July 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 05000336/2004006 AND 05000423/2004006

Dear Mr. Christian:

On June 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 July 22, 2004, with Mr. Stephen Scace 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 two NRC-identified findings of very low safety significance (Green). 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 05000336/2004006 and 05000423/2004006
w/Attachment: Supplemental Information

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REGION I

Docket No.:	05000336, 05000423
License No.:	DPR-65, NPF-49
Report No.:	05000336/2004006 and 05000423/2004006
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2 and Unit 3
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	April 1, 2004 - June 30, 2004
Inspectors:	S. M. Schneider, Senior Resident Inspector S. R. Kennedy, Resident Inspector K. A. Mangan, Resident Inspector G. T. Bowman, Reactor Inspector, Division of Reactor Safety (DRS) W. A. Cook, Senior Project Engineer, Division of Reactor Projects (DRP) P. D. Kaufman, Senior Reactor Inspector, DRS M. C. Modes, Senior Reactor Inspector, DRS T. A. Moslak, Health Physicist, DRS N. T. Sanfilippo, Reactor Engineer
Approved by:	Ronald R. Bellamy, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR 05000336/2004006, 05000423/2004006; 04/01/2004 - 06/30/2004; Millstone Power Station, Unit 2 and Unit 3; Surveillance Testing, Other Activities.

The report covered a 3-month period of inspection by resident inspectors and two announced inspections by regional inspectors. Two (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

- Green. The inspectors identified a non-cited violation of Technical Specification 6.8.1a for the failure to adequately implement procedures for draining the reactor coolant system (RCS). During the October 2003 refueling outage, Dominion drained down the RCS for an approximate 1.5 hour period with only one accurate means of level indication. The operator dedicated to monitoring refuel pool level was released from his duties prior to completion of the draindown and the operators in the control room were mis-reading the remote camera indication of the refuel pool level. Also, a recent revision of the procedure controlling the draindown had removed the steps required to conduct a valve line-up of the RCS mid-loop wide range level indicator (LI-112). As a result, LI-112 was not on scale as expected because it was isolated due to a previous maintenance activity. During this period, the only accurate means of refuel pool level was mass balance.

  This finding is more than minor because it is associated with the initiating event cornerstone attribute of configuration control during shutdown and affected the likelihood of causing a loss of reactor water inventory to the point that shutdown cooling could be lost. The significance was low because multiple corrective measures available to ensure reactor cooling were maintained. Operators could have stopped the draindown by closing one valve from the control room, the draindown would have been automatically terminated once low pressure safety injection pump pressure lost suction, and operators could have restored shutdown cooling if it was lost. This finding is related to the cross-cutting issue of Human Performance.
  (Section 4OA5.5)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, which requires, in part, that conditions adverse to quality, such as failures, are promptly identified and corrected. Contrary to this requirement, Dominion did not take effective corrective actions to address repetitive failures of local leak rate tests (LLRT) for the quench spray system and recirculation spray system containment isolation check valves. The inspectors determined that over the span of 8 years, the same known failure mechanism resulted in an approximate 50% LLRT surveillance test failure rate for these check valves.

  This finding is more than minor because it is associated with the Barrier Integrity cornerstone attribute of structures, systems, and components (SSC)/Barrier Performance - containment isolation SSC reliability. Unacceptable leakage past these check valves resulted in a decrease in operational capability of the containment isolation system and a decrease in reliability of containment isolation SSCs. This violation has been determined to have a very low safety significance since there was not an actual open pathway in the physical integrity of reactor containment. This finding is related to the cross-cutting issue of Problem Identification and Resolution. (Section 1R22)

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. On May 24, 2004, operators reduced power to approximately 90% for main turbine control valve testing and main condenser tube cleaning. Unit 2 returned to 100% power on May 28, 2004 and operated at essentially 100% power for the remainder of the period.

Unit 3 was operating at 90% power at the beginning of the inspection period and performed a normal plant shutdown on April 2, 2004 to begin the 3R09 refueling outage. Dominion started up the unit and phased to the grid on May 9, 2004 and then performed a power ascension achieving 100% power on May 14, 2004. The unit operated at essentially 100% power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

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

The inspectors performed eight 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 "B" emergency diesel generator (EDG) during "A" EDG surveillance (4/22/2004)
- Partial equipment alignment of "B" containment spray following completion of containment spray valve operability tests (6/9/2004)
- Partial equipment alignment of Facility 2 service water with Facility 1 service water inoperable for maintenance (6/14/2004)
- Partial equipment alignment of east DC switchgear compensatory cooling (6/15/2004)

Unit 3

- Partial equipment alignment of "A" train charging system with safety injection unavailable (4/5/2004)
- Chemical and volume control system dilution flowpath (4/13/2004)
- Partial equipment alignment of "A" EDG with reserve station service transformer and "B" EDG unavailable (4/19/2004)
- Partial equipment alignment of service water system after restoration of system following maintenance (4/25/2004)

b. Findings

No findings of significance were identified.

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

The inspectors conducted one detailed sample of the alignment and condition of the Unit 2 Reactor Protection System (RPS). The inspectors conducted a walkdown of the system to verify that the critical portions, such as switches and breakers, were correctly aligned in accordance with procedures and to identify any discrepancies that may have had an affect on operability. The documents reviewed during the inspection are listed in the Attachment.

The inspectors also conducted a review of outstanding maintenance work orders to verify that the deficiencies did not significantly affect the RPS 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.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Sample Review (71111.05Q - 7 Unit 2 and 6 Unit 3 Samples)

a. Inspection Scope

The inspectors performed thirteen 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 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)
- East Main Steam Safety Valve Room - Auxiliary Building, 38' 6" Elevation (Fire Area A-10C)
- Diesel Oil Tank Room A - Auxiliary Building, 38' 6" Elevation (Fire Area A-31)
- Diesel Oil Tank Room B - Auxiliary Building, 38' 6" Elevation (Fire Area A-30)
- Spent Fuel Pool General Area - Auxiliary Building, 38' 6" Elevation (Fire Area A-14C)
- "A" Engineered Safety Features (ESF), -45' 6" Elevation (Fire Area A-8, Zone A)
- East Penetration Room, -5' Elevation (Fire Area A-10, Zone A)

Unit 3

- Turbine Building Operating Floor (Fire Area TB-2)
- East Switchgear Room, 4' 6" Elevation (Fire Area CB-1)
- West Switchgear Room, 4' 6" Elevation (Fire Area CB-2)
- Cable Spreading Room, 24' 6" Elevation (Fire Area CB-8)
- Auxiliary Building, 66' 6" Elevation (Fire Area AB-1, Zone F)
- Auxiliary Building, 24' 6" Elevation (Fire Area AB-1, Zone C)

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06 - 1 Unit 2 Sample)

a. Inspection Scope

The inspectors reviewed one sample of flood protection measures in the "A" Engineered Safety Features (ESF) room located on the -45 foot level in the Unit 2 Auxiliary Building. 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 Final Safety Analysis Report and design basis documents, including flooding calculations. The inspectors compared the as-found equipment and conditions to ensure 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.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A - 1 Unit 2 and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors reviewed two samples of safety related heat exchanger tests to identify any degraded performance or potential for common cause problems that could increase plant risk. The inspectors reviewed the results of the Unit 2 4160 VAC Lower Switchgear Room Cooling Heat Exchanger and Unit 3 Recirculation Spray System "A" Heat Exchanger inspections, performed in accordance with Dominion procedures. The inspectors reviewed the inspection results against the acceptance criteria contained within the procedure, and verified that all acceptance criteria had been satisfied. The inspectors also reviewed the Final Safety Analysis Report to ensure that heat exchanger inspection results were consistent with the design basis. The inspectors verified that adverse conditions identified by Dominion were appropriately entered into Dominion's corrective action program. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified

1R08 Inservice Inspection Activities (71111.08 - 5 Unit 3 Samples)

a. Inspection Scope

Unit 3

Inservice and Steam Generator inspection activities were reviewed. The radiography of a section of the feedwater system, replaced in conformance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements, was reviewed. No recordable indications were accepted for continued service during the prior outage, and no repairs were available for review.

The inspector reviewed the supporting Millstone nondestructive testing procedures, MP-PDI-UT-1, Revision 000, "PDI Generic Procedure for the Ultrasonic Examination of Ferritic Pipe Welds", and MP-PDI-UT-2, Revision 0, "PDI Generic Procedure for the Ultrasonic Examination of Austenitic Pipe Welds" for compliance with ASME Section XI, Appendix VIII as modified by 10 CFR 50.55a(a)(xv). The inspectors observed the calibration of a phased-array ultrasonic test system and demonstration of the specialized technique on a mock-up of the "J" tube weld located on the steam generator feedwater sparger. The examination utilized a state-of-the-art ultrasonic technique to ensure complete coverage of the tube-to-tube penetration even though it is not required by either the ASME Code or other specifications.

The inspectors observed the ultrasonic examination of main steam isolation valve bonnet studs by the use of a full length bore probe. The applicable procedure, MP-PDI-UT-5, Revision 000-01 "PDI Generic Procedure for the Straight Beam Ultrasonic

Examination of Bolts and Studs", was reviewed and the examination was completed in accordance with the procedural requirements. The observation included the calibration of the system on a four notch standard made from a spare bonnet stud.

The inspectors reviewed Millstone Unit 3 Steam Generator Eddy Current Data Analysis Reference Manual to determine that steam generator tube inspections were performed within the guidance given in the Electric Power Research Institute (EPRI) Pressurized Water Reactor Steam Generator Examination Guidelines. The inspectors reviewed Millstone Unit 3 Steam Generator Integrity Degradation Assessment M3-EV-03-0024, Revision 0, and Millstone Unit 3 Steam Generator Condition Monitoring and Operational Assessment to determine the correspondence between the Millstone programs and the EPRI Steam Generator Aging Management Guidelines. The inspectors observed the resolution analysis of tube R1, C88 and the acquisition of data at R1, C83 to ascertain if the procedure requirements were being implemented. The inspectors reviewed the disposition of a wear indication in the generator caused by a small section of bare metal weld wire located in the secondary side of the generator. The discovery, retrieval, and plugging of the abraded tube were discussed with the Steam Generator program manager and independent Level III Eddy Current analyst. The loose part was entered into the corrective action program and removed from the generator.

The inspectors reviewed weld radiographs under WO M 30306299 for the replacement of piping in the feedwater system. The radiographs of welds 88, 89, 91, 92, 93, and 94 were evaluated for radiographic acceptance and weld integrity in conformance with Code requirements.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

Unit 2

The inspectors observed one sample of Unit 2 licensed operator simulator and classroom training on May 28, 2004. The inspectors observed licensed operator training on the Control Room Air Conditioning System and Functional Recovery Resource Assessment Trees. The inspectors evaluated the ability of each operations crew to mitigate the consequences of the failures presented in the accident scenarios, the ability of Dominion's evaluators to adequately address operator performance deficiencies that were identified during the exercise, and also evaluated that applicable training objectives had been achieved. The inspectors evaluated use of formal communications, proper use of procedures, and overall crew teamwork. Additionally, the inspectors reviewed the simulator physical fidelity as compared to the actual Unit 2 control room conditions. Documents reviewed during the inspection are listed in the Attachment.

