July 28, 2003

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

SUBJECT: MILLSTONE POWER STATION UNIT 2 AND UNIT 3 - NRC INTEGRATED INSPECTION REPORTS 05000336/2003003 AND 05000423/2003003

Dear Mr. Christian:

On June 28, 2003, the US Nuclear Regulatory Commission (NRC) completed inspections at your Millstone Power Station, Unit 2 and Unit 3. The enclosed integrated inspection reports document the inspection findings, which were discussed on July 18, 2003 with Mr. J. Alan Price and other members of your staff.

These 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.

On the basis of the results of this inspection, no findings of significance were identified.

Since the terrorist attacks on September 11, 2001, 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 are scheduled for completion in calendar year 2003. The NRC will continue to monitor overall safeguards and security controls at Millstone Power Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the

NRC Public Document Room or from the Publicly Available Records (PARS) 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

Enclosures: Inspection Report 05000336/2003003
w/Attachment: Supplemental Information

Inspection Report 05000423/2003003
w/Attachment: Supplemental Information

cc w/encl:
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C. L. Funderburk, Director, Nuclear Licensing and Operations Support
D. W. Dodson, Acting Manager - Licensing
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	050000336
License No.:	DPR-65
Report No.:	05000336/2003003
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	March 30, 2003 - June 28, 2003
Inspectors:	S. M. Schneider, Senior Resident Inspector S. R. Kennedy, Resident Inspector P. C. Cataldo, Resident Inspector K. A. Mangan, Resident Inspector L. L. Scholl, Senior Reactor Inspector, Division of Reactor Safety (DRS)
Approved by:	Brian J. McDermott, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000336/2003-003; 03/30/2003 - 06/28/2003; Millstone Power Station, Unit 2; Routine Integrated Report.

The report covered a 3-month period of inspection by resident inspectors and an announced inspection by a regional inspector. 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

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Unit 2 Plant Status

The Unit operated at essentially 100% power for the duration of the inspection period with the exception of the period between June 9, 2003 and June 15, 2003. On June 9, 2003, the unit conducted an unplanned power decrease to 77% due to loss of the "A" circulating water pump while the "D" circulating water pump was out of service for maintenance. After completion of repairs to the "D" circulating water pump, the unit was returned to 100% power on June 15, 2003 and operated at essentially 100% power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdowns. The inspectors performed four partial system walkdowns during this inspection period. The following systems were reviewed:

- Reactor building closed cooling water (RBCCW) system partial alignment, Facility 1 on April 23 following an RBCCW valve stroke and timing IST
- Partial alignment of "C" high pressure safety injection (HPSI) system on May 22 during "A" & "B" HPSI system operational tests, in-service tests, and safety injection tank fill
- Partial alignment of "B" motor-driven auxiliary feedwater (MDAFW) pump on May 1 while "A" MDAFW pump was unavailable for maintenance
- Partial alignment of turbine-driven auxiliary feedwater (TDAFW) pump on April 24 following identification of tin and ferrous material in the "A" MDAFW pump oil sample

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.

Complete System Walkdown. The inspectors conducted a detailed review of the alignment and condition of the auxiliary feedwater system. The inspectors used the licensee procedures and other documents listed below to verify proper system alignment:

- Drawing No. 25203-26005, Condensate Storage and Auxiliary Feed
- OPS 2322, Rev 025-01, Auxiliary Feedwater System
- OPS Form 2610C-002, Revision 019-05, Auxiliary Feedwater System Lineup Verification

The inspectors also verified electrical power requirements, labeling, hangers and support installation, and associated support system status. Operating pumps were examined to ensure that any pump leakoff was not excessive and the pumps were properly vented. The walkdowns also included evaluation of system piping and supports against the following considerations:

- Piping and pipe supports did not show evidence of water hammer.
- Oil reservoir levels appeared normal.
- Hangers were within the setpoints.
- Component foundations were not degraded.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed nine 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. The fire areas reviewed included:

- East DC Switchgear Room - Auxiliary Building, 14'-6" Elevation (Fire Area A-20)
- West DC Switchgear Room - Auxiliary Building, 14'-6" Elevation (Fire Area A-21)
- "A" Battery Room - Auxiliary Building, 14'-6" Elevation (Fire Area A-22)
- Intake Structure Pump Room, 14'-6" Elevation (Fire Area I-1, Zone A)
- West Cable Vault - Turbine Building, 45'-0" Elevation (Fire Area T-8)
- East Cable Vault - Turbine Building, 45'-0" Elevation (Fire Area T-9)
- RBCCW Pump and Heat Exchanger Area - Auxiliary Building, -25'-6" Elevation (Fire Area A-1, Zone B)
- Low Pressure Safety Injection (LPSI) Pump Room - Auxiliary Building, -45'-6" Elevation (Fire Area A-3)
- Containment Spray and HPSI/LPSI Pump Room - Auxiliary Building, -45'-6" Elevation (Fire Area A-8, Zone A)

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the "A" emergency diesel generator (EDG) room in the auxiliary building 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 EDG room remain consistent with assumptions presented in the design basis documents.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the results of the "B" RBCCW heat exchanger inspection, performed in accordance with Maintenance Procedure (MP) 2701J-096, Revision 007, "Service Water Cooled Heat Exchanger Subject to GL 89-13." The inspectors reviewed the inspection results against the preestablished acceptance criteria contained within the procedure, and verified that all acceptance criteria had been satisfied. The inspector also reviewed the Final Safety Analysis Report to ensure that heat exchanger inspection results were consistent with the design basis. The inspectors verified that adverse conditions identified by the licensee were appropriately entered into the licensee's corrective action program.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed the conduct of licensed operator simulator training on April 22, 2003. The inspectors observed licensed operator performance relative to the following activities: training on high-risk licensed operator actions, operators' activities associated with the Emergency Plan, previous lessons learned items, and plant

experiences. In addition, the inspectors reviewed simulator physical fidelity to verify similarity between the simulator and the Unit 2 control room. The inspectors verified that the training evaluators adequately addressed operator performance issues that were identified during the exercise, and that applicable training objectives had been achieved.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed five maintenance risk assessments during the inspection period. The inspectors verified the conduct and adequacy of scheduled maintenance risk assessments for plant conditions affected by the conduct of the following scheduled maintenance and testing activities:

- Unit 2 Work Schedule for the week of 4/20/03 - maintenance and testing on the "A" and "B" reactor building closed cooling water (RBCCW) system in-service testing (IST) and check valve testing, "B" turbine building closed cooling water (TBCCW) heat exchanger (HX) and valve maintenance with Unit 3 "A" emergency diesel generator (EDG) out of service
- Unit 2 Work Schedule for the week of 4/27/03 - maintenance and testing on the refueling water storage tank (RWST) Facility 1 containment sump and shutdown cooling (SDC) system HX valve, turbine-driven auxiliary feedwater (TDAFW) pump valve stroke and operational test and one charging pump unavailable
- Unit 2 Work Schedule for the week of 5/19/03 - maintenance and testing on the station blackout diesel, west 480V load center room fan, and lower 4160 switchgear room fan
- Unit 2 Work Schedule for the week of 5/26/03 - maintenance and testing on the TDAFW pump, Facility 1 RWST and SDC HX valve, "B" service water pump outage, and "C" TBCCW HX outage
- Unit 2 emergent work during the week of 6/09/03 - PRA risk review of Temporary Modification to service water supply piping to the "A" EDG

