and program has been strengthened since the time of the violation and is currently part of continuing training for engineering and engineering support personnel.

Date When Full Compliance Will Be Achieved

NNECO is in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Violation "D" (50-336/98-202-04)

Statement of the Violation 202-04, D.3

- D. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that activities affecting quality be prescribed by documented instructions and be accomplished in accordance with those instructions.

Contrary to the above:

3. An example of originally-installed small bore piping which was not installed in accordance with the applicable piping isometric drawing was identified. A 3/4-inch by 1/2-inch reducing elbow was installed instead of a 3/4-inch elbow and 3/4-inch by 1/2-inch reducer as specified by DCN No. DM2-00-0640-97, "HPSI 41A Seal/Bearing Coolers Cooling Water supply and Return Pipe Replacement," dated August 12, 1997.

Additionally, a pipe support was installed differently than required. The support, Hanger No. 6, was shown on drawing 25203-22200 SH. 491315E, Rev. 0, dated March 3, 1982. The drawing showed a frame type restraint, but the installed restraint was a cantilever arrangement. Additionally, the drawing showed a 4-inch and a 2-inch angle members, but the installation was made of a 6-inch square tube and 6-inch wide flange members. Likewise, anchor base plate locations, sizes, and concrete fastener sizes were different than shown on the drawing.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

The first example, the 3/4-inch by 1/2-inch reducing elbow, was caused by inattention to detail in the development of the piping drawings as specified by DCN No. DM2-00-0640-97. The vendor drawings showed the installed piping components correctly, but they were transcribed incorrectly onto the piping isometric drawing.

The second example was the inadequate documentation of the design details and changes which occurred during the installation of support Hanger No. 6 shown on drawing 25203-22200 SH. 491315E, Rev. 0. This example further illustrates the lack of configuration control cited in ACR 8761 (documents equipment installations that are different from design drawings or specifications). The root cause investigation and corrective actions for ACR 8761 address the general issue of configuration control associated with drawings not accurately reflecting installed design details. The root cause investigation identified issues such as low standards for document control and document detail, and the absence of system accountability and ownership.

Corrective Actions and Results Achieved

A design change notice (DM2-03-0640-97) has been issued to supplement DM2-00-0640-97 and correct the above drawing of concern.

DCN DM2-00-1498-98 was issued to revise drawing 25203-22200 SH. 491315E, Rev. 0, and issued a new drawing 25203-22200 SH. 491315F, Rev. 01. These drawing changes are qualified in calculation 98-ENG-02683-C2, Rev. 00.

Corrective actions for issues identified in ACR 8761 include additional training, walkdowns, program enhancements, and documentation reviews. Many of these corrective actions are complete and the remaining ones are being tracked in the Corrective Action Program.

Corrective Steps To Avoid Further Violations

Corrective actions for ACR 8761 address the general issue of configuration control associated with drawings not accurately reflecting installed design details.

Discussions relating to attention to detail have been held by department managers and appropriate contractor project management personnel. These discussions made appropriate department personnel aware of the importance of correct and accurate configuration control issues.

Date When Full Compliance Will Be Achieved

NNECO is in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Violation "D" (50-336/98-202-04)

Re statement of the Violation 202-04, D.4

- D. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that activities affecting quality be prescribed by documented instructions and be accomplished in accordance with those instructions.

Contrary to the above:

4. There were two examples of recent modification work where piping supports were not installed in accordance with their drawings. The supports, 25203-22200-611087 and 25203-22200-611100, were shown on DCN No. DM2-00-0919-97, "HPSI Pump P-41A Seal/Bearing Cooling Water Supply and Return Piping Supports," Rev. 0, dated October 10, 1997. The actual installations differed from the drawing in that the assemblies were rotated 90 degrees from that shown.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

There was inadequate documentation of design details and engineering decisions made during the installation of these supports on small bore piping. The procedure for specifying supports on small bore piping, SP-ME-730, was neither clear nor specific enough in providing guidance to install these supports.

Corrective Actions and Results Achieved

A design change notice (DM2-02-0891-97) has been issued. This DCN clarifies SP-ME-730, Rev. 1. It requires that support installations on small bore piping comply with the requirements of the specification (e.g., orientation, load capacity, attachment details).

DCN No. DM2-08-0919-97, which will clarify the orientation of these supports (an issue identified in this violation), is in the review process.