Unit 3

The inspectors observed one sample of Unit 3 licensed operator simulator training on June 3, 2004. The inspectors observed licensed operator performance relative to the following activities: training on Emergency Action Level Tables, Alternate Shutdown Panel operation and critique of operators after a simulator exercise. The inspectors verified that the training evaluators adequately addressed operator performance issues that were identified during the exercise and that 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 (71111.12Q - 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

- Stack High Range Radiation Monitor (CR-04-03699)
- Reactor Trip Breaker Failed to Shut Remotely (CR-04-04370)

Unit 3

- Quench Spray System Check Valve Failure (CR-04-03130)
- Recirculation Spray System Check Valve Failure (CR-04-03329)
- Main Steam Safety Valve Leak Check Failure (CR-04-03040)

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13 - 6 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed eleven 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 and the Shutdown Safety Assessment sheets 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 emergent and scheduled maintenance and testing activities:

Unit 2

- Work Schedule for the week of 4/05/04 - risk assessment for maintenance/testing on "B" EDG, Station Blackout, "C" Charging Pump, Auxiliary Feedwater Regulating Valve Failure Surveillance
- Work Schedule for the week of 4/12/04 - risk assessment for maintenance/testing on Reserve Service Station Transformer
- Work Schedule for the week of 4/19/04 - risk assessment for maintenance/testing on Yellow Risk Condition due to Containment Sump Valve Stroke
- Work Schedule for the week of 5/24/04 - risk assessment for maintenance/testing on Downpower for Condenser Tube Cleaning
- Work Schedule for the week of 5/31/04 - risk assessment for maintenance/testing on "B" EDG, "C" High Pressure Safety Injection, "A" Turbine Building Closed Cooling Water, "C" Linear Power Calibration and TM/LP Functional Testing
- Work Schedule for the week of 6/14/04 - risk assessment for maintenance/testing on "A" Auxiliary Feedwater Pump, Enclosure Building Filtration System, "A" Reactor Building Component Cooling Water Heat Exchanger, "A" DC Switchgear Room Vital Chiller

Unit 3

- Work Schedule for the week of 3/29/04 - Shutdown Safety Assessment dated 4/04/04
- Work Schedule for the week of 4/12/04 - Shutdown Safety Assessment dated 4/12/04
- Work Schedule for the week of 4/12/04 - Shutdown Safety Assessment dated 4/13/04
- Work Schedule for the week of 4/26/04 - Shutdown Safety Assessment dated 4/26/04

- Emergent risk assessment for maintenance/testing of missed surveillance on atmospheric dump valves on 6/14/04

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 June 10, 2004, Operations personnel responded to the "D" circulating water pump high amps alarm on the primary plant computer. Operations secured the "D" circulating water pump due to rising amps and high vibration and entered AOP 2517 "Circulating Water Malfunctions". After backwashing the "D" circulating water pump, Operations restarted the pump. The plant equipment operator stationed locally at the "D" circulating water pump reported abnormal noise and vibration and recommended securing the pump again. Operations responded by securing the "D" circulating water pump and re-entered AOP 2517. After completing the action for trip of one circulating water pump, Operations exited AOP 2517. Dominion determined that the cause of high vibration was due to failure of the bolts on the lower bearing housing. The bolt failure was attributed to corrosion of 316 stainless steel.

On June 18, 2004, Operations personnel responded to a reactor coolant pump (RCP) control bleedoff relief high flow alarm. Operations entered AOP 2568 "Reactor Coolant System Leak" due to a greater than 4 gpm imbalance between charging and letdown flows during steady state operation. The imbalance caused isolation of the normal RCP bleedoff flow path to the volume control tank and lifting of the relief valve to the alternate relief path to the primary drain tank. Operations determined that the alarm was caused by an apparent failure of the RCP controlled bleedoff pressure transmitter. After placing RCP bleedoff flow in manual and re-establishing the normal RCP bleedoff flow path, Operations exited AOP 2568.

Unit 3

On April 6, 2004, Dominion was making preparations to remove the reactor vessel head. The preparations included draining reactor vessel water level to below the flange and removing the reactor vessel missile shield. Dominion was installing the missile shield lifting rig when the overhead crane malfunctioned, resulting in significant damage to the missile shield lifting rig and superficial damage to personnel safety equipment and non-safety related cooling piping. Operations refilled the vessel and pressurizer when it became apparent that the lifting device would not be repaired quickly. This was done to maximize the time to core boil in the event of a loss of decay heat removal. Dominion also developed corrective actions related to the crane malfunction which included conducting additional preventative maintenance on overhead cranes and additional load supervisor observation requirements.

On April 13, 2004, refueling personnel noted that a fuel assembly (H-42) had moved several inches upon coming out of the core and would not travel into the mast without causing an overload condition. The fuel assembly was moved to another location along the core periphery and inserted to support an inspection. The fuel assembly would not completely seat in the new core location, as a result, fuel assembly movement was halted until a corrective action plan could be generated. Subsequent inspection and investigation determined that the refuel tool grippers were holding the fuel by the top nozzle leaf springs rather than underneath the ledge of the top nozzle as designed. Refueling personnel concluded that the spring screws on two leaf springs and possibly the spring screw cover capture screw had failed, causing the cover to lift up and contact the refuel tool orientation pin before the refuel tool was down far enough to properly latch underneath the top nozzle ledge. Upon retracting the refuel tool, the refuel tool gripper engaged underneath the leaf springs rather than underneath the top nozzle ledge. Refueling personnel were able to seat fuel assembly H-42 and release the refuel tool through manual manipulation of the refuel tool and bridge crane. Refueling tool inspections and surveillance tests were conducted to ensure there was no damage to the refueling tool. Additionally, refueling personnel changed the refuel tool cable slack set point and full down set point while also instituting visual examinations for an extent of condition determination of the remaining fuel assemblies of this type. Core offload was then recommenced on April 14, 2004. On April 15, 2004, a recovery plan for moving fuel assembly H-42 was finalized and H-42 was moved out of the core, transferred to the upender, and then stored in the spent fuel pool.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - 8 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed thirteen samples of 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 technical specification (TS) and Final Safety Analysis Report (FSAR) requirements were met. The inspectors reviewed the following degraded or non-conforming conditions:

Unit 2

- "A" EDG Timer Calibration Failures (CR-04-05008)
- Vendor Not On Safety Related Qualified Vendor List (CR-04-04250)
- Reactor Trip Breaker Failed to Shut (CR-04-04370)
- "B" EDG Fuel Rack Stop Position (CR-04-05540)
- "A" EDG Heat Exchanger Bypass Valve Not Fully Closing (CR-04-05119)
- Unit 2 Offsite Line Operability due to Unit 3 Reserve Station Service Transformer Maintenance
- Lower 4160 Volt AC Switchgear Room High Temperature (CR-04-06096)
- Spent Fuel Pool Ventilation Boundary (CR-04-04080)

Unit 3

- Service Water Leak on Header for Engineering Safety Features Building AC Unit (CR-04-03704)
- Service Water Pump Motor Operability due to High Amp Load
- Service Water System Operability due to Deficient "Short Neck" Flange Solder Joints (CR-04-02795)
- Feed Flow Venturi and Leading Edge Flow Meter Indication for Calorimetric (CR-04-04761)
- Lack of a Surveillance Activity to Verify Atmospheric Steam Dump Valves Can Operate Manually in Accordance with the IST Program (CR-04-05842)

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16 - 2 Unit 2 Samples)

a. Inspection Scope

Selected Operator Work-Arounds

The inspectors reviewed one risk significant operator work-around (OWA) for Unit 2 during the inspection period. Reactor Coolant Pump (RCP) bleedoff pressure was being controlled in manual due to failure of the RCP bleedoff pressure instrument. The inspectors evaluated the condition to determine if there was any affect on human reliability in responding to an initiating event or any adverse affect on the function of mitigating systems. The OWA was also reviewed to ensure compliance with licensee

documents which administratively control OWAs. Documents reviewed during the inspection are listed in the Attachment.

Cumulative Effects of Operator Work-Arounds

The inspectors reviewed the current listing of active operator work-arounds for Millstone Unit 2. The review was conducted to verify that Millstone procedures and practices provided the necessary guidance to plant personnel, that the cumulative effects of the known operator work-arounds were addressed and that the overall impact on the affected systems was assessed by Dominion. The inspectors independently assessed the cumulative impact of known operator work-arounds 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 operator work-arounds and verified that work-arounds 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 - 1 Unit 3 Sample)

a. Inspection Scope

The inspectors reviewed one sample of a permanent plant modification on Unit 3. The sample involved installing a vent line on the service water piping system at the recirculation spray system heat exchanger outlet. The inspectors performed a walkdown of the area and reviewed the Final Safety Analysis Report, licensing and design basis documents, and the engineering disposition. These reviews were conducted to ensure (1) modified components remained consistent with the assumptions indicated in the design basis documents; (2) 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.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed eleven 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 Technical Specification 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

- "B" EDG Service Water Supply Valve Assembly Repair (M2-04-01660)
- "A" EDG 4160KV Breaker 3 Year Preventive Maintenance (M2-02-03776)
- Service Water System Piping Inspection on the "A" EDG (M2-04-01598)
- "A" EDG Jacket Water Leak on Cylinders No. 8 and 11 (M2-02-05596)
- Lower 4160 VAC Switchgear Room Cooling Heat Exchanger Cleaning (M2-03-02809)
- #1 Atmospheric Dump Valve Positioner Replacement (M2-03-14396)

Unit 3

- Residual Heat Removal Suction Valve Packing Changeout (M3-03-06867)
- Accumulator Injection Check Valve (SIL*CV019) Leak Repair (M3-00-115852)
- Reactor Coolant System Check Valve (3RCS*CV107) Leak Repair (M3-02-15635)
- Main Steam Drain Solenoid Valve (3DTM*SOV61C) Replacement (M3-98-01361)
- Main Steam Drain Air Actuator (3DTM*AOV61C) Diaphragm Replacement (M3-03-05045)

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20 - 1 Unit 3 Sample)

a. Inspection Scope

Dominion conducted a Unit 3 refueling outage from April 2 through May 9, 2004. The inspectors evaluated the outage plan and outage activities to confirm that Dominion had appropriately considered risk, had developed risk reduction and plant configuration control methods, had considered mitigation strategies in the event of losses of safety functions, and had adhered to license and technical specification requirements. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes, reactor vessel draindowns, mid-loop operations, shutdown cooling operation, fuel handling and other maintenance, testing, and outage related activities. Additionally, the inspectors conducted a walkdown of the containment prior to final closeout to ensure

no loose material or debris which could be transported to the containment sump was present. The inspectors observed startup, heatup, and power ascension activities following the outage. 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. Some of the specific activities observed include:

- Fuel handling, core loading, and fuel element assembly tracking
- Core alterations
- Reactor Coolant System pressure, level, and temperature instruments operability
- Decay Heat Removal System monitoring
- Mid-loop operations
- Tagout and tagout clearance control
- Reactor startup and power operations
- Low power physics testing

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - 6 Unit 2 and 5 Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed eleven samples of surveillance activities to determine whether the testing adequately demonstrated equipment 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 verified, 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 bases, licensing bases and Technical Specification requirements, and ensured 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

- Refueling Water Storage Tank Level Functional Test (SP-2403M)
- Channel "A" Through "D" Engineered Safeguards Actuation System Automatic Test Insert Functional Test (SP-2403AA)
- Containment Sump and Shutdown Cooling System Heat Exchanger Reactor Building Closed Cooling Water Outlet Valves Operability Tests, Facility 1 (SP-2604G)
- "A" EDG Slow Start Operability Test (SP-2613K)
- Containment Spray Valve Stroke and Timing IST (SP-2606D-004)
- "A" Motor Driven Auxiliary Feedwater Operability Test (SP-2610A)

Unit 3

- Main Steam Code Safety Relief Valve Simmer Testing (SP-3712G)
- Local Leak Rate Test (LLRT) on "A" and "B" train Quench Spray System Check Valves (SP-3612B.4)
- LLRT on "A", "B", "C", and "D" Recirculation Spray System check valves (SP-3612B.4)
- "A", "B", "C", and "D" Accumulator Blowdown Flow Test (SP-3610B.4)
- Safety Injection Full Flow Test (SP-3608.6)

b. Findings

Unit 2

No findings of significance were identified.

