November 10, 2003

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 05000336/2003004 AND 05000423/2003004

Dear Mr. Christian:

On September 27, 2003, the US Nuclear Regulatory Commission (NRC) completed inspections at your Millstone Power Station Unit 2 and Unit 3. The enclosed integrated inspection report documents the inspection findings, which were discussed on October 15, 2003 with Mr. J. Alan Price and other members of your staff.

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

The report documents one NRC-identified finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV), consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, 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 Millstone Power Station.

Since the terrorist attacks on September 11, 2001, the NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision, to audit and inspect licensee implementation of the interim compensatory measures required by order. Phase 1 of TI 2515/148 was completed at all commercial power nuclear power plants during calendar year 2002 and the remaining inspection activities for Millstone Power Station were completed in calendar year 2003. The NRC will continue to monitor overall safeguards and security controls at Millstone.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, 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/

Brian J. McDermott, Chief
Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000336/2003004 and 05000423/2003004
w/Attachment: Supplemental Information

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REGION I

Docket No.:	05000336, 05000423
License No.:	DPR-65, NPF-49
Report No.:	05000336/2003004 and 05000423/2003004
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2 and Unit 3
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	June 29, 2003 - September 27, 2003
Inspectors:	S. M. Schneider, Senior Resident Inspector P. C. Cataldo, Resident Inspector S. R. Kennedy, Resident Inspector K. A. Mangan, Resident Inspector C. M. Long, Reactor Engineer C. G. Cahill, Senior Reactor Inspector, Division of Reactor Safety (DRS) L. S. Cheung, Senior Reactor Inspector, DRS E. W. Cobey, Senior Reactor Analyst, DRS J. M. D'Antonio, Operations Engineer, DRS J. C. Jang, Senior Health Physicist, DRS K. M. Jenison, Senior Project Engineer, Division of Reactor Projects (DRP) N. T. McNamara, Emergency Preparedness Specialist, DRS T. A. Moslak, Health Physicist, DRS T. L. O'Hara, Reactor Inspector, DRS B. E. Sienel, Resident Inspector, Vermont Yankee D. Prevatte, NRC Contractor
Approved by:	Brian J. McDermott, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

CONTENTS

SUMMARY OF FINDINGS

IR 05000336/2003-004, 05000423/2003-004; 06/29/2003 - 09/27/2003; Millstone Power Station, Unit 2 and Unit 3; Operability Evaluations.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by regional inspectors. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter () 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: Mitigating Systems

Unit 3

- Green. The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, for the failure to evaluate and correct an identified condition adverse to quality (physical degradation) associated with the "B" service water (SW) pump/motor coupling. The inspectors found that the licensee had not properly evaluated a degraded condition of the "B" SW pump/motor coupling and associated fasteners after a condition report documented the "B" SW pump packing and coupling degradation. Subsequently, the licensee declared the pump inoperable and replaced the coupling.

  The finding is more than minor because the failure to evaluate the identified degradation of a mitigating system, and to take corrective actions, would have allowed further degradation and affected operability of the system. The finding is associated with the equipment performance attribute of the mitigating systems cornerstone and the objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. However, the finding was determined to be of very low safety significance based on the as-found condition and an analysis of the existing degradation that concluded the SW pump was capable of meeting its safety function. (Section 1R15)

B. Licensee-Identified Findings

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 operated at essentially 100% power for the duration of the inspection period with several exceptions. On July 12, 2003, operators reduced power to approximately 93% to provide low pressure turbine exhaust pressure margin to allow condenser backflushing and waterbox inspections for tube leaks. On July 17, 2003, operators reduced power to 80% to facilitate condenser backflushing. On July 26, 2003, power was reduced to 90% for four hours to facilitate turbine control valve testing. During the grid disturbance on August 14, 2003, Unit 2 reduced power to 98 percent for approximately 7 hours before it was returned to 100 percent power. Unit 2 operated at essentially 100 percent power for the remainder of the period.

Unit 3 operated at essentially 100% power for the duration of the inspection period with one exception. On August 14, 2003, automatic control rod insertion reduced power to 87 percent during the grid transients resulting from the grid disturbance. Unit 3 returned to 100 percent power the next day and operated at that power level for the remainder of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity [R]

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

Site Hurricane Seasonal Susceptibility

The inspectors reviewed the licensee's site preparation for adverse weather relative to the protection of safety-related structures, systems, and components (SSCs) during the current hurricane season for both Unit 2 and Unit 3. This review focused on the adequacy of applicable procedures and design features established to protect safety-related systems from the effects of a hurricane. The inspectors reviewed the applicable updated Final Safety Analysis Report (FSAR) regarding design features of various SSCs. The inspectors also conducted walkdowns of flood sensitive areas to ensure protective features were available or in place for safety-related systems susceptible to flooding. Documents reviewed during the inspection are listed in the attachment.

Unit 2 Risk Significant System required to be Protected from Adverse Weather

The inspectors reviewed the licensee's preparation for adverse weather relative to the protection of the Service Water System in Unit 2 from the effects of a hurricane. Specifically, the inspectors reviewed FSAR requirements as they relate to the protection of the portion of the Service Water System located in the Intake Structure. The inspectors reviewed licensee procedures and walked down the Service Water System and Intake Structure. The inspectors also interviewed operators who would be

responsible to respond to the Intake Structure in the event that flooding levels reached certain limits. The inspectors also visually observed the condition of a top hat that is used to protect one Service Water pump from flooding impacts should the Intake Structure be flooded to certain levels. Documents reviewed during the inspection are listed in the attachment.

Evaluation of Readiness of Impending Adverse Weather Conditions

Since Hurricane Isabel was forecast to travel up the East coast and could have possibly impacted the Millstone site during the week of September 15, 2003, the inspectors reviewed the licensee's preparations for this possible adverse weather condition for both Unit 2 and Unit 3. The inspectors walked down the site to determine if the licensee's efforts in securing potential wind driven missiles were effective. The inspectors discussed the impending hurricane with operators in the control room and reviewed applicable procedures. The inspectors also discussed hurricane preparations with the emergency response organizations and site management. Documents reviewed during the inspection are listed in the attachment.

b. Findings

No findings of significance were identified.

1R02 Evaluation of Changes, Tests or Experiments (71111.02)

a. Inspection Scope

The inspectors reviewed 15 selected safety evaluations associated with design changes that were completed during the past two years at both Unit 2 and Unit 3. The selected safety evaluations were distributed among initiating events, mitigating systems, and barrier integrity cornerstones and were reviewed to verify that changes to the facility or procedures as described in the Updated Final Safety Analysis Reports were reviewed and documented in accordance with 10 CFR 50.59. In addition, the safety evaluations were reviewed to ensure that the safety issues pertinent to the changes were properly resolved or adequately addressed. These safety evaluations were selected based on the safety significance of the associated design changes and the risk to structures, systems and components.

The inspectors also reviewed 22 evaluations for changes, tests and experiments for which the licensee determined that safety evaluations were not required. This review was performed to verify that the licensee's criteria for performing safety evaluations were consistent with 10 CFR 50.59.

In addition, the inspectors reviewed the administrative procedure that was used to control the screening, preparation, and issuance of the safety evaluations to ensure that the procedure adequately implements the requirements of 10 CFR 50.59. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial System Walkdowns. The inspectors performed seven partial system walkdowns during this inspection period. The inspectors evaluated system and component alignment to identify any discrepancies that would impact system operability. The inspectors reviewed selected valve positions, electrical power availability and the general condition of major system components. Documents reviewed during the inspection are listed in the Attachment. The following systems were reviewed:

Unit 2

- Partial alignment of "B" diesel generator (DG) while "A" DG was inoperable for surveillance
- Partial alignment of Facility 2 service water (SW) system while "C" SW pump was inoperable for maintenance
- Partial alignment of Facility 2 high pressure safety injection (HPSI) while "C" HPSI pump was inoperable for maintenance

Unit 3

- Partial alignment of "B" motor driven auxiliary feedwater (MDAFW) pump while "A" MDAFW pump was unavailable for maintenance
- Partial alignment of "A" MDAFW train during turbine driven auxiliary feedwater (TDAFW) maintenance
- Partial alignment of "B" train of an emergency safeguards feature (ESF) ventilation system required for auxiliary feedwater (AFW) operability during maintenance on "A" train of ESF ventilation
- Partial alignment of station fire water system during maintenance on firewater storage tank "B"

Complete System Walkdown. The inspectors conducted a detailed review of the alignment and condition of the Unit 3 residual heat removal system. The inspectors also verified electrical power requirements, labeling, hangers and support installation, and associated support system status. The walkdowns also included evaluation of system piping and supports. The inspectors used the licensee procedures and other documents listed below to verify proper system alignment:

- OPS Form 3310A-1 Revision 7, Residual Heat Removal System (Common)
- OPS Form 3310A-2 Revision 8, Change 2, Residual Heat Removal System Train A

- OPS Form 3310A-3 Revision 9, Change 1, Residual Heat Removal System Train B

A review of outstanding maintenance work orders was performed to verify that the deficiencies did not significantly affect the residual heat removal system function. In addition, the inspectors reviewed the condition report database to verify that residual heat removal system equipment alignment problems were being identified and appropriately resolved.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q and 71111.05A)

1. Quarterly Sample Review (71111.05Q)

a. Inspection Scope

The inspectors performed 12 walkdowns of fire protection areas during the inspection period. The inspectors reviewed the licensee'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 the licensee'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 also reviewed completed surveillances of fire damper operability for selected areas. Documents reviewed during the inspection are listed in the Attachment. The fire areas reviewed included:

Unit 2

- Enclosure Building Filtration System Equipment Area (Fire Area A-14D)
- Z1 Switchgear Room - Turbine Building, 31'-6" Elevation (Fire Area T-7)
- West 480 VAC Load Center - Turbine Building, 31'-6" Elevation (Fire Area T-6)
- East 480 VAC Load Center - Auxiliary Building, 31'-6" Elevation (Fire Area A-28)
- West 125 VDC Switchgear Room - Auxiliary Building, 14'-6" Elevation (Fire Area A-21)
- Unit 2/Unit 1 Fire Interface

Unit 3

- Circulating and Service Water Pump House - North Floor Area (Fire Area CSW-1)
- Circulating and Service Water Pump House - South Floor Area (Fire Area CSW-2)

- Circulating and Service Water Pump House - East Service Water Cubicle (Fire Area CSW-3)
- Circulating and Service Water Pump House - West Service Water Cubicle (Fire Area CSW-4)
- West Motor Control Center (MCC) and Rod Control Switchgear Area (Fire Area AB-6)
- East MCC and Rod Control Switchgear Area (Fire Area AB-5)

b. Findings

No findings of significance were identified.

2. Annual Fire Drill Observation (71111.05A)

a. Inspection Scope

The inspectors observed licensee performance during an unannounced Unit 3 fire brigade drill on July 17, 2003, to evaluate the readiness of station personnel to respond to and fight fires. The drill simulated response to an incipient stage fire in a conduit located in the Unit 3 Cable Spreading Room (CSR). The inspectors observed fire brigade members regarding their use of protective clothing and appropriate turnout gear, including self-contained breathing apparatus, and their approach and methods in the combat of an incipient stage conduit fire. For example, the inspectors evaluated the deployment and simulated use of fire hoses in the CSR to ensure adequate coverage. The inspectors observed implementation of the fire fighting strategies by the fire brigade, as well as the communications between participants throughout the drill. The inspectors verified that the pre-planned drill scenario was followed, and observed the post-drill critique to verify that drill objectives were satisfied and that any drill weaknesses were identified, discussed, and adverse conditions entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors evaluated the licensee's preparation and protection from the effects of external flooding conditions for Unit 2 and 3. The inspectors reviewed the FSAR, and various procedures to determine the readiness of protection, for applicable, safety-related structures, systems, and components. The inspectors performed walkdowns of the Unit 2 floodgates and fire pump houses and the Unit 3 intake structure to verify the adequacy of the floodgates, flood doors, temporary equipment and removable flood planks were able to perform their design function. Additionally, the inspectors reviewed

recent licensee inspection results including floodgate inspections, and verified that previously identified deficiencies had been entered into the licensee's corrective action program for resolution.

The inspectors also reviewed the intake structure spaces to evaluate the licensee's protection of this safety-related system from internal flooding conditions. The inspectors performed a walkdown of the area, reviewed the Final Safety Analysis Report, as well as various licensing and design basis documents, including flooding calculations, to ensure the flooding mitigation plans and as-found conditions in the intake structure room remain consistent with assumptions presented in the design basis documents. The inspectors reviewed the licensee procedures and documents listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11Q)

a. Inspection Scope

The inspectors observed the conduct of licensed operator simulator training for Unit 2 on July 24, 2003. The inspectors observed licensed operator performance for a Unit 2 drill involving a Unit 1 fire and then a subsequent Unit 2 fuel handling accident. The inspectors also observed a simulator requalification exam for a Unit 3 operating crew on September 24, 2003. The inspectors observed two Unit 3 drill scenarios involving multiple failures of safety-related equipment including failure of steam piping, loss of offsite power and primary piping failure.

