October 29, 2004

Mr. David A. Christian
Sr. Vice President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Boulevard
Glenn Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION UNIT 2 AND UNIT 3 - NRC INTEGRATED INSPECTION REPORT 05000336/2004007 AND 05000423/2004007

Dear Mr. Christian:

On September 30, 2004, the U.S. Nuclear Regulatory Commission (NRC) completed inspections at your Millstone Power Station Unit 2 & Unit 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 14, 2004, with Mr. J. Alan Price and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents three NRC-identified findings and one self-revealing finding of very low safety significance (Green). All of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest these non-cited violations, you should provide a response within 30 days of the date of these inspection reports, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Millstone Power Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the

NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Ronald R. Bellamy, Chief
Projects Branch 6
Division of Reactor Projects

Docket Nos.: 50-336, 50-423
License Nos.: DPR-65, NPF-49

Enclosure: Inspection Report 05000336/2004007 and 05000423/2004007
w/Attachment: Supplemental Information

cc w/encl:
J. A. Price, Site Vice President - Millstone
C. L. Funderburk, Director, Nuclear Licensing and Operations Support
D. W. Dodson, Supervisor, Station Licensing
L. M. Cuoco, Senior Counsel
C. Brinkman, Manager, Washington Nuclear Operations
W. Meinert, Massachusetts Municipal Wholesale Electric Company
First Selectmen, Town of Waterford
V. Juliano, Waterford Library
J. Markowicz, Co-Chair, NEAC
E. Woollacott, Co-Chair, NEAC
E. Wilds, Director, State of Connecticut SLO Designee
J. Buckingham, Department of Public Utility Control
G. Proios, Suffolk County Planning Dept.
R. Shadis, New England Coalition Staff
G. Winslow, Citizens Regulatory Commission (CRC)
S. Comley, We The People
D. Katz, Citizens Awareness Network (CAN)
R. Bassilakis, CAN
J. M. Block, Attorney, CAN

Distribution w/encl **(VIA E-MAIL)**:
S. Collins, RA
J. Wiggins, DRA
J. Jolicoeur, RI OEDO
J. Clifford, NRR
V. Nerses, PM, NRR
S. Wall, Backup, NRR
S. Schneider, Senior Resident Inspector
E. Bartels, Resident OA
R. Bellamy, RI
K. Jenison, RI
T. Madden, OCA
T. Kim, Director, DOC
Region I Docket Room (with concurrences)

DOCUMENT NAME: E:\Filenet\ML043090220.wpd
After declaring this document "An Official Agency Record" it **will** be released to the Public.
To receive a copy of this document, indicate in the box: **"C"** = Copy without attachment/enclosure
"E" = Copy with attachment/enclosure **"N"** = No copy

OFFICE	RI/DRP		RI/DRP		RI/DRP			
NAME	SSchneider/*KMJ for*		KJenison/KMJ		RBellamy/RRB			
DATE	10/29/04		10/29/04		10/29/04		10/ /04	

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	05000336, 05000423
License No.:	DPR-65, NPF-49
Report No.:	05000336/2004007 and 05000423/2004007
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2 and Unit 3
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	July 1, 2004 - September 30, 2004
Inspectors:	S. M. Schneider, Senior Resident Inspector S. R. Kennedy, Resident Inspector K. A. Mangan, Resident Inspector B. A. Bickett, Reactor Inspector, Division of Reactor Safety P. C. Cataldo, Senior Resident Inspector, Beaver Valley G. T. Dentel, Senior Resident Inspector, Seabrook R. L. Fuhrmeister, Senior Reactor Inspector, Division of Reactor Safety G. K. Hunegs, Senior Resident Inspector, Nine Mile Point 1 & 2 K. M. Jenison, Senior Project Engineer, Division of Reactor Projects S. L. Lewis, Reactor Engineer, Division of Reactor Projects M. P. Patel, Reactor Engineer, Division of Reactor Projects T. A. Moslak, Health Physicist, Division of Reactor Safety S. M. Pindale, Senior Reactor Inspector, Division of Reactor Safety B. D. Welling, Senior Reactor Inspector, Division of Reactor Safety
Accompanied by:	N. S. Sieller, Nuclear Safety Professional, Division of Reactor Projects
Approved by:	Ronald R. Bellamy, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS iii

REACTOR SAFETY 1
1R01 Adverse Weather Protection 1
1R04 Equipment Alignment 2
1R05 Fire Protection 3
1R06 Flood Protection Measures 5
1R07 Heat Sink Performance 6
1R11 Licensed Operator Requalification Program 6
1R12 Maintenance Effectiveness 6
1R13 Maintenance Risk Assessments and Emergent Work Evaluation 8
1R14 Personnel Performance During Non-Routine Plant Evolutions and Events 9
1R15 Operability Evaluations 11
1R16 Operator Work-Arounds 12
1R17 Permanent Plant Modifications 12
1R19 Post-Maintenance Testing 14
1R22 Surveillance Testing 16
1R23 Temporary Plant Modifications 18
1EP6 Drill Evaluation 19

RADIATION SAFETY 20
2OS3 Radiation Monitoring Instrumentation 20
2PS2 Radioactive Material Processing and Transportation 21

OTHER ACTIVITIES [OA] 23
4OA1 Performance Indicator Verification 23
4OA2 Identification and Resolution of Problems 24
4OA3 Event Followup 26
4OA4 Cross Cutting Aspects of Findings 28
4OA5 Other Activities 28
4OA6 Meetings, Including Exit 31

SUPPLEMENTAL INFORMATION A-1
KEY POINTS OF CONTACT A-1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED A-2
LIST OF DOCUMENTS REVIEWED A-3
LIST OF ACRONYMS A-14
TI 2515/159 . . . . . A-16

SUMMARY OF FINDINGS

IR 05000336/2004007, 05000423/2004007; 07/01/2004 - 09/30/2004; Millstone Power Station, Unit 2 and Unit 3; Permanent Plant Modifications, Post-Maintenance Testing, Event Followup, Other Activities.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by regional inspectors. Four (Green) non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Unit 2

- Green. The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, for the failure to take effective corrective actions to preclude main steam code safety valves from lifting following design basis turbine trips/reactor trips from 100% power. Following two uncomplicated reactor trips at Unit 2 in March 2004, the inspectors noted that main steam code safety valves lifted and reseated. The inspectors determined that Unit 2 had a history of main steam code safety valves lifting and reseating following uncomplicated trips. The inspectors concluded that cycling main steam code safety valves following trips from full power increases the likelihood that they may not reseat. Dominion had not taken effective corrective actions to correct this longstanding issue. Dominion has undertaken a study (to complete by the end of 2004) to evaluate this system condition and to specify long term design changes which will be scheduled for completion in refueling outage 2R17 (fall of 2006). Dominion has entered this issue into their corrective action program.

  This issue is more than minor because it affects the equipment performance attribute of the Initiating Events Cornerstone and the objective to limit the likelihood of those events that upset plant stability. Cycling of main steam code safety valves results in a greater likelihood that the valves will not reseat properly during an event. The finding was determined to have a very low safety significance since it did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the cross-cutting area of Problem Identification and Resolution. (Section 1R17.2)

- Green. The inspectors identified a non-cited violation of Technical Specification (TS) 6.8.1, for the failure to adequately implement post-maintenance testing following replacement of a pressurizer level instrument. On July 28, 2004, Operations and Maintenance personnel failed to meet a "Unit 2 Shutdown" procedural prerequisite and did not perform a procedure step to place charging pump controls in pull-to-lock during post-maintenance testing of pressurizer level control circuitry. As a result, both standby charging pumps started with one charging pump already operating. Dominion has specified training for both Operations and Maintenance organizations describing the circumstances of this event and management expectations for work evolution briefs, peer checking, and actions to be taken for unexpected conditions. Additionally, Maintenance management reinforced work practice expectations for the use of "N/A" in procedures and work planning process improvements. Dominion has entered this issue into their corrective action program.

  This issue is more than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and the objective to limit the likelihood of those events that upset plant stability. The start of both standby charging pumps with one charging pump already operating was the precursor to the failure of the charging system on March 7, 2003. The finding was determined to have a very low safety significance since it did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the cross-cutting area of Human Performance. (Section 1R19)

Cornerstone: Mitigating Systems

Unit 3

- Green. The inspectors identified a non-cited violation of Technical Specification (TS) 3.8.3.2, Onsite Power Distribution - Shutdown, for the failure to enter Technical Specifications following the loss of a vital inverter. The required actions were to immediately stop all reactivity additions. However, operators failed to stop both a plant heatup and reactor coolant system (RCS) dilutions (hydrazine addition), which resulted in positive reactivity additions to the reactor. Dominion specified operator training to reinforce the management expectation for completing procedures, however, additional corrective actions will be specified in an upcoming revision to the Licensee Event Report based on the issues identified by the inspectors in the finding description. Dominion has entered this issue into their corrective action program.

  This issue is more than minor because it is associated with the human performance attribute of the Mitigating System Cornerstone and the objective of ensuring the availability of systems to respond to initiating events to prevent undesirable circumstances. The failure of the vital inverter resulted in an electrical lineup that did not meet the TS requirements for one complete train of electrical buses. Additionally, the failure to recognize the need to enter TS precluded taking corrective actions to prevent adding positive reactivity with this

electrical lineup. Several positive reactivity additions from heatup and RCS dilutions occurred as a result. The finding is of very low safety significance because the reactivity addition from the heatup and the dilutions was small compared to the reactivity needed for criticality. Additionally, the finding did not increase the likelihood of a loss of RCS inventory, degrade Dominion's ability to add inventory if needed, or degrade the ability to recover the residual heat removal system if it was lost. This finding is related to the cross-cutting issue of Human Performance. (Section 4OA3)

- Green. The inspectors identified a non-cited violation of Technical Specification (TS) 6.8.1a for the failure to adequately implement procedures for venting the reactor coolant system (RCS) and the residual heat removal (RHR) system. On May 28, 2004, Dominion conducted a quarterly vent and valve lineup of the "A" train of the RHR system in which air was vented from several vent valves. The inspectors investigated whether the voids in the "A" train of the RHR system and portions of suction piping leading to both trains of the safety injection (SI) and charging systems would have adversely affected these systems' ability to respond to a small break loss of coolant accident (SBLOCA). The inspectors reviewed the engineering technical evaluation and determined that the amount of air in the RHR system did not adversely impact the RHR pumps, SI pumps, or the charging pumps. The inspectors reviewed Dominion's root cause investigation and determined that the cause of the entrapped air was due to securing one of the two RHR pumps on April 28, 2004, during the RCS sweep and vent procedure following completion of the refueling outage. Dominion revised the RCS sweep and vent procedure to add a precaution to avoid securing an RHR pump during this procedure. Dominion has entered this issue into their corrective action program.

  This issue is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems cornerstone and the objective to ensure availability of systems that respond to initiating events to prevent undesirable consequences. The entrapped air had the potential to make the "A" RHR pump, SI pumps, and charging pumps inoperable. The finding is of very low safety significance because it did not represent an actual loss of safety function of the RHR, SI, or charging system since the amount of air identified in these systems would not have prevented them from functioning. This finding is related to the cross-cutting issue of Human Performance. (Section 40A5.1).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 operated at essentially 100% power for the duration of the inspection period with one exception. From July 20, 2004 to July 26, 2004 the unit reduced power to 94% to perform maintenance on the circulating water system. Unit 2 returned to 100% power on July 26, 2004 and operated at essentially 100% for the remainder of the period.

Unit 3 operated at essentially 100% power for the duration of the inspection period with one exception. On August 11, 2004, the plant reduced load to approximately 91% power due to the No. 3 and No. 5 turbine intercept valves closing caused by the failure of a servo valve. The unit returned to 100% power on August 14, 2004, but reduced load to 90% power that same day to back flush the circulating water bays due to condenser fouling. The plant returned to 100% power on August 15, 2004, and remained at full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 - 2 Unit 2 Samples and 1 Unit 3 Sample)

a. Inspection Scope

Seasonal Site Inspection (1 Unit 2 and 1 Unit 3 sample)

The inspectors performed a review of severe weather preparations during the onset of the hurricane season to evaluate the site's readiness for seasonal susceptibilities. The inspectors reviewed Dominion's preparations/protection for severe weather and its impact on the protection of safety-related systems, structures and components. The inspection was intended to ensure that the indicated equipment, its instrumentation, and its supporting structures were configured in accordance with Dominion's procedures and that adequate controls were in place to ensure functionality of the systems. The inspectors reviewed the Unit 2 and 3 Final Safety Analysis Report (FSAR) and Technical Specifications and compared the analysis with procedure requirements to ascertain that procedures were consistent with the FSAR. The inspectors performed partial walkdowns of the Unit 2 and Unit 3 intake structures, service water systems, intake structure traveling screens and emergency diesel generators to ascertain the adequacy of protection of equipment from the effects of hurricanes. The inspectors verified that operator actions defined in the adverse weather procedures maintain readiness of essential systems and that adequate operator staffing is specified. Documents reviewed during the inspection are listed in the Attachment.