Unit 3

Introduction. A Green non-cited violation (NCV) was identified for the ineffective corrective action associated with repetitive failures of local leak rate tests (LLRTs) for the Unit 3 Quench Spray System (QSS) and Recirculation Spray System (RSS) containment isolation check valves. Over the span of eight years, the same known failure mechanism resulted in an approximate 50% LLRT surveillance test failure rate for these check valves.

Description. The inspectors reviewed the results of LLRT surveillance tests performed by Dominion, as required by 10 CFR 50, Appendix J, for containment isolation valves (CIVs) in the QSS and RSS systems. The credited CIV configuration of the two systems consists of a motor-operated butterfly valve (MOV) outside containment and a check valve inside containment, both in series. Dominion performs a LLRT for both sets of valves against a 10,000 standard cubic centimeters per minute acceptance criteria on a refueling outage periodicity. The "as found" testing of the valves during refueling outage 3R09 identified that one RSS check valve and one QSS check valve had failed the surveillance. Dominion inspected the failed check valve seats and found boron deposits on the seating surface which had prevented the check valve from seating properly.

The inspectors determined that Dominion had previously evaluated this degraded condition and had concluded that the boron deposits were a result of leakage past the system MOVs during quarterly system operability tests of the QSS and RSS pumps. Dominion found that borated water leaked by the MOV during this quarterly testing and then evaporated, causing boric acid to plate out on the check valve seat. This phenomenon allowed containment atmosphere to bypass the check valve and enter the penetration piping. The inspectors agreed with this assessment and noted that many of the check valves had routinely failed their LLRTs due to this boric acid phenomenon. The inspectors discovered that over the past eight years the LLRT identified QSS check valve failures eight times, and RSS check valve failures seven times. This represented

an approximate failure rate of 80% for QSS check valves and 35% for RSS check valves.

The inspectors concluded that Dominion had been aware of this phenomenon but had failed to take adequate corrective action to assure the operability of the CIVs during the operating cycle. Specific actions Dominion had previously taken included:

- Cleaned the seating surfaces of the check valves to remove boron deposits
- Adjusted the QSS MOV torque setting to prevent leakage by the valve
- Replaced the RSS MOVs with new valves
- Changed the required quarterly test of the RSS pumps to an 18 month periodicity
- One QSS MOV was removed and bench tested during 3R09 but no adjustments to the valve were made

Dominion has since taken additional corrective actions to suspend performance of all RSS pump tests while operating and to maintain the QSS system discharge header filled with water (which will preclude the boric acid from plating out on the check valve seating surface).

Analysis. The performance deficiency associated with this issue is the failure to adequately correct long-standing LLRT failures in the QSS and RSS systems. Over the span of time in which these failures have been occurring, it was within Dominion's ability to foresee and correct the leakage such that subsequent LLRT failures could have been prevented. Traditional Enforcement does not apply because there were no actual safety consequences or impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. However, this issue is more than minor because it is associated with the Barrier Integrity Cornerstone attribute of SSC/Barrier Performance - containment isolation SSC reliability. Unacceptable leakage past these check valves resulted in a decrease in operational capability of the containment isolation system and a decrease in reliability of containment isolation SSCs. In accordance with the Reactor Safety Significance Determination Process (SDP), a Phase 1 analysis of this condition was performed using Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Specifically, this issue does not represent a degradation of the radiological barrier function provided for the control room, auxiliary building, or spent fuel pool; does not represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere; and does not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atmospheric pressure control function of the reactor containment. Therefore, the risk of this finding was determined to be of very low safety significance (Green). This finding is related to the cross-cutting issue of Problem Identification and Resolution in that Dominion was unable to resolve repeated LLRT failures in a timely manner.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI requires, in part, that conditions adverse to quality, such as failures, are promptly identified and corrected. Contrary to this requirement, Dominion did not take corrective actions to address repetitive failures

of the QSS and RSS containment isolation check valves. This violation has been determined to have a very low safety significance since there was not an actual open pathway in the physical integrity of reactor containment. This violation is in Dominion's corrective action program (CR-04-03329, CR-04-03130) and, therefore, is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000423/2004006-01**).

1R23 Temporary Plant Modifications (71111.23 - 1 Unit 2 Sample)

a. Inspection Scope

The inspectors reviewed one sample of a temporary plant modification for Unit 2 this inspection period. The inspectors reviewed a temporary modification associated with the "A" EDG service water. Specifically, a blank spacer was installed in place of the "A" EDG service water supply bypass valve which was found not fully closing due to internal degradation. The inspectors reviewed the temporary modification and its associated 10 CFR 50.59 screening against the FSAR and TS to ensure the modification did not affect system operability or availability. Documents reviewed during the inspection are listed in the Attachment.

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 two samples of the conduct of licensed operator simulator training: one sample for Unit 2 on June 8, 2004 and one sample for Unit 3 on June 15, 2004. The inspectors evaluated the Operations crew activities related to evaluating the scenario and making proper classification and notification determinations. Additionally, the inspectors assessed the ability of Dominion's evaluators to adequately address operator performance 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]

2OS1 Access Control to Radiologically Significant Areas (71121.01 - 10 Samples)

Unit 2 and Unit 3

a. Inspection Scope

During the period April 5 through April 9, 2004, the inspector conducted activities to verify that Dominion was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiologically controlled areas and that workers were adhering to these controls when working in these areas during the Unit 3 refueling outage. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Dominion's procedures.

Plant Walkdown and Radiation Work Permits (RWP) Reviews (7 Samples)

- Two samples were completed during the Unit 3 refueling outage of exposure significant work areas in the Unit 3 containment and the Unit 3 engineered safeguards building. The inspector reviewed radiation survey maps and RWPs associated with these areas to determine if the associated controls were acceptable.

- Two samples of tours of the accessible radiological controlled areas in Units 2 and 3, including the Unit 3 containment building, Unit 3 engineered safeguards building, and Units 2/3 auxiliary buildings, spent fuel pool areas, and waste processing buildings. With the assistance of radiation protection technicians, the inspector performed independent surveys of selected areas during the tours to confirm the accuracy of survey maps and the adequacy of postings.

- One sample RWP evaluation, the inspector review of electronic dosimeter dose/dose rate setpoints to determine if the setpoints were consistent with the survey indications and plant policy. The inspector verified that workers were knowledgeable of the actions to be taken when the dosimeter alarm activates or malfunctions for tasks being conducted under selected RWPs. Work activities reviewed included D-steam generator manway/diaphragm removal (RWP 306), staging/erection of scaffolding in the Unit 3 containment (RWP 331), staging of temporary shielding in containment (RWP 336), setup of eddy current test equipment for the D-steam generator (RWP 306), and machining of hand hole flanges on the D-steam generator (RWP 308).

- Two samples of review of RWPs and associated instrumentation and engineering controls (e.g., portable ventilation systems) for potential airborne radioactivity areas located in the Unit 3 containment building. The inspector confirmed that no worker received an internal dose (in excess of 50 mrem) due to airborne radioactivity when performing outage related activities.

High Risk Significant, High Radiation Area (HRA) and Very High Radiation Area (VHRA) Controls (3 Samples)

- Keys to Unit 2 and 3 locked high radiation areas (LHRA) and VHRAs were inventoried, and accessible LHRA were verified to be properly secured and posted during plant tours.

- The inspector reviewed the applicable procedures and preparations that were made for retracting the Unit 3 movable incore detectors (MIDS), including securing and posting the affected areas as VHRAs.

- The inspector examined the storage of high dose rate components, including the D-steam generator diaphragms, to verify that temporary shielding was effective in reducing the dose rates, that postings were in place, and containers were locked.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02 - 7 Samples)

Unit 2 and Unit 3

a. Inspection Scope

During the period April 5 through April 9, 2004, the inspector conducted the following activities to verify that Dominion was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for tasks conducted during the Unit 3 refueling outage. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Dominion's procedures.

Radiological Work Planning

- The inspector reviewed pertinent information regarding cumulative exposure history, current exposure trends, and ongoing activities to assess current performance and outage exposure challenges. The inspector determined the site's 3-year rolling collective average exposure.

- The inspector reviewed the refueling outage work scheduled during the inspection period and the associated work activity exposure estimates. Scheduled work that was reviewed included refueling cavity pit seal weld repair, lower reactor vessel head inspection, D-steam generator manway/diaphragm removal, D-steam generator eddy current testing, equipment installation, staging/erection of scaffolding, and installation of temporary shielding.

- The inspector reviewed procedures associated with maintaining worker dose ALARA and with estimating and tracking work activity specific exposures.

- The inspector reviewed 3RO9 dose summary reports, detailing worker estimated and actual exposures through April 8, 2004, for jobs performed during the refueling outage, to compare actual exposures with forecasted data.

- The inspector evaluated the exposure mitigation requirements specified in RWPs and ALARA Reviews (AR). Jobs reviewed included under reactor vessel inspections (RWP 350, AR 05), steam generator eddy current testing (RWP 306, AR 02), scaffolding installation (RWP 331, AR 13), steam generator secondary side hand hole machining (RWP 308, AR 03), and valve repairs in containment (RWP 327, AR 11).

- The inspector evaluated the departmental interfaces between radiation protection, operations, maintenance crafts, and engineering to identify any missing ALARA program elements and interface problems. The evaluation was accomplished by interviewing the ALARA Coordinator and Radiation Protection Manager, reviewing recent ALARA Council meeting minutes, attending various

pre-job planning/RWP briefings, attending a daily outage management meeting, and attending a work-in-progress ALARA debriefing.

- The inspector determined whether work activity planning included the use of temporary shielding, system flushes, and operational considerations to further minimize worker exposure. The inspector performed independent survey measurements on system components that were temporarily shielded, including the residual heat removal heat exchangers, D-steam generator diaphragms, and cavity drain lines. The inspector reviewed pre- and post-activity dose rate survey data for selected systems to evaluate the effectiveness of source term reduction efforts.