Corrective Actions To Avoid Future Violations

Changes to the review and approval process as described in the DCM are much more stringent than processes that existed at the time of this event. The more stringent process will minimize similar violations in the future.

Date When Full Compliance Will Be Achieved

NNECO will be in full compliance with respect to the cited violation when DCN No. DM2-08-0919-97, which will clarify the orientation and installation of these supports, is issued. This will be completed prior to entry into Mode 4 from the current shutdown.

Nuclear Regulatory Commission Violation "D" (50-336/98-202-04)

Restatement of the Violation 202-04, D.5

- D. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states in part that activities affecting quality be prescribed by documented instructions and be accomplished in accordance with those instructions.

Contrary to the above:

5. An FSAR change request had not been initiated as required by Procedure RAC 03, "Changes and Revisions to Final Safety Analysis Reports," Rev. 0, dated December 18, 1997. The flow for the shutdown coolers described in FSAR Table 9.3-1 were not revised to reflect the reduction of the design basis minimum design flow from 4820 gallons per minute (gpm) (2.41×10^6 pounds per hour) to 3500 gpm (approximately 1.75×10^6 pounds per hour). A request to change FSAR Table 9.3-1 had not been made.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation resulted from misinterpretation of the FSAR Table 9.3-1. The reason for this violation was personnel error since the FSAR table values were incorrectly interpreted as design parameters rather than operating parameters. The operating parameters were revised due to the containment peak temperature reanalysis. The FSAR Table 9.3-1 was not revised due to the misinterpretation.

Corrective Actions and Results Achieved

Table 9.3-1 of the FSAR will be revised to reflect the revised minimum flow value. FSAR sections associated with shutdown cooling and containment air recirculation cooling will be updated, as required to reflect the containment peak temperature reanalysis parameters.

Corrective Actions to Avoid Future Violations

A refined safety evaluation procedure, RAC 12, "Safety Evaluation Screens and Safety Evaluations," and improved training, which includes what constitutes a change to the FSAR, has increased the overall quality of safety evaluation screens and safety evaluations.

Date When Full Compliance Will Be Achieved

NNECO will be in full compliance with respect to the cited violation when the FSAR Table 9.3-1 change has been approved prior to entering Mode 4.

Nuclear Regulatory Commission Violation "E" (50-336/98-202-05)

Restatement of the Violation 202-05, E

- E. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires in part that measures be established to assure that the design basis is correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, for RBCCW radiation monitor, RM 6038, the design basis alarm setpoint calculation assumptions for flow were not translated into operating procedures. OPS Form 2669A-2, "Unit 2 Aux Building Rounds," Rev. 25, did not specify the flows assumed in the setpoint calculation. Similarly, the "Millstone Two Radiation Monitor Manual," dated June 27, 1997, provided an inadequate setpoint calculation bases for the RM-6038 alarm setpoint in that it did not assume flow dilution. Additionally, Operations Form 2654K, "Radiation Monitor Setpoint Verification," Rev. 3, did not provide guidance for dealing with postulated Conditions of high background radiation levels which could result in a nonconservative setpoint.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This violation occurred because of programmatic weaknesses in control of calculations and implementation of calculation results. Program processes did not always assure that appropriate design bases were considered in calculations. There was also an ineffective process for communicating calculation assumptions and results into operational procedures. In the case of the RBCCW radiation monitor setpoint, there was a failure to consider the affect of RBCCW system design on the ability of the monitor to adequately sample both trains of RBCCW. There was also a failure to implement the assumptions used in the basis of the setpoint into plant operating procedures to ensure that background radiation levels did not adversely affect the function of the alarm setpoint.

The Radiological Assessment Branch (RAB) calculated a maximum allowable setpoint value. This value and the calculation were placed in the Radiological Effluent Monitoring and Off-Site Dose Calculation Manual (REMODCM) and in the Radiation Monitor Manual (RMM). The RMM also recommended a setpoint value based on two or three times the normal monitor reading to allow for a sensitive indication of increased RBCCW radioactivity. RAB did not verify calculation parameters against system design. RAB and cognizant plant operational departments did not ensure that the setpoint was adequately implemented in procedures. The process for performing the calculation was not adequate to ensure use of validated input parameters. The process also did not ensure adequate communications of the assumptions and results

of the setpoint calculation to implementing departments. Technical Specifications require that the setpoint be set according to the method and parameters described in the REMODCM. However, neither the REMODCM nor the RMM have any process controls to ensure setpoint calculations are validated against system design or that the results of setpoint calculations are properly implemented. Operations set the setpoint at two times the normal monitor reading with procedural steps to increase the setpoint as the reading increased. However, there were no provisions to limit the setpoint to the maximum allowable value as described in the REMODCM. Chemistry, which has the lead for REMODCM implementation, did not ensure that the setpoint was adequately implemented in procedures.