System Inspection (1 Unit 2 Sample)

The inspectors reviewed one sample of the readiness of the Unit 2 service water system for extreme weather conditions, specifically, hurricanes, high winds, high tides, and other severe weather events. The inspection was intended to ensure that the indicated equipment, its instrumentation, and its supporting structures were configured in accordance with Dominion procedures and that adequate controls were in place to ensure functionality of the system. The inspectors reviewed licensee procedures and walked down the system. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns (71111.04Q - 4 Unit 2 and 3 Unit 3 Samples)

The inspectors performed seven partial system walkdowns during this inspection period. The inspectors reviewed the documents listed in the Attachment to determine the correct system alignment. The inspectors conducted a walkdown of each system to verify that the critical portions of selected systems were correctly aligned in accordance with these procedures and to identify any discrepancies that may have had an effect on operability. The inspectors verified that equipment alignment problems that could cause initiating events, impact mitigating system availability or function, or affect barrier functions, were identified and resolved. The following systems were reviewed based on their risk significance for the given plant configuration:

Unit 2

- Partial equipment alignment of motor driven auxiliary feedwater pumps (8/18/2004)
- Partial equipment alignment of the "B" emergency diesel generator (EDG) air start and jacket water cooling systems (8/19/2004)
- Partial equipment alignment of the charging system (8/19/2004)
- Partial equipment alignment of the "B" train of containment spray system during maintenance on the "A" train (9/17/2004)

Unit 3

- Partial equipment alignment of "B" emergency diesel generator (EDG) during "A" EDG surveillance (7/20/2004)
- Partial equipment alignment of 4160 VAC system following station blackout diesel maintenance (7/28/2004)

- Partial equipment alignment of the "A" motor driven auxiliary feedwater (MDAFW) pump during "B" MDAFW train maintenance (9/20/2004)

b. Findings

No findings of significance were identified.

Complete System Walkdown. (71111.04S - 1 Unit 2 Sample)

The inspectors completed a detailed review of the alignment and condition of the Unit 2 high pressure safety injection (HPSI) System. The inspectors conducted a walkdown of the system to verify that the critical portions, such as valve positions, switches, and breakers, were correctly aligned in accordance with procedures to identify any discrepancies that may have had an effect on operability.

The inspectors also conducted a review of outstanding maintenance work orders to verify that the deficiencies did not significantly affect the HPSI system function. In addition, the inspectors discussed system health with the system engineer and reviewed the condition report database to verify that equipment alignment problems were being identified and appropriately resolved. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Sample Review (71111.05Q - 6 Unit 2 and 6 Unit 3 Samples)

a. Inspection Scope

The inspectors performed twelve walkdowns of fire protection areas during the inspection period. The inspectors reviewed Dominion's fire protection program to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the selected areas. The inspectors walked down those areas to assess Dominion's control of transient combustible material and ignition sources. In addition, the inspectors evaluated the material condition and operational status of fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors then compared the existing conditions of the inspected fire protection areas to the fire protection program requirements to ensure all program requirements were being met. Documents reviewed during the inspection are listed in the Attachment. The fire protection areas reviewed included:

Unit 2

- West Main Steam Safety Valve Room - Auxiliary Building, 38'6" Elevation - (Fire Area A-8E)
- Diesel Generator Room "B" - Auxiliary Building, 14'6" Elevation - (Fire Area A-16)
- DC Switchgear Area - Turbine Building, 31'6" Elevation - (Fire Area T-1D)
- Charging Pump Room - Auxiliary Building, -25'6" Elevation - (Fire Area A-6A)
- Containment Spray and "HPSI"/"LPSI"Pump Room - Auxiliary Building, -45'6" Elevation - (Fire Area A-8A)
- Containment Spray and "HPSI"/"LPSI"Pump Room - Auxiliary Building, -45'6" Elevation - (Fire Area A-3)

Unit 3

- Fuel Building, 11'-0" Elevation, 24'-6" Elevation, 34'-0" Elevation, 52'-4" Elevation - (Fire Area FB-1)
- Fuel Building, 11'-0" Elevation, 24'-6" Elevation, 42'-6" Elevation - (Fire Area FB-2)
- Station Blackout Diesel Enclosure, 24' 6" Elevation - (Fire Area SBO-1)
- North Emergency Diesel Generator Enclosure, 24' 6" Elevation - (Fire Area EG-3)
- East Motor Control Cabinet (MCC)/Rod Control Area, 24'-6" Elevation - (Fire Area AB-5)
- West MCC/Rod Control Area, 24'-6" Elevation - (Fire Area AB-6)

b. Findings

No findings of significance were identified.

Annual Fire Drill Observation (71111.05A - 1 Unit 3 Sample)

a. Inspection Scope

Unit 3

The inspectors observed personnel performance during a fire brigade drill on July 1, 2004, to evaluate the readiness of station personnel to prevent and fight fires. The drill simulated a fire in the Unit 3 Cable Spreading Room. The inspectors observed the fire brigade members using protective clothing, turnout gear, and self-contained breathing apparatus and entering the fire area in a controlled manner. The inspectors also observed the fire fighting equipment brought to the fire scene to evaluate whether sufficient equipment was available to effectively control and extinguish the simulated fire. The inspectors evaluated whether the permanent plant fire hose lines were capable of reaching the fire area and whether hose usage was adequately simulated. The inspectors observed the fire fighting directions and communications between fire brigade members. The inspectors verified that the pre-planned drill scenario was

followed and observed the post drill critique to evaluate if the drill objectives were satisfied and that any drill weaknesses were discussed.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 2 Unit 2 and 2 Unit 3 Samples)

Internal Flooding Inspection (1 Unit 2 Sample and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors reviewed two samples of flood protection measures for equipment in the two safety related rooms listed below. This review was conducted to evaluate Dominion's protection of the enclosed safety-related systems from internal flooding conditions. The inspectors performed a walkdown of the area, reviewed the FSAR, the internal flooding evaluation and related documents. The inspectors compared the as-found equipment and conditions to ensure that they remained consistent with those indicated in the design basis documentation, flooding mitigation documents, and risk analysis assumptions. Documents reviewed during the inspection are listed in the Attachment.

- Unit 2 Motor Driven Auxiliary Feedwater (MDAFW) Room
- Unit 3 "B" MDAFW Room

b. Findings

No findings of significance were identified.

External Flooding Inspection (1 Unit 2 Sample and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors evaluated Dominion's preparation and protection from the effects of external flooding conditions for Unit 2 and Unit 3. The inspectors reviewed the FSAR and applicable procedures to determine the readiness of protection for applicable safety-related structures, systems, and components. The inspectors performed walkdowns of the Unit 2 floodgates and fire pump houses and the Unit 3 intake structure to verify the adequacy of the floodgates, flood doors, and temporary equipment and that removable flood planks were able to perform their design function. Additionally, the inspectors reviewed recent Dominion inspection results including floodgate inspections, and verified that previously identified deficiencies had been entered into Dominion's corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07B - 3 Unit 2 Samples)

Refer to Section 4OA5.2.

1R11 Licensed Operator Requalification Program (71111.11Q - 1 Unit 2 and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors observed one sample of Unit 2 licensed operator classroom training on August 20, 2004 and one sample of Unit 3 licensed operator classroom training on September 17, 2004. The inspectors observed licensed operator training on the Independent Spent Fuel Storage Installation during the August 20, 2004 classroom session. The inspectors verified that the training evaluators adequately addressed that the applicable training objectives had been achieved. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

Routine Maintenance Effectiveness Inspection (71111.12Q - 2 Unit 2 and 3 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed five samples of Dominion's evaluation of degraded conditions, involving safety related structures, systems and/or components (SSC) for maintenance effectiveness during this inspection period. The inspectors reviewed licensee implementation of the Maintenance Rule (MR), 10 CFR 50.65, and verified that the conditions associated with the referenced CRs were appropriately evaluated against applicable MR functional failure criteria as found in licensee scoping documents and procedures. The inspectors also discussed these issues with the system engineers and maintenance rule coordinators to verify that they were appropriately tracked against each system's performance criteria and that the systems were appropriately classified in accordance with MR implementation guidance. Documents reviewed during the inspection are listed in the Attachment. The following conditions were reviewed:

Unit 2

- Post Incident Recirculation Fan Timer Failure (CR-04-08427)

- Service Water Supply Header to "B" Emergency Diesel Generator Through-Wall Leak (CR-04-08487)

Unit 3

- "B" EDG Output Breaker Would Not Close During Surveillance (CR-04-07193)
- Control Building Isolation Actuation Due To HVC*RE 16A Going Into Alarm (CR-04-06929)
- Control Building Air Conditioning Unit Failure (CR-04-06510)

b. Findings

No findings of significance were identified.

Biennial Periodic Evaluation Inspection (71111.12B - 3 Unit 2 and 3 Unit 3 Samples)

a. Inspection Scope

The inspectors conducted a review of Dominion's periodic evaluation of the implementation of the Maintenance Rule required by 10 CFR 50.65 (a)(3). The evaluation covered a period from September 2001 to June 2003. The purpose of this review was to ensure that Millstone Unit 2 and Unit 3 effectively assessed its goals for reasonable assurance that structures and systems and components as defined in 10 CFR 50.65 (b) fulfill their intended functions. The inspections verified certain performance criteria, system monitoring, and preventive maintenance activities. The inspectors verified that the assessment was completed within the required time period and that industry operating experience was properly utilized. Additionally, the inspectors verified that Dominion appropriately balanced equipment reliability with unavailability when planning maintenance activities.

The inspectors selected a sample of six risk-significant systems to verify that: (1) the structures, systems, and components were properly characterized, (2) goals and performance criteria were appropriate, (3) corrective action plans were adequate, and (4) performance was being effectively monitored in accordance with MP-24-MR-FAP730, Rev. 0, "Maintenance Rule Goal Setting and Monitoring," and other Maintenance Rule procedures. The following systems were selected for this detailed review:

Unit 2

- Emergency Diesel Generators
- Service Water System
- Reactor Coolant System

Unit 3

- Service Water System
- Station Blackout Diesel Generator
- Containment Isolation

These systems were either currently in increased monitoring status as required by 10 CFR 50.65 a(1) or at some time during the assessment period had been in an increased monitoring status or had experienced degraded performance. The inspectors reviewed corrective action documents for malfunctions and failures of these systems to determine if: (1) they had been correctly categorized as functional failures; (2) they were correctly categorized as maintenance preventable; and (3) their performance was adequately monitored to determine if classifying a system as (a)(1) was appropriate.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13 - 4 Unit 2 and 4 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed eight samples of the adequacy of maintenance risk assessments of emergent and planned activities during the inspection period. The inspectors utilized the Equipment Out of Service (EOOS) quantitative risk assessment tool to evaluate the risk of the plant configurations and compared the results to Dominion's stated risk. The inspectors verified that Dominion entered appropriate risk categories and implemented risk management actions as necessary. Documents reviewed during the inspection are listed in the Attachment. The inspectors verified the conduct and adequacy of scheduled maintenance risk assessments for plant conditions affected by the conduct of the following maintenance and testing activities:

Unit 2

- Work Schedule for the week of 7/12/04 - maintenance and testing on the charging system
- Work Schedule for the week of 7/26/04 - emergent risk assessment for maintenance/testing
- Work Schedule for the week of 8/9/04 - risk assessment for maintenance/testing
- Work Schedule for the week of 9/4/04 - maintenance and testing on the instrument air, reactor plant component cooling water, and auxiliary feedwater systems

Unit 3

- Work Schedule for the week of 7/19/04 - maintenance and testing on the "A" engineered safety features building, air conditioning, and "A" safety injection pump
- Work Schedule for the week of 7/26/04 - maintenance and testing on the station blackout diesel, safety injection slave relay, and solar disturbance
- Work Schedule for the week of 8/2/04 - maintenance and testing on the 345 KV switchyard and 34D undervoltage
- Work Schedule for the week of 8/30/04 - maintenance and testing on the "B" safety injection (SI) pump, "1B" engineered safety feature building air conditioning, service water to "B" SI pump cooler

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions and Events (71111.14 - 2 Unit 2 and 2 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed four samples of events that demonstrated personnel performance in coping with non-routine evolutions and transients. The inspectors observed operations in the control room and reviewed applicable operating and alarm response procedures, technical specifications, plant process computer indications, and control room shift logs to evaluate the adequacy of Dominion's response to these events. The inspectors also verified the events were entered into the corrective action program to resolve identified adverse conditions. Documents reviewed during the inspection are listed in the Attachment.

Unit 2

- On July, 28, 2004, Operations personnel responded to the unexpected start of two standby charging pumps while one charging pump was running. An Instrumentation and Control (I&C) loop calibration of letdown controls was in progress as a post maintenance test activity for the replacement of a pressurizer level instrument. During this test, I&C personnel initiated signals into the Reactor Regulating System, which caused both standby charging pumps to start. Neither Operations nor I&C personnel had recognized that this activity would cause these pumps to start. Operators secured the two standby charging pumps, reviewed the I&C procedure, and noted that the pumps should have been placed in pull-to-lock. Operators placed the standby pumps in pull-to-lock and I&C then completed the procedure. See Section 1R19.

- On August 5, 2004, Operations and Reactor Engineering personnel were conducting operations in the spent fuel pool to inspect fuel rods from failed fuel

assemblies to determine their failure mechanism. During the transfer of a fuel rod into an Individual Rod Inspection Station (IRIS), the fuel rod broke. Approximately 133 inches of the fuel rod fell into the safety basket, attached to the inspection station, while approximately 13 inches of the fuel rod remained connected to the fuel rod gripper. Fuel inspection operations were stopped and the door was closed at the bottom of the fuel rod gripper to ensure both sections of the broken rod were secured. Recovery plans were formulated to recover the upper and lower fuel rod segments and place them into a failed rod storage canister (FRSC) and to determine the existence of and recover any fuel fragments remaining in the safety basket. On August 6, 2004 the lower section of the failed fuel rod was placed into the FRSC. On August 9, 2004, the upper segment of the failed fuel rod was placed into the FRSC. On August 11, 2004, fuel pellets and/or cladding fragments were identified at the bottom of the safety tube. On August 12, 2004 the safety tube was inverted and the fragments were tipped into a bucket. In all, five fragments were recovered and underwater radiological surveys confirmed there were no more fragments in the safety tube. The fragments were then transferred to a container (a short section of fuel rod cladding and lower end plug approximately 4 inches long) which was placed into the FRSC.