Verification of Dose Estimates and Exposure Tracking Systems

- The inspector reviewed the assumptions and basis for the annual site collective exposure estimate and the Unit 3 refueling outage dose projection. The inspector reviewed a personnel contamination event report, whole body counting data, and related calculations for internal dose and shallow dose estimates for selected personnel.

- The inspector reviewed Dominion's method for adjusting exposure estimates and re-planning work when actual dose approached estimated dose. The inspector attended a work-in-progress ALARA debriefing for erecting scaffolding and evaluated the additional dose controls applied to this task.

- The inspector reviewed Dominion's exposure tracking system to determine whether the level of dose tracking detail, exposure report timeliness, and exposure report distribution was sufficient to support the control of collective exposures. Included in this review were departmental dose compilations and individual dose records.

Job Site Inspection and ALARA Control

- The inspector observed maintenance and operational activities being performed for D-steam generator(S/G) manway/diaphragm removal and installation of eddy current test equipment in the S/G. The inspector also observed scaffolding installation in various containment areas, preparations for snubber inspections, and preparations for steam generator hand hole machining. The inspector verified that the appropriate radiological controls were implemented including radiation protection technician job coverage, contamination mitigation, properly worn personnel dosimetry, and proper briefing for workers on job-site radiological conditions.

- The inspector reviewed the exposure of individuals in selected work groups including mechanical maintenance, radiation protection, and outage support services to determine whether supervisory efforts were being made to equalize doses among the workers. The inspector also interviewed the Radiation

Protection Manager regarding the monitoring of dose distribution for site personnel.

Source Term Reduction and Control

- The inspector reviewed the current status and historical trends of the Unit 3 source terms. Through interviews with the Radiation Protection Manager and ALARA Coordinator, the inspector evaluated Dominion's source term measurements and control strategies. Specific strategies being employed by Dominion included system flushes, installation of temporary shielding, and chemistry controls.

Radiation Worker Performance

- The inspector observed radiation worker and radiation protection technician performance for various tasks including D-S/G manway/diaphragm removal, installation of eddy current test equipment in the D-S/G, installation of scaffolding in containment, and preparations for snubber inspections. The inspector determined whether the individuals were aware of radiological conditions and access controls, and whether the skill level was sufficient with respect to the radiological hazards and the work involved.

- The inspector attended the pre-job briefings for exposure significant tasks to determine the adequacy and accuracy of information provided to workers. Pre-job briefings attended included removal of manways/diaphragms from the D-S/G, installation of eddy current test equipment in the D-S/G, machining of steam generator hand holes, staging of temporary shielding in containment, and preparations for extracting the P-4 incore detector.

- The inspector reviewed condition reports related to radiation worker and radiation protection technician errors, and personnel contamination event (PCE) reports to determine whether an observable pattern traceable to a common cause was evident.

Declared Pregnant Workers

- The inspector reviewed the radiological control records for a declared pregnant worker performing outage related activities to evaluate the effectiveness in controlling the individual's dose.

Problem Identification and Resolution

- The inspector reviewed elements of Dominion's Corrective Action Program related to implementing the radiological controls program to determine if whether problems were being entered into the program for resolution. Details of this review are contained in Section 4OA2 of this report.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

1. Reactor Safety Cornerstone (4 Unit 2 and 2 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 that period. The PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline", Rev. 2, were used to verify the basis for reporting each data element.

Unit 2 Reactor Safety Cornerstone (4 Samples)

- Unplanned Scrams per 7000 Critical Hours
- Scrams With Loss of Normal Heat Removal
- Unplanned Transients per 7000 Critical Hours
- Safety System Unavailability- Emergency AC Power System

Unit 3 Reactor Safety Cornerstone (2 Samples)

- Unplanned Power Changes per 7000 Critical Hours
- Safety System Unavailability- Auxiliary Feedwater System

The inspectors reviewed licensee event reports (LERs), monthly operating reports, plant process shift logs, condition reports and NRC inspection reports to identify safety system unavailability and power changes that occurred from the 2nd quarter of 2003 through the 1st quarter of 2004. The inspectors compared this information with Dominion's data reported to the NRC for the PIs 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 database.

b. Findings

No findings of significance were identified.

2. Semi-Annual Trend Review (1 Unit 2 and 1 Unit 3 Sample)

a. Inspection Scope

The inspectors performed a semi-annual review to identify trends that might indicate the existence of a more significant safety issue. The inspectors reviewed Unit 2 and Unit 3 performance indicator monthly reports, system health reports, quality assurance audits, self assessment reports, and maintenance reports, and also interviewed key personnel.

b. Findings and Observations

No findings of significance were identified. The inspectors conducted a review of Dominion's Measuring and Test Equipment (M&TE) program. CR-03-00502 identified that Dominion could not account for over 339 M&TE. A licensee investigation determined that approximately one-third of the M&TE was located in the calibration lab, one-third was in department storage areas, and one-third remained missing. The inspectors determined that Dominion did not complete actions as required by procedure to disposition the missing M&TE. WC 8, "Control and Calibration of Measuring and Test Equipment", requires initiation of a loss of M&TE report and a CR for each missing piece of M&TE and logging the missing M&TE into the "M&TE Calibration History Record." Subsequent licensee investigations, to date, have determined that no safety related equipment was adversely affected by the missing M&TE. Corrective action for this issue has been entered into Dominion's corrective action program under CR-04-01846, CR-04-01847, CR-04-01842, and CR-04-06414.

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

a. Inspection Scope

The inspectors selected two condition reports (one for Unit 2 and one for Unit 3) for detailed review. 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 completed. The inspectors evaluated the reports against the requirements of Dominion's corrective action program as delineated in MP-1-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

Unit 2

While Shifting RCP Bleedoff From Equipment Drain Storage Tank to Volume Control Tank, RCP Bleedoff Isolated

No findings of significance were identified. The inspectors reviewed Dominion's corrective actions following isolation of the RCP bleedoff that occurred on March 25, 2003, as detailed in CR-03-02995. The original design issues contributing to this event have not been resolved. Interim corrective action is in place to ensure swapover of RCP bleedoff in emergency and normal conditions. The inspectors discussed the interim corrective action with the assistant operations manager and determined that the interim corrective action is an operator workaround (OWA) as defined by Dominion's procedures. Contrary to COP 200.9, "Operational Performance Standards", the OWA had not been entered into the Dominion corrective action program. Corrective action for this issue has been entered into Dominion's corrective action program (CR-04-06648).

Unit 3

Technical Specification Surveillance for the "A" EDG Did Not Time All Components

No findings of significance were identified. The inspectors reviewed Dominion's corrective actions following the identification of a deficiency in the surveillance performed to measure the starting time of the "A" Emergency Diesel Generator. The time measured did not include all relays in the starting circuit (CR-03-04296). Steps in the surveillance procedure re-positioned several switches which caused relays in the circuit to energize prior to the timed start of the EDG. This "preconditioning" resulted in a non-conservative time being measured by the surveillance. The inspectors interviewed Operations and Engineering personnel, reviewed the changes implemented for the TS Specification Surveillance, and walked down the Unit 3 EDG relay cabinet to verify that the new procedure correctly timed the starting sequence and all the relays in the starting circuit were operating properly. Additionally, the inspectors reviewed the surveillance test data recorded after the revisions to the surveillance procedure to verify that the required starting times were achieved. The inspectors also reviewed the condition report and other documentation to ensure the full extent of the condition was identified and the issue was properly evaluated.

4. As Low As Reasonably Achievable (ALARA) Planning and Controls

Unit 2 and Unit 3

a. Inspection Scope

The inspector reviewed 16 CRs relating to maintaining personnel exposure ALARA in order to evaluate the threshold for identifying, evaluating, and resolving problems in implementing the ALARA program. This review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and Dominion's procedures.

b. Findings

No findings of significance were identified.

5. Inservice Inspection Activities

Unit 3

a. Inspection Scope

The inspectors reviewed a sample of CRs shown in the Attachment, which identified problems related to inservice inspection issues. The inspectors verified that problems were being identified, evaluated, appropriately dispositioned, and entered into the corrective action program.

b. Finding

No findings of significance were identified.

6. Cross-Reference to PI&R Findings Documented Elsewhere

Section 1R22 describes a NRC-identified finding for failure to take effective corrective actions for recurring Local Leak Rate Testing of the containment Isolation check valves for the Quench Spray and Recirculation Spray Systems. The inspectors identified that actions taken by Dominion to correct the failures over the last five operating cycles were ineffective.

4OA3 Event Followup (71153 - 3 Unit 2 and 1 Unit 3 Samples)

1. (Closed) LER 05000336/2003005-00, Loss of Shutdown Cooling During Refueling Outage.

   On October 14, 2003, with Unit 2 in Mode 5, a loss of shutdown cooling occurred which resulted in an uncontrolled reactor coolant system (RCS) temperature increase of approximately 14°F. Operators declared an Unusual Event in accordance with their Emergency Action Level Tables (Uncontrolled RCS temperature increase greater than 10°F). A Green self-revealing non-cited violation of TS 6.8.1, for the failure to adequately implement vendor technical manual instructions, is discussed in NRC Integrated Inspection Report 05000336/2004005 (NCV 05000336/2004005-04). The finding was determined to be of very low safety significance and was entered into Dominion's corrective action program (CR-03-09838). This LER is closed.

2. (Closed) LER 05000336/2004001-00, Manual Reactor Trip on Low Steam Generator Level Resulting From a Feedwater Pump Spurious Relay Operation

   On March 6, 2004, with Unit 2 in Mode 1 at approximately 100% power, and with steam generator (SG) water level approaching 55%, operators initiated a manual reactor trip in anticipation of the low SG water level auto trip setpoint. The decreasing SG water level was due to a reduction in feedwater from the unexpected loss of the "B" steam generator feedwater pump (SGFP). The apparent cause of the pump loss was agitation of a relay in the feedwater pump control circuitry. Dominion changed the relay operation in the speed control circuit for the SGFP from an energized closed to an energized open contact to reduce relay sensitivity to agitation. The LER was reviewed by the inspectors and no findings of significance were identified. Dominion documented the failed equipment in CR-04-02121. This LER is closed.

3. (Closed) LER 05000336/2004002-00, Automatic Reactor Trip on Low Steam Generator Level Resulted From a Feedwater Pump Trip During Test

   On March 15, 2004, with Unit 2 in Mode 1 at 100% power, the reactor automatically tripped on low SG water level. The decreasing SG water level was due to a trip of the "B" SGFP. The SGFP tripped in the course of performing the quarterly overspeed lockout test. A Green non-cited violation of TS 6.8.1, for the failure to adequately implement procedures, is discussed in NRC Integrated Inspection Report 05000336/2004005 (NCV 05000336/2004005-01). The finding was determined to be of very low safety significance and was entered into the Dominion's corrective action program (CR-04-02446). This LER is closed.

4. Air Entrainment of Residual Heat Removal System

a. Inspection Scope

The inspectors observed Unit 3 Operations personnel response and Engineering Department activities following the identification of an excessive amount of air in the "A" train of the residual heat removal (RHR) system on May 28, 2004. The inspectors reviewed the issue and investigated to verify that the "A" and "B" trains of the RHR system remained operable. Dominion has established a root cause investigation team to determine the source of the air in the piping, the safety significance of the issue, and the reportability of this event. URI 05000423/2004006-02 will track this issue pending NRC evaluation of Dominion's investigation and corrective actions.