The inspectors evaluated the ability of each operations crew to mitigate the consequences of the failures presented in the accident scenarios, the ability of the licensees' evaluators to adequately address operator performance deficiencies that were identified during the exercise, and that applicable training objectives had been achieved. Additionally, the inspectors evaluated use of formal communications, response to alarms, proper use of procedures, oversight provided by the shift supervisor including emergency plan actions and notifications, and overall crew teamwork. Finally, the inspectors reviewed the simulator physical fidelity related to the actual Unit control room. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12Q)

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of eight degraded conditions, involving safety-related structures, systems, and/or components, for maintenance effectiveness. The inspectors reviewed the licensee's implementation of the maintenance rule (MR), 10 CFR 50.65, and verified that the condition associated with the referenced CR was appropriately evaluated against applicable MR functional failure criteria in accordance with associated scoping documents and applicable procedures. The inspectors also discussed these issues with the system engineer and maintenance rule coordinator to verify that they were appropriately tracked against each system's performance criteria and that the systems were appropriately classified in accordance with related MR implementation guidance. Documents reviewed during the inspection are listed in the Attachment. The following conditions were reviewed:

Unit 2

- "A" Charging Pump Check Valve Stem/Disc Separation
- "A" Instrument Air Compressor Failed to Load While in "Lead"
- Control Element Assembly (CEA) Automatic CEA Timer Module (ACTM) Failure

Unit 3

- "A" Safety Injection Tank Accumulator Pressure Instrument Failure
- Evaluations Associated with Station and Instrument Air Compressor Failures
- Failure of VIAC 1 Backup Power Supply
- Failure of Inverter 2
- Turbine Impulse Pressure Instrument Failure

Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed 11 maintenance risk assessments during the inspection period. The inspectors utilized the Equipment Out of Service (EOOS) quantitative risk assessment tool to evaluate the risk of the plant configurations and compared the result to the licensee's stated risk. The inspectors also verified that the licensee 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 following scheduled maintenance and testing activities:

Unit 2

- Work Schedule for the week of 7/7/03 - maintenance and testing on the DC vital switchgear room cooling systems

- Work Schedule for the week of 7/14/03 - maintenance and testing on the "B" MDAFW pump and "B" EDG surveillances
- Work Schedule for the week of 7/21/03 - maintenance and testing on the containment sump and shutdown cooling heat exchanger (HX) valve testing
- Work Schedule for the week of 7/28/03 - maintenance and testing on the "B" auxiliary feedwater (AFW) pump, "C" reactor building closed cooling water (RBCCW) pump, "B" RBCCW HX, and "C" high pressure safety injection (HPSI) pump
- Work Schedule for the week of 8/4/03 - maintenance and testing on the "C" SW breaker PM and strainer overhaul
- Work Schedule for the week of 8/25/03 - maintenance and testing on the Unit 3 to Unit 2 crosstie breaker resulting in an unplanned Orange risk condition

Unit 3

- Work Schedule for the week of 6/30/03 - maintenance and testing of residual heat removal service water isolation valve
- Work Schedule for the week of 7/28/03 - maintenance and testing of "B" MDAFW system and feed regulating valve
- Work Schedule for the week of 8/4/03 - maintenance and testing on the "D" SW pump surveillance, containment isolation valve slave relay, and vital bus 34D undervoltage
- Work Schedule for the week of 8/25/03 - maintenance and testing on the "A" AFW pump and station blackout diesel
- Work Schedule for the week of 9/15/03 - maintenance and testing of "C" SW pump and AFW ventilation

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14)

a. Inspection Scope

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

Unit 2

- On July 8, 2003, the inspectors observed operator response to a loss of non-vital 480VAC bus 22D. Operators entered abnormal response procedures, responded to lost loads, and conducted a PRA risk review. The licensee determined that the breaker opened on "short time overcurrent." After conducting inspections of associated breakers and loads on the 22D bus and finding no faults, bus 22D was energized. On July 9, 2003, most of the major loads were restored and the abnormal operating procedure was exited.

- On July 10, 2003, the inspectors observed operator response to an instrument air header pressure alarm and the failure of the "A" instrument air compressor to load. Instrument air header pressure decreased to 88 psig which was above the technical specification limit of 80 psig. The "B" instrument air compressor operated automatically to restore instrument air header pressure to normal. Operators manually placed the "B" instrument air compressor in "lead" to maintain instrument air header pressure.

- On August 14, 2003, Operations personnel responded to a significant transient on the electrical grid evidenced by offsite line voltage oscillations from 330KV to 375KV. The plant was stabilized at approximately 98 percent power. The licensee was contacted by Independent System Operator (ISO) New England who determined that the grid transient was due to a loss of several power stations in the Northeast.

Unit 3

- On July 14, 2003, the inspector observed Operations personnel respond to control board annunciators that alarmed concurrent with indications of a ground on Battery Bus 5. The source of the ground was subsequently identified and corrected following appropriate ground isolation procedures by the licensee.

- On July 15, 2003, Operations personnel responded to an unexpected rise in both reactor power and electrical load while restoring from main turbine valve testing. The transient was determined to be caused by a fluctuation in electrical grid frequency due to unanticipated load transfers initiated by the ISO. The inspector discussed the load transfer issue and its impact on plant operations with licensee management to determine the adequacy of licensee and ISO response, and verified that the event was captured in the corrective action program to resolve identified adverse conditions.

- On August 8, 2003, Operations personnel responded to high conductivity alarms due to what was later determined to be a leaking main condenser tube. The leak in the "B" condenser waterbox tube was identified during subsequent inspections and the tube was plugged on August 9, 2003.

- On August 14, 2003, Operations personnel responded to a significant transient on the electrical grid evidenced by offsite line voltage oscillations from 330KV to 375KV. The plant was stabilized at approximately 87 percent power following

automatic rod insertion from the transient. The licensee was contacted by ISO New England who determined that the grid transient was due to a loss of several power stations in the northeast.

- On September 6, 2003, the inspectors observed plant personnel respond to a failed inverter that provided 125 VAC to vital instrumentation alternating current (VIAC) Bus 2. The failure forced the licensee into a 24-hour shutdown action requirement per limiting condition of operation (LCO) 3/4.8.3.1 action b. The inspectors reviewed the operators' actions to minimize the effect of the inverter failure, troubleshooting and restoration efforts.

- On September 9, 2003, the inspectors observed Operations personnel respond to a "B" steam generator low level alarm. Immediate actions, problem isolation, and recovery of the "B" feed regulating valve (FRV) were observed. The low steam generator water level was caused by improper maintenance practices which impacted the air supply to the FRV control diaphragm. The maintenance was stopped and the system was restored to normal.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed 13 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. Documents reviewed during the inspection are listed in the Attachment. The inspectors reviewed the following degraded or non-conforming conditions:

Unit 2

- Turbine Driven Auxiliary Feedwater (TDAFW) Pump Vibration Outside Acceptance Criteria
- "C" Charging Pump Abnormal Thermography
- Intake Structure Operability due to High Temperature
- Radiation Monitors Isolation Valves Not Tested for Containment Isolation Actuation Signal (CIAS)
- "B" HPSI Control Switch on Main Control Board Not Operating Correctly
- Service Water System Piping and Support Configuration

- "A" EDG Operability due to Failed EDG Heat Exchanger Service Water Bypass Valve

Unit 3

- "A" Emergency Diesel Generator operability following the identification on July 16, 2003, that the governor load limit adjustment knob was not at the required "max fuel" setting
- Non-conservative technical specification value of 1 µCi/g for Dose Equivalent Iodine Activity, identified in March of 2000 as a result of a Westinghouse Nuclear Safety Advisory Letter, and the institution of an interim administrative limits of 0.6 µCi/g
- Inoperability of Primary and Secondary Steam Generator Sample Stations
- Licensee Response to Part 21 Notification related to Westronics Recorders
- DWST vent related to tornado events
- Operability of "B" SW pump with degraded motor coupling

b. Findings

Unit 2

No findings of significance were identified.

Unit 3

Introduction. A Green NCV was identified for the failure to evaluate and correct an identified condition adverse to quality (physical degradation) associated with the "B" service water (SW) pump/motor coupling.

Description. On September 20, 2003, an operator identified that the "B" SW pump had a degraded coupling and that the packing had excessive leakage. Condition Report (CR) 03-09006 was generated to document these issues. The "D" SW pump was placed in service and the "B" SW pump was placed in standby. The CR described the pump as operable.

On September 22, 2003, the inspectors questioned whether the pump was operable due to the degraded coupling and determined that the licensee had not evaluated operability of the coupling or otherwise affected corrective action. The licensee subsequently performed a visual examination of the coupling and determined that they could not verify operability due to the excessive corrosion on the coupling and fasteners. The SW pump was declared inoperable, the appropriate TS LCO was entered, and the licensee replaced the pump coupling and repacked the pump seal.

The inspectors subsequently determined that the licensee failed to perform an adequate extent of condition review for the other SW pumps. On October 7, 2003, Operations personnel questioned the operability of the "C" Service Water pump due to excessive corrosion on its coupling, similar to corrosion found on the "B" SW pump. The

licensee's investigation determined that this deterioration had not been evaluated when the degraded "B" SW pump condition was addressed on September 22, 2003. An operability determination for the "C" SW pump was completed on October 10, 2003, which determined that the "C" SW pump was operable.

Analysis. The performance deficiency associated with this issue is that the licensee failed to evaluate identified degradation of the "B" SW pump coupling for its potential impact on operability. Traditional Enforcement does not apply to this issue because there were no actual safety consequences, impacts on the NRC's ability to perform its regulatory function, or willful aspects to the violation. However, the finding is more than minor because the failure to evaluate the identified degradation of a mitigating system, and to take corrective actions, would have allowed further degradation and affected operability of the system. The finding is associated with the equipment performance attribute of the mitigating systems cornerstone and the objective of ensuring the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. However, the finding was determined to be of very low safety significance based on the as-found condition and an analysis of the existing degradation that concluded the SW pump was capable of meeting its safety function. The licensee performed an evaluation of the degraded pump coupling following its replacement and determined that the pump would have met its mission time and would not have affected the initiating event frequency for loss of service water. Based on a Phase 1 SDP evaluation, this issue was determined to be Green because the deficiency was confirmed not to result in a loss of function per NRC Generic Letter 91-18.

Enforcement. 10 CFR 50 Appendix B, Criterion XVI, states, in part, that the licensee shall take measures to assure that conditions adverse to quality, such as failures, deficiencies, defective material and equipment, are promptly identified and corrected. Contrary to this, the licensee failed to evaluate the degradation and thereby determine the availability of the SW pump to meet its safety function. However, because the finding is of very low safety significance and the issue has been entered into the licensee's corrective action program (CR-03-09039 and CR-03-09006), it is being treated as a non-cited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy. (**NCV 05000423/2003004-01**)

1R17 Permanent Plant Modifications (71111.17B)

a. Inspection Scope

The inspectors reviewed 22 risk-significant plant modification packages selected from among the design changes that were completed within the past two years at both Unit 2 and Unit 3. The review was to verify that: (1) the design bases, licensing bases, and performance capability of risk significant structures, systems or components had not been degraded through modifications; and, (2) modifications performed during increased risk configurations did not place the plant in an unsafe condition.

The selected plant modifications were distributed among initiating events, mitigating systems, and barrier integrity cornerstones. For these selected modifications, the

inspectors reviewed the design inputs, assumptions, and design calculations, such as instrument set-point and instrument uncertainty calculations, to determine the design adequacy. The inspectors also reviewed field change notices that were issued during the installation to confirm that the problems associated with the installation were adequately resolved. In addition, the inspectors reviewed the post-modification testing, functional testing, and instrument calibration records to determine readiness for operations. Finally, the inspectors reviewed the affected procedures, drawings, design basis documents, and UFSAR sections to verify that the affected documents were appropriately updated.