Unit 3

- On August 11, 2004, Operations personnel responded to indications of high steam flow on the "A" moisture separator reheater (MSR). Operations responded by securing reheat steam to the "A" and "B" MSRs. The resulting secondary transient caused the control rods to automatically insert which caused a decrease in reactor coolant system temperature and pressure. The operators energized all pressurizer heaters to restore plant pressure and the plant stabilized at 91 percent reactor power. Operations entered OP 3317, "Reheat and Moisture Separator" to remove the MSRs from operation while at power. Dominion determined that the cause of the high steam flow transient was the closure of two main turbine combined intercept valves due to the failure of a servo valve.

- On August 30, 2004, Operations personnel responded to a "C" steam generator flow mismatch (i.e., steam flow > feed flow). Operators took manual control of the "C" feed regulating valve (FRV) and matched steam flow, feed flow, and steam generator level in accordance with the alarm response procedure. The operators identified that the Channel 1 computer point had spiked low and then returned to normal. They entered AOP 3571, Instrument Failure Response, and selected the "C" steam generator instrument to Channel 2, and then restored the "C" FRV to automatic control.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 6 Unit 2 and 8 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed fourteen operability determinations associated with degraded or non-conforming conditions to ensure that operability was justified and that mitigating systems or those affecting barrier integrity remained available and no unrecognized increase in risk had occurred. The inspectors also reviewed compensatory measures to ensure that the compensatory measures were in place and were appropriately controlled. The inspectors reviewed licensee performance to ensure all related TS and FSAR requirements were met. The inspectors reviewed the following degraded or non-conforming conditions:

Unit 2

- Water Found in "C" Charging Pump Oil (CR-04-06464)
- Flood Door Found Open Between EDG Enclosures (CR-04-06625)
- "C" Service Water Pump Failed In Service Testing (CR-04-07158)
- Terry Turbine Trip Hook Did Not Fully Engage (CR-04-07628)
- Emergency Building Filtration System (CR-04-03329)
- Lost M&TE Used In The Installation Of MNSA Clamps On The Unit 2 Pressurizer in 2R14 (CR-04-05352)

Unit 3

- Thermal Performance Test of the 3EGS*E1A & E2A Was Terminated Prior To Completion (CR-04-07596)
- 125 VDC Battery Cells did not Meet Non Tech Spec Criteria (CR-04-06858)
- "B" Train Control Building Chilled Water Valve did not Close Within Required Surveillance Time (CR-04-07851)
- "B" Train Charging Pump Component Cooling Water System Relief Valve Leaks By at Approximately One Drop Per Minute (CR-04-07780)
- Rod Supervision Program Does Not Agree With Rod Position Demand Position and Digital Rod Position Indication (CR-04-07242)
- Residual Heat Removal Air Technical Evaluation (CR-04-05384)
- "B" Emergency Diesel Generator Output Breaker Would Not Close (CR-04-07193)
- Chill Water Valve Indication Fails Surveillance Test (CR-04-07851)

b. Findings

Unit 2

Following the rupture of several atmospheric relief housekeeping boots at Millstone Unit 2, Dominion removed the housekeeping boots, issued CR-04-03329 and performed an operability determination (OD) to establish whether the enclosure building filtration system (EBFS) was operable with the boots removed. Dominion based its OD on the

results of a "draw down test" which indicated that, in the absence of housekeeping boots and in a non transient environment, the EBFS system was capable of drawing a vacuum of 2.5 inches of water within the required 60 seconds using a single train of EBFS. Based on these results, Dominion concluded that the EBFS remained operable following the rupture and subsequent removal of the housekeeping boots. However the inspectors questioned what the effect of steam, increased humidity, an altered flow path and the distribution of debris (scale, dirt, and bird feathers) in the penetration room would have on the post accident operation of the EBFS and found that Dominion had not evaluated these aspects. An unresolved item (URI) is being opened to determine whether these conditions would impact the operability of the system and to determine the significance of any issues. (**URI 05000336/2004007-01**).

Unit 3

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16 - 1 Unit 2 and 1 Unit 3 Sample)

Cumulative Effects of Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed the current listing of active operator work-arounds (OWAs) for Millstone Unit 2 and Unit 3. The review was conducted to verify that Dominion procedures and practices provided the necessary guidance to plant personnel, that the cumulative effects of the known OWAs were addressed and that the overall impact on the affected systems was assessed by Dominion. The inspectors independently assessed the cumulative impact of known OWAs to determine if they adversely affected the ability of plant operators to implement emergency procedures, respond to plant transients, or perform normal functions within the expectations of the established Dominion risk models. In support of this assessment, the inspectors reviewed various condition reports regarding OWAs, and verified that OWAs were being identified, tracked, and resolved in Dominion's corrective action program.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A - 2 Unit 2 Samples)

a. Inspection Scope

The inspectors reviewed two samples of a permanent plant modification on Unit 2. The inspectors performed a walkdown of the area and reviewed the FSAR, licensing and design basis documents, and the engineering disposition. These reviews were conducted to ensure (1) the modified components remained consistent with the assumptions indicated in the design basis documents, (2) that system availability,

reliability, and functional capability were maintained, and (3) no unrecognized conditions that significantly affected risk or could place the plant in an unsafe condition were introduced as a result of the modifications. Documents reviewed during the inspection are listed in the Attachment.

Unit 2

- Charging System (DCR M2-03006)
- Reactor Regulating System/Atmospheric Reliefs/Condenser Dump Valves (MMOD M2-99056)

b. Findings

1. Charging System

The inspectors identified an unresolved item (URI) related to the application of 10 CFR 50.59 to a permanent modification of the Millstone Unit 2 charging system. During a review of permanent plant modification DCR M2-03006, the inspectors noted that the modification did not contain calculations or test data to verify that the charging system established and maintained an adequate net positive suction head (NPSH) on the system following significant design changes to the system. This issue is addressed in Dominion's corrective action program (CR-04-06773). A URI is being opened to track Dominion's evaluation of NPSH in the charging system. (**URI 05000336/2004007-02**).

2. Main Steam Code Safety Valve Operation

Introduction. A Green non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, Corrective Actions, was identified for the failure to take actions to correct a long-standing design problem whereby main steam safety valves (MSSV) lift following uncomplicated turbine trips/reactor trips from 100% power.

Description. The inspectors observed that main steam code safety valves had lifted following uncomplicated trips at Unit 2 on March 6, 2004 and March 15, 2004. A review of previous trips found that main steam code safeties had lifted subsequent to several reactor trips in the past. The inspectors questioned Dominion as to the adequacy of the RRS and ASDS system designs since the FSAR indicates these systems are intended to operate to prevent lifting MSSVs following a design basis turbine trip/reactor trip from 100% power.

The inspectors determined that corrective actions taken by Dominion over many years had not corrected the problem of MSSVs lifting following uncomplicated transients. The inspectors determined that cycling the main steam code safety valves following a turbine trip/reactor trip from full power results in an increased likelihood that they may not reseat properly.

Analysis. The inspectors determined that Dominion's failure to establish and implement adequate corrective actions to prevent the operation of the main steam code safety

valves outside of their design constitutes a performance deficiency. Traditional enforcement does not apply because there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. The finding is more than minor because it affects the equipment performance attribute of the Initiating Event Cornerstone and the objective to limit the likelihood of those events that upset plant stability. Specifically, cycling MSSVs results in a greater likelihood they will not reseat properly during an event. The inspectors determined that this finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, the finding did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the Problem Identification and Resolution cross-cutting area in that repetitive cycling of MSSVs has not been corrected.

Enforcement. 10 CFR 50 Appendix B, Criterion XVI, Corrective Actions, requires, in part, that Dominion shall take measures to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment are promptly identified and corrected. Contrary to this requirement, Dominion did not take effective corrective action to address repetitive cycling of MSSVs following uncomplicated turbine trips/reactor trips. This violation has been determined to have a very low safety significance since the cycling of MSSVs following turbine trips/reactor trips does not increase the likelihood of a primary system loss of coolant accident, reactor trip initiators, or fire/flooding initiators. This violation is in Dominion's corrective action program (CR-04-02514) and, therefore, is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. (**NCV 05000336/2004007-03**).

1R19 Post-Maintenance Testing (71111.19 - 4 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed nine samples of post-maintenance tests (PMT) during this inspection period. The inspectors reviewed these activities to determine whether the PMT adequately demonstrated that the safety-related function of the equipment was satisfied given the scope of the work specified and that operability of the system was restored. In addition, the inspectors evaluated the applicable test acceptance criteria to verify consistency with the associated design and licensing bases, as well as TS requirements. The inspectors also verified that conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following maintenance activities and their post maintenance tests were evaluated:

Unit 2

- "A" Control Room Air Conditioning (M2-03-04115)

- "A" Enclosure Building Filtration System Fan Dehumidifier Heater (M2-03-03455)
- "A" Containment Spray Pump Breaker Preventive Maintenance (M2-02-03953)
- Replacement of Calibrated Pressurizer Level Control Meter (M2-03-14724)

Unit 3

- Station Blackout Air Receiver Tank 1B Drain, 3BGA-V023 (M3-03-03273)
- Service Water to Containment Recirculation Pump Ventilation Cooler Bypass Valve Replacement with a Flange (M3-04-11702)
- "B" Diesel Generator Cylinder No. 7 Cover Oil Leak (M3-03-13787)
- Residual Heat Removal Heat Exchanger Outlet Total Flow Control Valve Overhaul (M3-03-04416)
- No. 2 Steam Generator Blowdown Sample Indication Valve (M3-04-13143)

b. Findings

Unit 2

Introduction. A Green self-revealing non-cited violation was identified for the failure to adequately implement procedures for Instrumentation and Control (I&C) testing of pressurizer level control circuitry which resulted in an inadvertent start of both standby charging pumps with one charging pump running.

Description. On July 28, 2004, both standby charging pumps started unexpectedly with one charging pump already running while I&C was performing post-maintenance testing of pressurizer level control circuitry in the Reactor Regulating System (RRS).

I&C generated a work order to replace a pressurizer level instrument and perform a loop calibration of the letdown controls in the RRS. IC2418D, Calibration of Letdown Controls, contained a prerequisite that required, "Unit 2 is shutdown". Additionally, a step within this procedure required placing the charging pump selector switches to "PULL TO LOCK" which would have precluded the standby charging pumps from starting on a RRS test signal. Neither operators nor I&C personnel identified these procedure requirements prior to the conduct of testing. As a result, I&C personnel initiated a test signal that affected both "X" and "Y" RRS channels and caused both standby charging pumps to start. It is noted that this system condition (starting both standby charging pumps with one charging pump already running thereby causing a significant pressure transient in the system) was the identified cause of the failure of the charging system on March 7, 2003. In this event, the highest system pressure recorded was approximately 2413psig (system relief valves are set at approximately 2735psig). System design changes including charging pump discharge pulsation dampeners, weld reinforcements, piping rerouting, and relief valve modifications taken in response to the March 7, 2003 event appear to have limited the impact on the charging system from this event.

Analysis. The performance deficiency associated with this event is that I&C technicians and plant operators did not adequately implement a post-maintenance test procedure

and it was within Dominion's ability to foresee and control. Traditional enforcement does not apply because there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. This issue was more than minor because it is associated with the human performance attribute under the Initiating Events cornerstone and the objective to limit the likelihood of those events that upset plant stability. The finding is associated with an increase in the likelihood of initiating events in that both standby charging pumps actually started which was the precursor to the failure of the charging system on March 7, 2003. The inspectors determined that this self-revealing finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, this finding did not contribute to the likelihood of a primary or secondary loss of coolant accident initiator, did not contribute to the likelihood of a reactor trip and the unavailability of mitigation equipment or functions, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the Human Performance cross-cutting area, in that human performance errors resulted in an unexpected start of both standby charging pumps.

Enforcement. TS 6.8.1a states, in part, that written procedures shall be established, implemented and maintained covering the activities specified in Appendix A of Regulatory Guidance 1.33. Regulatory Guide 1.33, Appendix A, Item 9.a, requires that maintenance that can affect the performance of safety-related equipment should be properly preplanned and performed in accordance with written procedures. Contrary to this requirement, during post-maintenance testing of pressurizer level control circuitry, I&C technicians and operations personnel did not verify all appropriate prerequisites or perform all applicable procedural steps which then resulted in the inadvertent actuation of a safety-related system. This violation has been determined to have a very low safety significance and is in Dominion's corrective action program as CR-04-07015. Therefore, it is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. (**NCV 05000336/2004007-04**).