The inspectors utilized the Equipment Out of Service (EOOS) quantitative risk assessment tool to evaluate the risk of the above 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.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

On April 3, 2003, the inspectors reviewed personnel performance in response to a failure of a control element assembly (CEA) to insert upon demand. Specifically, during a down power to support scheduled maintenance, a Group 7 CEA failed to insert with the rest of the group when a demand signal was sent. Operations personnel responded to the event by entering the abnormal operating procedure for CEA malfunctions. The CEA was declared inoperable and TS 3.1.3.1, Moveable Control Assemblies, was entered; however, TS 3.1.1.1, Shutdown Margin, was also applicable. The inspectors reviewed operator logs and response procedures. The inspectors also interviewed operators responding to the event and held discussions with senior licensee management regarding the applicability of TS 3.1.1.1. The licensee has since determined that a CEA that remains tripable will remain operable and that TS 3.1.3.1 and TS 3.1.1.1 will only be entered for an inoperable CEA or other required entry conditions.

b. Findings

No findings of significance were identified

1R15 Operability Evaluations

a. Inspection Scope

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

- CEA-59 Momentary Trouble Alarm (CR-03-03390)
- Enclosure Building Filtration System Operability (OD-MP2-046-03)
- "A" Motor-Driven Auxiliary Feedwater Pump Oil Sample Results Abnormal (ferrous material in oil) (OD MP2-048-03)
- Charging Pump Discharge Check Valves Not Fully Open As Expected (OD MP2-045-03)
- West 480 Volt alternating current (AC) Switchgear Room Temporary Ventilation Installation (CR-03-05497)

b. Findings

Introduction. The inspectors identified that Millstone failed to take measures to assure that the design bases were correctly translated into procedures and instructions for the installation of temporary cooling to a 480 volt AC (vital power) switchgear room. This is

an issue about which more information is required to determine if it is acceptable, if it is a finding, or if it constitutes a deviation or a violation. This is an unresolved item (URI) pending the licensee's evaluation of the potential impact of operability of equipment in the switchgear room and NRC review.

Description. On June 4, 2003, the licensee identified a service water (SW) leak on the cooling supply line to the safety-related cooler in the West 480 volt AC switchgear room. The licensee isolated the cooler to affect repairs and entered Technical Requirements Manual (TRM) Limiting Condition of Operation(LCO) 3/4.8.2.1B.b, Electrical Switchgear Room Ventilation. The compensatory measures required by the TRM, included the installation of temporary cooling to the switchgear room per Operating Procedure (OP) 2315D - "Vital Electric Switchgear Room Cooling." The temporary cooling system consisted of two Appendix R air blowers and several 20' sections of flexible air ducting. Subsequent to the installation of the equipment, operators determined that the switchgear room temperature could not be maintained below the licensee's maximum normal operating temperature limit of 104 degrees. Additional measures were taken to lower the room temperature that included installing additional suction and discharge ducting, and lowering the temperature of a non-vital air-conditioning system that serviced the hallway from which the blowers were drawing air. The switchgear room temperature was stabilized as a result of these efforts.

In February 1999 and October 2000, the licensee developed design calculations and a technical evaluation to specify compensatory measures for a loss of cooling to the West 480 Volt AC switchgear room, including temporary equipment installation, location, and specific flow path designation. The inspectors reviewed the licensee's design calculations and technical evaluation to verify that the design bases for the compensatory measures were sufficient to ensure operability of the vital switchgear during all design basis events. The inspectors determined that the flow path developed in the design basis calculations had not been translated to the procedure (OP 2315D, Revision 11) which was used to install the compensatory measures to the switchgear rooms on June 4, 2003. The inspectors further found that a subsequent revision to the procedure (Revision 12), issued while the compensatory measures were in place, they had not been fully implemented nor was sufficient guidance provided for installation of the blowers and ducting. This is an unresolved item (URI) pending the licensee's evaluation of the potential impact of operability of equipment in the switchgear room and NRC review. **URI 05000336/2003003-01**, West 480 Volt AC Switchgear Ventilation Lineup.

1R16 Operator Work-Arounds

Refer to NRC Inspection Report 0500423/2003003, Section 1R16, for specific details.

1R17 Permanent Plant Modifications

a. Inspection Scope

A plant modification that provides cooling water to the motor driven auxiliary feedwater (AFW) pump motor bearings was reviewed by the inspectors to ensure that the modification did not adversely affect the availability, reliability, or functional capability of any safety-related structures, systems or components. The design bases of the motor driven AFW pumps were evaluated to ensure that the installed modification did not introduce the potential for common cause failures or unanalyzed conditions that could affect plant risk. The inspection also included a review of seismic qualifications to verify that the structural integrity of the modified cooling water supply piping, to the motor driven AFW pump bearings, remained acceptable for all accident conditions. The inspectors verified that the modified flow path did not adversely impact AFW design flow.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed five post-maintenance test (PMT) activities during the inspection period. The inspectors reviewed post-maintenance test activities to determine whether the tests were performed in accordance with the approved procedures. The inspectors assessed the test's adequacy by comparing the test methodology to the scope of maintenance work performed. In addition, the inspectors evaluated the test acceptance criteria to verify whether the test criteria demonstrated that the tested components satisfied the applicable design and licensing bases and the TS requirements. The inspectors reviewed the recorded test data to determine whether the acceptance criteria were satisfied. In addition, the inspectors verified that any identified deficiencies were entered into the licensee's corrective action program. The following maintenance activities and specified post-maintenance tests were evaluated:

- "A" Charging System Discharge Check Valve Replacement (AWO M2-03-03343)
- "B" Containment Spray Pump Assembly (AWO M2-00-6514)
- Replacement of Service Water Spool Piece and Modification ("B" RBCCW HX, Service Water Side)(AWO M2-02-12725)
- "C" RBCCW Heat Exchanger Relief Valve Repair (AWO M2-03-06952)
- 2-SW-231A "A" EDG Heat Exchanger Service Water Bypass Valve Repair (AWO M2-02-09172)

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

The inspectors reviewed six surveillance activities, including two in-service testing (IST) activities during this inspection period. The inspectors reviewed licensee performance of surveillance testing of structures, systems, and components to ensure these systems were capable of performing their intended safety functions and to ensure related technical specifications (TS) and Final Safety Analysis Report (FSAR) requirements were met. The inspectors reviewed surveillance testing activities associated with the following:

- "B" Containment Spray (CS) Pump Operability Test (SP-2606B)
- "B" Low Pressure Safety Injection (LPSI) Pump Operability Test (SP-2604D)
- "A" Charging System Discharge Check Valve Test (SP 2601I)
- "C" RBCCW Pump IST (SP-2611B)
- "C" RBCCW Pump Discharge Check Valve IST (SP-2611F)
- "A" MDAFW Pump Operability Test, Facility (SP-2610A)

The inspectors attended test briefs, verified selected prerequisites and precautions, and verified the tests were performed in accordance with the procedural steps. The inspectors also reviewed completed data sheets and verified that TS requirements were met.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed a temporary modification (TM-2-03-004) for service water supply piping to the "A" emergency diesel generator 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.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from the 3rd quarter of 2002 through the 1st quarter of 2003. PI

definitions and guidance contained in NEI 99-02, "Regulatory Assessment Indicator Guideline" were used to verify the basis in reporting for each data element.