For the accessible components associated with the modifications, the inspectors also walked-down the systems to detect possible abnormal installation conditions.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed 13 post-maintenance test (PMT) activities 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. 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 reviewed the completed test results and verified that applicable acceptance criteria were satisfied. In addition, the inspectors 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 specified post maintenance tests were evaluated:

Unit 2

- "B" HPSI Pump Breaker PM and Relay Calibration (AWO M2-00-07291)
- CEA 46 Timer Module Replacement (AWO M2-03-07769)
- "A" Service Water Pump Motor Overhaul (AWO M2-02-09929)
- "B" Charging Pump 18 Month Planned Maintenance (AWO M2-07640)
- "A" Low Pressure Safety Injection (LPSI) Pump Seal Cooler (AWO M2-08654)
- "C" Charging Pump Abnormal Thermography (AWO M2-07319)

Unit 3

- 3SWP*P1A following pump and motor overhaul (M3 00 00862)
- CTV30 (containment Isolation Valve) following preventive maintenance (M3 87 10689)

- "A" Diesel day tank refill pump backup pressure switch calibration (M3 03 10147)
- Standby leakage collection and release system following damper failure (M3 03 10968)
- Inverter #2 120 VAC following failure (M3 03 10768)
- Turbine Impulse Pressure Instrument Calibration and Troubleshooting (AWO M3-03-10507)
- Charging Pump Cooler Thermal Performance Test Equipment Removal (AWO M3-03-00706)

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed 12 surveillance activities to determine whether the testing adequately demonstrated the ability of the equipment to perform its intended safety-related function. The inspectors attended pre-job briefs, verified selected prerequisites and precautions were met and that the tests were performed in accordance with the procedural steps. Additionally, the inspectors evaluated the applicable test acceptance criteria to verify consistency with associated design basis, licensing bases and Technical Specification requirements, and that the applicable acceptance criteria were satisfied. The inspectors also verified that conditions adverse to quality were entered into the corrective action program for resolution. Documents reviewed during the inspection are listed in the Attachment. The following surveillance activities were evaluated:

Unit 2

- HPSI Valve Operability Alignment Check, Facility 1 (SP 2604E-003)
- "A" EDG Slow Start Operability Test (SP 2613K-001)
- "A" EDG Train "B" Starting Air Valve IST (SP 2624A)
- "A" HPSI Pump Operability Test (SP 2604A)
- Calibration and Functional Test of Emergency Safeguards Actuation System Undervoltage Reserve Service Station Transformer and Sequencer (SP 2403BA)

Unit 3

- Containment Area High Range Radiation Monitor Op Test (SP 3449H31)
- Containment Isolation Slave Relay Testing (Phase A) - Train B (SP 3646A.9)
- "D" Service Water Pump Quarterly Operational Test (SP 3626.4)
- Auxiliary Feedwater Valve Stroke Time Test and Manual Cycling of Suction (CIV) Header Isolation Valves (SP 3622.8)
- "A" Service Water Pump Quarterly Operational Test (SP 3626.4)

- "B" High Pressure Safety Injection Pump Quarterly Operational Test (SP 3608.2) (IST)
- "B" High Pressure Safety Injection Cooling Pump Quarterly Operational Test (SP 3626.4)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed three temporary modifications to verify that the temporary modification did not affect the safety function of important safety systems. The inspectors reviewed the temporary modification and its associated 10 CFR 50.59 screening against the Final Safety Analysis Report (FSAR) and Technical Specifications to ensure the modification did not affect system operability or availability. Documents reviewed during the inspection are listed in the Attachment.

Unit 2

- Charging Pump P18A Drain Line Freeze Seal

Unit 3

- Steam Generator Cubicle Snubbers Temporary Oil Reservoir Fill
- "C" Accumulator Leakage Path

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP2 Alert Notification System Testing (71114.02)

a. Inspection Scope

An onsite review of the licensee's Alert Notification System (ANS) was conducted to ensure the licensee was capable of promptly notifying the public to take protective actions. The inspection included a review of the following procedures: (1) MP-26-EPA-FAP08, Public Alert System Administration, Rev. 1; and (2) MP-26-EPA-FAP09, Public Alert System Testing and Maintenance, Rev. 1. In addition, the inspector interviewed the siren program coordinator and reviewed maintenance and test records to determine if test failures were being immediately assessed and repaired and sirens were being routinely maintained. The inspection was conducted in accordance with NRC Inspection

Procedure 71114, Attachment 02, and the applicable planning standard, 10 CFR 50.47(b)(5) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed Condition Report (CR) No. 03-09271 which was generated during the inspection regarding operability of a siren if the receiver failed to function and how that information is applied for calculating the ANS performance indicator data.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

An onsite review of the licensee's Site Emergency Response Organization (SERO) augmentation staffing requirements and the process for notifying the SERO was conducted to ensure the readiness of key staff for responding to an event and timely facility activation. The inspector reviewed the 2002/2003 communication pager test records and associated CRs. A review was also conducted of the backup notification systems that would be used in case of a power outage. An interview was conducted with the emergency preparedness training instructor to determine the adequacy of the lesson plans used for training SERO which included lessons learned from past drills for correcting SERO performance problems. Finally, the emergency plan qualification records for key SERO positions were reviewed to ensure all SERO's qualifications were current. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, and the applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

A regional in-office review of revisions to the emergency plan, implementing procedures and EAL changes was performed for determining if changes had decreased the effectiveness of the plan. The revisions covered the period from February 2003 through August 2003. Onsite, the inspector evaluated the associated 10 CFR 50.54(q) reviews in which Dominion determined that a decrease in the effectiveness had not occurred. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspector reviewed corrective actions identified by the licensee pertaining to findings from drill/exercise reports for 2001 through 2003 and the associated condition reports to determine the significance of the issues and to determine if repeat problems were occurring. Reviewed CRs and corrective action program procedures are contained in an attachment to this report. In addition, the inspector reviewed Audit Report Nos. MP-02-A14 and MP-01-A20 generated by the Nuclear Oversight Department to assess Dominion's ability to identify issues, assess repetitive issues and the effectiveness of corrective actions through their independent audit process. This inspection was conducted according to NRC Inspection Procedure 71114, Attachment 05, and the applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed CR Nos. 03-06033 and 03-07357 regarding continuous classification problems at Unit 2 during EP exercises, drills and requalification training.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed licensed operator performance for a Unit 2 drill involving a Unit 1 fire and then a subsequent Unit 2 fuel handling accident. The inspectors also observed a simulator requalification exam for a Unit 3 operating crew on September 24, 2003 which involved two drill scenarios involving multiple failures of safety, systems and components including failure of steam piping, loss of off site power and primary piping failure.

The inspectors evaluated each Operations crew activities related to evaluating the scenario and making proper classification and notification determinations. Additionally, the inspectors assessed the ability of the licensee'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]

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

During the period August 4 - 7, 2003, the inspector conducted the following activities to verify that the licensee was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as is reasonably achievable (ALARA) for tasks conducted during power operations at Unit 2 and Unit 3 and during the Unit 2 forced outage (2FO-155). Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and the licensee's procedures. Documents reviewed during the inspection are listed in the Attachment.

Radiological Work Planning

- The inspector reviewed pertinent information regarding cumulative exposure history for the operating units, current exposure trends, and recent dose significant work activities to assess current performance and exposure challenges. The inspector evaluated the site's 3-year rolling collective average exposure. Recent work reviewed included maintenance and engineering activities related to the Unit 2 Chemical and Volume Control System (CVCS) conducted during the 2FO-155 and routine oil additions to the Unit 2 "A" reactor coolant pump (RCP) during power operations.
- The inspector reviewed the on-line work schedule during the inspection period and the associated work activity dose estimates. Work activities reviewed included performing a surveillance test (SP-2601k) on the Unit 2 "B" charging pump, spent fuel movement in the Unit 2 spent fuel pool, scaffolding installation in the Unit 2 charging pump cubicles, and preparations for transferring RCP motors, stored at Unit 3, to Unit 1.
- The inspector reviewed the 2003 ALARA Review summary list, detailing the worker estimated and actual exposures, to date, for jobs performed during power operations and during the Unit 2 forced outage.
- The inspector evaluated ALARA Review AR02-03-0034, "Containment Entry, Unit 2, RCP Oil Addition," for related tasks performed in February 2003 and June 2003; and AR 02-03-0032, Revision 1, "Unit 2 Charging System Work," for ongoing engineering activities. The inspector evaluated exposure mitigation requirements (e.g., Temporary Shielding Request 02-03-04 for shielding portions of the Unit 2 Shutdown Cooling System piping) and compared actual worker cumulative exposure to estimated dose.
- The inspector evaluated departmental interfaces between radiation protection, operations, maintenance, and engineering to identify missing ALARA program elements and interface problems. The evaluation was accomplished by

interviewing the ALARA Coordinator, reviewing ALARA Council Meeting minutes, and reviewing the job prerequisites contained in selected ALARA Reviews.

- The inspector determined if work activity planning included the use of temporary shielding, system flushes, operational considerations (e.g., turning off pressurizer spray during RCP oil additions at Unit 2), adjustments to preventive maintenance frequencies, and job rescheduling to further minimize worker dose.
- The inspector reviewed ALARA Work-In-Progress Reviews and Post-Job ALARA Reviews for emergent work developing during the Unit 2 forced outage to determine if worker problem areas were being identified and that lessons learned from the activity were being addressed. Specific jobs reviewed included the repair to a pinhole leak on the upper seal pressure transmitter tubing on the "C" RCP, and assorted CVCS engineering and maintenance activities.

Verification of Dose Estimates

- The inspector reviewed the assumptions and basis for the current annual collective exposure estimates for routine power operations at Unit 2 and Unit 3, and for the fall 2003 Unit 2 refueling outage.
- The inspector reviewed the licensee's method for adjusting exposure estimates, and replanning work, when emergent work was encountered during the Unit 2 forced outage.
- The inspector reviewed the licensee'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 the Radiation Work Permits (RWP) for Unit 3 Cask/Crane Project (RWP 03-03-0035), Unit 2 CVCS corrective and preventive maintenance (RWP 02-03-0030/31) and Unit 2 "A" RCP oil additions (RWP 02-03-0090). The inspector also reviewed a skin dose calculation (RP-03-03) for a personnel contamination incident occurring at Unit 2 on June 25, 2003.

Radiation Worker Performance

- The inspector observed an operational surveillance test of the Unit 2 "B" charging pump, movement of spent fuel in the Unit 2 spent fuel pool, and preparations for transferring stored RCP motors from Unit 3 to Unit 1, to verify that radiological controls, such as required surveys, job coverage, and contamination controls were implemented; personnel dosimetry was properly worn, and workers were knowledgeable of ambient radiological conditions. The inspector attended the pre-job ALARA briefing for installation of scaffolding in the Unit 2 charging pump cubicles.

The inspector observed operations and radiation protection department response to increased airborne radioactivity in the Unit 2 auxiliary building on August 6, 2003, to determine whether the skill level was sufficient with respect to evaluating the radiological hazards involved. The inspector attended daily turnover meetings at Unit 2 (on August 7, 2003) and at Unit 3 (on August 5, 2003) to evaluate the timeliness of the

information and level of detail, regarding plant's operational status and scheduled work, provided to the Health Physics Department staff.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety [PS]

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

a. Inspection Scope

The inspector reviewed documents to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs. The requirements of the radioactive effluent controls are specified in the Technical Specifications (TS), the Radiological Effluent Monitoring Manual (REMM), and the Offsite Dose Calculation Manual (ODCM). Documents reviewed during the inspection are listed in the Attachment.

The inspector toured and observed the following activities to evaluate the effectiveness of the licensee's radioactive gaseous and liquid effluent control programs:

Unit 2

- Walkdown for determining the availability of radioactive liquid/gaseous effluent RMS and for determining the equipment material condition;
- Walkdown for determining operability of air cleaning systems and for determining the equipment material condition; and
- Observed sample preparation for gamma spectrometry measurements.

Unit 3

- Walkdown for determining the availability of radioactive liquid/gaseous effluent RMS and for determining the equipment material condition;
- Walkdown for determining operability of air cleaning systems and for determining the equipment material condition; and
- Walkdown for determining the integrity of spent fuel pool water leak-off system.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors sampled licensee 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. 1, were used to verify the basis for reporting each data element. The inspectors reviewed licensee event reports, monthly operating reports, plant process computer power history information, Maintenance Rule unavailability data, Operation's shift logs, and NRC inspection reports to identify significant plant power changes, plant scrams, and equipment unavailability that occurred from the 3rd quarter of 2002, through the 2nd quarter 2003. Documents reviewed during the inspection are listed in the Attachment. The inspectors compared this information with the licensee's data reported to the NRC for the performance indicators listed below.