Unit 3

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 4 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed nine samples of surveillance activities to determine whether the testing adequately demonstrated the equipments' operational readiness and its ability to perform its intended safety-related function. The inspectors attended pre-job briefs, verified that selected prerequisites and precautions were met and that the tests were performed in accordance with the procedural steps. Additionally, the inspectors evaluated the applicable test acceptance criteria to verify consistency with associated design basis, licensing bases and TS requirements, and that the applicable acceptance criteria were satisfied. The inspectors also verified that conditions adverse to quality

were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following surveillance activities were evaluated:

Unit 2

- Turbine Driven Auxiliary Feed Pump Surveillance Test (SP-2610B)
- "A" Reactor Building Closed Cooling Water Pump Inservice Test (SP-2611A)
- Main Steam Code Safety Valve Test (SP-2730B)
- TSP Solubility and Potency Verification (SP-2868)

Unit 3

- 34C Safety Bus Undervoltage Test (SP-31447VA)
- "A" Emergency Diesel Generator Service Water Valve Stroke Test (SP-3626.3)
- "B" Safety Injection Slave Relay Testing (SP-3646A.9)
- "A" Emergency Diesel Generator Operability Tests (SP-3646A.1)
- "B" MDAFW Pump Inservice Test (SP-3622.2-001)

b. Findings

Unit 2

1. Main Steam Code Safety Valve Testing

Millstone Unit 2 main steam code safety valve TS surveillance testing is implemented in part by SP-2730B, Main Steam Code Safety Valve Test. The inspectors questioned the following based on a review of the surveillance procedure and supporting documentation:

- The surveillance procedure contained a conversion factor for the main steam code safety valves that was developed by a 10 CFR Appendix B qualified vendor, however, the developmental data was not available for NRC Inspection and had not been independently reviewed by Dominion. Additionally, the conversion factor does not indicate tolerances such as testing assurance, variation or error related to the development of the conversion factor and the surveillance did not address testing assurance, variation or error related to the measurement and test equipment (MT&E).

- There was no indication in the Dominion surveillance that the M&TE used during the implementation of the surveillance was calibrated and traceable to a National Bureau of Standards (NIST) standard.

- Vendor technical materials that were related to the M&TE used in the Millstone Unit 2 surveillance indicated that the M&TE is to be used only for confirming valve set pressure once the valve has been adjusted by the use of full system over pressure ("full lift") testing. Dominion documentation indicates that the

M&TE was used on several main steam code safety valves following full valve lifts that resulted from plant transients.

An unresolved item (URI) is being opened to determine how information supplied by Appendix B certified vendors is reviewed, if Dominion can trace the M&TE equipment to a national standard and whether it is acceptable to test main steam code safeties with the test apparatus following an actual lift of the relief valve. (**URI 05000336/2004007-05).**

2. Trisodium Phosphate Surveillance

Millstone Unit 2 TS 3.5.5, Trisodium Phosphate (TSP), requires a verification that there are 282 cubic feet of active, granulated TSP stored in a designated container within the Millstone Unit 2 containment. The TS surveillances are based on Dominion engineering calculation 97-ENG-1784-M2 and a set of titration curves developed from Dominion Standard 7077-US(B)-001, Titration of Boric Acid with Trisodium Phosphate. The inspectors questioned the effectiveness of the TSP related to it being in a "granulated" state throughout its volume as opposed to the current condition of a coagulated mass. Additionally, the inspectors questioned if the sampling mechanism and size were adequate. Finally, the inspectors questioned why the engineering calculation used to determine the necessary amount of TSP did not include several volumes of borated water (for example; piping down stream of the blender, EDT, VCT, and PDT) which would contribute to the post accident, containment sump, boric acid concentration. The URI is being opened to address these questions and determine the significance of any issues. (**URI 05000336/2004007-06**).

Unit 3

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23 - 1 Unit 2 and 2 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed three samples of temporary modifications to verify that the temporary modifications did not affect the safety function of important safety systems. The inspectors reviewed the temporary modifications and their associated 10 CFR 50.59 screening against the FSAR and TS to ensure the modifications did not affect system operability or availability. Documents reviewed during the inspection are listed in the Attachment.

Unit 2

- Fuel Handling Building Door Temporary Ventilation Barrier (WC-10-004)

Unit 3

- Temporary Design Change to Replace the Service Water to Containment Recirculation Pump Ventilation Cooler Bypass Valve with a Flange (DM3-00-0234-04)
- Temporary Piping Restraints for 3CCI*E1A Service Water Piping (DM3-00-0235-04)

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06 - 1 Unit 2 and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors observed one sample of the conduct of a Unit 2 licensed operator simulator training on September 14, 2004. The inspectors evaluated the Operations crew activities related to evaluating the scenario and making proper classification determinations. Additionally, the inspectors assessed the ability of Dominion's evaluators to adequately address deficiencies identified during the exercise.

The inspectors observed one sample of the conduct of a Unit 3 licensed operator training emergency planning drill on August 10, 2004. The inspectors observed the operating crew performance at the simulator and emergency response organization performance at the site emergency operations center and technical support center. The inspectors verified that the classification, notification and protective action recommendations were accurate and timely. Additionally, the inspectors assessed the ability of Dominion's evaluators to adequately address deficiencies identified during the exercise. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS3 Radiation Monitoring Instrumentation (71121.03 - 9 Samples))

Unit 2 and Unit 3

a. Inspection Scope

During the period September 13 - 17, 2004, the inspector conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation, and the adequacy of the respiratory protection program for issuing self-contained breathing apparatus (SCBA) to emergency response personnel. Implementation of these programs was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Dominion's procedures.

- The inspector reviewed the operating procedure and current source activities/dose rate characterizations for the Shepherd Model 89 instrument beam calibrators (Serial Nos. 9155 & 9068). The inspector reviewed the calibration records for the Model 530 Electrometer and associated ion chambers used in calibrating the Shepherd calibrators.

- The inspector reviewed the calibration records for selected survey instruments and contamination monitors including the small article contamination monitors (SAM 9 & 11), personnel contamination monitors (PCM-1B), portal monitors (PM-7), and portable survey instruments (RO-2A, RO-20).

- The inspector reviewed the relevant procedures and observed a technician calibrating an air sampler (AVS-28A) and two portable radiation survey instruments (RO-2A & RO-20).

- The inspector observed a technician performing daily functional checks on a variety of contamination monitors and survey instruments located in Unit 3 including a SAM-9, SAM-11, PCM-1B, CM-11, RM-14, and a Teleprobe FH-40-TG. The inspector reviewed the procedure and records associated with performing the instrument daily functional checks, including routine response tests performed on electronic dosimeters.

- The inspector reviewed the calibration procedure and current calibration data for selected area monitors, including two Unit 3 fuel storage pool area radiation monitors (3RMS-RIY08 and 3RMS-RIY36) and a Unit 3 containment area monitor. The inspector observed an Instrumentation and Control technician calibrating the Unit 3 containment area monitor.

- The calibration records and pre-operational quality control checks were reviewed for the Fast-Scan whole body counting systems.

- The inspector reviewed recent contamination sampling results for Units 2 and 3 to determine if the calibration sources used were representative of the radioisotopes found in the plant source term.

- The inspector evaluated the adequacy of the respiratory protection program regarding the maintenance and issuance of SCBA to emergency response personnel. Training and qualification records were reviewed for three licensed operators from each of the five operating shifts at each unit and for selected radiation protection technicians who would wear SCBAs in the event of an emergency. The inspector, with the assistance of a Fire Brigade member, physically inspected three SCBAs staged for use in each control room, a SCBA staged for use in the Unit 3 auxiliary building, and a SCBA staged in the Unit 2 Technical Services Area. Maintenance and test records were reviewed for selected SCBAs.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety [PS]

2PS2 Radioactive Material Processing and Transportation (71122.02 - 6 Samples)

Unit 2 and Unit 3

a. Inspection Scope

During the period June 28 - July 1, 2004, the inspector conducted the following activities to verify that Dominion's radioactive material processing and transportation programs complied with the requirements of 10 CFR 20, 61, and 71; and Department of Transportation (DOT) regulations contained in 49 CFR 170-189.

Radioactive Waste System Walkdown

The inspector walked down accessible portions of the Unit 2 and Unit 3 radioactive liquid and solid waste collection/processing systems with the cognizant system engineer. The inspector evaluated if the systems and facilities were consistent with the descriptions contained in the Updated Final Safety Analysis Report (UFSAR) and Process Control Program, evaluated the general material conditions of the systems and facilities, and identified any changes to the systems. Also, the inspector and the Supervisor of Radioactive Material Controls visually inspected the radwaste storage areas located within the site protected area, including Warehouse No. 9 and the Dominion Radwaste Reduction Facility; and the radwaste storage bunker, located in the owner controlled area.

The inspector discussed with the radioactive waste systems engineer the status of non-operational, retired-in-place, radioactive waste processing equipment, and the administrative and physical controls for various components in these systems. The inspector evaluated any recent changes made to radwaste processing systems and the potential radiological impact, and reviewed the current processes for transferring radioactive resin and sludge to shipping containers and subsequent resin sampling and de-watering.

Waste Characterization and Classification

The inspection included a selective review of the waste characterization and classification program for regulatory compliance, including:

- the radio-chemical sample analysis results for various radioactive waste streams, including spent resins, dry active waste, and mechanical filters
- the development of scaling factors for hard-to-detect radionuclides
- methods and practices to detect changes in waste streams
- classification and characterization of waste relative to 10 CFR 61.55 and to determine the DOT shipment subtype per 49 CFR 173

Shipment Preparation

The inspection included a review of radioactive waste program documents and shipment preparation procedures, and in-progress activities for regulatory compliance, including:

- review of certificates of compliance for in-use shipping casks
- verification of appropriate NRC (or agreement state) license authorization for shipment recipients for six recent shipments listed in the shipping records section
- verification that training was provided, in accordance with NRC Bulletin 79-19, and 49 CFR 172 Subpart H, to appropriate personnel directly responsible for classifying, handling, and shipping radioactive materials, or for providing oversight for these activities
- review of the 2003 Radioactive Effluent Release Report

Shipping Records

The inspector selected and reviewed records associated with six (6) non-excepted shipments of radioactive materials made since the last inspection of this area. The shipments were Nos. 04-024-3, 03-082-2, 03-057-3, 03-055-3, 03-024-2, and 02-076-3. The following aspects of the radioactive waste packaging and shipping activities were reviewed for these shipments:

- implementation of applicable shipping requirements including proper completion of manifests
- implementation of specifications in applicable certificates-of-compliance, for the approved shipping casks including limits on package contents
- classification of radioactive materials relative to 10 CFR 61.55 and 49 CFR 173

- labeling of containers
- placarding of transport vehicles
- radiation and contamination surveys of packages
- conduct of vehicle checks
- providing of driver emergency instructions
- completion of shipping papers

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151 - 2 Unit 2 and 4 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed six samples of Dominion submittals for the performance indicators (PIs) listed below to verify the accuracy of the PI data reported during the applicable period. The PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline", Revision 2, were used to verify the basis for reporting each data element.

Unit 2 Reactor Safety Cornerstone

- Residual Heat Removal System (Containment Spray) Unavailability
- High Pressure Safety Injection System Unavailability

Unit 3 Reactor Safety Cornerstone

- Unplanned Scrams
- Scrams with Loss of Normal Heat Removal
- High Pressure Safety Injection System Unavailability
- Residual Heat Removal System Unavailability

The inspectors reviewed licensee event reports, monthly operating reports, control room shift logs, condition reports and NRC inspection reports to identify safety system equipment failures and unavailability that occurred from the third quarter of 2003, through the second quarter of 2004. The inspectors compared this information with Dominion's data reported to the NRC for the performance indicators (PI) listed above to verify that PI reporting and proximity to PI thresholds published on the NRC website were accurate. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

1. Daily Review of Problem Identification and Resolution

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems", and in order to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed a daily screening of items entered into Dominion's corrective action program. This review was accomplished by reviewing summary lists of each condition report, attending screening meetings, and accessing Dominion's computerized condition report database.

b. Findings

No findings of significance were identified.

2. Annual Sample Review (1 Unit 2 and 1 Unit 3 Sample)

Unit 2

a. Inspection Scope

The inspectors selected condition reports (CR) associated with the Unit 2 turbine-driven auxiliary feedwater (AFW) pump overspeed condition and excessive discharge check valve chatter for detailed review. While several CRs were reviewed associated with this issue, this inspection constituted one sample. The inspectors reviewed CR-03-11918, CR-03-11922, CR-03-11942, CR-03-11963 and CR-04-05091. The reports were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified, prioritized, and implemented. The inspectors evaluated the reports against the requirements of Dominion's corrective action program as delineated in MP-16-CAP-FAP01.1, "CR Screening and Review," and 10 CFR 50, Appendix B. Documents reviewed during the inspection are listed in the Attachment.

b. Findings and Observations

There were no findings identified. The five CRs reviewed were associated with turbine overspeed events and/or excessive discharge check valve chatter, which occurred during AFW system testing. Although Dominion’s initial efforts were not effective in identifying the cause and correcting the operational anomalies (resulting in multiple turbine overspeed occurrences), operability of the system was not impacted and an adequate corrective action plan was developed and implemented. For the interim, a previously removed turbine governor was re-installed and tested satisfactorily, and upgraded replacement governors were ordered.

Unit 3

a. Inspection Scope

The inspectors selected three condition reports (CRs) for detailed review. The CRs were associated with unexpected power changes while performing monthly turbine generator valve testing. The CRs were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized.

b. Findings

No findings of significance were identified

3. Cross-References to PI&R Findings Documents Elsewhere

Section 1R17 describes a finding for the failure to take effective corrective actions to preclude main steam code safety valves from lifting following design basis turbine trips/reactor trips from 100% power. This issue is attributable to the PI&R cross-cutting area because if left uncorrected it could lead to a more significant event and affect the equipment performance attribute of the Initiating Events Cornerstone. Cycling of main steam code safety valves results in a greater likelihood that the valves will not reseat properly.

4. Radioactive Material Processing and Transportation

Unit 2 and Unit 3

a. Inspection Scope

The inspector reviewed nine (9) Condition Reports and a Nuclear Oversight Audit Report (MP-03-A07) relating to radioactive material processing and shipment. Through this review, the inspector assessed Dominion's threshold for identifying problems, and the promptness and effectiveness of the resulting corrective actions. This review was conducted against the criteria contained in 10 CFR 20.1101(c), TS, and Dominion's procedures.

b. Findings

No findings of significance were identified.