Reactor Safety Cornerstone

- Unplanned scrams per 7000 critical hours
- Scrams with loss of normal heat removal
- Unplanned power changes per 7000 hours
- Safety System Unavailability - Emergency AC Power System

The inspectors reviewed licensee event reports, monthly operating reports, plant process computer power history information, condition reports (CRs) and NRC inspection reports to identify significant plant power changes and plant trips that occurred from the 3rd quarter of 2002 through the 1st quarter of 2003. The inspectors also reviewed system engineering tracking data to verify the accuracy of the EDG system unavailability data. The inspectors compared this information with the licensee's data reported to the NRC for the time period listed above.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

Annual Sample Review

a. Inspection Scope

The inspectors performed a detailed review of condition report (CR) 02-07452, which was associated with the potential for emergency diesel generator (EDG) operability to be impacted by specific electrical alignments of the service water (SW) or reactor building closed cooling water (RBCCW) pumps. The specific conditions that were reviewed involved either pump pair being aligned to the same electrical facility and being started simultaneously. This review was conducted to ensure that the full extent of condition was identified, the issue was properly evaluated and appropriate corrective actions were identified and implemented. Additional CRs and other documents associated with this review are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA3 Event Followup 71152

(Closed) LER 05000336/2003002-00, Reactor Trip While Performing RPS Matrix Testing

On March 7, 2003 with the unit in Mode 1 at 100% power, an automatic reactor trip occurred during normal monthly Reactor Protection System (RPS) matrix testing due to a fault in the test circuitry. An extent of condition review determined that the strain failure of the wiring was limited to matrix relay trip select switches in the RSP test modules requiring adapter plates, and additional suspect switches were replaced during troubleshooting. The inspectors determined that the licensee entered the issues into the corrective action program and had taken actions to fix the problems. No additional findings of significance were identified. The licensee documented this event in CR-03-02300 which was addressed in NRC Inspection Report 05000336/2003006. This LER is closed.

4OA6 Meetings, including Exit

Integrated Report Exit Meeting Summary

On July 18, 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 & Licensing
R. Burnham, Design Engineering
D. Fredericks, Licensing
D. Dodson, Licensing
M. Kai, Safety Analysis
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N. Sacco, Piping and Engineering Mechanical
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C. Maxson, Engineering, Nuclear

NRC personnel

S. M. Schneider, Senior Resident Inspector
S. R. Kennedy, Resident Inspector
P. C. Cataldo, Resident Inspector
K. A. Mangan, Resident Inspector
L. L. Scholl, Senior Reactor Inspector, Division of Reactor Safety (DRS)

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000336/2003003-01	URI	West 480 Volt AC Switchgear Ventilation Lineup (Section 1R15)

Opened and Closed

None

Attachment

Closed

05000336/2003002-00	LER	Reactor Trip While Performing RPS Matrix Testing (Section 4OA3)

Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Surveillance procedure (SP) 2611C-002, Revision 026-00, "RBCCW System Alignment Checks, Facility 1"
SP 2611C, Revision 007, "RBCCW System Alignment and Valve Tests, Facility 1"
SP 2611G, Revision 000-06, "'B' RBCCW Pump Tests"
SP 2604F-002, Revision 015-02, "HPSI System Valve Alignment Check, Facility 2"
SP 2610C, Revision 012-06, "AFW System Lineup, Valve Operability, and Operational Readiness"
OPS Form 2604F-1, Revision 9, "HPSI System Electrical Alignment, Facility 2"
OPS Form 2610C-002, Revision 019-05, "Auxiliary Feedwater System Lineup Verification"
OP 2322, Revision 025-01, Auxiliary Feedwater System
CR-03-04131, Valve Found Out of Position During the Performance of SP 2610C-002

Section 1R05: Fire Protection

Unit 2 Fire Hazards Analysis
Unit 2 Fire Hazards Analysis Boundary Drawings
FP-EV-98-0006, Technical Evaluation of the Partial Suppression and Partial Detection in Appendix R Fire Area R-1
OPS Form 2618G-001, Revision 006-03, "Fire Damper Operability Verification - Group 1"
EMP Calculation No. 186, Revision 1, Combustible Loading Re-Analysis, Fire Area A-1, Zone B
MP 2720U1, Revision 004-02, Cold Shutdown Fire Damage Repair Procedure for Fire Area R-1 (Appendix R)
SP 2618C, Revision 012-04, Attachment 1, "Heat and Smoke Detector Locations"
CR-03-05168, "Possible Electrical Safety Issue"

Section 1R06: Flood Protection Measures

SP 2665, Revision 4, Building Flood Gate Inspection
Millstone Unit 2, Individual Plant Examination for Severe Accident Vulnerabilities
Millstone Unit 2, Internal Flooding Evaluation, Revision 0
Calculation No. 98-ENG-02411-C2, MP2 Evaluation of Flooding Outside Containment

Section 1R07: Heat Sink Performance

CR-03-01136, Blue Mussels Found in X18B ("B" RBCCW Heat Exchanger) during Quarterly Inspection

Section 1R11: Licensed Operator Requalification

AOP 2503B, Revision 2, Loss of Non-vital 480V AC Bus 22B
EOP 2536, Revision 20, Excess Steam Demand Event
Millstone Emergency Plan, Revision 29, Change 4

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

SP 2611G, Revision 000-06, "'B' RBCCW Pump Tests"
SP 2611A, Revision 008-06, "'A' RBCCW Pump Tests"
RBCCW, Containment Spray and CAR Piping and Instrumentation Diagrams
CR-03-03949, RBCCW IST Probabilistic Risk Assessment Evaluation
CR-03-03965, OPS Surveillance 2611F-1 was incorrectly assigned to a non-impacting FEG
CR-03-04838, Unit 3 Scheduled Activity would have placed Unit 2 in an Unplanned TSAS and Unrecognized PRA Yellow
CR-03-04846, Work on SBO Diesel not Released due to Lack of Review of Impact to Unit 2
CR-03-05419, A Risk Review for Temporary Modification No. 2-03-004 Not Performed
Calculation PRA03YQA-0402352, Revision 0, Temporary Modifications to the Charging Pump Modeling in the MP2 EOOS Model
Temporary Modification 2-03-004, Revision 00, Installation of a Blind Flange to Isolate "B" Header Service Supply to the "A" Emergency Generator
DCM-03, Revision 012-01, Plant Changes
MP-20-WM-FAP02.1, Revision 6, Conduct of On-Line Maintenance

Section 1R14: Personnel Performance Related To Non-routine Plant Evolutions and Events

Part 9900, Operations - Notices of Enforcement Discretion
CR-02-04645, CEA 41 of Group 7 did not Initially Move During Reactor Startup
CR-02-07015, CEA 19 Failed to Operate Properly During Surveillance Testing
CR-03-03390, "CEDS Trouble" Received, Due to CEA 59 ACTM Trouble Alarm
CR-03-04286, Operations Requires Guidance on How To Comply with Technical Specifications Related to Control Rod Malfunctions
CR-03-03338, Group 7 CEA #59 did not Insert with the Rest of the Group 7 CEAS When Demand Signal Sent to Group 7
Dominion Correspondence Docket No. 50-336, B18835, Response to Request for Additional Information
Dominion Memorandum RA-03-017, Guidance Related to Control Rod Malfunctions
Dominion Memorandum RA-03-018, Guidance Related to Control Rod Malfunctions
AOP 2556, Revision 016, CEA Malfunctions