Unit 2 Reactor Safety Cornerstones

- High Pressure Safety Injection System Unavailability
- Residual Heat Removal System Unavailability

Unit 3 Reactor Safety Cornerstones

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

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution (71152)

1. Annual Sample Review

a. Inspection Scope

The inspectors selected five condition reports 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 and prioritized. The inspectors evaluated the reports against the requirements of the licensee's corrective action program as delineated in MP-1-CAP-FAP01.1, CR Screening and Review, and 10 CFR 50, Appendix B.

b. Findings and Observations

Unit 2

Reactor Building Closed Cooling Water (RBCCW) Pump Abnormal Oil Analysis Results

There were no findings identified. The inspectors reviewed the licensee's corrective actions following the identification of an abnormal RBCCW pump outboard bearing oil analysis discovered on August 20, 2002 and as discussed in CR-02-08597. The inspectors interviewed maintenance and engineering personnel, reviewed licensee procedural guidance on the control of lube oil, and walked down the Unit 2 and Unit 3 lube oil rooms. This CR was selected for review since the failure to control the addition of lube oil to safety-related pumps could impact the availability of mitigating systems. The inspectors reviewed the condition report and other documentation to ensure the full extent of the condition was identified, the issue was properly evaluated, and appropriate corrective actions were identified and implemented.

CR-02-04412 "Gland Seal Regulator Malfunctioned Resulting in a 9 degree Drop in Tave During Plant Startup"

There were no findings identified. In this event, the operators noticed an unexpected drop in Tave while placing the gland sealing system in service. This was an unplanned reactivity addition. The facility determined that the operating procedure allows placing the gland sealing system in service at a pressure above the system unloader valves set pressure; under startup conditions, if these valves open they can be a steam load greater than the available plant heat input. In addition, there were no preventive maintenance activities for the system regulating valve, which may have malfunctioned. Corrective actions included a change to the discussion section of the system operating procedure to explain this system behavior, and the development of preventive maintenance activities for the system. For Unit 2 CR-02-04412, a minor concern was identified wherein the corrective action of a procedure change to the "discussion" section of the procedure may not be adequate to prevent a repeat of this problem. The body of the procedure still allows the operator to place the system in service at up to 7 psig, with the unloader setpoints at 3.5 and 4.0 psig. This concern was discussed with the licensee and documented in CR-03-11175. The inspectors reviewed the condition report and other documentation to ensure the full extent of the condition was identified, the issue was properly evaluated, and appropriate corrective actions were identified and implemented.

2-CHW-13 P122A P123 Crosstie Failed to Close to Its Accident Position

There were no findings identified. The inspectors reviewed the licensee corrective actions following the failure of a chill water crosstie valve to close to its accident position during surveillance testing on April 23, 2002, as detailed in condition report CR-02-04732. The inspectors interviewed the system engineer, reviewed the maintenance rule (a)(1) action plan, and conducted a partial walkdown of the system to evaluate the timeliness and effectiveness of corrective actions to ensure the licensee had properly addressed the root and contributing causes that resulted in the failure of the valve.

Unit 3

Misplaced Rod Cluster Control Assembly (RCCA) and A Thimble Plug During a Refueling Outage

There were no findings identified. The inspectors reviewed the licensee's corrective actions regarding the identification on September 21, 2002, of a misplaced rod cluster control assembly (RCCA) and a thimble plug during a refueling outage, as detailed in condition report CR 02-10011. The CR was reviewed to determine the timeliness and effectiveness of corrective actions. The inspectors interviewed operations and other support personnel, reviewed licensee's corrective action procedure guidance, and reviewed the licensee's corrective actions and supporting data to ensure the licensee had adequately addressed the root and contributing causes that resulted in the misplaced RCCA and thimble plug.

CR-02-08966 "OE Identifies Shutdown Margin Concern for 4 Loop Westinghouse Plants for Blocking/Unblocking Safety Injection below P-11"

There were no findings identified. The facility evaluated a Westinghouse Nuclear Safety Advisory Letter (NSAL) for applicability to their plant. This letter raised the concern that in the event of a steam line break occurring after a plant had blocked safety injection (in preparation for cooldown), the plant may not remain subcritical depending on boron concentration. The letter recommended either borating to cold shutdown conditions prior to blocking safety injection or verifying the reactor would remain subcritical.

The inspector reviewed MP3 calculation MP3C8-01928F3, which indicates that for the current operating cycle, the plant would remain subcritical under the conditions postulated in the NSAL. For the next operating cycle, additional boration will be required. Procedure changes are planned to accomplish this, but had not been developed at the time of this inspection.

The facility also evaluated this concern on Unit 2, and determined that while recriticality is possible following a steamline break with ECCS blocked, core conditions are bounded by existing accident analyses. No additional actions are planned.

2. Cross-References to PI&R Findings Documented Elsewhere

Section 1R15 describes a finding for failure to properly evaluate whether the "B SW pump was operable as a result of the material condition of the coupling. The licensee had identified degradation of the "B" SW pump packing and coupling but had not determined that the coupling was operable.

3. 10 CFR 50.59 and Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed condition reports (CR) associated with 10 CFR 50.59 issues and plant modification issues to ensure that the licensee was identifying, evaluating, and correcting problems associated with these areas and that the corrective actions for the issues were appropriate. The inspectors also reviewed three self-assessments related to 10 CFR 50.59 safety evaluation and plant modification activities at Millstone Unit 2 and Unit 3. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

a. Inspection Scope

The inspector reviewed selected 2002-2003 Condition Reports (CRs) to evaluate the effectiveness of the licensee's problem identification and resolution processes in the areas of radioactive liquid and gaseous effluent control programs. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

5. ALARA Planning and Controls

a. Inspection Scope

The inspectors reviewed 27 Condition Reports, relating to controlling worker exposures; Management Work Observation reports for May, June, and July 2003; and two (2) Radiation Protection Department Self-Assessment Reports, to evaluate the licensee's threshold for identifying, evaluating, and resolving problems relating to occupational radiation safety. The review included a check of possible repetitive issues such as radiation worker or radiation protection technician errors.

This review was conducted against the criteria contained in 10 CFR 20, Technical Specifications, and the licensee's ALARA-related procedures. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA3 Event Followup (71153)

1. (Closed) LER 05000336/2003001-00, Pressurizer Water Volume Periodically Exceeded the Technical Specifications Limit

On February 17, 2003, with the plant in Mode 1 at approximately 100% power, the licensee identified that a Pressurizer Level Calibration surveillance procedure did not contain the correct differential pressure values necessary to correctly measure the water level in the Unit 2 pressurizer resulting in the actual pressurizer level periodically exceeding the technical specification limit of 70 percent. The licensee revised the Engineering documents to reflect the correct differential pressure calibration values for the pressurizer level transmitters and incorporated the results into the surveillance procedure. On February 24, 2003, the two level transmitters were recalibrated to the correct values. The LER was reviewed by the inspectors and no findings of significance were identified. The licensee documented the failed equipment in CR-03-01637. This LER is closed.

2. (Closed) LER 05000423/2003002-00, Fire Safe Shutdown Strategy May Not Be Adequate for Fire Scenarios Which Assume Loss of All AC Power

a. Inspection Scope

The inspectors reviewed the above-referenced Unit 3 LER and the condition report (CR) that documents the inadequate safe shutdown strategies identified by the licensee on January 16, 2003. The inspectors evaluated the adequacy and scope of both the planned and completed corrective actions initiated to resolve the identified safe shutdown issues, and evaluated the significance of the associated finding based on the potential risk significance of not meeting safe shutdown requirements during postulated fires.

b. Findings

Introduction. The licensee identified in LER 05000423/2003002-00 that they had inadequate fire safe shutdown strategies for fire scenarios which assume the loss of all AC power. An unresolved item will be opened to track this issue pending the resolution of NRC questions necessary to evaluate potential licensee performance issues and assess the risk significance of the condition.

Description. On January 16, 2003, the licensee identified that existing fire safe shutdown strategies were not sufficient in response to fire scenarios that assume loss of all AC power. Specifically, in response to postulated fires in the control room, cable spreading room, or instrument rack rooms, current safe shutdown strategies would not prevent an over-pressure/temperature condition in the reactor coolant pump (RCP) seal #1 leakoff lines and result in their failure because the leakoff line would not be isolated as a result of damage from the fire. As a result, the licensee has concluded that the seal leakoff line failure would cause reduced makeup capabilities and result in failure to meet safe shutdown requirements. This LER will be closed. **URI 05000423/2003004-02**

is being opened to track this issue pending the resolution of NRC questions necessary to evaluate potential licensee performance issues and assess the risk significance of the condition.

4OA5 Other

(Closed) URI 05000336/2003006-01: Failure to Perform Adequate Post-Modification Test of Design Changes to the Charging System

Introduction. A Green NCV was identified for failure to comply with 10 CFR 50, Appendix B, Criterion III, Design Control, for two design changes which adversely affected the charging system and for which post-modification testing was not specified, or performed, to ensure the charging system could fulfill its design function under anticipated conditions.

Description. During a Special Inspection following a complicated reactor trip at Millstone Unit 2 on March 7, 2003 (NRC Inspection Report 05000336/2003006, dated June 30, 2003), the inspectors identified a finding having potential safety significance greater than very low significance. The inspectors had determined that two design changes implemented in April and May of 2002, did not meet the requirements of 10 CFR 50, Appendix B, Criterion III. Criterion III requires, in part, that design control measures be established and implemented to assure that applicable regulatory requirements and the design basis for structures, systems and components is correctly translated into specifications, drawings, procedures, and instructions. Contrary to this, two design changes were implemented which adversely affected the operation of the charging system, however, no post-modification testing was specified or performed to ensure the system could fulfill its design function under anticipated conditions. The significance of this finding had not been determined at the conclusion of the inspection.

Analysis. In accordance with Inspection Manual Chapter () 0612, Appendix B, "Issue Disposition Screening," the inspectors determined that the issue was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone objective. Specifically, the charging system was not capable of providing adequate high pressure injection to the reactor coolant system following an initiating event that resulted in simultaneous auto-start of the two standby charging pumps. In accordance with 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors conducted an SDP Phase 1 screening and determined that an SDP Phase 2 evaluation was required because the performance deficiency resulted in a loss of the charging system design function.

The inspectors conducted an SDP Phase 2 evaluation of the risk significance of the performance deficiency and determined that the finding was of high safety significance (Red). The inspectors used the following assumptions in the Phase 2 evaluation.

- As a result of the modifications made to the charging system, the system would have failed shortly following the simultaneous automatic start of the two standby pumps in response to the following initiating events.

- All general plant transients (i.e., loss of main feedwater, loss of condenser heat sink, loss of instrument air, loss of reactor building closed cooling water, loss of service water)
- Loss of vital DC power
- Main steam line breaks
- Steam generator tube rupture

In response to each of these initiating events, the charging system was needed for the licensee to successfully perform once through core cooling. Therefore, the inspectors concluded that the licensee would not have been successful in removing decay heat from the reactor using once through core cooling following these events.

The charging system would have also failed following a loss of offsite power event. However, subsequent to the March 7, 2003, event that resulted in the failure of the charging system, the licensee performed Calculation PRA03YQA-04029S2, "MAAP Calculations to Support EOOS Model Changes Implemented During Charging Event Risk SDP," which demonstrated that the charging system was not needed to support once through core cooling following this type of initiating event. Consequently, the inspectors determined that there was no increase in risk associated with loss of offsite power events due to the performance deficiency.

- The licensee implemented the design changes to the charging system on May 1, 2002. Thus, the charging system was vulnerable to this failure mode until March 7, 2003, when the charging system failed following a reactor trip. Therefore, the inspectors used an exposure time of 310 days for this evaluation.

- The charging system was not able to be recovered in a time frame to support successful once through core cooling (25 minutes). Therefore, recovery of the charging system was not credited.

The inspectors reviewed the Phase 2 results and concluded that they were several orders of magnitude conservative because the Phase 2 notebook conservatively assumed that a loss of a DC bus would result in a reactor coolant pump seal loss of coolant accident that would require reactor coolant inventory makeup from either of the remaining high pressure safety injection or charging pumps; and the Phase 2 notebook did not credit the possibility of condensate injection when main and auxiliary feedwater were not available. Therefore, the inspectors determined that the finding should be evaluated using the SDP Phase 3 process.

The regional Senior Reactor Analyst conducted the SDP Phase 3 analysis using the NRC's Standardized Plant Analysis Risk (SPAR) model for Millstone Unit 2. The model was revised to reflect the licensee's operating experience and procedures. The most notable of these changes involved revising the success criteria for once through core cooling to include the charging system except for loss of offsite power initiating events.