5. Radiation Monitoring Instrumentation and Protective Equipment

a. Inspection Scope

The inspector reviewed twenty-five (25) selected Condition Reports (CR), an I&C Department self-assessment and a Radiation Protection Department self-assessment to

evaluate Dominion's threshold for identifying, evaluating, and resolving problems in implementing the radiation monitoring and respiratory protection programs. This review was conducted against the criteria contained in 10 CFR 20, TS, and Dominion's procedures.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153 - 1 Unit 3 Sample)

(Closed) Licensee Event Report (LER) 05000423/2004001-00, Technical Specification Action Statement Not Met

a. Inspection Scope

The inspectors interviewed Dominion personnel and reviewed this LER with its associated condition reports (CR-04-04396, CR-04-08469, and CR-04-08935) to verify that the root cause and corrective actions related to the event described in the LER were adequate.

b. Findings

Introduction. A Green non-cited violation of TS 3.8.3.2, Onsite Power Distribution - Shutdown, was identified for the failure to enter TS 3.8.3.2 when it was warranted by plant conditions and the subsequent failure to take TS actions to preclude reactivity additions to the reactor coolant system (RCS).

Description. On April 30, 2004, with the plant in Mode 5 and with a startup/heatup in progress, an oncoming Shift Manager determined that the previous shift had not performed the required TS 3.8.3.2 limiting condition for operation (LCO) actions, following a failure of a vital inverter. The inverter failure resulted in an electrical lineup that did not meet the TS requirement for one compete train of electrical buses. The required actions were to immediately stop all reactivity additions. The operators entered the appropriate alarm response procedure, but did not complete the procedure which would have directed them to the TS. In addition, the operators failed to stop both the plant heatup and the RCS dilution (hydrazine addition) activities. The plant heatup and dilution activities resulted in positive RCS reactivity additions. CR-04-04396 and LER 05000423/2004001-00 determined the root cause of the event to be a failure to adequately complete the alarm response procedure.

Based on a review of the event, the LER and the associated CRs, the inspectors determined that;

- Dominion failed to comply with TS 3.8.3.2,

- the LER did not completely identify the root cause of the event since the LER does not discuss the operators failure to recognize entry was required independent of the failure to complete the alarm procedure,
- the corrective actions indicated in CR-0404396 were not adequate to prevent recurrence, since they were specific to the failure to complete the alarm response procedure,
- additional sources of positive reactivity addition (two separate dilutions of the RCS) was not addressed in the LER or CR.

Subsequent to the inspectors' review of CR-0404396 and the LER, Dominion issued two additional CRs (CR-0408469 and CR-0408935), in order to revise the stated root cause and to address the RCS dilutions. Dominion also initiated actions to revise the LER and implement additional corrective actions to prevent recurrence.

Analysis. The inspectors determined that the failure to cease the reactivity addition with a degraded electrical configuration was a performance deficiency. Traditional enforcement does not apply because there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. The on shift operators did not comply with TS because they failed to recognize the impact of the vital inverter failure on the existing electrical bus configuration and thereby the need to enter TS. The finding is more than minor because it is associated with the human performance attribute of the Mitigating Systems (in this case onsite power distribution) Cornerstone and the objective of ensuring the availability of systems to respond to initiating events to prevent undesirable circumstances. The failure of the vital inverter resulted in an electrical lineup that did not meet the TS requirement for one complete train of electrical buses. Additionally, the failure to recognize the need to enter TS precluded taking corrective actions to prevent adding positive reactivity additions with this electrical lineup. Several positive reactivity additions actually occurred as a result of not taking TS actions.

This finding was assessed using Appendix G, Shutdown Operations Significance Determination Process, of Inspection Manual Chapter 0609, Significance Determination Process (SDP), and was determined to be of very low safety significance (Green). The finding did not increase the likelihood of a loss of Reactor Coolant System (RCS) inventory, degrade Dominion's ability to add inventory if needed, or degrade the ability to recover the Residual Heat Removal (RHR) system if it was lost. Finally, the positive reactivity addition from the heatup and the dilution was small compared to the reactivity needed for criticality.

Enforcement.

Technical Specification 3.8.3.2, Onsite Power Distribution - Shutdown, requires, in part, that all reactivity additions be stopped when requirements for one complete train of electrical buses are not met. Contrary to this requirement, Dominion did not recognize the need to enter the TS and thereby failed to take the TS actions to preclude positive reactivity additions while in this electrical configuration. This violation has been determined to have a very low safety significance since the positive reactivity additions

were small compared to the reactivity necessary to achieve criticality. Dominion entered this finding into its corrective action program, therefore, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (**NCV 05000423/2004007-07**).

4OA4 Cross Cutting Aspects of Findings

Section 1R19 describes a finding for the failure by Operations and Maintenance to adequately implement a post maintenance test procedure following replacement of a pressurizer level instrument.

Section 4OA3 describes a finding for failure of operators to recognize that a vital invertor equipment failure required entry into TS. As a result, operators did not take TS actions to preclude reactivity additions and several positive reactivity additions occurred.

Section 40A5 describes a finding for failure to adequately implement procedures for venting the reactor coolant system (RCS) and the residual heat removal (RHR) system.

4OA5 Other Activities

1. (Closed) URI 05000423/2004006-02, Air Entrainment of Residual Heat Removal System

Introduction. A Green non-cited violation was identified for the failure to adequately implement procedures for venting the reactor coolant system (RCS) and the residual heat removal (RHR) system.

Description. On May 28, 2004, Dominion conducted a quarterly vent and valve lineup surveillance of the "A" train of the RHR system in which air was vented from several vent valves. On June 13, 2004, Dominion repeated the vent for the "A" RHR train. Again, air was vented from the RHR system but to a lesser extent than described on May 28, 2004. On June 15, 2004, a third venting of the "A" train of the RHR system was conducted with no air vented. Dominion preliminarily determined that the "A" train of the RHR system and portions of both trains of the safety injection (SI) and charging systems may have been adversely affected by entrapped air. CR-04-06166 was written and a team established to determine the root cause and provide a corrective action plan. Additionally, Engineering was tasked with quantifying the amount of entrapped air that could affect system operability to assess past operability.

The inspectors reviewed the technical evaluation and determined that the amount of air in the RHR system did not adversely impact the RHR pumps, SI pumps, or the charging pumps. The inspectors reviewed the root cause evaluation and determined the cause of the entrapped air was due to securing one of the two RHR pumps on April 28, 2004, during the RCS sweep and vent evolution. Additionally, the inspectors determined that Operations failed to vent the "A" train of the RHR system as required by SP 3610A.3, "RHR System Vent and Valve Lineup Verification" prior to aligning the RHR system to SI mode during plant heatup. Specifically, step 4.1.2 stated, “If RHR Train A is being

aligned for SI MODE during plant heatup as specified in OP 3310A, 'Residual Heat Removal System,' AND all of the following conditions are satisfied, Go to step 4.1.2.a:

- RHR Train A has not been run within 2 hours.
- RHR Train A has not been swept in accordance with this procedure since any maintenance which drained portions of the train (such as LLRT) was performed OR since any midloop operations were performed."

Contrary to this procedure step, Dominion did not go to step 4.1.2a in SP 3610A.3 even though the "A" RHR train had not been run within 2 hours and midloop operations had been performed. Consequently, Dominion did not run the "A" RHR pump as required during the venting of the "A" RHR train which precluded identifying the trapped air in the "A" RHR train prior to aligning the RHR system for the safety injection (SI) mode.

Analysis. The inspectors determined that the failure to adequately implement procedures for sweeping and venting the RCS and the RHR system was a performance deficiency. Traditional enforcement does not apply because there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. Dominion did not establish adequate precautions or prerequisites in OP 3218 to prevent securing a running RHR pump during the sweep and vent process and Dominion did not perform the RHR vent and valve lineup verification as required by SP 3610A.3. This resulted in trapping air in the RHR system and portions of the suction piping of both trains of the SI and charging systems. This issue was more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and the objective of ensuring the availability of systems to respond to initiating events to prevent undesirable consequences. The entrapped air had the potential to make the "A" RHR pump, the SI pumps and the charging pumps inoperable. The inspectors determined that the finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with Inspection Manual Chapter (IMC) 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Specifically, this finding did not represent an actual loss of safety function of the RHR, SI, or charging system since the amount of air subsequently determined to be in these systems would not have prevented them from functioning.

Enforcement. TS 6.8.1a, Written Procedures, requires, in part, that written procedures be established, implemented, and maintained for activities described in Appendix A of Regulatory Guide (RG) 1.33, "Quality Assurance Program Requirements (Operation)." Specifically, Section 3 of RG 1.33, Appendix A, "Instructions for energizing, filling, venting, draining, startup, shutdown, and changing modes of operation should be prepared, as appropriate, for the following systems," includes the reactor coolant system. Contrary to this requirement, Dominion failed to establish adequate precautions and prerequisites to prevent plant configuration changes that could lead to air entrainment while conducting OP 3218, "RCS sweep and vent procedure." Additionally, contrary to this requirement, Dominion failed to implement required procedural steps to vent the RHR system as required by SP 3610A.3, "RHR System Vent and Valve Lineup Verification." Together, these circumstances resulted in entrapped air in the "A" train of

the RHR system and portions of the SI and charging systems suction piping. This violation has been determined to have very low safety significance and is in Dominion's corrective action program as CR-04-06166. Therefore, this violation is being treated as a non-cited violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000423/2004007-08**).

2. Review of Generic Letter 89-13: Service Water System Problems Affecting Safety-Related Equipment (TI 2515/159)

Heat Sink Performance (71111.07B - 3 Unit 2 Samples)

a. Inspection Scope

The inspectors reviewed Millstone Unit 2 service water (SW) system and component performance which included a review of SW system design requirements, operating, maintenance, and testing procedures. Dominion's inspection, cleaning, chemical control, and performance monitoring methods, frequencies, and test results of the SW system and its related components were reviewed to ensure compliance with commitments made in their response to the five recommended actions of Generic Letter (GL) 89-13, "Service Water System Problems Affecting Safety Related Equipment." The inspectors reviewed design bases summary information including flow calculations and SW-related modifications to ensure that Dominion was maintaining the design bases of the SW system.

The inspectors reviewed system operating, abnormal and emergency procedures, and operator training material associated with the service water system to determine whether the procedures were adequate to ensure that safety-related equipment cooled by the service water system would function as intended, and that operators would perform effectively. In addition, operator logs were reviewed to determine the adequacy of temperature and flow monitoring, and to evaluate operator effectiveness in varying SW system heat exchanger flow rates due to changing climate (temperature) conditions. During plant tours and procedure and training reviews, the inspectors verified the ability of operators to locally operate SW components. The inspectors reviewed selected SW system maintenance procedures and/or work orders for technical adequacy and proper implementation. The maintenance history and preventive maintenance requirements for selected SW system components were reviewed to determine the effectiveness of corrective and preventive maintenance.

Applicable condition reports (CR), Licensee Event Reports (LER), system health reports and related past self-revealing and NRC-identified inspection findings were sampled to understand the SW system maintenance and operational history, and Dominion's response to those identified adverse conditions.

This inspection also fulfilled inspection attributes and requirements for Millstone Unit 2's biennial heat sink inspection (71111.07B). The following heat exchangers were selected for review:

- RBCCW Heat Exchanger X18A
- Vital AC Switchgear Cooler X183
- "B" Emergency Diesel Generator Heat Exchanger

b. Observations and Findings

No findings of significance were identified.

Overall, the inspectors concluded that Dominion's response to GL 89-13 was appropriate and the recommended actions from GL 89-13, in general, have been effectively implemented and maintained. In addition, Dominion's operating experience program and procedure have appropriately addressed and incorporated service water items.

The specific responses to the questions directed by TI 2515/159 are contained in the Attachment of this report.

4OA6 Meetings, Including Exit

Public Radiation Safety Report Exit Meeting Summary

On July 1, 2004, the inspector presented the Unit 2 and Unit 3 inspection results to licensee management and other staff who acknowledged the findings.

Biennial Maintenance Rule Scoping Inspection Exit Meeting Summary

On August 20, 2004, the inspectors presented the Unit 2 and Unit 3 inspection results to Mr. J. Alan Price and other member of his staff who acknowledged the findings.

TI-159, GL 89-13 Investigation and Heat Exchanger Performance Inspection Exit Meeting Summary

On September 3, 2004, the inspectors presented the Unit 2 inspection results to Mr. Steve Scace and Mr. Steve Sarver and other member of their staff who acknowledged the findings.

Occupational Radiation Safety Report Exit Meeting Summary

On September 17, 2004, the inspector presented the Unit 2 and Unit 3 inspection results to licensee management and other staff who acknowledged the findings.