Section 1R15: Operability Evaluations

OD MP2-046-03, "Air Leakage Found on the EBFS Common Discharge Plenum"
OD MP2-048-03, M2 Auxiliary Feedwater Pump P9A Oil Analysis Results are in Monitor Status with Ferrous Material
OD MP2-045-03, Discs on all 3 Charging Pump Discharge Nozzle Check Valves are not Fully Open as Expected
RP-5, Revision 002-04, "Operability Determinations"
CR-03-03390, "CEDS Trouble" Received, Due To CEA 59 ACTM Trouble Alarm
CR-03-04046, MP2 P9A Auxiliary Feedwater Pump Motor Oil Analysis Results Continue to Exhibit Elevated Ferrous Material
CR-03-03745, MP2 Auxiliary Feedwater Pump P9A Oil Analysis Results are in the Monitor Status with Ferrous Material
CR-02-05356, MP2 P9A Auxiliary Feed Pump Inboard Bearing Oil Sample is in the "Monitor" Status with Increased Ferrous Material
CR-03-06337, Supplemental Design Engineering Items Requiring Resolution - Pertaining to MP2 Comp Actions for Loss of Cooling to Est 480 Volt AC Switchgear Room
CR-03-05497, Revise Compensatory Actions for Loss of Cooling to West 480 Volt AC Switchgear Room Cooling Systems to Provide Better Cooling
MP-16-MMM, Revision 005-01, Corrective Action
M2-EV-99-0093, Revision 4, MP 2 Technical Evaluation, Evaluate Compensatory Measures to Use During Loss of Cooling/Ventilation Systems Supporting Vital Switchgear Rooms
M2-00-2842, Vital Switchgear Compensatory Cooling
92-FFP-934ES, MP2 West 480 Volt AC Load Center Heat Gains
97-HVAC-02036, M2 West 480 Volt AC Switchgear Room Loss of Ventilation, F-51
DRW# 25203-30001, Revision 20, Main Single Line Diagram
Letter, October 16, 1998, From Super Vacuum Manufacturing Company, Inc. Subject: Airflow Data
OP 2315D, Revision 11-06, Vital Electric Switchgear Room Cooling Systems
OP 2315D, Revision 12, Vital Electric Switchgear Room Cooling Systems

Section 1R17: Permanent Plant Modifications

DM2-00-0004-03, Rev A, AFW Pump Motor P9BM Cooling Lines
AWO #M2-03-00959, "B" AFW Motor
MP-24-SEISMIC-PRG, Revision 000, Seismic Qualification Program
MP-24-SEISMIC-FAP01, Revision 000, Seismic Qualification of Equipment and Parts
SP-ME-730, Revision 1, Alternative Procedure for Calculation of Piping Thermal Loads and Stresses for Small Bore Piping Support/Restraints
03-ENG-04008M2, Revision 0, MP2 - AFW System MDAFW Pump Bearing Cooling System Hydraulic Evaluation

Section 1R19: Post-Maintenance Testing

SP-2601G, Revision 012-01, "Charging Pump Operability Test, Facility 1"
SP-2601G-001, Revision 009-01, "'A' Charging Pump Operability Test"

SP-2601I, Revision 001-07, "Charging Pump Inservice Test"
SP-2601I-001, Revision 001-06, "'A' Charging Pump and Discharge Check IST, NOP"
SP-2606B-001, Revision 015-02, "Containment Spray Pump Operability Test, Facility 2"
SP-2606B-002, Revision 001-03, "Containment Spray Pump and Check Valve Inservice Testing, Facility 2"
SP-2606B, Revision 011-05, "Containment Spray Pump Operability and Inservice Testing, Facility 2"
SP 2612C-002, Revision 000-09, "Service Water Valve Quarterly Tests, Facility 1"
SP 2612C-006, Revision 000, "Service Water POV Remote Position Indication IST (Facility 1)"
CEN 110, Revision 000, "Post Repair/Replacement Leakage Test"
CEN 110-001, Revision 000, "Post Repair/Replacement Component Leakage Test"
MP-20-WP-GDL20, Revision 3, Work Order Preparation
MP-20-WP-GDL40, Revision 002, Pre-and Post-Maintenance Testing
MP-24-IST-PRG, Revision 0, Inservice Test Program
MP-24-IST-FAP01.2, Revision 001, Inservice Test Program Implementation
AWO M2-00-6514, "'B' Containment Spray Pump 3 Year PM"
AWO M2-02-12725, "Replacement of Existing Service Water Spool SK-0914 and Modification of Spool SK-914A
AWO M2-02-09172, "'A' D/G Heat Exchanger Service Water Bypass Valve Assembly
AWO M2-03-03343, "Charging Pump 'A' Discharge Check Valve"
AWO M2-03-06952, "Replace Inlet Pipe to 2-SW-92C"
CR-03-03476, Radiography of 2-CH-328 under AWO M2-03-03803 Revealed the Disc/Stem Separation
CR-03-05762, Service Water Leak at Inlet to 2-SW-92C, "C" RBCCW Heat Exchanger Relief Valve
CR-03-05854, 2-SW-92C Thru Wall Leak Repair (M2-03-06952)
CR-03-06020, 2-SW-92C Failed to Relieve Within the Required Acceptance Criteria
PDCR-2-49-80, "Diesel Generator Service Water Bypass and Strainer

Section 1R22: Surveillance Testing

SP-2604D, Revision 010-03, "LPSI Pump Tests, Facility 2"
OPS Form 2606B-001, Revision 019-01, "Containment Spray Pump Operability Test, Facility 2"
OPS Form 2604D-1, Revision 10, "'B' LPSI Pump Operability Test"
OPS Form 2610A-001, "Motor Drive AFP Operability Test, Facility 1"
SP-2606B, Revision 011-03, "Containment Spray Pump Operability Test"
SP-2601G, Revision 012-01, "Charging Pump Operability Test, Facility 1"
SP-2601G-001, Revision 009-01, "'A' Charging Pump Operability Test"
SP-2601I, Revision 001-06, "'A' Charging Pump and Discharge Check IST, NOP"
SP-2601I, Revision 001-07, "Charging Pump Inservice Tests"
SP-2610A, Revision 010-04, "Motor Driven AFP Tests"
SP-2611B-002, Revision 001-03, "'C' RBCCW Pump IST"
SP-2611B, Revision 007-06, "'C' RBCCW Pump Tests"
SP-2611F-002, Revision 000-02, "RBCCW Pumps Discharge Check Valve IST, Facility 2"
SP-2611F, Revision 000-08, "RBCCW Pumps Discharge Check Valve IST"

Section 1R23: Temporary Plant Modifications

Work Control-10, Revision 004-03, Temporary Modifications
MP-24-SEISMIC-FAP01, Revision 000, Seismic Qualification of Equipment and Parts
TM-2-03-004, Revision 00, Installation of a Blind Flange to Isolate "B" Header Service Supply to the "A" Emergency Generator
DCM-03, Revision 012-01, Plant Changes
50.59 Screen Form for TMOD 2-03-004
CR-03-05419, "A Risk Review for TM-2-03-004 not Performed"
Calculation Proto-Power 92-120, MP2 SWS Design Basis Alignments - Summer & Winter