4OA4 Cross Cutting Aspects of Findings

Section 4OA5.5 describes a finding for the failure to implement procedures for draining the Reactor Coolant System (RCS) which contributed to the Human Performance cross-cutting area. This issue resulted in Dominion's draining down of the RCS for an approximate 1.5 hour period with only one accurate means of level indication.

4OA5 Other Activities

1. Reactor Pressure Vessel Lower Head Penetration Nozzles (TI 2515/152, Revision 1)

a. Inspection Scope

The reactor vessel lower head penetration nozzles were examined by direct visual examination. The inspection was performed by a qualified and knowledgeable Dominion inspector in accordance with written procedure. The visual examination was capable of identifying pressure boundary leakage as described in the bulletin and reactor pressure under-vessel corrosion. Small boric acid deposits representing RCS leakage, as described in Bulletin 2003-02, could be identified and characterized. Each nozzle was examined around the entire circumference of each penetration. Dominion's inspection report noted that the reactor vessel lower head was free of insulation, debris, boron deposits, and viewing obstructions. No material deficiencies were identified and there were no impediments to the inspection.

NRC inspectors inspected the bottom head following Dominion's inspection and noted many indications of boric acid deposits on the lower head. The NRC inspectors questioned Dominion as to the source of the deposits and the quality of the initial inspection. Dominion investigated the issue and found that the deposits existed due to leakage from the cavity drain seal used during previous refueling operations. Dominion verified that there were no boron deposits around the annulus of the lower head penetrations. Additionally, Dominion cleaned the lower head to ensure that the existing deposits did not mask future leak indication.

b. Findings

No findings of significance were identified.

2. Reactor Containment Sump Blockage (TI 2515/153)

a. Inspection Scope

The inspectors completed the inspection activities of the Unit 3 emergency sump associated with TI 2515/153, which included an evaluation of Dominion's response to NRC Bulletin 2003-001, Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors. The inspectors performed a walkdown of the containment sump area to assess the as-built condition of the sump screen and other components, the architecture of the sump grating supports, and the condition of the surfaces and components internal to the containment sump screen. Additionally, the inspectors verified that the compensatory measures described in Dominion's response to Bulletin 2003-001 had been appropriately implemented.

b. Findings

No findings of significance were identified.

3. Offsite Power System Operational Readiness (TI 2515/156)

a. Inspection Scope

The inspectors completed activities associated with Temporary Instruction 2515/156, Offsite Power System Operational Readiness. The inspectors collected and reviewed information pertaining to the offsite power system specifically relating to the areas of the maintenance rule (10 CFR 50.65), the station blackout rule (10 CFR 50.63), offsite power operability, and corrective actions. The inspectors reviewed this data against the requirements of 10 CFR 50 Appendix A General Design Criterion 17, Electric Power Systems, and Plant Technical Specifications.

b. Findings

No findings of significance were identified.

4. (Closed) URI 05000336/2004005-02, Evaluating the Adequacy of Spent Fuel Pool (SFP) Level Indication Measurements and the Potential Risk Significance of an Actual SFP Level Error

An unresolved item (URI) was opened in NRC Integrated Inspection Report 05000336/2004005 to track this issue pending the resolution of NRC questions necessary to evaluate the adequacy of SFP level indication measurements and the potential risk significance of an actual SFP level below that which is required by TS 4.9.12, Spent Fuel Pool Level. Modification M2-039-095 identified a previous installation of a Unit 2 SFP level indicator without documentation as a modification or a bypass jumper. Modification M2-039-095 developed a new modification to the spent

fuel pool, validated the level indication provided by the undocumented indicator, and compared the level indication provided by the new modification with that provided by the undocumented modification and the level indication provided by SFP level instrument LS-7424. The inspectors conducted follow-up inspection activities to resolve differences among Engineering Record 96-0291 calculations, LS-7424 calibration data, and M2-039-095 data to ensure that TS requirements for SFP level above the irradiated fuel are met. The follow-up inspection included a walkdown of the spent fuel pool area and interviews with Millstone lead reactor engineer, the SFP system engineer, and a maintenance I&C senior nuclear instrument technician. As a result of this follow-up activity, the inspectors concluded that the SFP level at Unit 2 is being maintained in compliance with TS 4.9.12 for SFP level.

5. (Closed) URI 05000336/2003010-01, Conducted Reactor Vessel Draindown Without Sufficient Level Indication

Introduction. A Green non-cited violation (NCV) of Technical Specification 6.8.1a was identified for the failure to adequately implement procedures for draining the reactor coolant system (RCS).

Description. On November 15, 2003, Dominion conducted a draindown of the refuel pool to the refueling water storage tank (RWST) using a low pressure safety injection system operating procedure. With the pressurizer empty, and while waiting for the RCS mid-loop wide range level indication to come on scale, the operators were monitoring refuel pool level by remote camera and mass balance calculations. Step 4.5.4 of the Operating Procedure (OP) 2307 (Low Pressure Injection System) requires the control room to establish communications with a watchstander at the refuel pool. Contrary to this step, operators on the previous shift released the watchstander monitoring refuel pool level changes locally prior to completing the draindown. When the RCS mid-loop wide range level indication did not come on scale as expected, the operators secured the drain. The operators investigated and determined that the remote camera indication was being read incorrectly. As a result, the mass balance was the only means of accurate level indication during approximately 1.5 hours of the draindown with the RCS in a partial drain condition and outside of the pressurizer level indicating range.

The inspectors noted that a change made to OP 2307 on October 28, 2003 removed the requirement to conduct a valve lineup prior to utilizing the RCS mid-loop wide range level indication. Dominion determined that the RCS mid-loop wide range level indication did not come on scale as expected because the instrument had previously been isolated to support unrelated testing and was not restored to service following this testing. The removal of the valve lineup verification in OP 2307 precluded the discovery of the isolated RCS mid-loop wide range level indication prior to the draindown. The inspectors also noted that there were no precautions for inventory disagreements for which the evolution should be stopped and the disagreement investigated. As a result, the operators continued the draindown in spite of a discrepancy between the remote camera indication and the mass balance calculations. When the operators secured the draindown, the mass balance and remote camera indications disagreed by greater than 25 inches. Greater than 5 inches difference in level indication is a termination criteria in

a similar licensee procedure that drains the RCS to mid-loop. Additionally, operators continued to drain the RCS prior to resolving why the RCS mid-loop level indication did not come on scale as expected.

Analysis. The performance deficiency was the failure to adequately implement procedures for draining the RCS. This resulted in having only one accurate means of RCS level indication for a period during a planned draindown of the refueling cavity from the refueling condition of 23 feet of water above the reactor vessel flange to 0.5 feet of water level above the reactor vessel flange in preparation for reactor head reinstallation. The period of concern was the approximate 1.5 hours that it took to drain from approximately 6.6 feet to 1.5 feet of water level above the reactor vessel flange. During this period only the mass balance calculation was an accurate means of RCS level indication. This issue was more than minor because it was associated with the initiating event cornerstone attribute of configuration control during shutdown and affected the likelihood of causing a loss of reactor water inventory to the point that shutdown cooling (SDC) could be lost.

In accordance with the Reactor Safety SDP, this shutdown condition was evaluated using NRC Inspection Manual Chapter (IMC) 0609, Appendix G, Shutdown Operations Significance Determination Process. This issue was evaluated for the increase in Core Damage Frequency (ΔCDF) and increase in Large Early Release Frequency (ΔLERF). This issue was not a loss of control as defined by Appendix G, Table 1, so the Phase 1 screening process for Cold Shutdown and Refueling Operations with the RCS open and Refueling Cavity level < 23 feet was used. A Phase 2 analysis was needed because two sources of continuous level instrumentation, with the pressurizer empty, were not available. Additionally, the operator assigned to monitor the refuel pool level changes locally was released from his duties and control room operators were reading the remote camera indication incorrectly. As a result, there was an increase in the likelihood of a loss of RCS inventory with only one means of level indication available.

The issue was determined to be of very low safety significance (Green) for both ΔCDF and ΔLERF with a Phase 2 analysis using the DRAFT IMC 0609, Appendix G, Risk Informed Inspection Template for PWR during Shutdown, dated December 18, 2003. The draindown without two means of level indication was assumed to be a precursor to a loss of inventory (LOI) event and a subsequent loss of shutdown cooling. The plant operating state (POS) was cold shutdown or POS2. An LOI initiating event frequency of 4 was estimated using Table 3 based on greater than 2 hours to drain down from 6.6 feet of water level above the reactor vessel flange to the point that the SDC would have been lost due to loss of Low Pressure Safety Injection (LPSI) pump suction; the ease with which the operators could stop the draindown by closing one valve from the control room; the draindown would have stopped once the LPSI pump lost suction because the drain path was from the LPSI pump discharge to the RWST; and the ability of the operators to restore shutdown cooling once it was lost. Using Worksheet 6 (LOI-POS2), the following function credit was given: FEED - 1 in 10000, both High Pressure Safety Injection (HPSI) pumps were available, limited by operator credit; RHR-R - 1 in 1000, limited by operator credit; and RWSTMU - 1 in 100, limited by operator credit. The LEAK-STOP function would automatically terminate at the bottom of the hotleg without

operator action if SDC was lost. The dominant core damage sequence was a LOI and failure of the operator to feed using either the LPSI or HPSI injection paths, prior to core damage. LERF was not a concern because the containment, while open, was capable of reclosure prior to RCS boiling.

Enforcement. Technical Specification 6.8.1a 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. Step 4.5.4 of OP 2307 requires the control room to establish and maintain communications with a watchstander at the refuel pool. Contrary to this requirement, Dominion secured the operator stationed locally at the refuel pool during the draindown evolution. Also, OP 2307 failed to include instructions for verifying level instrumentation was in service prior to the draindown. This resulted in a draindown of the RCS for an approximate 1.5 hour period with only one accurate means of level indication. This violation has been determined to have a very low safety significance and is in Dominion's corrective action program as CR-03-11600 and CR-04-06473. Therefore, this violation is being treated as a non-cited violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy (**NCV 05000336/2004006-03**).

6. (Closed) URI 05000336/2003010-05, Reactor Coolant System Pressurizer Pressure Boundary

On October 11, 2003, while Unit 2 was in a refueling outage, Dominion identified that very small leakage through two pressurizer heater sleeve penetrations had occurred while the unit was in operation. An unresolved item (URI) was opened in NRC Integrated Inspection Report (IR) 05000336/2003010 to determine if Dominion's corrective actions taken during a previous outage were adequate and to establish the significance of this issue. The LER associated with this issue was discussed and closed in NRC Integrated IR 05000336/2004005. However, the URI was inadvertently left out of the List of Items Opened, Closed, and Discussed.

4OA6 Meetings, Including Exit

Inservice Inspection Activities Exit Meeting Summary

The inspectors presented the inspection results to Dominion management at the conclusion of the inspection on April 16, 2004. Dominion acknowledged the conclusions presented.