Integrated Report Exit Meeting Summary

On October 14, 2004, the resident inspectors presented the overall inspection results to Mr. J. Alan Price and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

A. Armagno, Supervisor, Health Physics
K. Beagle, Systems Engineer, Radwaste Systems
J. Bennett, Senior Training Instructor
B. Brown, Licensing
C. Debiasi, Chemist
J. Doroski, Health Physicist
J. Epps, Nuclear Maintenance Planning Supervisor
M. Finnegan, Shift Supervisor, Radiological Protection, Unit 3
J. Firman, Radiation Protection Technician, Instrument Calibration Facility
S. Garvin, Site Fire Protection Supervisor
T. Gleason, Radiation Protection Technician, Instrument Calibration Facility
W. Gorman, Instrumentation & Control Supervisor
I. Haas, Supervisor, Exposure Control & Instrumentation
J. Hochdorfer, Radwaste Operations Supervisor
G. Holtz, Primary Radwaste Shipping Engineer
C. Janus, Maintenance Rule Coordinator
A. Johnson, Supervisor, Radiation Protection Technical Services
A. Jordan, Director, Nuclear Engineering
B. Kaufman, Auditor, Nuclear Oversight
E. Laine, Radiation Protection and Waste Services Manager
R. Leach, Health Physicist, Technical Services
D. MacDonald, Design Engineering
R. McIntosh, Licensing Engineer
K. McQuade, Fire Brigade member
T. Moore, Service Water System Engineer
A. Price, Site Vice President - Millstone
D. Regan, Supervisor, Radiation Protection Support (ALARA)
S. Sarver, Director, Nuclear Station Operations & Maintenance
S. Scace, Director, Nuclear Station Safety and Licensing
G. Sisgoreo, Instrumentation & Control Technician, Unit 3
A. Smith, EDG System Engineer
P. Strickland, Unit 2 Operations Supervisor
P. Tulba, Supervisor, Rad Material Control
K. Yearwood, System Engineering

NRC personnel

B. A. Bickett, Reactor Inspector, Division of Reactor Safety (DRS)
P. C. Cataldo, Senior Resident Inspector, Beaver Valley
G. T. Dentel, Senior Resident Inspector, Seabrook
R. L. Fuhrmeister, Senior Reactor Inspector, DRS

Attachment

G. K. Hunegs, Senior Resident Inspector, Nine Mile Point 1 & 2
K. M. Jenison, Senior Project Engineer, Division of Reactor Projects (DRP)
S. R. Kennedy, Resident Inspector, Millstone
S. L. Lewis, Reactor Engineer, DRP
K. A. Mangan, Resident Inspector, Millstone
T. A. Moslak, Health Physicist, DRS
M. P. Patel, Reactor Engineer, DRP
S. M. Pindale, Senior Reactor Inspector, DRS
S. M. Schneider, Senior Resident Inspector, Millstone
N. Sieller, Nuclear Safety Professional, DRP
B. D. Welling, Senior Reactor Inspector, DRS

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000336/2004007-01	URI	Adequacy of the EBFS OD and the potential risk significance of any degradation in EBFS function (1R15)
05000336/2004007-02	URI	Application of 10 CFR 50.59 to a permanent modification of the Millstone Unit 2 charging system (1R17.1)
05000336/2004007-05	URI	Adequacy of code safety surveillance testing and the potential risk significance of any degradation in code safety function (1R22.1)
05000336/2004007-06	URI	Adequacy of TS 3.5.5 Surveillance Requirements (1R22.2)

Opened and Closed

05000336/2004007-03	NCV	Failure to properly establish and implement 10 CFR 50, Appendix B, Criterion XVI, to address repeated lifting of Main Steam Code Safety Valves (1R17.2)
05000336/2004007-04	NCV	I&C technicians and operations personnel did not verify all appropriate prerequisites or perform all applicable procedural steps which then resulted in the inadvertent actuation of a safety-related system (1R19)
05000423/2004007-07	NCV	Failure to Properly Implement TS 3.8.3.2, Onsite Power Distribution - Shutdown (4OA3)
05000423/2004007-08	NCV	Dominion failed to establish precautions and prerequisites to prevent plant configuration changes that could lead to air entrainment in the RHR system (4OA5.1)

Closed

05000423/2004001-00	LER	Technical Specification Action Statement Not Met (4OA3)
05000423/2004006-02	URI	Air Entrainment of Residual Heat Removal System (4OA5.1)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Millstone Nuclear Power Station Unit 2 Final Safety Analysis Report
Millstone Nuclear Power Station Unit 3 Final Safety Analysis Report
COP 200.6, Revision 001-02, Storms and Other Hazardous Phenomena (Preparation and Recovery)
AOP 2560, Revision 010-00, Storms, High Winds and High Tides
AOP 3569, Revision 015-02, Severe Weather Conditions
CR-01-05839, A Systematic Assessment of Station Readiness for Hurricane Conditions Should be Performed
CR M2-99-1619, Deficiencies Noted Not In Accordance With ONP For A Staged Emergency Floor Drain Plug Installed For Prep of Hurricane Tornado Or Flood
MP-2713F, Revision 003-02, Service Water Strainer Maintenance
MP-2721C, Revision 007-01, Protection and Restoration of Service Water Pump Motor During a PMH
Specification No. 7604-M-130, Non-Metallic Fiber Glass Reinforced Plastic Tank
EN 21154A, Revision 001-03, Tank Inspection Plan
MP 2721C, Revision 007-01, Protection and Restoration of Service Water Pump Motor During A PMH

Section 1R04: Equipment Alignment

Partial System Walkdowns
OPs Form 2610C-002, Auxiliary Feedwater System Lineup Verification
OP-3346A-012, Revision 011, EDG "B", Electrical Lineup
OP-3346A-006, Revision 009-01, EDG "B", Starting Air Valve Lineup
OP-3346A-004, Revision 006, EDG "B", Lube Oil Valve Lineup
OP-3343, Revision 013-05, Station Electrical Service 4.16kv
SP-3622.4-001, Revision 005-02, Auxiliary Feedwater System Lineup (MDAFW Train A)
Drawing EM-130B, Revision 38, Piping & Instrumentation Diagram Feedwater System
Drawing 25203-26005, Auxiliary Feedwater System
Drawing 25212-26916, Sheet 4 of 5, Revision 15, Emergency Diesel Generator "B" Starting Air System"
Drawing 25203-26015, Revision 30, LP Safety Injection System
Calc 25203-ER-98-0301, Revision 06, Design Basis for Safety Related Pump Testing
Unit 3 Final Safety Analysis Report, Figure 8.1-1, Electrical One Line Diagram

Complete System Walkdown
SP Form-2604V-002, Revision 000-03, HPSI System Check Valve IST, Facility 1
SP Form-2604A-003, Revision 002-04, "A" HPSI Pump IST
SP Form-2604E-003, Revision 010-01, HPSI Valve Operability Alignment Check, Facility 1
SP Form-2604E-001, Revision 008-01, HPSI System Electrical Alignment Check, Facility 1
SP Form-2604E-002, Revision 017-03, HPSI System Valve Alignment Check, Facility 1
SP-2604B, Revision 013-12, HPSI Pump Operability and Inservice Testing, Facility 2
OP-2201, Revision 029-06, Requirements for Entering Operational Mode 4
Letter from Bechtel Corporation to Northeast Utilities Service Company dated September 9, 1970 relating to Containment Spray Pumps MB-772
Drawing 25203-26015, Sheet 2 of 3, Figure 6.1-1, Sheet 2, High Pressure Safety Inj. Pumps
Millstone Unit 2 Pump Summary Report Issued August 31, 2004

Section 1R05: Fire Protection

OPS Form 3641D.5-1, Revision 3, Fire Damper Operability Verification
AWO-M3-02-11274, Fire Damper Operability Verification
SP-3641D-5-001, Revision 008-06, Fire Damper Operability Verification
MNPS-3-FPER, Fire Protection Evaluation Report, Analysis 14 and Analysis 15
Unit 2 Fire Hazard Analysis Boundary Drawing, Figure 1, Revision 3, Sheet 1 of 12
MP2 Evaluation of Flooding Outside Containment
IC 2440, Revision 0, Circulating Water Pump Trips Functional Test
Drawing 25203-24092, Sheet T3W01, Penetration Seal Survey Map and Inspection Record
Drawing 25203-24092, Sheet T3W01A, Penetration Seal Survey Map and Inspection Record
M2-EV-99-0070, Revision 0, Hazard Barrier Program and Seal Qualification
Unit 2 Fire Hazards Analysis, Revision 8, March 2004

Section 1R06: Flood Protection Measures

Calculation No. P(R) 1194, ESF Bldg Flood Study

Section 1R07: Heat Sink Performance

See documents listed in Section 4OA5

Section 1R11: Licensed Operator Requalification Program

NUHOMS 32PT Certificate of Compliance Overview Training Material
Operator Experience Lesson Plan

Section 1R12: Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (7111112Q)

CR-04-07193, "B" EDG Output Breaker Would Not Close During SP3646A.2
CR-04-06929, Control Building Isolation Activation Due to HVC*RE16A Going Into Alarm

CR-04-08487, A Through Wall Leak Was Discovered On A Service Water Pipe Supplying The Unit 2 Bravo Diesel Generator
CR-04-08427, Timer TB-094 Failed Calibration
CR-04-06510, 3HVC*ACU1B Smoking While Running
NRC Generic Letter 90-05, Guidance For Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping
Unit 2 Maintenance Rule Scoping Table
Unit 3 Maintenance Rule Scoping Table
Unit 2 Maintenance Rule (a)(1) for the Service Water System (2326A)
Unit 3 Maintenance Rule (a)(1) Evaluation For The Radiation Monitoring System
Drawing 25203-32022, Sheet 23, Post Incident Recirc. Fan F18A

Biennial Periodic Evaluation Inspection (7111112B)

MP-24-MR-FAP710, Revision 0, Maintenance Rule Functional Failures & Evaluations
MP-24-MR-FAP720, Revision 0, Maintenance Rule Plant Level Monitoring
MP-24-MR-FAP730, Revision 0, Maintenance Rule Goal Setting and Monitoring
MP-24-MR-FAP740, Revision 0, Maintenance Rule a(3) Assessment
MP-24-MR-FAP750, Revision 0, Maintenance Rule Scoping
2003 Maintenance Rule Periodic Assessment Report - Millstone Power Station, September 2001 - June 2003
M2-EV-00-0058, Revision 1, Maintenance Rule Functional Failure Performance Criteria - Millstone Unit 2,January 2002
25203-ER-02-0099, Transmittal of Maintenance Rule Bases Information for Millstone 2, December 2002
25212-ER-02-0117, Transmittal of Maintenance Rule Bases Information for Millstone 3, December 2002
Site Maintenance Rule Expert Panel Meeting Minutes: July 2002, February 2003, April 2003, December 2003, May 2004

(A)(1) Action Plans
Service Water System: U2- Rev. 1 & U3 - Rev. 2
Radiation Monitoring - U2 & U3, Rev. 12
Reactor Coolant - U2, Rev. 2
480V AC Load Centers - U2, Rev. 0
Station Blackout Diesel Generator - U3, Rev. 3
Main Steam - U2, Rev. 2
Containment Isolation - U3, Rev. 0

System Health Reports/MR Basis Documents
Emergency Diesel Generator - U2 & U3, July 2004
Service Water System - U2, March 2004
SBO Diesel Generator - U3, March 2004
Main Steam - U3, April 2004
Reactor Coolant - U2, March 2004

Condition Reports

2002-00486	2003-01968	2003-10518	2004-05008
2002-00499	2003-03531	2003-10616	2004-05460
2002-08271	2003-03865	2003-10623	2004-06625
2002-11170	2003-06005	2003-10682	2004-07588
2002-12545	2003-07003	2003-12288	
2002-12690	2003-09866	2004-00349	

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

Major Equipment Schedule
Equipment Out of Service Quantitative Risk Assessment Tool
NUMARC 93-01, Revision 2, NEI Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants
Control Room Logs
MP-13-PRA-GDL01, Revision 000, Performing Risk Reviews
MP-20-WM-FAP02.1, Revision 009, Conduct of Online Maintenance
MP-26-EPA-REF02, Revision 004, Millstone Unit 2 Emergency Action Level Technical Basis Document
MP-26-EPI-FAP06-002, Revision 002, Millstone Unit 2 Emergency Action Level Classification Tables
Millstone Unit 2 Spent Fuel Pool Crane Lift Contingency Plan

Section 1R14: Personnel Performance During Non-Routine Plant Evolutions and Events

IC-2418D, Calibration of Letdown Controls
MP-20-WP-GDL40, Revision 002-01, Pre and Post Maintenance Testing
DNAP-0509, Revision 0, Dominion Nuclear Procedure Adherence and Usage
MP-20-WM-FAP02.1, Revision 009, Conduct of On-Line Maintenance
CR-04-07015, The Unexpectent start of the "A" and "C" charging pumps occurred during calibration of the RRS setpoint indicator
CR-04-07922, Steam Generator "C" Feed Flow Channel Failure
AOP-3571, Revision 08, Instrument Failure Response
Control Room Logs
CR-04-07266, Fuel Rod Broke and Fell During Inspection
AREVA Procedure FS-085, Revision 08, Contingency Plan for Problems Encountered During Fuel Rod Handling
Recovery Plans for broken fuel rod
AWO-M2-03-14724, Input from Rx Reg on LIC 110Y does not reflect plant conditions (CR-03-12453)
Reportability Determination for CR-04-07266, Fuel Rod Broke and Fell During Inspection
OP-3317, Revision 014-04, Reheat and Moisture Separator