Section 40A2: Problem Identification and Resolution

AR 96031539, EDG Overload with 2 HPSI Pumps
CR M2-97-2142, Potential for Overload of EDGs
CR M2-97-2491, EDG Loading Calculation
CR-02-07452, RBCCW System Procedure May Require EDG to be Considered Inoperable
DM2-00-0045-02, Addition of RBCCW/SW Swing Pump SIAS/LNP Start Permissive Switches
NE-93-SAB-180, MP2 EDG Loading Assumption Input, Dated April 19, 1993
OP 2326A, Rev. 020-08, Service Water System
OP 2330A, Rev. 020-03, RBBCW System

LIST OF ACRONYMS

AFW	auxiliary feedwater
CAR	containment air recirculation
CEA	control element assembly
CR	condition report
CS	containment spray
EDG	emergency diesel generator
EOOS	equipment out of service
FSAR	final safety analysis report
HPSI	high pressure safety injection
HX	heat exchanger
IST	in-service testing
LCO	limiting condition for operation
LPSI	low pressure safety injection
MDAFW	motor-drive auxiliary feedwater
MP	maintenance procedure
OP	operating procedure
PI	performance indicator
PMT	post-maintenance testing
QSS	quench spray system
RBCCW	reactor building closed cooling water
RWST	refueling water storage tank

SDC	shutdown cooling system
SDP	significance determination process
SW	service water
TCB	trip circuit breaker
TBCCW	turbine building closed cooling water
TDAFW	turbine-driven auxiliary feedwater
TM	temporary modification
TRM	technical requirements manual
TS	technical specification
URI	unresolved item

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	05000423
License No.:	NPF-49
Report No.:	05000423/2003003
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 3
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	March 30, 2003 - June 28, 2003
Inspectors:	S. M. Schneider, Senior Resident Inspector P. C. Cataldo, Resident Inspector K. A. Mangan, Resident Inspector S. R. Kennedy, Resident Inspector K. M. Jenison, Senior Project Engineer, Division of Reactor Projects L. L. Scholl, Senior Reactor Inspector, Division of Reactor Safety (DRS) J. A. Talieri, Reactor Inspector, DRS
Approved by:	Brian J. McDermott, Chief Projects Branch 6 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000423/2003003; 03/30/2003 - 06/28/2003; Millstone Power Station, Unit 3; Routine Integrated Report.

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

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Unit 3 Plant Status

The Unit operated at essentially 100% power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed Dominion's preparations for adverse weather, relative to the protection of safety-related systems, structures, and components from hot weather. This review focused on the protection of the circulating water system, and included a walkdown of the system on June 5, 2003 to ensure that the equipment was aligned for summer conditions per licensee procedures. The inspectors verified that adequate controls were in place to ensure functionality of the system.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial System Walkdown. The inspectors performed four partial system walkdowns during this inspection period. The inspectors evaluated system and component alignments, and condition reports as appropriate, to identify any discrepancies that would impact system operability. The inspectors reviewed valve positions, electrical power source lineups and the general condition of major system components utilizing the applicable piping and instrumentation diagram, associated system operating procedures and valve lineup surveillances. The following systems were reviewed:

- "B" emergency diesel generator (EDG) during outage activities on the "A" EDG on May 2
- "B" motor-driven auxiliary feedwater pump (MDAFP) during "A" MDAFP maintenance activities on May 30
- "B" Quench Spray System (QSS) during the operational test of the "A" QSS Pump on May 22
- "A" EDG and associated support systems during 2 year overhaul of the "B" EDG on June 4

Complete System Walkdown. The inspectors performed a complete system walkdown of the High Pressure Safety Injection system during this inspection period. The

inspectors evaluated system and component alignments to identify any discrepancies that would impact system operability. The inspectors review included verification of valve position and electrical power source lineups. Additionally, the general condition of major system components including pipe supports, snubbers, pump mounting and general area were inspected utilizing the applicable piping and instrumentation diagram, associated system operating procedures and valve lineup surveillances.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors performed ten walkdowns of fire protection areas during the inspection period. The inspectors reviewed the licensee's fire protection program, including the Unit 3 Fire Protection Evaluation report and associated area fire-fighting strategies 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 fire areas reviewed included:

- West Switchgear Room, Fire Area CB-1
- East Switchgear Room, Fire Area CB-2
- Battery Room 1, Fire Area CB-3
- Battery Room 2, Fire Area CB-4
- Battery Room 3, Fire Area CB-5
- Battery Room 4, Fire Area CB-6
- Battery Room 5, Fire Area CB-7
- Inverter Room (West), Fire Area CB-16
- Inverter Room (East), Fire Area CB-17
- Auxiliary Building West Floor Area, Fire Area AB-1, Zone D

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors walked down the -4'-6" level (areas S, T, and U) of the emergency safeguards (ESF) building which contains various safety-related equipment and piping sections to verify the protection of this equipment from the effects of internal flooding.

The inspectors reviewed the Final Safety Analysis Report, various licensing and design basis documents and flooding calculations to ensure the flooding mitigation plans and the as-found conditions in the applicable areas of the ESF building remained consistent with assumptions presented in the design basis documents.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspector reviewed performance testing and processes to ensure that heat exchangers 3HVQ*ACUS1 A/B and 3HVQ*ACUS2 A/B could perform their design functions as intended. These heat exchangers provide cooling to the residual heat removal and containment recirculation pump areas.

To ensure compatibility with commitments made in response to Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment," the inspector reviewed Dominion's inspection, cleaning, and performance monitoring methods and frequency. The inspector compared surveillance test and inspection data to acceptance criteria developed in engineering calculations and verified that these calculations were based on reasonable design basis assumptions.

Additionally, the inspector reviewed the methods for controlling biologic fouling to verify that the service water hypochlorite injection system was implemented effectively. The inspector walked down the applicable portions of the hypochlorite injection and service water systems as well as the selected heat exchangers to assess the material condition of these systems and components.

The inspector also reviewed a sample of Condition Reports (CR) related to the heat exchangers and the service water system. This review was done to ensure that Dominion was appropriately identifying, characterizing, and correcting problems related to these components.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed the conduct of licensed operator requalification training conducted in the facility's simulator on April 24. The inspectors observed licensed operator performance relative to the following activities: effective communications,

implementation of normal, abnormal and emergency operating procedures, command and control, technical specification compliance, and emergency plan implementation. The inspectors evaluated simulator fidelity relative to the configuration of the control room display boards to ensure significant differences were captured by the licensee's training program. The inspectors evaluated the training scenario for deficiencies in operator performance and the licensee's evaluation of the scenario. In addition, the inspectors verified that the training evaluator addressed performance problems and conditions adverse to quality were appropriately entered into the licensee's corrective action program for resolution.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of six 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. The following conditions were reviewed:

- "B" Control Building Chiller 3HVK*TCV-35B Failure
- "D" Steam Generator Feed Flow Instrument Failure
- "D" FRV Bypass 3FWS*FV580 which had failed closed while performing SP 3670.4
- EDG reverse current relay failures
- Unit 3 electric fire pump minimum flow relief valve failure
- Diesel fire pump equipment failures, including excessive oil leaking from a bolt on the diesel engine and a leak on the pump seal cooling line

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed maintenance risk assessments for three planned and two emergent maintenance activities during the inspection period. The inspectors verified the conduct and adequacy of scheduled and emergent maintenance risk assessments for plant conditions. The inspectors utilized the Equipment Out of Service quantitative risk assessment tool to evaluate the risk of the plant configurations and compared the result to the licensee's stated risk as documented in the on-line maintenance schedules and/or control room logs. The inspectors also verified that the licensee entered appropriate risk categories and implemented risk management actions as necessary, and were conducted in accordance with applicable risk management procedures. The following scheduled and emergent maintenance and testing activities were evaluated:

- Unit 3 Schedule for week of March 30, 2003, for maintenance activities affecting the availability of the Unit 3 Station Blackout Diesel and the Unit 2 crediting of the Unit 3 reserve station system transformer
- Unit 3 Operations assessment that the scheduled operational test of the emergency diesel generator would have no impact on the plant risk, April 1
- Unit 3 Operations assessment of planned maintenance being performed on the "A" Emergency Diesel Generator and slave relay testing associated with the Containment Spray and Safety Injection valves on April 29
- Unit 3 emergent maintenance - increase in risk during recovery of the "C" charging pump when complications caused both the "A" and "C" charging pumps to be inoperable for several hours on May 10
- Unit 3 emergent maintenance for Turbine-Driven Auxiliary Feedwater Pump outage on June 18

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed personnel performance in coping with one non-routine evolution. The inspector reviewed relative procedures, system drawings, valve lineups and the station's assessment and design calculations related to air entrapment in safety related system piping.

On May 10, the inspectors observed the actions of operators in the control room and in the field during recovery of the "A" and "C" charging pumps after maintenance on the "C" charging pump. The recovery was complicated by the unanticipated discovery of Hydrogen in the common suction piping of the two pumps.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the operability assessments of seven degraded or non-conforming conditions to ensure that operability was justified and that mitigating systems and barrier integrity remained available so that an unrecognized increase in risk had not occurred. The inspectors also reviewed compensatory measures, if applicable, to ensure that the compensatory measures were in place and were appropriately controlled. The inspectors also reviewed common cause failure determinations specifically required by technical specifications for identified emergency diesel generator (EDG) issues that potentially impact EDG operability. The inspectors reviewed the following degraded or non-conforming conditions:

- Condensate Storage Tank Nitrogen Impact on Auxiliary Feedwater System (MP3-023-02)
- Reactor Plant Component Cooling Water heat exchanger divider plate found bent during heat exchanger cleaning (CR-03-04924)
- "A" Emergency Diesel Generator operability related to a missed surveillance due to procedure errors which incorrectly calculated the total start time for the EDG (CR-03-04296)
- The common cause failure assessment of the "B" Emergency Diesel Generator related to the failure of fuel line tubing found during post maintenance testing of the "A" Emergency Diesel Generator (CR-03-04306)
- Unisolable leak on "B" Service water header due to brazing failure (CR-03-05549)
- EDG operability when directional overcurrent relay was found inoperable (CR-03-03317)
- Extended loss of all seal cooling events following postulated fire shutdown events in fires that potentially cause RCP seal #1 leakoff piping to over-pressurize and possibly fail (Reference NRC EN# 39515). (MP3-025-03)

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors reviewed the current listing of active operator workarounds for Millstone Unit 2 and Unit 3. The inspectors reviewed applicable Operations department procedures, as well as C OP 200.9, "Operational Performance Status," and verified these procedures provide the necessary guidance to the licensee to adequately address the cumulative effects operator workarounds have on the operation, reliability, and availability of affected systems. Additionally, the inspectors verified that the cumulative effects of active operator workarounds do not adversely impact the ability of the

operators to implement emergency procedures or respond to plant transients. The inspectors reviewed various condition reports (CRs) regarding operator workarounds, and verified that workarounds were being identified at the appropriate threshold, and were being tracked via the licensee's corrective action program for resolution.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed five 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. The following maintenance activities and specified post maintenance tests were evaluated:

- Steam Generator Blowdown Solenoid Valve (3BDG*TV22B) replacement (M3-97-22637)
- Charging Pump (3CHS*P3C) bearing replacement (M3-02-04199)
- "A" Emergency Diesel Generator following 10 year overhaul (M3-02-03353)
- B" Emergency Diesel Generator following 2 year overhaul and exhaust manifold replacement (M3-02-03871)
- "D" Feed Regulating Bypass Valve Diaphragm replacement (CR-03-02882)

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed five surveillance activities, including an In-Service Test (IST) and a Containment Isolation Valve test, 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 the 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. The following surveillance activities were evaluated:

- High Pressure Safety Injection Valve Lineup Verification (SP 3608.4)
- Safety Injection S909 - Slave Relay Assisted Test - Train A (SP 3646A.8)
- EGLS Auto Test - Train A (SP 3448E11)
- Residual Heat Removal Operability test (SP 3610A.2)
- Residual Heat Removal system valve stroke test (SP 3610B.3)

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation

a. Inspection Scope

Two inspectors observed the performance of an off-year emergency plan drill, which was utilized for reporting performance indicator data for classification, notification, and protective action recommendation (PAR) in accordance with applicable industry and licensee guidance documents to identify any weaknesses or deficiencies in licensee performance. Both inspectors observed the drill pre-brief, as well as the post-drill critique to ensure that the licensee appropriately identified drill deficiencies. The inspectors also observed the training at the simulator for the operations staff and at the site emergency operations facility (EOF), including the activation of the site emergency response organization and participation of limited off-site organizations. In addition, the inspectors verified that the initial classification, notification and PARs recomendations performed by the shift manager of the operations crew and EOF organization was accurate and timely.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed licensee event reports, monthly operating reports, plant process computer power history information, and NRC inspection reports to identify significant plant power changes and plant trips that occurred from the 3rd quarter of

2002, through the 1st quarter of 2003. The inspectors compared this information with the licensee's data reported to the NRC for the time period listed above for the following performance indicators:

Reactor Safety Cornerstone

- Auxiliary Feedwater (AFW) system and train unavailability
- Unplanned Transients per 7000 Critical Hours
- Emergency Diesel Generator (EDG) Unavailability

The inspectors reviewed selected records, including licensee event reports, monthly operating reports, operator logs, plant process computer power history information, and NRC inspection reports to identify unplanned transients greater than 20 percent and system unavailability for the EDG and AFW systems that had occurred during the past four quarters.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

Annual Sample Review

a. Inspection Scope

Over-pressurization of Isolated Reactor Coolant System. The inspectors reviewed the licensee's corrective actions following an over-pressurization of an isolated reactor coolant system loop that occurred on September 9, 2002, as detailed in condition report CR 02-09226. 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 over-pressurization event.

Internal Pressure Drop across Steam Generator. The inspectors reviewed corrective actions associated with issues that arose as a result of pressure drops internal to the steam generators that were not previously identified or analyzed. The pressure drops occur at high steam flow rates and are a result of steam generator mid-deck plate pressure losses. Additional CRs and other documents associated with this issue are listed in the Attachment.

This CR was selected for review since the failure to adequately review the issue and implement appropriate corrective actions could result in operation of the plant with protective systems instrumentation setpoints which may not be bounded by the assumptions of the plant accident analyses.

The inspectors reviewed the condition reports 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.

b. Findings

No findings of significance were identified.