Integrated Inspection Exit Meeting Summary

On July 22, 2004, the resident inspectors presented the overall inspection results to Mr. Stephen Scace and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was neither provided nor examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel
T. Armagno, Supervisor, Health Physics
P. Calandra, ALARA Coordinator
K. Carlson, Radiation Protection Technician
J. Campbell, Security Manager
T. Dagata, Radiation Protection Technician
D. Delcore, Shift Supervisor, Health Physics, Unit 2
D. Dodson, Licensing Manager
L. Donovan, Radiological Engineer ALARA
M. Finnegan, Radiation Protection Supervisor
R. Fuller, ISI Level III
I. Haas, Acting Supervisor Exposure Control
K. Hajnal, Radiation Protection Supervisor
A. Johnson, Supervisor, Radiation Protection Support, (Technical)
A. Jordan, Director, Nuclear Engineering
J. Jozwick, Radiation Protection Technician
D. Knopf, Primary Maintenance Supervisor
E. Laine, (Acting) Manager, Radiological Protection & Chemistry
L. Loomis, SG Manager
P. Marchese, Supervisor, Site Access Services
C. Marlow, Radiation Protection Technician
F. Matovic, Radiation Protection Technician
P. Parulis, Manager, Nuclear Oversight
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
J. Smith, Security Operations Coordinator
M. Stark, SG Project Manager

NRC personnel
G. T. Bowman, Reactor Inspector, Division of Reactor Safety (DRS)
W. A. Cook, Senior Project Engineer, Division of Reactor Projects (DRP)
P. D. Kaufman, Senior Reactor Inspector, DRS
S. R. Kennedy, Resident Inspector
K. A. Mangan, Resident Inspector
M. C. Modes, Senior Reactor Inspector, DRS
T. A. Moslak, Health Physicist, DRS
N. T. Sanfilippo, Reactor Engineer
S. M. Schneider, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000423/2004006-02	URI	Air Entrainment of Residual Heat Removal System (4OA3.4)

Opened and Closed

05000423/2004006-01	NCV	Inadequate corrective actions to prevent repetitive failures of the QSS and RSS containment isolation check valves (1R22)
05000336/2004006-03	NCV	Failure to adequately implement procedures for draining the RCS (4OA5.5)

Closed

05000336/2003005-00	LER	Loss of Shutdown Cooling During Refueling Outage (4OA3.1)
05000336/2004001-00	LER	Manual Reactor Trip on Low Steam Generator Level Resulting From a Feedwater Pump Spurious Relay Operation (4OA3.2)
05000336/2004002-00	LER	Automatic Reactor Trip on Low Steam Generator Level Resulted From a Feedwater Pump Trip During Test (4OA3.3)
05000336/2004005-02	URI	Evaluating the Adequacy of SFP Level Indication Measurements and the Potential Risk Significance of an Actual SFP Level (4OA5.4)
05000336/2003010-01	URI	Conducted Reactor Vessel Draindown Without Sufficient Level Indication (4OA5.5)
05000336/2003010-05	URI	Reactor Coolant System Pressurizer Pressure Boundary (4OA5.6)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Final Safety Analysis Report, Figure 7.2-1, Reactor Protection System Block Diagram
DWG 25203-30022, Revision 21, Sheet 1, (DV10) 125 VDC & 120 VAC Distribution Panel Schedule
DWG 25203-30022, Revision 6, Sheet 2, (DV30) 125 VDC & 120 VAC Distribution Panel Schedule
DWG 25203-30022, Revision 20, Sheet 3, (DV20) 125 VDC & 120 VAC Distribution Panel Schedule
DWG 25203-30022, Revision 6, Sheet 4, (DV40) 125 VDC & 120 VAC Distribution Panel Schedule
DWG 25203-30022, Revision 41, Sheet 10, 120 VAC Distribution Panel Schedule VIAC-1 Fac. Z1
DWG 25203-30022, Revision 33, Sheet 11, 120 VAC Distribution Panel Schedule VIAC-3 Fac. Z3
DWG 25203-30022, Revision 38, Sheet 12, 120 VAC Distribution Panel Schedule VIAC-2 Fac. Z2
DWG 25203-30022, Revision 32, Sheet 13, 120 VAC Distribution Panel Schedule VIAC-4 Fac. Z4
OP 2380, Revision 008-08, RPS and NI Safety Channel Operation
SP-2606D-002, Revision 015-04, CS Train Alignment Check, Facility 2
SP-2611D-002, Revision 029-05, RBCCW System Alignment Check, Facility 2
SP-2612D-001, Revision 029-00, Service Water Facility 2
SP-2613B-002, Revision 016-04, DG Valve Alignment Checklist Facility 2
SP-3604C.6, Revision 007-04, Valve Closure Verification for Chemical and Volume Control System Dilution Flow Paths
SP-3604C.6-001, Revision 6, Change 1, Valve Closure Verification for Water Supply to Emergency Boration
SP-3604C.6-002, Revision 5, Change 1, Valve Closure Verification for CVCS Dilution Flow Path
CR-04-03985, "B" EDG Service Water Strainer Outlet Pressure Gauge Isolation Valve 2-SW-238A Not Fully Open
OP-3346A Revision 021-02, Emergency Diesel Generator
OP-2315D, Revision 012-03, Vital Electrical Switchgear Room Cooling System
12179-EM-116B-34, Emergency Diesel Air Start System
12179-EM-116A-40, Emergency Diesel Lube Oil and Cooling Water
12179-EM-133D-35, Service Water
12179-EM-104A-43, Chemical and Volume Control

Section 1R05: Fire Protection

Millstone Unit 2 Fire Hazards Analysis
Millstone Unit 2 Fire Hazards Analysis Boundary Drawings
Millstone Nuclear Power Station Unit 3, Fire Protection Evaluation Reports, December 2001
Millstone Unit 3 Fire Hazards Analysis
Drawing 25212-24261, Fire Hazards Analysis Plan Elevation 24’-6"

Drawing 25212-24263, Fire Hazards Analysis Plan Elevation 52'-6"
OP-3341D, Revision 014-02, Attachment 12, Table 12, Points Monitored in Zone Panel 9B
CR-04-03921, Operator Aid Procedure Copies in the Field with Outdated Revision
CR-04-05453, General Housekeeping in Shutdown Cooling Heat Exchanger Areas of the Safeguards Room Needs Improvement
CR-04-05455, Flange Upstream of CTMT Spray PP Discharge Check Valves Have Dissimilar Plugs Installed
CR-04-05457, Position Indicator Clamp on Stem of SDC to "A" LPSI valve, 2-SI-441, Appears To Have Insufficient Thread Engagement

Section 1R06: Flood Protection Measures

Calculation W2-517-1020-RE, Revision 0, MP2, Internal Flooding Evaluation
Calculation 98-ENG-02411-C2, Revision 01, MP2 Evaluation of Flooding Outside Containment
TE M2-EV-98-0194, Technical Evaluation for Internal Flooding Effects on the "A" Engineered Safeguards Feature (ESF) Room

Section 1R07: Heat Sink Performance

EN 31084, Revision 6, Service Water Cooled Heat Exchangers Inspection Form
SP-3626.14, Revision 0-3, RSS Heat Exchanger SW Supply Piping Flush
Generic Letter 89-13, Service Water System Problems Affecting Safety Related Equipment
17273.19-US(B)-342, Revision 2, Recirculation Spray Heat Exchanger "UA" Spray & LHSI Recirculation Modes
SP-3626.12, Revision 003-02, Service Water Components Fresh Water Layup

Section 1R08: Inservice Inspection Activities

CR-04-03518, Weld Wire Found in 'D' SG Hot Leg
CR-04-03556, RPV Head Inspection
CR 04-03489, 3 Indications in Head O-Ring Grooves
W3-03-06218, Final Disposition of Bottom Head Inspection
MP-BACC-003, Revision 000-00, Boric Acid Corrosion Control Outage Examinations
MP-24-SIP-GDL01, Revision 001, Steam Generator Tube Examinations Independent Qualified Data Analysts Guideline
M3-EV-03-0024, Revision 0, Millstone Unit 3 Steam Generator Integrity Degradation Assessment
DWG 25212-29001, Sheet 16165, MSIV Bolt Test Cal Block
MP-PDI-UT-5, Revision 000-01, PDI Generic Procedure for Straight Beam Examination of Bolts and Studs

Section 1R11: Licensed Operator Requalification

SO4305L-H01 - EOP 3503, Shutdown Outside Control Room Lesson Plan
EOP 2540, Revision 21, Functional Recovery, Safety Function Status Checklist
EOP 2541, Appendix 43, Revision 000, Operating Control Room Emergency Air Intakes
EOP 3503, Revision 13-04, Shutdown Outside Control Room
C04301L, Revision 1-3, EAL Classifications Exercises
MP-26-EPI-FAP06-003, Revision 001-03, Millstone Unit 3 EAL Tables
O- 2315A, Revision 014-03, Control Room Air Conditioning System
OPS Form 2540-002, Revision 001, Functional Recovery Resource Assessment Trees

Section 1R12: Maintenance Effectiveness

CR-04-03329, Check Valve 3RSS*V009 Failed LLRT
CR-04-03130, 3QSS*V4 Failed LLRT. Would Hold only 13.5 lbs.(LLRT Test Pressure is 39 lbs)
CR-04-03699, Stack High Range Monitor RM-8168 High Alarm Setpoint Found Out Of Spec High
CR-04-03040, Post Main Steam Safety Valve Testing Inspections Identified Several Leaking Valves
CR-04-04370, TCB-8 Failed to Reclose During RPS Matrix Path Test (SP-2401D)
Millstone Unit 2 Maintenance Rule Scoping Tables
Millstone Unit 3 Maintenance Rule Scoping Tables
SP-2404AR, Revision 004-07, High Range Stack Gas Radiation Monitor RM-8168 Functional Test
Maintenance Rule (a)(1), Action Plan for Process and Area Radiation Monitoring
MP-SA-03-63, Millstone Station Radiation Monitor Pressure Self-Assessment
SP-3612B.4-076, Revision 004, Type C LLRT - Penetration No.100(i) [3QSS*V4]
SP-3612B.4-088, Revision 004, Type C LLRT - Penetration No.109(i) [3RSS*V9]
Maintenance Rule (a)(1), Evaluation for Containment Isolation System (3312A)

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

CR-02-13482 - OE 15187, Requirements for RHR train availability during refueling while the upper internals are in place and the cavity is flooded
CR-04-05842, Surveillance to Manually Cycle MSS*MOV 74A-D does not Exist
OD MP3-069-04, The Manual Opening of Valves 3 MSS*MOV 74A-D is not Included in the IST Program
MP-13-PRA-GDL01, Revision 000, Performing Risk Reviews
MP-13-PRA-REF01, Revision 000, PRA Reference for Missed TS Surveillances
NUMARC 93-01, Industry Guidelines for Monitoring Effectiveness of Maintenance at Nuclear Power Plants
MP-20-WM-FAP02.1, Revision 008, Conduct of On-Line Maintenance
Shutdown Safety Assessment Checklist dated 4/4/04
Shutdown Safety Assessment Checklist dated 4/13/04
OP-3260A, Revision 14, Conduct of Outages
OP-3260A-004, Revision 12, Shutdown Safety Assessment Checklist
RP-5, Revision 3, Operability Determinations