Corrective Actions and Results Achieved

The programmatic weaknesses affecting calculations has been resolved with the new requirements for calculations in Chapter Five of the Design Change Manual (DCM). The process required by this manual chapter ensures that calculations are performed with validated design inputs and receive adequate and thorough reviews.

NNECO will implement the improved calculation program to establish a setpoint for the RBCCW radiation monitor that fully meets licensing and design bases. This will be done in three steps:

- Identify RBCCW system design parameters that may affect the setpoint calculation.
- Recalculate the setpoint based on validated system design parameters and thoroughly review the setpoint calculation prior to approval.
- Implement the setpoint in station procedures with adequate consideration of the calculation basis. This will include placing operational limits on background to ensure the validity of the setpoint.

A review of the effect of RBCCW system design on monitor sampling capability was completed and is documented with an Engineering Record of Correspondence (25203-ER-98-1024). Reviewers of the draft calculation to revise the RBCCW monitor setpoint have identified other design and operational parameters that affect the setpoint calculation. This includes constraints on available dilution flow based on the operation and design of the circulating and service water systems. The reviewers have also identified parameters that affect the source term for radioactivity leakage into the RBCCW system from the reactor coolant system or the spent fuel pool cooling system. This ongoing RBCCW system design review will result in a final setpoint calculation that will ensure licensing and design bases are satisfied. The calculation will follow the requirements of the DCM, Chapter 5.

After completion of the revised calculation, operating procedures will be revised to limit radiation monitor background and to provide adequate control of setpoint changes. An interim change has already been made to form SP2654K-1 for limiting background.

The bases in the REMODCM for other effluent radiation monitor setpoints will be reviewed to ensure that there are no similar failures to consider the affects of system

design on the setpoint calculation. If the review shows other failure, the faulty calculations will be revised using the requirements of DCM, Chapter 5.

Corrective Actions to Avoid Future Violations

To ensure adequate communications of the bases of the RBCCW radiation monitor setpoints the REMODCM will be revised to include the setpoint basis. The procedure, which controls REMODCM revisions, NGP 6.09, has been revised to require appropriate reviews and identification of affected procedures. This includes operational procedures that would need revision if any operational constraints, such as limits on background, are needed according to the basis of the RBCCW radiation monitor setpoint calculation.

To ensure adequate surveillance of changing conditions, which would necessitate a radiation monitor setpoint adjustment, a procedure will be developed for radiation monitor setpoint control. This procedure, EN21235, is in a draft form and is being reviewed by affected departments.

Date When Full Compliance Will Be Achieved

NNECO will be in full compliance with respect to the cited violation prior to entry into Mode 4.

Nuclear Regulatory Commission Violation "F" (50-336/98-202-06)

Restatement of the Violation 202-06, F

- F. 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, And Drawings," requires that activities affecting quality be prescribed by procedures of a type appropriate to the circumstances.

Contrary to the above, the annunciator response procedures for the RBCCW system contained numerous inconsistencies, had widely differing levels of detail, and exhibited poor integration with existing operating and abnormal operating procedure instruction (AOP) 2564, "Loss Of RBCCW," Rev. 3.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

This historical violation was caused by not coordinating the guidance between procedures when developing and modifying the ARPs and AOPs, and when performing biennial reviews. The Millstone Unit 2 Alarm Response Procedures (ARPs) and Abnormal Operating Procedures (AOPs) were developed and modified over several years by many different individuals. There was no procedural requirement to ensure that the guidance within the two procedure types was consistent. In addition, there was no evaluation performed during biennial reviews to determine whether or not the guidance was consistent. Although the procedures would work individually, if used together, the guidance did not always coincide.

Corrective Actions and Results Achieved

AOP 2564 (Loss Of RBCCW) and relevant RBCCW ARP window instructions were modified to clarify actions and ensure consistency between the documents.