4OA3 Event Followup 71152

(Closed) Licensee Event Report (LER) 05000423/2003001-00, Reactor Trip Caused by Generator Backup Protection Fault

On December 23, 2002, Millstone Unit 3 experienced a reactor trip caused by a generator trip. The generator/turbine trip resulted from a stator cooling water leak which was caused by a short to ground on the T-4 high voltage bushing of the main generator. The turbine trip/reactor trip, including the specific manual operator actions that were implemented, and the consequences of the trip were evaluated against conditions described in the Millstone Unit 3 Final Safety Analysis Report as anticipated transients. The inspectors' off-site review, in consultation with the Millstone Resident Inspectors and the Region I Senior Reactor Analyst, identified no findings of significance. The licensee documented the event in CR-02-13621. This LER is closed.

4OA6 Meetings, including Exit

Heat Sink Performance Exit Meeting Summary

The inspector presented the inspection results to members of Dominion's staff at the conclusion of the inspection on April 11, 2003. The licensee acknowledged the conclusions and observations presented.

The inspector asked Dominion whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

Integrated Report Exit Meeting Summary

On July 18, 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 & Licensing
R. Burnham, Design Engineering
D. Fredericks, Licensing
D. Heronemus, Licensing
M. Kai, Safety Analysis
M. Legg, Engineering
J. Quinn, Engineering

NRC personnel

S. M. Schneider, Senior Resident Inspector
P. C. Cataldo, Resident Inspector
K. A. Mangan, Resident Inspector
S. R. Kennedy, Resident Inspector
K. M. Jenison, Senior Project Engineer, Division of Reactor Projects (DRP)
L. L. Scholl, Senior Reactor Inspector, Division of Reactor Safety (DRS)
J. A. Talieri, Reactor Inspector, DRS

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

None

Closed

05000423/2003001-00	LER	Reactor Trip Caused by Generator Backup Protection Fault (Section 4OA3)

Discussed

None

Attachment

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OP 3325A, Rev 21-02, Circulating Water

Section 1R04: Equipment Alignment

CR-03-05383, SWP Leak in Vicinity of EJA6A On The 'A' Diesel
CR-03-05360, 3QSS*P3B has Boric Acid Deposits, Dry White, On Both Seal Supply Line Couplings
OPS Form 3608.4-1, Revision 4, High Pressure Safety Injection Vent Valves
OPS Form 3308-4, Revision 3, Train B HPSI
OPS Form 3326-11, Revision 5, SI Pump Cooling SW System Supply
OPS Form 3308-2, Revision 5-5, High Pressure Safety Injection Common
OPS Form 3308-3, Revision 4, Train A HPSI
OPS Form 3308-6, Revision 1, Electrical Check List for HPSI
OP 3346A-001, Revision 7, EDG A - Cooling Water Valve Lineup
OP 3309-003, Revision 5-03, Quench Spray System (Train B) - Valve Lineup
OP 3346A-003, Revision 6, EDG A - Lube Oil Valve Lineup
OP 3346A-011, Revision 9, EDG A - Electrical Lineup
OP 3346A-005, Revision 8, EDG A - Starting Air Valve Lineup
OP 3346A-009, Revision 9, EDG A - Instrument Valve Lineup
OP 3346A-007, Revision 5, EDG A - Crankcase Vacuum Valve Lineup
OP Form 3314H-001, Revision 4, EDG A - Enclosure Ventilation System
OP Form 3314H-003, Revision 1, EDG Ventilation Train A
S&W Dwg. # 12179-EM-114A-15, Revision 15, Safety Injection Pump and Shield Tank
S&W Dwg. # 12179-EM-113A-23, Revision 23, High Pressure Safety Injection
S&W Dwg. # 12179-EM-104B-17, Revision 17, Chemical and Volume Control
S&W Dwg. # 12179-EM-117A-23, Revision 23, Emergency Generator Fuel Oil System
S&W Dwg. # 12179-EM-115A-31, Revision 31, Quench Spray and Hydrogen Recombiner
S&W Dwg. # 12179-EM-116B-34, Revision 34, Emergency Diesel Generator A Starting Air System
S&W Dwg. # 12179-EM-116A-40, Revision 40, Emergency Diesel Generator A Lube Oil and Cooling Water
S&W Dwg. # 12179-EM-133D-35, Revision 35, Service Water
S&W Dwg. # 12179-EM-133B, Revision 56, Service Water
S&W Dwg. # 12179-EM-116E, Revision 8, Emergency Diesel Exhaust, Combustion Air and Crankcase Vacuum System
SP 3608.4, Revision 3-02, High Pressure Safety Injection system Vent and Valve Lineup Verification
SP 3608.4-002, Revision 005-01, High Pressure Safety Injection Valve Lineup Verification
SP 3608.4-002, HPSI Valve Lineup Verification
SP 3604A.6-002, SI Pump Inoperability Verification
SP 3608.4-001, Revision 004-1, HPSI Vent Valves

Section 1R05: Fire Protection

Millstone Nuclear Power Station Unit 3 Fire Protection Evaluation Report, Revision March 02

Section 1R06: Flood Protection Measures

Calculation P(R) 1194, Revision 2, "ESF Bldg Flood Study: Maximum Flood Height In The ESF Bldg Due To A Pipe Break"
Calculation 94-ENG-1013-M3, Revision 0, "ESF Building Flooding Rate - 4'-6" Elevation"

Section 1R07: Heat Sink Performance

CR-02-07597, CR-02-09552, CR-02-10845, CR-02-11465, CR-02-11475, CR-03-01834
Heat Loads for the ESF Building HVAC Systems, 12179-P(B)-1001, Revision 1
MP3 SW System - Service Water System - NRC Generic Letter 89-13, Item No.IV, Design Basis Summary Report, 90-069-01065M3, Revision 1
Minimum Required Service Water Flow to 3HVQ*ACUS1 A/B and 2 A/B and 3HVK*CHL1A/B, 97-002, Revision C
Empirical Adjustments of the MP3 SW Model to 1995 Flow Test Data and Incorporation of the Latest SW System Design Change Notices
Service Water Heat Exchangers Fouling Determination, SP 3626.13, Revision 019-02
3HVQ*ACUS1A Condenser Thermal Performance Test, EN 31168, Revision 000
Operating Strategy For Service Water System at Millstone Unit 3, EN 31084, Revision 006
Service Water System Health Report, Fourth Quarter 2002
Technical Evaluation for Service Water Heat Exchanger Monitoring - Millstone Unit 3, M3-EV-02-0031, Revision 0

Section 1R12: Maintenance Implementation

CR-03-02882, 3FWS*FV580 (D FVR Bypass) Failed closed while performing SP 3670.4
CR-03-02870, TRM required fire protection pump as been degraded since 2000 with no apparent repair plan
CR-03-02819, Unit 3 electric fire pump failed C SP 600.6 monthly electric fire pump operability demonstration
CR-03-02866, MP3 Electric Fire Pump M7-8 Relief valve is not functioning properly
CR-03-02884 - Repairs made to MP3 Electric fire pump M7-8 shaft seals were unsuccessful in correcting problem
CR-03-03385, MP3 Electric fire pump M7-8 overhaul has determined additional degradation
CR-02-04274, Battery for fire pump diesel failed surveillance SP788A
CR-02-13093, During surveillance of diesel fire pump, oil was leaking excessively from a bolt
CR-02-02089, Block Heater on Diesel Fire pump (M7-7) not functioning properly
MP-24-MR-FAP710, Revision 0, Maintenance Rule Functional Failures & Evaluations
Millstone Unit 3 Maintenance Rule Scoping Tables