Equipment Out of Service Quantitative Risk Assessment Tool
Major Equipment Schedule
OR-04-003 - 3R09, Shutdown Risk Review Team Pre-Outage Report
NEU-95-619 Northeast Utilities Service Company, Loss of RHR Cooling Evaluation

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

CR-04-03205, Missile Shield Lift Rig Failure
CR-04-0354B, Fuel Assembly H-42 has Broken Spring Screw and is Preventing Refuel Machine from Latching Assembly Properly
CR-04-06026, OP-2207, Attachment 17 Does Not Give Any Guidance For Recovery of RCP Bleedoff Pressure/Flow Control If Both 2-CH-505 And 2-CH-198 Close Simultaneously
Recovery Plan for Moving Fuel Assembly H-42 dated 4/14/04
Recovery Plan for Moving Fuel Assembly H-42 dated 4/15/04
Drawing 112SE29, Top Nozzle Assembly 17X17
OP-3260A, Revision 14, Conduct of Outage
OP-3303D, Revision 011, Fuel Handling Tool
FSAR Chapter 9.1, Fuel Storage and Handling
12179-EM-2F-12, Revision 9, Machine Location-Containment Structure - Section 2-2
12179-EV-28H-3, Revision 3, Misc Equipment Supports CRD Shield Left Rig
Event Review Team Report, Reactor Missile Shield Rig Failure Event Review
MP3790AM, Revision 6-1, Missile Shield Handling
AOP 2568, Revision 007-01, Reactor Coolant System Leak
AOP 2517, Revision 000-03, Circulating Water Malfunctions
ARP 2590B, Revision 005, A-10, RCP Control Bleed-Off Press Hi
Unit 2 Control Room Logs

Section 1R15: Operability Evaluations

CR-04-06096, Heat Exchanger End Bell Leaks Following Maintenance
CR-04-06178, Temporary Fans Found Not Seismically Restrained IAW 2315D
CR-04-04370, TCB-8 Failed To Reclose During RPS Matrix Path Test (SP-2401D)
CR-04-05008, Various Timer Calibration Failures on Unit 2 "A" Diesel and Wiring Discrepancy on Timer TD1
CR-04-05017, Engineering Evaluation of Operability and Possible Common Mode Failure Concern on CR-04-05008
CR-04-04250, Nuclear Oversight Finding 04-03-01M: Post Weld Heat Treatment Vendor Not Qualified by Dominion QA Program
CR-04-05842, Surveillance to Manually Cycling MSS*MOV 74A-D Does Not Exist
CR-04-05540, "B" EDG Fuel Rack Stop Is Set At The Incorrect Position
CR-04-04761, Venturi Feedflow Indications May Not be Accurate
CR-04-02795, Poor Braze Penetration in Flange Joint Removed from MP3 Service Water
CR-04-03704, 360 Degree Brazed Joint crack in a Tee in SW line 3-SWP-003-67-3
CR-04-04240, Leak from Brazed Joint on Circ Pump Lube Water Supply Header
CR-04-05119, Inspection of 2-SW-231A ("A" D/G Heat Exchanger Service Water Bypass Valve) Identified that the Valve is not Fully Closed or Slightly Open
CR-04-04080, AEAS Boundary Issue

OD MP2-066-04, Vendor Was Not On The Safety Related QA Qualified Vendor List
OD MP2-067-04, "A" EDG Heat Exchanger Bypass Valve Not Fully Closing
OD MP3-069-04, The Manual Opening of Valves 3MSS*MOV 74A-D is not Included in the IST Program
RP-5, Revision 003, Operability Determinations
MP3-066-04, Operability Determination for Venturi Feedflow indication
MP-20-WM-FAP02.1, Revision 008, Conduct of On-Line Maintenance
MP-13-PRA-REF01, Revision 000, PRA Reference for Missed TS Surveillances
MP-24-ENG-FAP947, Revision 0-001, Non-Code Repairs in Safety Class 3 Piping
Unit 3 Technical Specification 4.0.3 and 4.0.5, Surveillance Requirements
Unit 2 Technical Specification 3.8.1, AC Sources
SP-2613I, "A" Emergency DG Loss of Load Test
SP-2613K, Periodic DG Slow Start Operability Test, Facility 1 (Loaded Run)
SP-2401D, Revision 012-05, RPS Matrix Logic and Trip path Relay Test Data Sheet
Electrical Loading Calculation, PA-079-126-01027E2, Revision 02, Change 05
Reg Guide 1.9, Selection, Design, Qualification and Testing of EDG Units Used as Class IE Onsite Electric Power Systems at Nuclear Power Plants
Unit 2 FSAR, Chapter 8.3, Emergency Generators
Millstone Power Station Unit 2 Final Safety Analysis Report, Section 8.3.4.1
NUCENG-04-47, Brazed Flange Failure Extent of Condition Review CR-04-02795
12179-EM-133E, Service Water
RAC 05, Revision 002-02, Reportability Determination for CR-04-2795
Calc # 96-001 Revision 1-003, Empirical Adjustment of the MP3 SW Model to 1995 Flow Test Data and Incorporation of the Latest Service Water System Design
OP2343, Revision 020-02, 4160 Volt Electrical System
OP2315D, Revision 012-03, Vital Electrical Switchgear Room Cooling System
SE-93-623, July 1, 1993, MP2-EWR No. 2-93-00061, Memo from A.G. Lassonde to J.M. Bergin
Control Room Logs
Millstone Unit 3 Final Safety Analysis Report, Figure 8.1-1, Electrical Online Diagram
M2-EV-99-0093, Revision 04, Evaluate Compensatory Measures to Use During Loss of Cooling/Ventilation System Supporting Vital Switchgear Rooms

Section 1R16: Operator Work-Arounds

Unit 2 Ops Key Performance Indicators Info Week ending 6-21-2004
COP 200.9, Revision 002, Operational Performance Status
MP-14-OPS-GDL40, Revision 001, Operations Administrative Procedures
Unit 2 Shift Turnover Report for 6-22-2004
CR M2-00-1792, Reactor Regulating Channel Y Operator Work Around
CR-04-04920, L110R Failed
CR-04-06026, RCP Seal Header Pressure Indicator Failure

Section 1R17: Permanent Plant Modifications

DCN DM3-00-0055-03, Install Vent Line off the 18" Service Water Outlet Line of 3RSS*E1B & 3RSS*E1D
Calc # 96-001 Revision 1-003, Empirical Adjustment of the MP3 SW Model to 1995 Flow Test

Data and Incorporation of the Latest Service Water System Design
12179-EM-133B-61, Service Water

Section 1R19: Post-Maintenance Testing

M2-02-03776, 4160 Breaker Preventive Maintenance and Doble Testing
M2-04-01598, Service Water System Piping Inspection on the "A" EDG
M2-04-01660, Service Water Supply Valve to the "B" Emergency Diesel Engine
M2-02-05596, "A" Emergency Diesel Jacket Water Cylinder Leaks
M2-03-02809, Lower 6.9 and 4.16 KV Switchgear Room Cooling Coil
M2-03-14396, #1 Steam, Generator Atmospheric Dump Control Valve Assembly
M3-02-15852, SI Accumulator C Discharge to RCS Loop 3 Cold Leg
M3-02-15635, Westinghouse 10" Check Valve Leaks by Seat
SP-2612C-006, Revision 000, Service Water POV Remote Position Indication IST (Facility 1)
SP-2612A-003, Revision 001-03, "A" SW Pump and Facility 1 Discharge Check Valve IST
SP-3610B.4-002, Revision 2, Accumulator Check Valve Stroke Test (MODE 6 or MODE 0)
SP-3601F.4-004, Revision 007-02, Leak Test of 3RCS*V030, 3RCS*V107, and 3RCS*V146
SP-3610.B.3-001, Revision 011-01, SIL Valve Stroke Time Test - Train B
NEU-96-556, Northeast Utilities Service Company, Accumulator Check Valve Testing
M3-98-01361, Main Steam Line Drain; Solenoid
M3-03-05045, Containment Isolation "B" Steam Generator Steam Header Drain
M3-04-00607, Main Steam Line Drain; Solenoid
M3-03-06867, 3SIL*MV8812B; Full PM, Static Test, Valve Maintenance Adj./Rep
CR-03-04386, Boron Found in the packing area of 3SIL*MV8840 and 3SIL*MV8812B
CR-04-05621, Seat Leakage on 2-SW-89B
CPT 1456, Revision 3, SKV and 7.2 KV Magne-Blast Breaker Tests
MP-20-WP-GDL40, Revision 002-01, Pre-and Post Maintenance Testing
MP-14-OPS-REF01s02, Section 02, Revision 001, Equipment Control and Monitoring
C EN 110-001, Revision 000-02, Post Repair/Replacement Component Leak Test
C EN 110, Revision 000-02, Post Repair/Replacement Leakage Test
MP2719A, Revision 010-01, Emergency Diesel Generator Overhaul
MP2719J, Revision 002-00, Emergency Diesel Generator Jacket Coolant and Air Coolant System Maintenance

Section 1R20: Refueling and Outage Activities

OP-3201, Revision 020-02, Plant Heatup
OP-3206, Revision 010, Plant Shutdown
OP-3208, Revision 020-08, Plant Cooldown
OP-3210A, Revision 012-09, Refueling Preparation
OP-3210B, Revision 008-01, Refueling Operations
OP-3210C, Revision 012-09, Refueling Restoration
OP-3216, Revision 008-04, Reactor Coolant System Drain (IPTE)
OP-3217, Revision 005-04, Reactor Coolant System Fill
OP-3250.01, Revision 009, Individual Loop Drain and Fill (IPTE)
OP-3260A, Revision 014, Conduct of Outages
OP-3270B, Revision 009, Reduced Inventory Operation MODE 0

OPS Form 3270A-3, Revision 1, Mid-loop Emergency Makeup Flowpaths For Cold Leg Opening (Forced And Gravity)
SP-3612A.1, Revision 015-03, Containment Inspections
EOP-3505, Revision 010-01, Loss of Shutdown Cooling and/or RCS Inventory
EOP-3505A, Revision 005-03, Loss Of Spent Fuel Pool Cooling
Letter from Dominion dated March 25, 2004 re: 3R09 Shutdown Risk Review Team Pre-Outage Report
3R09 Shutdown Risk Review Issue Matrix
Westinghouse Proprietary Class 2, Figure 2-2, Millstone Unit 3, Cycle 9, REFERENCE CORE LOADING PATTERN
Letter from Northeast Utilities dated April 4, 1990, re: Generic Letter 88-17