Millstone Unit No. 2 will continue to review feedback from operator training sessions with regard to consistency between all ARPs and AOPs, and determine necessary procedure modifications.

Corrective Actions to Avoid Future Violations

All Unit 2 AOPs and their applicable ARP window steps and instructions will be reviewed when the ARPs and AOPs are revised and as part of each procedure's biennial review to correct actions and wording which are inconsistent.

Date When Full Compliance Will Be Achieved

NNECO is currently in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Violation "G" (50-336/98-202-07)

Restatement of the Violation 202-07, G

- G. 10 CFR Part 50, Appendix B, Criterion VI, "Document Control," requires that measures be established to control issuance of documents, such as instructions, procedures and drawings, including changes thereto, which prescribe activities affecting quality. These measures shall assure that documents, including changes, are distributed to and used at the prescribed location.

VI. Document Control

Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization.

Contrary to the above, the full-size Unit 2 piping and instrumentation diagrams maintained in the Controlled Document Library on the third floor of building 475 had not been updated since May 1997.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

Inefficient transfer of responsibility for controlled documents was the cause of this condition. The out-of-date drawings found in the Controlled Document Library (CDL) had been removed from controlled distribution, but were inadvertently kept in CDL 475-3.

As part of the establishment of CDLs in May 1997, controlled copy holders (in the vicinity of the new CDLs) were instructed to transfer their controlled documents to the new CDL. Concurrent with this action, Nuclear Document Services (Document Control Section) terminated the controlled document status for these holders including the holder of these piping & instrumentation diagrams (P&IDs) (i.e. there would be no further controlled updates for this set of documents). This specific set of P&IDs was not transferred to the CDL, and remained uncontrolled. These documents should have been removed from the CDL.

Corrective Actions and Results Achieved

The CDL group reestablished the P&IDs as controlled documents (through the NDS Control Document Section) and verified/updated the P&ID stick file. The CDL was added to the controlled distribution for these P&IDs.

The P&ID files in the other CDLs were audited to verify current revision. No similar P&ID problems were identified in the other CDLs. However, several P&IDs were missing from a stick file in one CDL. This was corrected in accordance with CDL program.

Corrective Actions to Avoid Future Violations

The CDL group has reviewed its program and procedures, and provided more specific guidance regarding the storage of uncontrolled (or reference) documents in CDLs.

Date When Full Compliance Will Be Achieved

NNECO is currently in full compliance with respect to the cited violation.

Nuclear Regulatory Commission Citation "H" (50-336/98-202-08)

Restatement of the Violation 202-08, H

- H. 10 CFR 50.59, "Changes, Tests, and Experiments," permits changes to be made in the facility as described in the FSAR, and requires that records of the changes be maintained, and that the records include a written safety evaluation which provides the bases for the determination that the change did not involve an unreviewed safety question. A proposed change involves an unreviewed safety question if the probability of occurrence or the consequences of a malfunction of equipment evaluated in the safety analysis report may be increased.

NRC "Safety Evaluation of the Millstone Point Nuclear Power Station," dated May 10, 1974, Section 7.10, approved 12 inches as the electrical cable separation criteria in panels.

FSAR Section 8.7.3.1 described the same separation criteria.

Contrary to the above, a safety evaluation erroneously concluded that a reduction in the plant-wide electrical separation criteria was not an unreviewed safety question. Design Change Record (DCR) M2-96-068, "Electrical Separation Specification-Millstone Unit 2," Rev 0, dated September 8, 1997, revised SP-M2-EE-0016, Rev. 0, dated September 9, 1996. The change reduced the electrical cable separation criteria from 12 to 6 inches in cabinets. The DCR included a Safety Evaluation No. S2-EV-97-0018, Rev. 1, dated September 8, 1997, which concluded that there was not an unreviewed safety question. The reduction in separation could increase the probability of a previously evaluated malfunction of equipment.

NNECO's Response

NNECO agrees with the violation.

Reason for the Violation

The discrepant condition identified by this violation was a safety evaluation (SE) that erroneously concluded that a reduction in the electrical separation criteria for wires and devices inside control panels was not an unreviewed safety question (USQ).

The cause of the violation was the failure of the Design Change Record (DCR) SE to fully consider the effect of the change relative to the acceptance limit stated in the NRC Safety Evaluation Report (SER) issued on May 10, 1974.