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

CR-03-05052, Train A Gravity Boration Line Inoperable Following 3CHS*P3C Fill and Vent
CR-03-04933, Could Not Fully Isolate 3CHS*P3C to Support Scheduled Work
S&W Dwg. # 12179-EM-104A-30, Revision 43, Chemical and Volume Control
S&W Dwg. # 12179-EM-104C-30, Revision 30, Chemical and Volume Control
SP 3604C.8-001, Revision 0, Gravity Feed Boration Line Gas Volume Calculation for Mode 1, 2, and 3
OP 3304A, Revision 28-5, Charging and Letdown
TM-1876A, Transport of a Small Air Pocket, February 1998.
Calc 98-ENG-01598M3, Revision 0, Allowable Gas Volume in Gravity Boration Lines (CHS)

Section 1R15: Operability Evaluations

CR-03-03317, EDG Differential over-current relay failure
CR-02-03287, Divider Plate on 3CCP*E1B is Deflected From Inlet to Outlet Side
CR-03-04891, 3CCP*E1B South End Bell Leaked Following Corrective Maintenance
CR-03-05549, Service water Leak at 3SWP*V705
CR-03-04924, Divider Plate on 3CCP*E1B is Deflected in Inlet/Outlet End of HX
CR-03-04802, The Permanent Repair for 3CCP*E1B Heat Exchanger Needs to Be Implemented No Later Than August 31, 2003
CR-03-04296, Not All Components Required To Start EDG on SI are Included When Timing The EDG Start In OP 3646.21
CR-03-04306, A EDG Emergency Stopped Due to Fuel Leak
CR-03-04530, MRFF Evaluation was not Performed for CR-03-03317
OPS Form 3646A.21-2, Revision 5, EDG B Auto Start on ESF Signal
CPT Form 1425C08-1, Revision 1, Relay Type CJC15E Directional Overcurrent Data (10-31-01, 4-2-03)
S&W Dwg. # 12179-ESK-8KC, Revision 12, 125 VDC Gen "A" Start Ckt 3EGSA01
Dwg # 73-N-005-1-1, Revision 7, Yuba Heat Transfer Division - Heat Exchanger
SP 3646A.21, Revision 6-02, DG Auto Start on ESF Signal
MP-24-ENG-FAP947, Revision 000-01, Non-code Repairs in Safety Class 3 Piping
M3 99 18946 - PM, 2 Cycles-Calibration of Relays and Meters Associated with 34A to 34C Tie Breaker
MP3-025-03, Reactor Coolant Pump (RCP) Seal Leakoff Integrity Following Postulated Fires
MP3-023-02 - Possible Impact of CST Nitrogen Concentraion Affecting AFW Pump NPSH
Generic Letter 91-18, Revision 1, Resolution of Degraded and Nonconforming Conditions
Generic Letter 90-05, Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping
Letter From FairBanks Morris, Dated June 11, 2003, Subject Spread Exhaust Manifold Installation, Exhaust Temperature limits, Fuel Temperature Limits

Section 1R19: Post Maintenance Testing

CR-03-03951, Wrong Procedure Utilized when Performing Post Maintenance Testing
SP 3646A.1-001, Revision 15, Emergency Diesel Generator A Operability Tests (5-3-03)
MP 3720CD, Revision 8-01, Slow Speed Start and Run-In of Emergency Diesel Generator Following Maintenance

M3-97-22637 SOV EOQL Replacement
M3-02-04199 #CHS*P3C Bearing Replacement
M3-02-03871- SP, 18 Month-Surveillance (CSP788D-1) Inspection
M3-01-03353, Emergency Diesel Generator A Overhaul
M3-01-10702, Emergency Diesel Generator A Overhaul
M3-02-16482, Emergency Diesel Generator A Overhaul
M3-EV-03-0012, Revision 0, Use of Running Compound to Run-In Unit 3 EDGs Following Overhaul

Section 1R22: Surveillance Testing

OPS Form 3646A.8-5, Revision 006-02, Slave Relay Assisted Test - Train A
I&C Form 3448E11-1, Revision 4, EGLS Auto Test Data Sheet - Train A
S&W Dwg. # 12179-2424.6000-427, Sequencer Test Fault Timer Circuit
S&W Dwg. # 12179-ESK-5DR, Revision 21, Element Diagram 4.16KV (15G-114U-2) Emergency
Diesel Generator Breaker (3ENS*ACB-G-A)
SP 3610B.3, Rev 011-02, 3RHS*P1B Operational Readiness Test in Mode 1, 2, 3 or 4
SP 3610A.2, Rev 011-02, SIL - SIL Valve Stroke Time Test - Train B
SP 3448E11, Revision 003-03, Actuation Logic Test of EGLS Autotest System - Train A
SP 3646A.8, Revision 019-02, Slave Relay Testing -Train A
SP 3646A.8-023, Revision 0, Safety Injection S909 - Relay K603, Slave Relay Assisted Test - Train A
SP 3646A.8-027, Revision 1, Containment Isolation Phase A S916-Relay K622, Slave Relay Assisted
SP 3646A.8-028, Revision 1, Containment Spray Actuation S931-Relay K645, Slave Relay Assisted
SP 3712K, Revision 6, Emergency Diesel Generator Surveillance Inspection

Section 1EP6: Drill Evaluation

Millstone Unit 3 Off-Year Evaluated Exercise - CFD 03-02, April 24, 2003

Section 4OA1: Performance Indicator Verification

CR-03-05511, Historical Unavailability Error
S&W Dwg. # 12179-EM-130B, Revision 35, Feedwater System
MP3 PI-DVS 6 -MP 3 Safety System Unavailability (SSU) - Aux. Feedwater System (Reports-4-8-02, 7-5-02, 1-13-03)

Section 40A2: Problem Identification and Resolution

Calculation EOPINDAC-01541 E3, Revision 0, Change 3, Emergency Operating Procedure Indicator Loop Accuracy
Calculation RPS-ESF-01190 I3, Revision 0, Change 1, RPS/ESF Channel Uncertainties and Statistical Allowances

Calculation 3444A01-01221 E3, Revision 0, Change 4, Steam Generator NR Level Channel Calibration Data
CR-02-01362, SG Mid-Deckplate Pressure Loss May Affect RPS Setpoints
CR-02-01953, AMSAC Setpoint Does Not Include SG Mid-Deckplate Loss
CR-02-04709, Feedwater Line Break Chapter 15 Analysis
DM3-00-0047-02, MP3 AMSAC Low Steam Generator Level Trip Setpoint Change
DM3-00-0077-02, RPS, ESF, & AMSAC Low Steam Generator Level Trip Setpoint Change
NRC Information Notice 2002-010, March 7, 2002, non-conservative Water Level Setpoints on Steam Generators
NSAL-02-3, Rev. 1, Steam Generator Mid-deck Plate Pressure Loss Issue
NSAL-02-4, Rev. 0, Maximum Reliable Indicated Steam Generator Water Level
NSAL-02-5, Rev. 1, Steam Generator Water Level Control System Uncertainty Issue

LIST OF ACRONYMS

AFW	auxiliary feedwater
CR	condition report
EDG	emergency diesel generator
EOF	emergency operations facility
ESF	engineered safety feature
FSAR	final safety analysis report
IST	in-service testing
MDAFP	motor-driven auxiliary feedwater pump
MR	maintenance rule
OD	operability determination
PI	performance indicator
PMT	post maintenance testing
QSS	quench spray system
RCP	reactor coolant pump
SDP	significance determination process
TS	technical specification