Section 1R22: Surveillance Testing

TS 3/4.6.3, Containment Isolation Valves
TS 3.7.1.1, Main Stream Safety Valves
TS 4.0.5, Inservice Inspection and Testing
TS 3.4.5.1, Accumulators
SP-2403AA, Revision 002-03, Channel "A" ESAS Functional Test
SP-2403AB, Revision 002-03, Channel "B" ESAS Functional Test
SP-2403AC, Revision 002-03, Channel "C" ESAS Functional Test
SP-2403AD, Revision 002-03, Channel "D" ESAS Functional Test
SP-2403M, Revision 001-04, RWST Level Functional Test
SP-2604G, Revision 015-04, Containment Sump and SDC HX RBCCW Outlet Valves Operability Tests, Facility 1
SP-2604G-001, Revision 016-01, Containment Sump and SDC HX RBCCW Outlet Valves Operability Tests, Facility 1
SP-2606D-004, Revision 000-04, CS Valve Stroke and Timing IST
SP-2610A, Motor Driven AFP Operability Test, Facility 1
OPS Form 2610A-001, Revision 010-01, Motor Driven AFP Operability Test, Facility 1
SP-3610B.4, Revision 8, Accumulator Check Valve Stroke Test
SP-3610B.4-002, Revision 002, Accumulator Check Valve Stroke Test (Mode 6 or Mode 0)
SP-3612B.4, Revision 014, Containment Local Leak Rate Test Type "C" Penetrations
SP-3712G, Revision 007-02, Main Steam Code Safety Valve Surveillance Testing (IPTE)
SP-3712G-001, Revision 008-02, Main Steam Code Safety Surveillance Testing Data Sheet
SP-3608.6, Revision 13-04, Safety Injection System Valve Operability Test
SP-3608.6-005, Revision 7-03, Refueling Full Stroke Testing of SIH Header Check Valves
SP-2613K, Revision 002-05, Diesel Generator Slow Start Operability Test, Facility 1
CR-02-12342, 3QSS*MOV34A/B: Contingency AWOS Required for 3R09 to Remove and Bench Test These Valves to Verify Leak Tightness
CR-04-03040, Post Main Steam Safety Valve Testing Inspections Identified Several Leaking Valves
CR-04-03130, 3QSS*V4 Failed LLRT, Would Hold Only 13.5 lbs. (LLRT Test Pressure is 39.0 lbs.). The Flange Gasket was Leak Tight, Air was Blowing Out the Vent Valve.
CR-04-03153, Lessons Learned - Main Steam Code Safety Valve Testing IPTE ("Simmer Testing")
CR-04-03329, Check Valve 3RSS*V009 Failed LLRT

Unit 3 Maintenance Rule (a)(1) Evaluation for Containment Isolation System (3312A)
ANSI/ANS-56.8-2002, Containment System Leakage Testing Requirements
DWG 12179-EM-115A-31, Quench Spray & H_2 Recombiner
DWG 12179-EM-112C-34, Low Pressure Safety Injection/Containment Recirculation
ENG Form 31151-051, Revision 1, IST pump Test Plan, 3SIH*P1A
NEU-99-108 - Northeast Nuclear Energy Company, Accumulator Check Valve Test Document Methodology Used for Curves on SP-3610B.4, Revision 7, Attachment 1

Section 1R23: Temporary Plant Modifications

TM-2-04-003, Temporary Blind Spacer at 2-SW-231A Location
WC 10, Revision 004-03, Temporary Modifications

Section 1EP6: Drill Evaluation

Millstone Emergency Plan, Revision 29, Change 5
MP-26-EPI-FAP06-002, Revision 002, Millstone Unit 2 EAL Tables
MP-26-EPI-FAP07-001, Revision 001, Incident Report Form (IRF)
S04403L - Cycle 04-4, Simulator Session #3,Revision 0
S04405L - Cycle 04-4, Simulator Session #5, Revision 0
MP-26-EPI-FAP06-003, Revision 001-03, Millstone Unit 3 EAL Tables

Section 2OS1: Access Control to Radiologically Significant Areas and Section 2OS2: ALARA Planning and Controls

RPM 1.3.8, Revision 8, Criteria for Dosimetry Issue
RPM 1.4.1, Revision 7, ALARA Reviews and Reports
RPM 1.4.2, Revision 2, ALARA Engineering Controls
RPM 1.4.4, Revision 2, Temporary Shielding
RPM 1.5.2, Revision 4, High Radiation Area Key Control
RPM 1.5.5, Revision 4, Guidelines for Performance of Radiological Surveys
RPM 1.5.6, Revision 3, Survey Documentation and Disposition
RPM 2.1.1, Revision 5, Issuance and Control of RWPs
RPM 2.1.2, Revision 2, ALARA Interface with the RWP Process
RPM 2.4.1, Revision 3, Posting of Radiological Control Areas
RPM 2.82, Revision 2, Requirements for Entry into MIDS Very High Radiation Areas
OP 3361A, Revision 7, Personnel Access Control to the MID System Components Inside Containment
RPM 5.2.2, Revision 10, Basic Radiation Worker Responsibilities
RPM 5.2.3, Revision 3, ALARA Program and Policy
RPM-GDL-008, Revision 0, Electronic Dosimeter Alarm Set Points
EN 31013, Revision 2, Spent Fuel Pool Operations

Condition Reports
04-03116, 04-02189, 04-02428, 04-02590, 04-02035, 04-02549, 04-02744, 04-01270, 04-01520, 04-01889, 04-00237, 04-03048, 04-03143, 04-03287, 04-02428, 04-03262

ALARA Council Meeting Notes
Meeting conducted on: 2/10/04, 2/24/04, 3/4/04, 3/6/04, 3/9/04

Section 4OA1: Performance Indicator Verification

Performance Indicator Report, Protected Area Security Equipment Performance, 1st Quarter 2003 - 1st Quarter 2004
Millstone Power Station Semi-Annual Part 26 Performance Data Report for January 1, 2003 to December 31, 2003
Auxiliary Feedwater Unavailability Tables
MP3, Cycle 9 Power History
MP2 Diesel System Engineer Log
CR-03-06958, Error Made When Reporting MP2 Emergency Diesel Generator Unavailabilty
CR-04-03918, Scheduler's PRA Evaluation Does Not Reflect "A" EDG Unavailabilty for a Scheduled Surveillance
CR-04-03740, Enhancements Needed to Service Water Procedures to Minimize Diesel Unavailabilty Time
Unit 2 Control Room Logs
MP2, Cycles 15 and 16 Power History Year 2003 and 2004

Section 4OA2: Identification of Resolution of Problems

CR-03-04296, Not all Components required to Start EDG on SI are Included when Timing the EDG Start in OP 3646.21
CR-03-02995 While Shifting RCP Bleed Off From EDST to VCT, RCP Bleed Off Isolated
CR-02-03435 2-CH-198/505 Controls Design Prevents Proper Operation
CR-02-04792 Request for Engineering Assistance to Correct Problems with 2-CH-198 & 2-CH-05 Impacting Auto RCP Bleedoff Pressure Control
CR-03-00502, Loss of Control of M&TE in Violation of 10CFR50 Appendix B Criterion XII
CR-04-01846, M&TE Lost
CR-04-01847, M&TE Lost
CR-04-01842, M&TE Lost
CR-02-01500, While Searching for Missing and Overdue M&TE at the CBM Storage Room, 50+ M&TE Were Discovered Overdue Calibration, Some By As Much As 4 Years
CR-04-06414, Adverse Trend CR For M&TE Lost Prior To February 20, 2004
Generic Letter 96-01, Testing of Safety-Related Logic Circuits
12179-ESK-8KC-12, 125VDC Gen "A" Start Ckt 3EGSA01 [3EGS*EG-A]
SP-3646A.1, Revision 15-04, Emergency Diesel Generator "A" Operability Test
SP-3646A1-001, Revision 015, Emergency Diesel Generator "A" Operability Tests
SP-3646A.21, Revision 006-03, DG Auto Start on ESF Signal
SP-3614A.21-001, Revision 005-01, EDG "A" Auto Start on ESF Signal
SP-3614A.21-002, Revision 005-01, EDG "B" Auto Start on ESF Signal
MP-16-MMM, Revision 009, Organizational Effectiveness (Corrective Action Program, Operating Experience Program, Independent Safety Engineering Group)
OP 2201, Revision 029-06, Attachment 14, Operation of 2-CH-505 and 2-CH-198
AOP 2571, Revision 4, Inadvertent Emergency Core Cooling System Initiation
C OP 200.9, Revision 002, Operational Performance Status

WC 8, Revision 005-01, Control and Calibration of Measuring and Test Equipment
Memo, October 15, 1997, AE-97-4282, Measuring and test Equipment Audit A60607 Follow-up
CR-03-09547, During The Review of CR-03-09278 It Was Noted That a M&TE Generic Usage Issue Was Involved and Therefore An Extent of Condition Review May Be Warranted

Section 4OA3: Event Followup

SP-3610A.3, Revision 004-02, RHR System Vent and Valve Lineup Verification
12179-EM-112A, Low Pressure Safety Injection
SP-3610A.3-001, Revision 004-02, RHR System Venting and Valve Lineup completed on April 30, May 3, May 28, June 13, June 15
CR-04-05822, Unusual Amount of Gas Observed during Venting of 'A' RHR System Venting
CR-04-05384, During 'A' Train RHR Vent and Valve Line-up, Excessive Amounts of Gasses were Vented
CR-04-06166, Reportability Evaluation Required to Evaluate Operability of 'A' RHR Pump between 3R09 Moded 4 and June 13, 2004

Section 4OA5: Other Activities

NRC Bulletin, 2003-001, Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors
Serial No. 03-368, Revision 0, 50-336/423, Millstone Power Station Units 2 and 3 Sixty Day Response to NRC Bulletin 2003-01
Serial Number 03-459A B19000, Millstone Power Station Unit 3 90 day Response to NRC Bulletin 2003-02 Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity
EOP 35, GA-10, Revision 001, Filling RWST
EOP 35, ECA-1.1, Revision 13, Loss of Emergency Coolant Recirculation
EOP 35, ES-1.3, Revision 11, Transfer to Cold Leg Recirculation
SP-3612A.1-002, Containment Sump Inspection
CR-03-05551, NRC Bulletin 2003-01 Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors
NUREG/CR6808, Knowledge Bases for the Effect of Debris on Pressurized Water Reactor Emergency Core Cooling and Sump Performance
TI 2515/153, Reactor Containment Sump Blockage
WO-M3-03-06218, ISI Inspection required on the Unit 3 RPV Lower Head Instrument Penetrations

LIST OF ACRONYMS

ALARA	as low as reasonably achievable
AR	ALARA review
ASME	American Society of Mechanical Engineers
CDF	core damage frequency
CIV	containment isolation valve
CR	condition report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	emergency diesel generator
EOOS	equipment out of service
EPRI	Electric Power Research Institute
ESF	engineered safety features
FSAR	Final Safety Analysis Report
HPSI	high pressure safety injection
HRA	high radiation area
IMC	inspection manual chapter
IR	inspection report
LER	licensee event report
LERF	large early release frequency
LHRA	locked high radiation area
LLRT	local leak rate tests
LOI	loss of inventory
LPSI	low pressure safety injection
MIDS	movable incore detectors
MOV	motor operated valve
MR	maintenance rule
M&TE	measuring and test equipment
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
OP	operating procedure
OWA	operator work-arounds
PI	performance indicator
PMT	post-maintenance testing
POS	plant operating status
QSS	quench spray system
RCP	reactor coolant pump
RCS	reactor coolant system
RPS	reactor protection system
RSS	recirculation spray system
RWP	radiation work permit
RWST	refueling water storage tank
SFP	spent fuel pool
SDC	shutdown cooling
SG	steam generators
SGFP	steam generator feedwater pump

SSC	structures, systems, and components
SDP	significance determination process
TS	technical specifications
URI	unresolved item
VHRA	very high radiation area