Section 7.10 of the SER states in part that,

"The applicant has also stated that at least 12 inches of air separation has been maintained in the control boards and panels, or noncombustible barriers or conduit were provided." and, "We conclude that the applicants' cable separation criteria are acceptable."

The DCR revised the separation criteria from 12 inches to 6 inches. The DCR SE concluded that the change was safe and did not involve a USQ. An adequate basis was documented in the SE that the change was safe. However, the SE did not specifically address the SER acceptance limit for separation criteria. Since the SER acceptance limit was being revised by the DCR, this should have resulted in the SE conclusion that the change involved a USQ and required NRC approval prior to implementation.

It is noted that historically NNECO has been consistent with the industry position (e.g., NEI guidance related to 10 CFR 50.59 evaluations) which allowed small increases in probability of malfunctions to not be called USQs. However, when the NRC changed their expectation in this area, NNECO changed the Safety Evaluation procedure (RAC 12, "Safety Evaluation Screens and Safety Evaluations") to be consistent with NRC expectations. Two examples of this are license amendment requests submitted to the NRC on April 29, 1998 (USQ related to the diversity issue for low range pressure transmitters) and on July 2, 1998 (USQ related service water system piping coatings).

Corrective Actions and Results Achieved

DCR M2-96068 SE Number S2-EV-97-0018, Rev. 1 has been revised to consider the effect of the change relative to the acceptance limit in NRC SER issued on May 10, 1974.

A license amendment request was submitted in accordance with 10 CFR 50.90 for the change to the SER acceptance limit for electrical separation criteria in control boards and panels on September 28, 1998.

Corrective Actions to Avoid Future Violations

The procedure for performing safety evaluations will be reviewed and revised, as required, to strengthen the guidance concerning plant changes which affect NRC SERs.

A review of other DCRs which impact electrical separation will be performed for similar discrepant conditions.

Date When Full Compliance Will Be Achieved

NNECO will be in full compliance with respect to the cited violation after the NRC issues the license amendment and prior to entry into Mode 4.

Docket No. 50-336
B17491

Attachment 3

Millstone Nuclear Power Station, Unit No. 2

Additional Items Which Are Not Regulatory Commitments

November 1998

Additional Items Which Are Not Regulatory Commitments

NNECO has conducted a thorough review of the ICAVP Tier 1 RBCCW SSFI Out of Scope Inspection Report and has identified several items that will be tracked internally in our corrective action program, but are not considered to be regulatory commitments unless they are specified in Attachment 1 of this letter. These items and their associated section number are indicated below:

2.2.2 Threshold of Safety Evaluations for Modifications

"The team considered that the licensee should have had a lower threshold for performing 10 CFR 50.59 safety evaluations. **The licensee stated that they would revise their procedures to lower the safety evaluation threshold.**"

2.2.3 Lack of Corrective Action for a System Scenario

"The licensee analyzed the scenario during the inspection. The licensee concluded that a more severe waterhammer than that previously analyzed for GL 96-06 would occur. The new analysis concluded that 45 minutes would be required before the RBCCW pump could be manually started to assure that the previous GL 96-06 analysis for waterhammer effects would still be bounding. **As corrective action, the licensee stated that they would revise the operating procedures to ensure that the RBCCW pumps would not be restarted immediately if they failed to start. The licensee is performing a waterhammer analysis to assess the impact of the increase voiding in the RBCCW piping for the as found condition, assuming operators immediately restart the affected pump.**"

3.2.2 Cable Separation Problem

"The failure to maintain the cable separation required by Specification SP-M2-EE-0016 for cables Z12AA20, Z2LAA20, and Z24LA60 and Z16HT35 on Standards drawing 25203-34031, Rev. 7, was considered an example of a violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

"As corrective action, the licensee issued Design Change Notice (DCN) DM2-00-0475-98 to install cable tray covers. Additionally, the licensee provided Engineering Self-Assessment Report ESAR-PRGIM-97-032 that documented the results of a June 1997 assessment of the Separation-Independence-Diversity Program, and concluded that the program had established controls to ensure compliance to the licensing basis. In addition, the licensee concluded that there had been a generic lack of documentation for the electrical separation problems and consequently, had issued a modification, MMOD M2-97541, "Cable Tray Covers" to investigate and document the use of cable tray covers and other barriers. **The licensee stated that the activity was ongoing.**"