The revised success criteria for once through core cooling was 1 of 3 charging pumps, 2 of 2 high pressure safety injection (HPSI) pumps, and 2 of 2 pressurizer power operated relief valves (PORVs) for all initiating events except main steam line breaks which was 3 of 3 charging pumps, 2 of 2 HPSI pumps, and 2 of 2 pressurizer PORVs. In addition, the model was revised to credit condensate injection for secondary side decay heat removal. These revisions resulted in a baseline core damage frequency of 4.57E-5 per year.

The analyst revised the SPAR model to reflect the same assumptions that were made in the Phase 2 evaluation (stated above), determined a revised core damage frequency for the exposure period and calculated the change in core damage frequency (ΔCDF) for this finding due to internal initiating events. The analyst determined that the ΔCDF for this finding was 4.48E-7 per year (Green). This result was dominated by the following accident sequences.

Contribution to ΔCDF	Core Damage Sequence Description
2.98E-7	• IE - Steam line break outside of containment • Auxiliary feedwater fails • Once through core cooling fails due to the failure of the charging system
5.94E-8	• IE - Loss of condenser heat sink • Auxiliary feedwater fails • Operators fail to align condensate injection for decay heat removal • Once through core cooling fails due to the failure of the charging system
4.45E-8	• IE - Loss of main feedwater • Auxiliary feedwater fails • Operators fail to align condensate injection for decay heat removal • Once through core cooling fails due to the failure of the charging system
3.28E-8	• IE - Reactor Trip • Main feedwater fails • Auxiliary feedwater fails • Operators fail to align condensate injection for decay heat removal • Once through core cooling fails due to the failure of the charging system

The analyst also evaluated the risk significance for this finding due to internal flooding events and determined that the risk contribution was very low, ΔCDF approximately 1.9E-7 per year. The dominant internal flooding accident sequence involved a flood initiator in the turbine building condensate pump pit. This flood initiator would cause the loss of condensate and feedwater which would result in a plant transient. Without condensate and feedwater, any combination of failures that resulted in the loss of auxiliary feedwater would progress to core damage because once through core cooling would not have been successful due to the condition of the charging system.

In addition, the analyst determined that the risk contribution due to fire events was not significant because: (1) the likelihood of a fire induced transient were two orders of magnitude less than the transient initiating event frequency assumed in the internal event assessment; and (2) the probability was small that the fire would also impact multiple components used to remove decay heat (e.g., condensate, main feedwater, and auxiliary feedwater), which would increase the likelihood of needing once through core cooling. The analyst also determined that the risk contribution due to seismic initiators was not significant because consequential seismic events result in the loss of offsite power and the charging system was not needed to mitigate loss of offsite power events.

Furthermore, the analyst evaluated this finding using Inspection Manual Chapter 0609, Appendix H, "Containment Integrity SDP." Because Millstone Unit 2 has a large dry containment and the dominant accident sequences did not involve either a steam

generator tube rupture or an inter-system loss of coolant accident, the finding did not significantly contribute to an increase in the large early release frequency for the facility.

As a result, the inspectors concluded that the performance deficiency was very low risk (Green).

Enforcement. Because this failure to comply with 10 CFR 50, Appendix B, Criterion III is of very low safety significance and has been entered into the corrective action program (CR-03-03359), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: **(NCV 05000336/2003006-01, Failure to Implement Adequate Design Control and to Perform Adequate Post-Modification Tests for Changes to the Charging System.)**

4OA6 Meetings, including Exit

1. 10 CFR 50.59 and Permanent Plant Modifications Report Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Alan Price, Site Vice President, and other members of licensee management at the conclusion of the inspection on July 18, 2003. A telephone call to provide an updated status of the findings was also conducted on July 30, 2003 with Mr. M. Elmaghrabi.

2. Public Radiation Safety Report Exit Meeting Summary

On July 24, 2003, the inspector presented the Unit 2 inspection results to licensee management and other staff who acknowledged the findings.

On September 26, 2003, the inspector presented the Unit 3 inspection results to licensee management and other staff who acknowledged the findings.

3. Emergency Preparedness Report Exit Meeting Summary

On September 25, 2003 the inspector presented the inspection results to Mr. S. Scace and other members of his staff. Dominion had no objections to the NRC's observations. The inspector confirmed that proprietary information was not provided or examined during the inspection.

4. Integrated Report Exit Meeting Summary

On October 15, 2003, the resident inspectors presented the overall inspection results to Mr. J. Alan Price and other members of his staff who acknowledged the findings. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

A. Price, Site Vice President - Millstone
A. Jordan, Director, Nuclear Engineering
S. Sarver, Director, Nuclear Station Operations & Maintenance
S. Scace, Director, Nuclear Station Safety and Licensing
A. Armagno, Unit 2 Health Physics Shift Supervisor
W. Bartron, Licensing Engineer
K. Burgess, Sr. EP Specialist
P. Calandra, On-Line ALARA Coordinator
B. Castiglia, Supervisor, Nuclear Human Performance
E. Collins, Radiation Protection Technician
K. Connor, Safety Analysis Engineer
D. Delcore, (Acting) Unit 2 Health Physics Shift Supervisor
D. Dodson, Acting Manager, Licensing
J. Doroski, Health Physicist
M. Elmaghrabi, Licensing Engineer
W. Faye, Senior Engineer
M. Finnegan, Unit 3 Health Physics Shift Supervisor
D. Fredericks, Licensing Engineer
J. Fuller, Sr. EP Instructor
C. Gladding, Manager, Nuclear Design Engineering
D. Glover, Outage Planning Manager
S. Heard, Manager, Document Administration and Nuclear Procedures
W. Hoffner, Manager, Operations
A. Johnson, Supervisor, Radiation Protection Support (Technical)
J. Joswick, Radiation Protection Technician
M. Kai, Supervisor, Safety Analysis
R. King, Outage ALARA Coordinator
E. Laine, Acting Manager, Radiological Protection and Chemistry
J. Langworthy, Unit 2 Radiation Protection Technician
P. Luckey, Manager, EP
S. Mazzola, Supervisor, Off-site EP
R. McConnell, Primary System Chemist
R. Leach, Staff Health Physicist
F. Neff, Nuclear Oversight Assessor
D. Regan, Supervisor, Radiation Protection Support (ALARA)
M. Wynn, Health Physicist

NRC personnel

S. M. Schneider, Senior Resident Inspector
P. C. Cataldo, Resident Inspector
S. R. Kennedy, Resident Inspector
K. A. Mangan, Resident Inspector
C. M. Long, Reactor Engineer
C. G. Cahill, Senior Reactor Inspector, Division of Reactor Safety (DRS)
L. S. Cheung, Senior Reactor Inspector, DRS
E. W. Cobey, Senior Reactor Analyst, DRS
J. M. D'Antonio, Operations Engineer, DRS
J. C. Jang, Senior Health Physicist, DRS
K. M. Jenison, Senior Project Engineer, DRP
T. A. Moslak, Health Physicist, DRS
N. T. McNamara, Emergency Preparedness Specialist, DRS
T. L. O'Hara, Reactor Inspector, DRS
B. E. Sienel, Resident Inspector, Vermont Yankee
D. Prevatte, NRC Contractor

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000423/2003004-02	URI	Failure to meet safe shutdown requirements integral with the fire protection program requirements (4OA3)

Opened and Closed

05000423/2003004-01	NCV	Failure to adequately evaluate and correct an identified degradation of the service water (SW) pump/motor coupling (1R15)

Closed

05000336/2003001-00	LER	Pressurizer Water Volume Periodically Exceeded the Technical Specifications Limit (4OA3)
05000423/2003002-00	LER	Fire Safe Shutdown Strategy May Not Be Adequate for Fire Scenarios Which Assume Loss of All AC Power (4OA3)
05000336/2003006-01	URI	Failure to Perform Adequate Post-Modification Test of Design Changes to the Charging System (4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection (71111.01)

AOP 2560, Revision 009-05, Storms, High Winds, and High Tides
AOP 3569, Revision 015-01, Severe Weather Conditions
SP 3665.1, Revision 5-1, Flood Level Determination
S&W Dwg 12179-EM-106C-43, Radioactive Liquid Waste & Aerated Drains
Unit 2 and Unit 3 FSAR
C OP 200.6, Revision 001-01, Storms and Other Hazardous Phenomena (Preparation and Recovery)
MP 2721C, Revision 007-01, Protection and Restoration of Service Water Pump Motor during a PMH

Section 1R02: Evaluation of Changes, Tests or Experiments (71111.02)

Refer to Section 4OA2 for list of documents reviewed

Section 1R04: Equipment Alignment (71111.04)

SP 2604F-001, Revision 009-01, HPSI System Electrical Alignment Check, Facility 2
SP 2604-002, Revision 015-02, HPSI System Valve Alignment Check, Facility 2
SP 2612D-001, Revision 028-06, Service Water, Facility 2
SP 2613B-002, Revision 016-03, DG Valve Alignment Checklist, Facility 2
SP 2613K, Revision 002-03, Diesel Generator Slow Start Operability Test, Facility 1
SP 2669A, Revision 016-03, PEO Rounds
SP 3610A.3-002, Revision 5, RHR System Valve Lineup Verification
SP 3622.4, Revision 005-02, Auxiliary Feedwater System Lineup (MDAFW Train B)
OPS Form 2326A, Revision 020-10, Service Water System
OPS Form 2343, Revision 020-00, 4160 Volt Electrical System
OPS Form 2346A-005, Revision 018-02, "B" DG Pre-start Checklist
OPS Form 3310A-1 Revision 7, Residual Heat Removal System (Common)
OPS Form 3310A-2 Revision 8,Change 2, Residual Heat Removal System Train A
OPS Form 3310A-3 Revision 9, Change 1, Residual Heat Removal System Train B
TRM Section3/4.7.12, Fire Suppression Systems
DWG# 12179-EM-152C-17, ESF And MSV Buildings Ventilation
DWG# 12179-EM-112A-42, Low Pressure Safety Injection
Drawing No. 25203-32005 SH. 24, 345KV Breaker 52/8T, Auxiliary Contact Multiplier
Drawing No. 25203-31034, Unit 2 Connection Diagram, Neutralizing Transformers and Reactors
OP 2388A, Revision 004-03, Unit 2 Ground Isolation and Electrical Distribution
MP 2720H2, Revision 000-01, DC Bus Ground Fault Location Using the GFD-115 Detector
MP-24-BKR-REF00, Revision 002, Circuit Breaker Maintenance Program, "Program Requirements and Key Elements"

Section 1R05: Fire Protection (71111.05Q)

Unit 2 Fire Hazards Analysis Rev. 7 Section 4, Plant Design Features
Unit 2 Fire Hazards Analysis Rev. 7 Fire Area No. A-21 El. 14’ 6" Appendix R Area R-10
Unit 2 Fire Hazards Analysis Boundary Drawing Auxiliary & Containment -EL. 14’ 6" FIG. 4 Revision 2
FP-EV-98-0006, Revision 1, "The Partial Suppression and Partial Detection in Appendix R Fire Area R-1"
FP-EV-99-0005, Revision 1, Technical Evaluation for the Configuration of Fire Dampers 2-HV-601A and 2-HV-601B in the Floor of the Auxiliary Building 25’-6" Elevation Cable Vault
FP-EV-99-0006, Revision 0, Condition of Fire Dampers 2-HV-155A, 155B, 155C, 156A, 156B, 157A, 157B, and 157C in Auxiliary Building 14’ 6" Elevation Fire Zones A-12A, A-20 and A-21
Penetration Seal Survey Map and Inspection Record Dwg. No. 25203-24092, Sheet AZ4F17
Attachment 1, Penetration Seal Inspection Survey Notice Discrepancy and Engineering Resolution, Unit 2, Seal no. 804, Map no. A24F17
Condition Report CR-03-09217, Damper in Ceiling of Unit 2 West DC Switchgear Room Mislabeled
Millstone Nuclear Power Station Unit 3, Fire Protection Evaluation Reports, December 2001
ONP 505, Revision 006-01, Fire
25203-SP-M2-SU-1046, Revision 00, Unit 2 Appendix R Compliance Report
SP 3641D.6, Revision 009-03, Fire Rated Assemblies
SFP-17 Revision 0, Fire Penetration Seal Inspections

Annual Fire Drill (71111.05A)

Millstone Nuclear Power Station Unit 3 Fire Protection Evaluation Reports, Revision March 02
FPI 50, "Fire Brigade Meetings and Drills," Revision 004-01
SFP 1, "Fire Protection Training Program," Revision 000-01
Millstone Unit 3 Updated Final Safety Analysis Report
Condition Report CR-03-06930, An Unannounced Fire Brigade Drill Mets Its Acceptance Criteria, But Revealed 5 Areas For Improvement

Section 1R06: Flood Protection Measures (71111.06)