Section 1R15: Operability Evaluations

CR-04-06464, MP2 P18C Charging Pump Reservoir Oil Analysis Results are Abnormal due to High Water Content
CR-04-07628, Terry Turbine Trip Hook Did Not Fully Engage
CR-04-07596, Thermal Performance Test of the 3EGS*E1A & E2A Was Terminated Prior To Completion
CR-04-06858, During Performance of M3-03-13824, Seven Cells Did Not Meet Non-Tech Spec Criteria
CR-04-07851, During Performance of SP-3614F.9, 3HVK*TV71B Closed Position Indication Was Sluggish To Respond
CR-04-07780, 3CCE*RV43B Has Seat Leakage of Approximately 24 Drops Per Minute
CR-04-07242, Rod Supervision Program Doesn't Agree With Rod Position Demand Position and Digital Rod Motion Indication
CR-04-05352, Lost M&TE
CR-04-06808, Lost M&TE QA-1503A, Requires Additional Engineering Review/Analysis
CR-04-07158, "C" Service Water Pump Failed Its IST, 2612B-003
CR-04-06405, "C" Service Water Pump Failed Its D/P
CR-04-06625, Unplanned Entry Into TS 3.8.1.1E When A/B EDG Flood Door 205-14-011 was Discovered Open
CR-04-07193, "B" EDG Output Breaker Would Not Close During SP-3646A.2
AWO M3-04-11144, Emergency Diesel Generator "B" 3EGS*EGB Output Breaker
AWO M3-03-13824, 301A-1 125 VDC Battery Surveillance Inspection
AWO M3-04-12407, Valve 3HVK*TV71B Had No Indication of Valve Position During Performance of Surveillance
C SP 750, Revision 001-04, Battery Weekly and Quarterly Surveillance
OD MP2-012-02, MP2 P18C Charging Pump Reservoir Oil Sample is Abnormal with 0.5% Water
OD MP3-072-04, Thermal Performance Test of the 3EGS*E1A & E2A Was Terminated Prior To Completion
OD MP2-070-04, Terry Turbine Trip Hook Did Not Fully Engage
OD MP2-068094, Revision 1, M&TE Used In MNSA Clamp Installation in 2R14 Was Lost
OD MP3-075-04, Valve 3HVK*TV71B Close Indicating Light Responds Slowly To Valve Position
OP-2356, Revision 001-03, Doors
M3-EV-04-0021, Technical Evaluation for Assessment for Gas Accumulations in the RHR "A" Train Piping as Documents in CR-04-05384, CR-04-05822, and CR-04-06615
EN 31174, EDG Thermal Performance Test
RP-5, Revision 003-01, Operability Determinations
RECO MP2-060-04, M&TE Used in MNSA Clamp Installation in 2R14 Was Lost
RECO MP3-073-04, "B" Train Charging Pump Component Cooling Water System Oil Heater Relief Valve 3 CCE*RV43B is Leaking By At Approximately One Drop Per Minute
RECO/OD MP3-075-04, Valve 3HVK*TV71 B Close Indicating Light Responds Slowly to Valve Position
Drawing 25203-26008, Revision 83, Service Water
Calc 98-ENG-02697M2, Revision 00, Change 01, Service Water Pumps Acceptance Curve
Control Room Logs

Section 1R16: Operator Work-Arounds

MP-14-OPS-GDL40, Revision 001, Operations Administrative Procedures
MP3 Shift Turnover Report
Unit 3 Summary Report Listing of OWAs Operator Burdens, and Control Panel Deficiencies

Section 1R19: Post-Maintenance Testing

MP-20-WP-GDL40, Revision 002-01, Pre and Post Maintenance Testing
MP-20-WM-FAP02.1, Revision 009, Conduct of On-Line Maintenance
AWO M2-03-04115, "A" Control Room A/C System Unit Fan Assembly
AWO M2-03-10425, "A" Control Room Air Conditioning Compressor
AWO M2-03-03466, "A" Enclosure Building Filtration System Fan Dehumidifier Heater
AWO M2-02-03953, 4160V Breaker PM and PT To Perform Doble Testing
AWO M2-03-14724, Input from Rx Reg on LIC 110Y does not reflect plant conditions (CR-03-12453)
AWO M3-03-03273, SBO Air Receiver Tank 1B Drain
AWO M3-04-11702, Service Water to Containment Recirculation Pump Ventilation Cooler Bypass Valve Replacement with a Flange
AWO M3-03-13787, "B" Diesel Generator Cylinder #7 Cover Oil Leak
AWO M3-03-04416, PM, 18 Month - 3 RHS-619 Loop Calibration
AWO M3-03-12056, RHR Flow Control Valve Limit Switch Replacement
AWO M3-04-13143, Steam Generator Number Two Blowdown Sampling Containment Isolation
C EN 110, Revision 000-03, Post Repair/Replacement Leakage Test
SP-3610A.8, Revision 009-02, RHR Valve Operability Test - Train B (Quarterly)
CR-04-07852, Upper Limit Switch Data for Loop 3RHS-619 Does Not Agree With ESK Drawing 7TK
CR-04-08208, 355R*CTV19B, Steam Generator Blowdown Sampling Isolation Failed Remote Position Indication Verification on Following Maintenance
CR-04-08270, SP-3611A.1-002 Failed Surveillance Retest
CR-04-07612, AWO M20304115 Did Not Have A Retest
CR-04-07015, The Unexpectant start of the "A" and "C" charging pumps occurred during the calibration of the RRS setpoint indicator
CR-04-08873, Loop Calibration Acceptance Criteria Does Not Agree With The Transmitter Error Acceptance Criteria
DNAP-0509, Revision 0, Dominion Nuclear Procedure Adherence and Usage
IC-2418D, Calibration of Letdown Controls
Unit 2 FSAR, Section 9.9.10, Revision 21, Control Room Air Conditioning System
LCR#3RHS-619, Loop Calibration Data Sheets

Section 1R22: Surveillance Testing

SP-2611A, Revision 001-02, "A" RBCCW Pump IST
SP-2610B, Revision 014-07, TDAFP Tests
SP-2600, Revision 006-07, Auxiliary Feedwater Pump Turbine Periodic Testing

SP-31447VA, Revision 000-01, Trip Actuating Device Operational Test for 4kv Bus 34C Undervoltage
SP-3626.3, Revision 009-06, Service Water Valve Operability Tests
SP-3646A.9, Revision 019-05, Slave Relay Testing Train "B"
SP-3646A.1, Revision 015-05, Emergency Diesel Generator "A" Operability Test
SP-3622.2-001, Revision 013-02, Auxiliary Feed Pump 3FWA*PIB Operational Readiness Test
SP-2604K-001, Containment Phosphate Basket Inspection
Procedure 07077-US(B)-001, Titration of Boric Acid with Trisodium Phosphate
Unit 3 Technical Specifications 3.8.1.1
OP-3346, Revision 021-02, Emergency Diesel Generator
CR-04-07628, Terry Turbine Trip Hook Did Not Fully Engage

Section 1R23: Temporary Plant Modifications

DM3-00-0234-04, Temporary Design Change to Replace the Service Water to Containment Recirculation Pump Ventilation Cooler Bypass Valve Replacement with a Flange
DM3-00-0235-04, Temporary Piping Restraints for 3CCI*E1A Service Water Piping
Design Control Manual 03, Revision 013-02, Plant Changes
MP-03-DCC-GDL02, Revision 001, Temporary Plant Changes
SP-3626.13, Revision 019-04, Service Water Heat Exchangers Fouling Determination
SP-3670.3, Revision 005-06, Plant Equipment Rounds, Radwaste
WC 10-004, Revision 000, Temporary Exhaust Piping for Condor During Crane Installation

Section 1EP6: Drill Evaluation

MP-26-EPA-GDL01, Revision 002, Drill and Exercise Performance Indicator Evaluation Form
MP-26-EPI-FAP07-002, Revision 002-02, Incident Report Form
MP-26-EPI-FAP06-003, Revision 001-03, Millstone Unit 3 EAL Tables

Section 2OS3: Radiation Monitoring Instrumentation

Procedures
RPM 1.3.7, Revision 5, Lost, Off-Scale, or Questionable Dosimetry
RPM 1.3.14, Revision 6, Personnel Dose Calculations and Assessments
RPM 1.6.4, Revision 1, Siemens Electronic Dosimetry System
RPM4.1.6, Revision 2, HD-29A, HD-66A, and AVS-28A Air Sampler Calibration
RPM 4.3.7, Revision 4, RO-20 Dose Rate Meter Calibration
RPM 4.6.6, Revision 4, Electronic Dosimeter Calibration Verification & Response Check
RPM 4.6.12, Revision 2, PCM-1B Contamination Monitor Calibration
RPM 4.6.24, Revision 5, Small Articles Monitor Calibration
RPM 4.6.26, Revision 0, Eberline Personnel Monitor PM-7 Calibration
RPM 4.7.3 Revision 5, Small Articles Monitor Operation
RPM 4.7.8, Revision 5, Whole Body Counting System Operation
CP 2801/3801Revision 0, Abacos Plus Whole Body Counting System Maintenance
RPM 4.8.1, Revision 5, Measuring the Radiation Intensity of the J. L. Shepard Calibrator
RPM 4.8.9, Revision 7, Source Checking Health Physics Instruments

SFP 24, Revision 2, Inspection & Inventory of Self-Contained Breathing Apparatus
IC 3490B10, Revision 6, Calibration and Functional Test for Kaman Science Area Radiation Monitor

Condition Reports:
04-07248, 04-07577, 04-03494, 04-04755, 04-04631, 04-04599, 04-01957, 04-01064, 04-00237, 03-12266, 03-08963, 03-07820, 03-07272, 03-06513, 03-06356, 03-05840, 03-01777, 03-00201, 03-00200, 03-00030, 03-00868, 03-00164, 02-07109, 02-13452, 02-13277

Department Self-Assessments
MP-SA-03-63, I&C Radiation Monitor Program
MP-SA-03-016, Health Physics Equipment

Other
Unit 2 and Unit 3 Student Qualification/Training Status Records for SCBA training

Section 2PS2: Radioactive Material Processing and Transportation

Procedures:
RW 46016, Revision 7, Shipment of Radioactive Waste - Waste Processing Facility
RW 46041, Revision 5, Compliance with 10 CFR 61 - Waste Classification
RW 46052, Revision 4, Packaging Dry Active Waste
RW 46066, Revision 4, Vehicle Loading Procedure - Vans and Flatbed Trailers
RPM 2.4.2, Revision 12, Radiological Control of Material and Vehicles
RPM 4.7.3, Revision 5, Small Articles Monitor Operation
MP-03-DCC-GDL03, Revision 0, Retired-In-Place Equipment
COP 200.12, Revision 0, Interim Administrative Controls for Systems and Equipment to be Retired-In-Place
OP 2260B, Revision 0, Unit 2 Equipment Control
OP 3260B, Revision 3, Unit 3 Equipment Control

FSAR Change Requests:
FSARCR# 01-MP2-016, Installation of new "B" secondary demineralizer and recirc line in Clean Liquid Radwaste System
FSARCR# 97-MP2-29, Retirement of the Unit 2 Recovered Boric Acid Storage System and Boric Acid Evaporator
FSARCR# 03-MP3-0372-02, Retirement of the Unit 3 Waste Evaporator Subsystem

Process Control Program
MP-24-RWQA-FAP01, Revision 0, Radioactive Waste Process Control Program Implementation

Shipping Manifests:
Shipment No. 04-024-3, Dewatered Filters, LSA II
Shipment No. 03-082-2, Dewatered Resin, LSAII
Shipment No. 03-057-3, Dewatered Resin, LSA II

Shipment No. 03-055-3, Dewatered Resin, LSA II
Shipment No. 03-024-2, Calibration Sources, Type B
Shipment No. 02-076-3, Dewatered Resin, LSA II

Condition Reports:
CR-03-03292, CR-03-03703, CR-03-03842, CR-03-05232, CR-03-05233, CR-03-05236, CR-04-06322, CR-04-06321, CR-04-06303

Nuclear Oversight Audits/Assessments
MP-03-A07, Radwaste Management

Section 4OA2: Identification and Resolution of Problems

CR-02-00237, Turbine Load Decrease When Switching From Load Limit To Load Set Turbine Control
CR-03-06723, Plant Transient Due To Unstable Grid Affect On Turbine Control System
CR-03-11918, Unexpected Discharge Check Valve Oscillations When Operating Turbine Driven Auxiliary Feed Pump For Testing
CR-03-11922, Turbine Drive Aux Feed Pump Overspeed Trip
CR-03-11942, Turbine Driven Aux Feed Pump Tripped While Testing
CR-03-11963, Turbine Driven Aux Feed Pump Tripped On Overspeed Two More Times
CR-04-05091, Audit 04-07 Deficiency, Inadequacies In Problem Identification/Resolution For Review of Cr-03-11942, "MP2 Turbine Driven AFW Pump Tripped"
CR-03-09549, Unplanned Load Decrease of 14 MWE During Monthly Turbine Valve Testing
Preventive Maintenance Change and Deferral Request (2004, Log No. 0246), May 20, 2004
SP-2610B, "Turbine Driven AFW Pump and Recirculation Check Valve Inservice Test," performed on May 28, 2004, and August 19, 2004
Drawing 25203-26005, Revision 50, Sheet 3 of 4, "Piping and Instrument Diagram, Condensate Storage and Auxiliary Feed"
DCN DM3-00-0257-03, Addition of EHC Speed Error Filter

4OA5: Other Activities

CR-04-05384, During "A" Train RHR Vent and Valve Lineup, Excessive Amounts of Gasses Were Vented
CR-04-05822, Unusual Amount of Gas Observed During Venting of "A" RHR System
CR-04-06615, Excessive Amount of Air Vented from 3SIL*V875, 3RHS*P1A Suction Line
CR-04-06166, Reportability Evaluation Required to Evaluate Operability of A RHR Pump Between 3R09 Mode 4 and June 13, 2004
CR-04-06697, Performed ATrain RHR System Vent and Valve Lineup per 3610A.3 and Found Small Amounts of Air at Various Locations
OP 3218, Revision 007-03, Reactor Coolant System Sweep and Vent
SP 3610A.3, Revision 004-02, RHR System Vent and Valve Lineup Verification
SP 3601F.4, Revision 011-08, RCS Pressure Isolation Valve Test
Drawing, EM 112-A, Revision 42, Piping and Instrumentation Diagram Low Pressure Safety Injection