3.2.3 Procedures

"The team reviewed Operating Procedure OP 2343 "4160 Volt Electrical System," Rev. 17 through Change No. 9, dated February 10, 1998. The team noted that the procedure read as if it were possible to interconnect one train of ac power to the other train's dc control power. The licensee resolved the question by opening the applicable circuit breaker cubicles and demonstrating that interlock mechanisms precluded the interconnection. **The licensee stated that the procedure would be clarified in the next revision.**"

4.2.2 Valve Identification Conflict

"When the team reviewed the plant production maintenance management system database for the safety category of the "Letdown Heat Exchanger RBCCW Outlet TCV Air Operator," the data under the 2-RB-402 designation indicated a Category 1 designation, and the data under 2-CH-223 designation, indicated a non-Category 1 designation. The team also examined component records and found no procedural or maintenance errors as a result of the identification confusion. After discussion with the team, **the licensee stated that they would examine and correct the FSAR, procedures, and drawings as a result of this finding.**"

4.2.3 Setpoint and Uncertainty Calculations

"The team examined the licensee's instrumentation setpoint calculation program for the RBCCW system. The team noted that Specification SP-M2-IC-019, "Millstone Unit 2 I&C Setpoints," Rev. 0, dated December 12, 1997, included reactor protection system and engineered safety feature actuation system parameters. It was not intended to include the RBCCW setpoints. The licensee stated that the plant predated, and did not implement, most guidance on setpoint methodology used by newer plants. However, the licensee further stated that, as an intended enhancement, the specification would be expanded to include ultimate heat sink parameters. The licensee stated that all other setpoints, including the RBCCW, were covered by original design calculations and their revisions. **The licensee stated that it planned to revisit these other setpoints in the future and would address those used in each emergency operating procedure or in the I&C procedure "Basis" document in the form of an updated setpoint calculation. The licensee stated that this would be done to all safety setpoints that were not included in reactor protection system or ESFAS setpoints.** In 1997, the licensee had added the basis document to the procedures format. At the time of the inspection, only a limited number of procedures have been modified to the new format. **The licensee stated the recalculation of original setpoint calculations would be done in accordance with their nuclear steam supply system vendor owners group program described in Combustion Engineering Owners Group letter, CEOG-98-037, dated January 30, 1998.**"

5.2.3 Missing Pipe Support Calculations

"During the inspection the team requested calculations for installed supports. For one support, Support No. 450026, licensee inspections and calculations that document compliance with NRC Bulletins 79-02 and 79-14, were found. For the other support, Support No. 450022, the licensee inspections and calculations which documented compliance with NRC Bulletin 79-14, were found. However, complete original design calculations were not found for either support.

The licensee stated that a majority of the pipe support calculations are not available onsite, that the original calculations had not been stored onsite, and that the licensee was in process of retrieving the calculations. This fact had been previously identified by the licensee in Engineering Self-Assessment Report (ESAR) No. 97-043, "Calculations," dated May 22, 1997, ESAR No. 97-063, "Pipe Stress and Support Assessment," dated June 26, 1997, and in CR M2-97-0829 dated May 20, 1997. The CR recommended a number of corrective actions including the development of a calculation index, the identification of "critical" calculations, and the performance of such calculations that are not currently available.

The licensee stated that if the calculations could not be retrieved they would develop a rationale for why that was an acceptable condition and present it to the NRC in the future. This will be a followup item. (IFI 50-336/98-202-11)"

6.2.2 Findings

Sealed Valves

"The team observed a number of sealed valves in containment that were not identified as sealed by the system alignment checklist (OPS Form 2611D-2). These valves were the cooler coil vent valves for the containment air recirculation (CAR) and coolant units. The team noticed that the CAR cooler coil drain valves were both sealed and identified as sealed by OPS Form 2611D-2. The licensee explained that valves in containment were sealed in response to a previous NRC violation (50-336/96-08-07) and that affected system alignment checklists were being revised. Rev. 25, of SP 2611D-2, had incorporated the requirement to seal all RBCCW containment valves except the CAR coil vents. The licensee stated that this was because, at the time of Rev. 25, they had been evaluating the need to seal the vents. After the evaluation was completed, the vent valves were also sealed. **The licensee planned to incorporate these additional sealed valves into Rev. 26.** (IFI 50-336/98-202-15)"