SP 2615, Revision 006-01, "Flood Level Determination"
SP 3670.4-014, Revision 002-01, Semi-Annual PMs
SP 3670.4, Revision 20-07, Routine PM’s
AOP 2560, Revision 009-05, "Storms, High Winds, and High Tides"
AOP 3569, Revision 015-01, Severe Weather Conditions FSAR
C OP 200.6, Revision 001-01, "Storms and Other Hazardous Phenomena (Preparation and Recovery)"
MP 2721C, Revision 007-01, “Protection and Restoration of Service Water Pump Motor during a PMH"
C EN 104I, Revision 005, "Condition Monitoring of Structures"

Section 1R11: Licensed Operator Requalification (71111.11)

Millstone Units 1 and 2 Training Drill Package (CFD-03-04)
Unit 1 Emergency Action Levels
Unit 2 Emergency Action Levels
Operational Exam 38
Operational Exam 50

Section 1R12: Maintenance Implementation (71111.12)

CR-02-04645, CEA 41 of Group 7 did not Initially Move During Reactor Startup
CR-02-07015, CEA Failed to Operate Properly during Surveillance Testing
CR-02-13356, While Performing SP 2654I, Automatic Start Test of "B" IAC, the "B" Compressor Started But Would Not Load
CR-03-03338, Group 7 CEA #59 did not Invert with the Rest of the Group 7 CEAs When Demand Signal Sent to Group 7
CR-03-03476, Radiography of 2-CH-328 under AWO M2-0303803 Revealed the Disc/Stem Separation
CR-03-03720, "A" SIL Accumulator Pressure Instrument 3SIL-PI961 Dropped From 600 PSI to 560 PSI Unexpectedly
CR-03-06496, MRFF For CR-03-03720 Conclusion Was Correct, Although the Wrong Basis Was Documented
CR-03-06589, Received IA Header Pressure Low Alarm Due to F3A Failing To Load While In "Lead"
CR-03-08347, 3MSS-PT505, Failure Results in Control Rod Motion and Unplanned LCO Entry
CR-03-08513, Loss of 3VBA*INV2 Supply to VIAC2. Unplanned LCO
DM2-00-0122-03, Clarification to Charging System Check Valve Replacement DCR Charging System Recovery Plan, Revision 9/25/03
Maintenance Rule (a)(1) Evaluation for the Chemical and Volume Control System
Maintenance Rule Scope Report
MP-24-MR-FAP710, Revision 2, Maintenance Rule Functional Failures & Evaluations
Maintenance Rule Action Plan for Control Element Drive System
Millstone Unit 3 Maintenance Rule Scoping Tables

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation (71111.13)

MP-20-WM-FAP02.1, Revision 007, Conduct of On-Line Maintenance
MP-20-WM-FAP02.1, Attachment 8.1, PRA Orange Condition Contingency/Compensatory Measures Plan
Equipment Out Of Service Risk Assessment Tool
Major Equipment Schedule for Week of 7/28/03
Major Equipment Schedule for Week of 8/4/03
Major Equipment Schedule for Week of 8/25/03
Plan of the Week Schedule for Week 0335, August 24-August 30, 2003
Surveillance Form SP 3646A.9-009, Revision 001-01, Containment Isolation Phase A S917 - Relay K 623, Slave Relay Actuation Test - Train B
Surveillance Form SP 3646A.9-026, Revision 001, Safety Injection S914 - Relay K616, Slave

Relay Assisted Test - Train B
OP 2315D, Revision 012, Vital Switchgear Room Cooling Systems

Section 1R14: Operator Performance During Non-Routine Evolutions and Events (71111.14)

CR-03-06654, 3CNA-AOV40 Repositioning Caused Loss of Annunciators and Valve Indications at BRS Panel; Also Caused Ground on Battery 5
CR-03-06723, Plant Transient Due to Unstable Grid Affect on Turbine Control System
CR-03-01042, ISO New England Study (MP3 Exciter) Shows That MP3 Loses Synchronism Under Heavy Transfer Conditions During Extreme Contingencies Outside CT
OP 3204, Revision 015-07, At Power Operation
SP 3623.2, Revision 008-05, Turbine Overspeed Protection System Test
AOP 2503D, Revision 2, "Loss of Non-Vital 480 VAC Bus 22D"
AOP 2563, Revision 009-01, "Loss of Instrument Air"
AOP 2580, Revision 003, Degraded Voltage
AOP 3566, Revision 009, Immediate Boration
Operator Logs

Section 1R15: Operability Evaluations (71111.15)

CR-01-06395, Temporary Action is Needed to Administratively Control TS 3/4.4.8 From a Reactor Coolant Activity Limit of 1 uci/gm DE I-131 to a Limit of 0.6 uci/gm
CR-03-03225, Recent Millstone Vibration Program Software Upgrade Could Affect First Vibration Valves
CR-03-05536, 3SSR-CHL1 Mechanical Refrigeration Unit Not Running
CR-03-06130, TDAFW Pump Vibes Outside Acceptance Criteria of 2610B-4
CR-03-06453, 2315G Intake Structure Ventilation Needs Clarification
CR-03-06718, 3SSR-CHL1 Will Not Run
CR-03-06732, "A" EDG Governor Load Limit Knob Found Below Max Fuel Setting
CR-03-06751, Unable to Obtain Steam Generator Samples at Alternate Sample Location Due to Clogged Lines
CR-03-06755, As-found Support configuration for X-169A1B Service
CR-03-06966, Westronics Series 2100C Part 21 Report
CR-03-07134, Thermography on Breaker B6102 (P18C Charging Pump) Abnormal
CR-03-07135, 2-AC-527, 528, 529, and 530 Currently are not CIAS Tested as Required
CR-03-07890, Unplanned TSAS due to SW231A, "A" EDG Bypass Valve Close Stroke Time Excessive
CR-03-09006, 3SWP*P1B Packing Leak
CR-03-09039, Unplanned LCO developed when it was determined that 3SWP*P1B motor/pump coupling was degraded and operability was questioned
CR-03-07705, "B" HPSI Control Switch on Control Room MCB-01 does not Operate Correctly
OD MP2-054-03, Service Water Piping Support Configuration in the Return of X-169A1B Does Not Match Analysis
OD M2-055-03, Containment Process Radiation Monitor Isolation Valves
OP 2315G, Revision 6, Intake Structure Ventilation System

OP 3311A, Revision 8, Reactor Plant Sampling
S&W Dwg. No 12179-FM-143A-25 - Turbine Plant Sampling
S&W Dwg. No 12179-FM-123A-40 - Main Steam and Reheat
S&W Dwg. No 12179-FM-144A-27 - Reactor Plant Sampling
Dwg. No. 25203-39007, Sheet 1024B Millstone Unit 2, MCC B61 Cubicle No. AF4 Elementary Conn.
CBM 104, Revision 003, Vibration Data Acquisition and Overall Vibration Analysis
Reportability Determination for CR-03-06732, in accordance with RAC 05, Revision 003-00, Reportability Determinations and Licensee Event Report Processing
CR M3-00-0765, Part 21 Notification from Westinghouse regarding non-conservative technical specification values for RCS Iodine Activity
Westinghouse Nuclear Safety Advisory Letter NSAL-00-004, dated March 7, 2000, "Nonconservatisms in Iodine Spiking Calculations"
RP-5, Revision 003, Operability Determinations
Part 21 Notification - Possible Defect with Thermo Westronics Series 2100C Recorders
NSAL-00-004 - Nonconservatisms in Iodine Spiking Calculation
SP 3855, Rev 005 - Reactor Coolant Analysis For Dose Equivalent I-131
MP2 Service Water System Design Basis Alignment Calculations
MP3-044-03, Rev 0 - DWST Vent Operability Determination
PRA03YQA-04031S3, Rev 0 - Tornado Missile Impact On External Items -Unit 3

Section 1R17: Permanent Plant Modifications (71111.17B)

Refer to Section 4OA2 for list of documents reviewed

Section 1R19: Post-Maintenance Testing (71111.19)

AWO M2-00-07291, "B" HPSI Breaker PM and Relay Calibration
AWO M2-00-15851, Hypot Testing on Motor and Cables of the "A" SW Pump
AWO M2-02-07640, "B" Charging Pump 18 Month Planned Maintenance
AWO M2-02-08654, "A" LPSI Pump Seal Cooler Leak Repair
AWO M2-03-05512, Repack "A" SW Pump
AWO M2-03-07135, Realignment of "A" SW Pump
AWO M2-03-07319 P18C "C" Charging Pump 480V Breaker
AWO M2-03-07769, CEDM 46 Microprocessor is Not Fully Functional
AWO M3-03-00706, Charging Pumps Cooler Thermal Performance Test
AWO M3-03-10507, Turbine Impulse Pressure Instrument Calibration and Troubleshooting
I&C 2421A, Revision 005-01, CPP Component Replacement
I&C Form 3445A01-1, Revision 3, Turbine Impulse Pressure Calibration Channel 1
OPS Form 2620A-001, Revision 008-01, CEA Partial Movement
PT 1425I01, Revision 2, Relay Type IAC Overcurrent
PT 1425P1, Revision 1, Relay Type PJC Instantaneous Overcurrent
PT 21461, Revision 006, MP2 Protective Relay Calibration Program
SP 2612A, Revision 001-01, "A" SW Pump and Facility 2 Discharge Check Valve
SP 3445A01, Revision 003-01, Turbine Impulse Chamber Pressure Calibration
SP 3626.4-001, Revision 012-02, Service Water Pump 3SWP*P1A Operational Readiness Test

CR-03-05913, CRPD: Hand Switch Hard to Operate from the Pull to Lock Position to the Normal After Trip Position
CR-03-06344, Procedure Required for Testing HPSI Pump Control Switch Replacement
CR-03-06558, CEDM ACTM Microprocessor is Not Fully Functional
CR-03-07319, Wrong Size Wire from Load Side of Breaker to Line Side of Contactor on B6102 (MP18C)
CR-03-07693, P-41B Handswitch Stuck in Pull to Lock Position
CR-03-07944, Unplanned entry into A EDG Tech Spec
CR-03-08227, CCE Thermal Performance Test Delayed
CR-03-08513, Loss of 3VBA*INV2 Supply to VIAC2. Unplanned LCO
CR-03-08701, Unplanned TSAS 3.6.6.1 and 3.7.9 Due to 3HVR*AOD33A is Sticking
M3 99 01468, Per DCN# DM3-00-1091-98 Stress Relief for Motor Leads
M3 00 00862, Overhaul Service water Pump
M3 03 10768, 3VBA*INV2
M3 03 10147, Fuel Oil Day Tank 3EFG*TK2A LVL Control and Indication
M3 03 10968, Lubricate Linkage and Cycle Damper
M3 87 10689, EEQ, 20 Year - Reed switch and Clamp Assembly, SOV Coil and Cover gasket Replacement
M3 87 10692, EEQ 20 Years - Reed Switch and Clamp Assembly, SOV Coil, Bonnet, O-Ring and Cover Gasket EOQL Replacement
MP-20-WP-GDL40, Revision 002, Pre- and Post-Maintenance Testing
MP-24-IST-FAP01.2-1, Revision 0 - Pump Test Data Evaluation Form
MP 2702F12, Low Pressure Safety Injection Pump
Calc 96-001, Rev 1, Empirical Adjustment MP3 SW Model To 1995 Flow Test Data and Incorporation of Latest Service Water System Design
EN31172, Revision 000, Charging Pump Cooler Thermal Performance Test
Drawing No. 12179-EM-114A-15, CCE System

Section 1R22: Surveillance Testing (71111.22)

AWO M2-03-03444, Calibration and Functional Test ESAS UV, RSST and Sequencer
SP 2403BA, Revision 002-05, Facility 1 ESAS UV, RSST and Sequencer Calibration and Functional Test
SP 2604A, Revision 012-07, HPSI Pump Operability and Inservice Testing, Facility 1
SP 2604E-003, Revision 010-01, HPSI Valve Operability Alignment Check, Facility 1
SP 2613K-001, Revision 002-00, Periodic DG Slow Start Operability Test, Facility 1 (Loaded Run)
SP 2624A-003, "A" EDG Train "B" Starting Air Valves IST
SP 3449H1, Revision 5, General Atomic Containment Area High Range Radiation Monitor Op Test
SP 3608.2, Revision 009-01, Safety Injection Pump B Pump Operational Readiness Test
SP 3622.8, Revision 009-03, Auxiliary Feedwater Valve Operability Test
SP 3622.8-001, Auxiliary Feedwater Valve Stroke Time Test and Manual Cycling of Suction Header Isolation Valves
SP 3626.4, Revision 11-04, Service Water Pump 3SWP*P1A Operational Readiness Test
SP 3626.7, Revision 014-01, Service Water Pump 3SWP*PID Operational Readiness Test
SP 3626.7-001, Revision 013-02, Service Water Pump 3SWP*PID Operational Readiness Test