M3-EV-04-0021, Technical Evaluation for Assessment for Gas Accumulations in the RHR "A" Train Piping as Documented in CR-04-05384, CR-04-05822, and CR-04-06615

Review of Generic Letter 89-13: Service Water System Problems Affecting Safety-Related Equipment (TI 2515/159)

Drawings

25203-26008, SH. 2 of 4, Revision 83, Piping and Instrument Diagram, Service Water
25203-26008 SH. 3 of 4, Revision 28, Service Water To Vital AC Switchgear Cooling Coil and AC Chillers
25203-26008 SH. 4 of 4, Revision 23, Screen Wash and Sodium Hypochlorite
25203-32013, SH. 41, Revision 11, RBCCW Heat Exchanger Cooling Water Outlet SOV-TV6307 (2-SW-8.1B)
25203-32013, SH. 43, Revision 9, RBCCW Heat Exchanger Cooling Water Outlet SOV-TV6307 (2-SW-8.1B)

Procedures

EN 21228, Thermal Performance Test for the 'B' Emergency Diesel Heat Exchanger, completed 9/11/98
EN 21246, Thermal Performance Test of Unit 2 RBCCW Heat Exchangers, completed 4/13/00
EN 21234, Thermal Performance Test of Unit 2 Vital AC Switchgear Cooler X183, completed 9/11/98
AOP-2565, Revision 004-01, Loss of Service Water
ARP-2590E, Revision 009, Alarm Response for control room Panels, C-06/7
ARP-2591A, Revision 003, Alarm Response for 'A' Diesel Generator Panel, C-38
DNAP-3002, Revision 0, Dominion Nuclear Operating Experience (OE) Program
EOP-2525, Revision 20, Standard Post Trip Actions
OP-2316A, Revision 020-11, Service Water System
OP-2326C, Revision 001-04, Off-Normal Service Water System Operations
SP-2669A, Revision 000-02, Unit 2 Outside Rounds
SP-2669A, Revision 030-01, Unit 2 Auxiliary Building Rounds
SP-2670, Revision 009, Saltwater Cooled Heat Exchanger Differential Pressure Determination

Miscellaneous

Millstone Unit 2 SWSOPI Self-Assessment 1995
Millstone Unit 2 Service Water Self-Assessment Inspection 50-336/95-29
Millstone Unit No.2 Generic Letter 89-13 Responses and Updates, Jan 1990 - June 1996
DM2-00-0318-02, Revision 013, "Elimination of Service Water Check Valve 2-SW-11A"
DM2-00-0300-01, Revision 12, "Replacement of Service Water Spool SK 914 with AL-6XN Material"
PDCR M2-97045, Revision 06, "Plastocor Coating for Vital Switchgear Room Coolers"
Service Water System Quarterly Health Reports 2002 - 2004
Calculation 03-ENG-04035M2, Revision 11, "MP2 Service Water System Design Basis Summary Calculation"
Calculation 92-120, Revision 6, "MP2 SWS Design Basis Alignments - Summer & Winter (Flow Balance Calculation)"

MNPS-2, Revision 21.2, UFSAR for Service Water System 1, 6/22/98
Credited PM Tasks for System 2326A (Service Water), 8/19/04
EN 21243, Revision 001, "Millstone Unit 2 Service Water System Pipe Liner/Coating Inspection, Preventative Maintenance and Surveillance Program"
Service Water Component History Data, 8/25/04
MB-00130, Revision 1, SWS-04-C NLIT Systems, SW System (Operator Training Material)
MB-00450, Revision 0, SWS-04-J NLIT SW System (Operator Training Material)
PEO-04-J, Revision 3, Plant Equipment Operator (On-the-job Training Guide)
Nuclear Safety Engineering Report 01007307-01, Problems with Incorrectly Installed Swing Check Valves, 1/8/02
PM Change and Deferral Request 2004-0042, RBCCW Heat Exchanger cleaning frequency
Operating Experience Report 02000002-01, Improper Maintenance and Reassembly of Automatic Oil Bubblers, 3/28/02
MP2701J-096, Service Water Cooled Heat Exchangers Subject to GL 89-13, 8/27/01
DNAP-2808, Revision 1, "NRC Licensing Correspondence"
00-067, Revision 0, Thermal Performance Calculation - RBCCW Heat Exchanger
97-211, Revision 0, Thermal Performance Calculation - Vital Switchgear Room Cooler
98-119, Revision 0, Thermal Performance Calculation - EDG Coolers

Work Orders

M2-91-13491	M2-02-04440	M2-02-15700	M2-03-08863
M2-00-12310	M2-02-09617	M2-03-02279	M2-03-13210
M2-01-15284	M2-02-14521	M2-03-05759	M2-03-13210
M2-02-03729	M2-02-14909		

Action Requests and Condition Reports

AR 94004990	CR 03-01136	CR-03-10269	CR 04-07964
AR 04000454	CR 03-12219	CR-03-10524	CR 04-89049
CR 02-00130	CR-03-05224	CR-04-02814	CR 04-92049
CR 02-10063	CR-03-05373	CR 04-08014	CR 04-90073
CR-02-11997	CR-03-06755	CR 04-08005	CR 04-90026
CR 03-11398		CR-04-05119	CR-04-03985
CR 03-12439			

Licensee Event Reports (LER)

93-006-00	95-009-00	96-002-00	98-006-00
93-020-00	95-039-00	97-037-01	2000-012-01
95-008-00			

LIST OF ACRONYMS

AFW	auxiliary feedwater
CFR	Code of Federal Regulations
CR	condition report
DOT	Department of Transportation
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EBFS	enclosure building filtration system
EDG	emergency diesel generator
EOOS	equipment out of service
FRSC	failed rod storage canister
FRV	feed regulating valve
FSAR	Final Safety Analysis Report
GL	Generic Letter
HPSI	high pressure safety injection
I&C	instrumentation and control
IPM	Individual Personnel Monitor
IRIS	individual rod inspection station
LER	licensee event report
LCO	limiting condition for operation
M&TE	measurement & test equipment
MCC	motor control cabinet
MDAFW	motor driven auxiliary feedwater
MMOD	minor modification
MR	maintenance rule
MRFF	maintenance rule functional failure
MSR	moisture separator reheater
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
OD	operability determination
OP	operating procedure
OWA	operator work-arounds
PI	performance indicator
PMT	post-maintenance testing
RCS	reactor coolant system
RHR	residual heat removal
RRS	reactor regulating system
SAM	small articles monitor
SBLOCA	small break loss of coolant accident
SCBA	self-contained breathing apparatus
SDP	significance determination process
SI	safety injection
SP	surveillance procedure
SW	service water
TS	technical specifications
TSP	trisodium phosphate

UFSAR	updated final safety analysis report
URI	unresolved item

TI 2515/159
Review of Generic Letter 89-13:
Service Water System Problems Affecting Safety-Related Equipment

a.1. The effectiveness of GL 89-13 in communicating information

Generic Letter (GL) 89-13 communicated the importance in understanding SW system health and increased awareness with respect to implementing maintenance and testing programs to ensure design basis and operability were maintained. It provided a foundation of recommended practices that contributed to improving overall performance of this risk significant system as well as maintaining high performance. GL 89-13 has also increased Dominion station management awareness of SW issues to ensure support for system improvements.

a.2. Licensee actions that are being implemented for the five recommended actions of GL 89-13

Dominion has implemented all five recommended actions of GL 89-13: (1) Dominion was effectively implementing their surveillance program with respect to biofouling in an attempt to minimize flow blockage problems; (2) Dominion has instituted a program of regular maintenance of safety-related heat exchangers in lieu of periodic testing, which is acceptable per GL 89-13 the frequency of the maintenance activity, which consists of inspection and cleaning (if necessary), was adequately determined by a single baseline heat transfer test for each heat exchanger type; (3) Dominion's maintenance program has ensured, as a minimum, that (a) excessive accumulations of biofouling agents, corrosion products, and silt were removed and (b) defective protective coatings and corroded SW system piping and components that could adversely affect performance of their intended safety functions were repaired; (4) Dominion was finalizing design bases summary information to ensure that SW system design and operability would be assured under all accident conditions, design flow calculations and models were being clarified to ensure that operability of SW and flow margin was understood under all conditions; and (5) overall, the inspectors found that Dominion's procedures and training were acceptable to ensure that operators perform effectively and minimize human errors in operation, repair, and maintenance of the SW system.

Overall, the inspectors concluded the five recommended actions were being implemented. However, the team noted the following minor examples where Dominion's actions deviated from their commitments to GL 89-13 or were not meeting Dominion program guidelines.

- Implementation procedure for Vital Switchgear coolers was less stringent in its inspection and cleaning requirements than the actual commitment letter. However, Dominion has been performing the more stringent requirements. (CR 04-08005)

- Dominion has changed its inspection and cleaning frequency from three months to four months for reactor building closed loop cooling water (RBCCW) without changing the GL 89-13 commitment or using a formal change notification procedure. (CR 04-07964)

- The single baseline performance test for each type of GL 89-13 heat exchanger was performed consistent with Dominion's GL 89-13 response and was acceptable. However, the inspectors noted that the baseline test protocol documents stated that a series of tests should be performed to clearly demonstrate the acceptability of the selected cleaning frequency. Thus, multiple tests to understand different conditions (e.g. seasonal changes) would provide a higher degree of confidence in the cleaning frequency.

- One minor procedure issue was identified associated with procedure ARP 2591A, "Alarm Response for 'A' Diesel Generator Panel, C-38," where the actions prescribed to operators were inconsistent with the alarm setpoint. Specifically, the alarm setpoint was 500 gpm, but the actions in the procedure required operators to monitor diesel generator performance when service water flow to the diesel generator has degraded to 700 gpm (normal SW flow is about 1,000 gpm). Dominion determined that existing design basis supports the 500 gpm setpoint, and indicated a procedure change would be initiated. (CR-04-08058)

- One minor exception was noted where a prescribed preventive maintenance was inappropriately changed non-conservatively based on incorrect information. Specifically, the inspectors found that the periodic solenoid valve assembly replacement associated with two RBCCW heat exchanger outlet temperature control valves (M22-SW-8.1BS/A and BS/B) had been changed from 9.6 years to 60 years based upon the solenoid valves being in a normally de-energized position. However, the solenoid valves are, in fact, normally energized and therefore subject to a more severe environment. Dominion determined there was no operability impact. (CR-04-08085)

a.3. Effective programmatic maintenance of the actions in response to GL 89-13

Overall, Dominion has maintained effective GL 89-13 programs and procedures to meet their GL 89-13 commitments. The inspectors also noted aspects of the GL 89-13 recommendations that have shown improvement. However, there were examples that indicate areas where actions in response to GL 89-13 commitments have not been maintained as effective as desired.

- Dominion has improved their chlorination process and have had minimal biofouling issues. Compared to an earlier GL 89-13 response, Dominion now has a continuous chlorination system that injects at the suction of SW pumps.

- Dominion has met the GL 89-13 intent for ensuring design bases for SW, but has struggled with design basis issues as supported by past licensee event

reports, condition reports, and inspection results. (Service Water System Operational Performance Inspection, SWSOPI, and Safety System Design and Performance Capability Inspection - 2002, SSDPC.)

C Initially, Dominion did not fully evaluate, until 1997, that their liner/coating of SW piping would deteriorate and lead to erosion of SW piping and challenge related safety-system functions. After a self-revealing coating event, which caused an Emergency Diesel Generator (EDG) to be inoperable, Dominion formally developed a coating program and has aggressively inspected SW piping in an attempt to minimize coating failures.

C Although not required by GL 89-13, Dominion does not have a consolidated formal GL 89-13 program document to address GL 89-13 changes or issues but rather implements GL 89-13 commitments through individual maintenance and testing procedures.

a.4. As applicable, noteworthy SW System operational history that supports inspection results

- Dominion has experienced SW reliability issues as evidenced by the fact SW has been a Maintenance Rule a(1) system for extended periods of time since 1996 for various reasons. Some recent reliability issues are SW strainer problems and SW piping leaks. The recent through-wall leaks have affected structural integrity of SW piping to the Vital Switchgear cooler.

- SWSOPI results -1996: It was identified that there was not an effective program to address some of the recommended actions of GL 89-13. Specifically, heat exchanger testing was incomplete in that no successful testing to verify fouling factors was accomplished at the time. Also, the maintenance and inspection program for SW components had not been developed.

- SSDPC - 2002: NRC inspection identified several design bases issues that were either constituted a finding or unresolved item in IR 50-336/02-012. Dominion has currently addressed or is finalizing all unresolved items from that inspection.

C LER 97-037-01: This event report describes the coating failure that caused inoperability of an EDG and resulted in Licensing Amendment (222) being granted due to the discovery of this unanalyzed event that affected a safety-related system and was not fully described in the UFSAR.

a.5. Effectiveness assessment of licensee's program procedure(s) on related SWS operating experience

The inspectors determined that Dominion's operating experience program and its implementation were adequate to maintain service water system functionality. Several operating experience items were reviewed and found to have been evaluated appropriately. For example, Condition Report CR-02-00130 (Heat Exchanger Performance Decline), NRC Information Notice (IN) 92-79 (Microbiologically Influenced Corrosion), and IN 92-49 (Service Water System Degradation) were evaluated promptly and appropriately by station personnel. As an additional measure of the effectiveness of the operating experience programs, the inspectors noted an overall acceptable response to and appropriate implementation of NRC GL 89-13. Further, the inspectors observed that relevant industry operating experience has been incorporated into the appropriate training programs.

In addition to Dominion's acceptable operating experience program, the inspectors noted that the service water system engineer has been involved in industry programs and initiatives addressing service water system challenges.