Surveillance Form
SP 3630E.2, Revision 006-01, Safety Injection Pump B Cooling Pump Operational Readiness Test
SP 3646A.9, Revision 019-03, Slave Relay Testing-Train B
SP 3646A.9-009, Revision 001-01, Containment Isolation Phase A S917-Relay K623, Slave Relay Actuation Test-Train B
OPS Form 2346A-004, Revision 021-04, "A" DG Data Sheet
OPS Form 2604A-001, "A" HPSI Pump Operability Test, Mode 1, 2, 3, & 4
TS 3.3.2.1, Engineered Safety Feature Actuation System Instrumentation and TS Surveillance 4.3.2.1.1
TS 3.6.3, Containment Isolation Valves
TS 3.7.4 Bases, Service Water System
TS 4.0.3, IST Program Requirements
TS Surveillance 4.0.5, Surveillance Requirements for IST of ASME Code Class 1, 2, and 3 Components
TS Surveillance 4.3.2.1, Engineered Safety Features Actuation System Instrumentation
TS Surveillance 4.3.3.6.1 and Bases Accident Monitoring Instrumentation
IST Pump Test Plan, IST Pump ID 3SWP*PID
ASME Code XI, Inservice Test Procedures
ASME Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components
FSAR, Chapter 6, Table 6.2-6.5, Containment Isolation Valves
FSAR, Chapter 7.3, Engineered Safety Features Actuation System
CR-03-08212, TDAFW Pump Control Valve 3FWA*HV32C Exceeded Max. ISI Closed Stroke Time on First Attempt During Performance of SP3622.8-001
NGP 5.31, Revision 3, Fixed Resistance System Classification During Testing - SIH Pumps
ASME Code, 1988, Case Code OM-6, Inservice Testing of Pumps in Light-Water Reactor Power Plants
IST Program Manual, Revision 0, Pump Test Acceptance Criteria Worksheet for SI pumps
IST Program Manual, Revision 0, Pump Test Acceptance Criteria Worksheet for SI Cooling pumps
IST Program Manual, Revision 0, Pump Test Acceptance Criteria Worksheet for Service Water pumps

Section 1R23: Temporary Plant Modifications (71111.23)

TM M3-02-009, Revision 0, S/G Cubicle Snubber Temporary Oil Reservoir Fill from El. 51'
TM M3-02-010, Revision 0, 3SIH-V986 Bypass Line
TM M2-03-006, Revision N/A, Charging Pump P18A, B, C Drainline 2-HSC-113 Freeze Seal
S&W DWG # 12179-EM-112B-21, Low Pressure Safety Injection
S&W DWG # 12179-EM-113A-23, High Pressure Safety Injection
WC-10, Revision 004-03, "Temporary Modifications"

Emergency Preparedness

Millstone Emergency Plan

MP-26-EPA-FAP10, Public Alert System Siren Test and Repair, Rev. 0
MP-26-EPI-FAP07, Notifications and Communications
MP-26-API-FAP01, Management Program for Maintaining EP
MP-02-NO-FAP02.2, Nuclear Oversight Audits, Rev. 004
DNAP-0104, Dominion Nuclear Self-Assessment Program, Rev. 0
CR 03-08285, Did not re-test encoder after siren test failure
CR 03-08142, Trend in siren failures due to dead batteries
CR 03-02665, Classification and PARS Change for evacuating vs. sheltering
CR 03-05063, Clarification needed for EAL classification
CR 03-05103, Several instances of missed EAL classifications
CR 02-08255, Establish tracking mechanism in procedure to evaluate monthly pager test
CR 02-07367, Revise U2 EAL tables to include EOP 2540

Section 1EP6: Drill Evaluation (71114.06)

Millstone Units 1 and 2Training Drill Package (CFD-03-04)
Unit 1 Emergency Action Levels
Unit 2 Emergency Action Levels
Operational Exam 38
Operational Exam 50
MP-26-EPI-FAP06, Revision 0, Change 4, Classifications and PARs

Section 2OS2: ALARA Planning and Controls (71121.02)

RPM 1.1.1, Rev 7, Health Physics Organization and Responsibilities of Key Radiological Personnel
RPM 1.3.8, Rev 8, Criteria for Dosimetry Issue
RPM 1.3.14, Rev 6, Personnel Dose Calculations and Assessments
RPM 1.4.1, Rev 6, ALARA Reviews and Reports
RPM 1.4.2, Rev 1, ALARA Engineering Controls
RPM 1.5.1, Rev 8, Routine Survey Frequency
RPM 1.5.2, Rev 4, High Radiation Area Key Control
RPM 1.5.5, Rev 4, Guidelines for Performance of Radiological Surveys
RPM 1.5.6, Rev 3, Survey Documentation and Disposition
RPM 2.1.1, Rev 4, Issuance and Control of RWPs
RPM 2.1.2, Rev 1, ALARA Interface with the RWP Process
RPM 2.2.6, Rev 8, Continuous Air Monitors
RPM 2.4.1, Rev 3, Posting of Radiological Control Areas
RPM 2.10.2, Rev 10, Air Sample Counting and Analysis
RPM 2.11.1, Rev 8, Survey and Decontamination of Personnel and Clothing
RPM 5.2.2, Rev 10, Basic Radiation Worker Responsibilities
RPM 5.2.3, Rev 3, ALARA Program and Policy
MP-SA-03-04, Surveys and Pre-job Briefs
MP-SA-03-16, Health Physics Equipment
Management Work Observation Reports for July 2003:WO-03-4604, 4621, 4681, 4684, 4705, 4776, 4824, 5104, 5110, 3865

Management Work Observation Reports for June 2003: WO-033865, 3866, 3946, 3989, 4054, 4073, 4270, 4304, 4312, 4441
Management Work Observation Reports for May 2003: WO-03-3215, 3320, 3302, 3661
CR-03-01909, 03-07437, 03-07434, 03-04383, 03-01473, 03-02554, 03-02934, 03-06514, 03-04186, 03-07028, 03-05310, 03-05548, 03-05577, 03-06049, 03-04383, 03-04449, 03-04655, 03-03457, 03-05012, 03-03723, 03-03771, 03-03994, 03-04162, 03-02241, 03-04096, 03-01999, 02-03543

Section 2PS1: Gaseous and Liquid Effluents (71122.01)

Unit 2

2002 Radiological Annual Effluent Release Reports including projected public dose assessments
REMM (Revision 23, January 8, 2002), ODCM (Revision 23, January 8, 2002), and Unit 2 Radiological Effluent Controls (Revision 23, January 8, 2002)
Technical justifications for REMM and ODCM and Unit 2 Radiological Effluent Controls changes made
Analytical results for charcoal cartridge, particulate filter, and noble gas samples
Implementation of the compensatory sampling and analysis program when the effluent radiation monitoring system (RMS) is out of service
Selected 2003 radioactive liquid and gaseous release permits
Associated effluent control procedures, including analytical laboratory procedures
Calibration records for laboratory measurements equipment (gamma and liquid scintillation counters)
Implementation of measurement laboratory quality control program, including quarterly effluent split/spike samples comparisons
Implementation of the interlaboratory comparisons
Self-assessments
2002 NQA Audit (Audit No. MP-02-A13, RETS/REMP/ODCM) for the REMM and ODCM implementations
Most recent surveillance testing results (visual inspection, delta P, in-place testings for HEPA and charcoal filters, air capacity test, and laboratory test for iodine collection efficiency) for the following air treatment systems:
    TS Section 3/4.6.5.1: Enclosure Building Filtration System and
    TS Section 3/4.7.6.1: Control Room Emergency Ventilation System
Most recent Channel Calibration results for the radioactive liquid effluent radiation monitoring system (RMS) and its flow measurement devices which listed in the ODCM Tables IV C-2 and IV C-4
Radiation Monitoring System
Clean Liquid Radwaste Effluent Line Radiation Monitor(RM-9049)
Aerated Liquid Radwaste Effluent Line Radiation Monitor (RM-9116)
Steam Generator Blowdown Radiation Monitor (RM-4262)
Reactor Building Closed Cooling Water Radiation Monitor (RM-6038)
Condensate Polishing Facility Waste Neutralization Sump Radiation Monitor (2CND-RM-245)
Waste Gas System Noble Gas Monitor (RM-9095)

MP2 Vent Noble Gas Activity Monitor (RM-8132B)
Millstone Stack Noble Gas Monitor (RM-8169)
Flow Rate Monitor
Clean Liquid Radwaste Effluent Line Flow Rate Monitor (F-9050)
Aerated Liquid Radwaste Effluent Line Flow Rate Monitor (F-9118)
Condensate Polishing Facility Waste Neutralization Sump Flow Rate Monitor (2CND-FT-246)
MP2 Vent Flow Rate Monitor (RR-8132)
Millstone Stack Flow Rate Monitor (FT-8169)

Unit 3

2002 Radiological Annual Effluent Release Reports including projected public dose assessments
Most recent Radiological Effluent Monitoring Manual and Unit 3 ODCM (Revision 024, Effective Date: September 12, 2003)
Technical justifications for REMM and Unit 3 ODCM and Unit 3 Radiological Effluent Controls changes made
Selected 2003 analytical results for charcoal cartridge, particulate filter, and noble gas samples
Implementation of the compensatory sampling and analysis program when the effluent radiation monitoring system (RMS) is out of service
Selected 2003 radioactive liquid and gaseous release permits
RER-03-003, Release of Contaminated Water from the Millstone Stack to the Millstone Quarry (implementation of the IE 80-10)
Calibration records for Unit 3 chemistry laboratory measurements equipment (gamma and liquid scintillation counters)
Implementation of the measurement laboratory quality control program, including quarterly effluent split/spike samples comparisons and control charts
Implementation of the interlaboratory and intralaboratory comparisons performed by Unit 3 Chemistry
Contractor laboratory's (Environmental Laboratory, Framatome, ANP) Laboratory Quality Assurance Plan
Contractor laboratory's 2002 Semi-Annual QA Status Reports, including interlaboratory comparisons
Self-assessment
Most recent Channel Calibration and Analog Channel Operational Test results for the radioactive liquid and gaseous effluent radiation monitoring system(RMS) and its flow measurement devices which listed in the ODCM Tables V.C-2 and V.C-4:

Unit 3 RMS
Liquid Waste Monitor;
Waste Neutralization Sump Monitor-Condensate Polishing Facility
Turbine Building Floor Drains Monitor
Steam Generator Blowdown Monitor
Unit 3 Ventilation Vent Stack (Turbine Building) Noble Gas Activity Monitor
Millstone Stack Noble Gas Activity Monitors (Low and High Range)
Engineered Safeguards Building Noble Gas Activity Monitor
Warehouse No. 5 Vent Noble Gas Monitor

Flow Rate Measuring Device
Waste Neutralization Sump Effluent
Liquid Waste Effluent Line
Steam Generator Blowdown Effluent Line
Millstone Stack Process Flow Rate Monitor
Unit 3 Ventilation Vent Stack Flow Rate Monitor
Engineered Safeguards Building Discharge Flow Rate Monitor

Most recent surveillance testing results (visual inspection, delta P, in-place testings for HEPA and charcoal filters, air capacity test, and laboratory test for iodine collection efficiency) for the following air treatment systems

- TS 3/4.6.6 Supplementary Leak Collection and Release System
- TS 3/4.7.7 Control Room Emergency Ventilation System
- TS 3/4.7.9 Auxiliary Building Filter System
- TS 3/4.9.12 Fuel Building Exhaust Filter System

Section 4OA1: Performance Indicator Verification (71151)

NRC PI Website
Unit 2 HPSI System Unavailability Data Sheets
HPSI System Health Report
Operator Shift Logs
Maintenance Rule Unavailability Tables
MP3 PI-DVS 5 - MP 3 Safety system Unavailability (SSU), High Pressure Safety Injection System
MP3 PI-DVS 5 - MP 3 Safety system Unavailability (SSU), Residual Heat Removal System

Section 4OA2: Problem Identification and Resolution (71152)

CR-02-08966 "OE Identifies Shutdown Margin Concern for 4 Loop Westinghouse Plants for Blocking/Unblocking Safety Injection below P-11"
CR-02-04412 "Gland Seal Regulator Malfunctioned Resulting in a 9 degree Drop in Tave During Plant Startup"
CR-02-04732, 2-CHW-13 P122A P123 Crosstie Failed to Close to Its Accident Position
OP 2323D Revision 008-03, "Turbine Gland Seal and Exhaust System"
OP 3208 Revision 020-07, "Plant Cooldown
OP 3209B Revision 010-01, "Shutdown Margin"
EMF-2902, "Millstone Unit 2 Cycle 16 Safety Analysis Report"
EN 31030 Revision 003, "Generation, Control, and Distribution of Reactor Engineering Curve and Data Book"
NSAL-02-14, Nuclear Safety Advisory Letter - Steam Line Break During Mode 3.
MP3C8-01928F3 Revision 0, "Millstone Unit 3 EOC8 Boron Requirements for Steam Line Break with P-11 Block Permissive in Mode 3 and Mode 4"
CR-02-04732, 2-CHW-13 P122A P123 Crosstie Failed to Close to Its Accident Position
Maintenance Rule (a)(1) Evaluation for the Chill Water System

SP 2604T, Revision 002-01, Actuation Tests of Various ESF Components

10 CFR 50.59 and Permanent Plant Modifications

M2-00025, Replacement of Check Valves 2-CH-432, 2-CH-433, 2-CH-328, 2-CH-331, and 2-CH-334
M2-00030, Adding Disconnect Switch to Appendix R MOV 2MS-65A & B, 2MS202
M2-01002, Addition of Atmospheric Steam Dump Steam Trap
M2-01008, 2-SI-469 Relief Valve Replacement and Orifice Installation
M2-02001, Millstone Unit 2 Reactor Vessel Head Nozzle Repairs
M2-02-0002, Use of NS1651 (knife switch) to isolate 2-SI-651 for Appendix R Concerns
M2-99046, Nuclear Instrumentation Upgrade
M3-00002, Installation of Mechanical Seals in Millstone Unit 3 Service Water System
M3-01003, Cold Overpressure Protection System PORV Actuation Setpoint Change
DM2 -00-0002-01, RWST Local Temperature Control
DM2-00-0003-01, Disconnect Switch To Allow Installation of MOV Operating Coils
DM2-00-0038-01, Connect Level Gauge LG-5413 To Feedwater Heater X-6B Level control
DM2-00-0039-01, Charging Pump P18A/P18B Oil Water Separators
DM2-00-0271-01, Chiller X196A and X196B Control Upgrades
DM2-00-0316-01, P3A and P3B Heater Drain Pump Mechanical Seal Upgrades
DM2-00-0364-00, HPSI Pump P41B Bearing Modification
DM2-00-0380-01, Modification to Valves 2-RB-29B and 2-RB-29D
DM2-00-0397-02, Emergency Diesel Generator Reverse Power Relay Setpoint
DM2-00-0752-00, Modify Reactor Head Pressurizer Vent Tubing
DM2-00-085-01, H7A EDG Bearing Temperature Instrument upgrade
DM2-01-0002-01, RWST Heat Exchanger X48 Maximum Line Temperature
DM2-04-0462-00, Wide Range Amplifier Connector Substitution
DM3-00-0008-01, Revise (voltage) Setpoint for all C and D Battery Charger at Unit 3
DM3-00-0038-01, Replacement of Check Valves 3SWP*V836/837
DM3-00-0077-02, RPS, ESF & AMSAC Low Steam Generator Trip Setpoint Change
DM3-00-0109-01, Removal of EDG Fuel Header Return Check Valves Internals
DM3-00-0232-01, MP3 AFW System Pump Minimum Flow
DM3-00-0273-01, Removal of Sentinel Relief Valve 3MSS*RV58
DM3-00-0293-01, Cold Overpressure Protection System (COPPS) Setpoint Change
DM3-00-0342-00, Fire Protection Deluge Water System Deletion of Manual Initiation Capability within Control Room
DM3-00-0355-00, Emergency Diesel Generator Breaker directional Overcurrent Phase Relay Contacts (62AR/62BR)
DM3-00-047-02, MP3 AMSAC Low Steam Generator Level Trip Setpoint Change
DM3-01-0355-00, Directional Overcurrent Timer Relay Contacts 62AR Interlock (Bus 34C)
S2-EV-98-0222, Re-powering of 2-SI-651, 2-CH-517 and 2-CH-519 for Boron Precipitation Control
S2-EV-00-0079, Nuclear Instrumentation Upgrade
S2-EV-01-0001, RWST Local Temperature Control
S2-EV-01-0016, Addition of Atmospheric Steam Dump Steam Trap
S2-EV-01-0017, EDG Lube Oil Temperature Instrument Upgrade
S2-EV-01-0022, 2-SI-469 Relief Valve Replacement and Orifice Installation
S2-EV-01-0023, Adding Disconnect Switch to Appendix R MOV 2MS-65A & B, 2MS202

S2-EV-02-0015, The Use of NS1651 to isolate 2-SI-651 for Appendix R Concerns
S3-EV-01-0004, Replace Centrifugal Charging Pump Minimum Recirculation Flow Orifice Assemblies 3CHS*RO46A/B/C
S3-EV-01-0017, Removal of EDG Header Return Check Valve Internals
S3-EV-00-0023, Installation of Mechanical Seals in Millstone Unit 3 Service Water System
S3-EV-01-0031, MP3 TDAFW Pump Turbine Casing Sentinel Valve Removal
S3-EV-00-0069, Directional Overcurrent Timer Relay 62AR/BR Interlock
S3-EV-00-0073, Fire Protection Deluge Water Spray Deletion of Manual Initiation Capability within Control Room S2-EV-02-0010, Millstone Unit 2 Reactor Vessel Head Nozzle Repairs
DCR M2-02001, Millstone Unit 2 Reactor Vessel Head Nozzle Repairs
DCR M2-98055, Re-powering of 2-SI-651, 2-CH-517 and 2-CH-519 for Boron Precipitation Control
DCR M3-00002, Installation of Mechanical Seals in Millstone Unit 3 Service Water System
DCR M3-01003, Cold Overpressure Protection System PORV Actuation Setpoint Change
M2CRM2-01156R2, MP2 Control Room (screened out)
M2CRM2HW-01164R2, MP2 Control Room Operator Dose From LOCA Low Wind
M2LOCA98-02635R2, EAB LPZ Dose From MP2 LOCA (screened out)
CR-01-00330, CR-01-08022, CR-01-11566, CR-01-11683, CR-01-11696, CR-01-12248, CR-02-00862, CR-03-06742, CR-01-07947, CR-02-04759, CR-02-06870, CR-02-10683, CR-03-02251, CR 01-11976, CR-02-10863, CR-02-10630, CR-02-11821, CR-02-07585, CR-02-07590, CR-02-07981, CR-02-08189, CR-02-12921, CR-01-03301, CR-01-03558, CR-01-06270, CR-02-02556, CR-02-10935, CR-03-04887, CR-01-07850, CR-02-02720, CR-02-01953, CR-02-01362, CR-03-06012, CR-03-01483, CR-03-02330, CR-03-06800, CR-02-09049, CR-02-05063, CR M2-00-1474, CR M3-00-0124, CR M3-00-0939, CR M3-00-1675, CR M3-99-1048, CR M2-01-0010
MP-SA-01-092, Unit 3 Refuel Outage 7 Modifications and Hazard Program
MP-SA-02-060, Quality of 50.59 Screens and Evaluations
MP-SA-02-063, Unit 2 Refuel Outage 14 Modifications and Hazard Program
DCM-01, Program and Policy Overview, Revision 009
DCM 03, Plant Changes, Revision 12
RAC 12, 50.59 Screens and Evaluations, Revision 004
SJ 2601J, CVCS Check Valve Tests
MP-16-MMM , Corrective Action, Revision 006
MP-13-SA-REF12.02, Determining Applicability of 10CFR50.59, Revision 0
MP-13-SA-REF12.03, Guidance for Performing 50.59 Screens, Revision 0
MP-13-SA-REF12.03, Guidance for Performing 50.59 Evaluations, Revision 0
OP 2304C, Make Up (Boration and Dilution) Portion of CVCS, Revision 021-07
51-5012782-01, Framatome ANP Document, "Consideration of RV Closure Head Laminations in the CRDM IDTB Weld Repair," dated October 29, 2001
51-5016343-00, Framatome ANP Document, "Corrosion Evaluation of Millstone-2 CEDM IDTP Weld Repair," dated March 1, 2002
51-5016344-00, Framatome ANP Document, "PWSCC Assessment of Millstone-2 CEDM IDTB Weld Repair," dated March 1, 2002
51-5016345-01, Framatome ANP Document, "Millstone-2 IDTP CEDM Nozzle Weld Repair - Life Assessment Summary," dated March 14, 2002
M2-EV-98-0104, Technical Evaluation for Revision of Charging System Functional

Requirements for HELB and MSLB, dated August 19, 1998
01-ENG-01858M3, Calculation, MP3 - AFW System, AFW Pumps (3FWA*P1A, P1B, P2) Minimum Flow Requirement
Drawing 25203-26017, Charging System P&ID, Sh. 1
Drawing 25203-28500, QEXC1PDA-Neutron Flux Monitor, Out-of-core Wide Range Detector Loop Diagram
Drawing 25203-31205, Connection Diagram- Out-of-Core Detectors Amplifier & Split Bos
Drawing 25212-26917, Emergency Fuel Oil System P & ID

Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems
Unit 2
CRs for Routine Effluent Control Program (CR-02-01739, CR-02-02244, CR-02-03057, CR-02-06625, CR-02-06872, CR-02-09044, CR-02-11365, CR-02-13285, CR-03-1385, CR-03-01436, CR-03-02668, CR-03-04096, and CR-03-05783)
CRs for Radiation Monitoring Systems (CR-02-00623, CR-02-01925, CR-02-03948, CR-02-08260, CR-02-11877, CR-02-12229, CR-03-00215, CR-03-00826, CR-03-01094, CR-03-02716, CR-03-03081, CR-03-04068, CR-03-0415, and CR-03-05753)
CRs for Air Cleaning Systems (CR-03-00245 and CR-03-03992)

Unit 3
CRs for Radiation Monitoring Systems (CR-03-01176, CR-03-02097, CR-03-04176, CR-03-06761, CR-03-07708, CR-03-06761, CR-03-07421, CR-02-09354, CR-02-11160, CR-02-12382, CR-02-12564, CR-02-12655, and CR-02-13091)
CRs for Routine Effluent Control Program (CR-03-00145, CR-03-01248, CR-03-03639, CR-03-04096, CR-03- 07717, CR-03-07750, CR-02-06625, CR-02-09044, CR-02-10622, CR-02-10624, and CR-02-12009)
CRs for Air Cleaning Systems (CR-03-02985 and CR-03-09180)
CR-02-04732, 2-CHW-13 P122A P123 Crosstie Failed to Close to Its Accident Position
CR-02-08597, MP2 P11A, RBCCW Pump Motor Outboard Bearing Oil Analysis Results are Abnormal Due to High Viscosity
MP-08-LUB-SAP01, Revision 000,01, Lubrication Administration Guidance
MP-16-MMM, Revision 007-01, Organizational Effectiveness
ISEG Report 01007384-01, Millstone Station Lube Oil Practices dated 10 April 2002
Maintenance Rule (a)(1) Evaluation for the Chill Water System
SP 2604T, Revision 002-01, Actuation Tests of Various ESF Components

LIST OF ACRONYMS

ACTM	automatic CEA timer module
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
ANS	alert and notification system
AWO	automated work order
ΔCDF	change in core damage frequency
CEA	control element assembly
CIAS	containment isolation actuation signal

CIV	containment isolation valve
CR	condition report
CSR	cable spreading room
CVCS	Chemical and Volume Control System
DG	diesel generator
EAL	emergency action level
EOOS	equipment out of service
EP	emergency preparedness
ESF	emergency safeguards feature
FRV	feed regulating valve
FSAR	Final Safety Analysis Report
HEPA	high-efficiency particulate air (filter)
HPSI	high pressure safety injection
IMC	inspection manual chapter
ISO	independent system operators
LCO	limiting condition of operation
LPSI	low pressure safety injection
MDAFW	motor driven auxiliary feedwater
MR	maintenance rule
NCV	non-cited violation
ODCM	offsite dose calculation manual
OE	operating experience
P&ID	piping and instrumentation diagram
PEO	plant equipment operator
PORVs	power operated relief valves
QA	quality assurance
QC	quality control
RCCA	rod cluster control assembly
RCP	reactor coolant pump
REMM	radiological effluent monitoring manual
RHR	residual heat removal
RMS	radiation monitoring system
RWP	radiation work permit
SBO	station blackout
SDP	significance determination process
SERO	site emergency response organization
SP	surveillance procedure
SPAR	standardized plant analysis risk
SSCs	structures, systems, and components
SW	service water
TDAFW	turbine driven auxiliary feedwater
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
VIAC	vital instrumentation alternating current