

July 28, 2006

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 - NRC INTEGRATED INSPECTION
REPORT 05000336/2006003 AND 05000423/2006003

Dear Mr. Christian:

On June 30, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Millstone Power Station Unit 2 and Unit 3. The enclosed inspection report documents the inspection results, which were discussed on July 11, 2006, with Mr. A. Skip Jordan and other members of your staff.

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

This report documents three NRC-identified findings of very low safety significance (Green). Two of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these issues as non-cited violations (NCVs), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any 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 the Millstone Power Station.

In accordance with 10 CFR 2.390 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 (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/

Paul G. Krohn, Chief
Reactor Projects Branch 6
Division of Reactor Projects

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

Enclosure: Inspection Report 05000336/2006003 and 05000423/2006003
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-336, 50-423

License No.: DPR-65, NPF-49

Report No.: 05000336/2006003 and 05000423/2006003

Licensee: Dominion Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Units 2 and 3

Location: P. O. Box 128
Waterford, CT 06385

Dates: April 1, 2006 through June 30, 2006

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Enclosure

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SUMMARY OF FINDINGS

IR 05000336/2006-003, 05000423/2006-003; 04/01/2006 - 06/30/2006; Millstone Power Station, Unit 2 and Unit 3; Equipment Alignment, Operability Evaluations, Event Followup.

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

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Unit 3

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for an inadequate design change review for a steam generator low-low water level setpoint modification. Specifically, Dominion did not fully consider the impact of the modification on the ability of the steam generator to accommodate operational transients without exceeding a parameter threshold which would require automatic or manual protective action. This led to a reactor trip on December 1, 2005, while conducting a rapid downpower in response to a reactor coolant system leak from the packing of a loop maintenance stop valve that was collected in a drain tank inside primary containment. At 38 percent power, main turbine vibrations increased above allowable values and the turbine was manually tripped. Following the turbine trip, the reactor unexpectedly automatically tripped on the "C" steam generator low-low level trip setpoint. Dominion entered this condition into their corrective action program as CR-06-04788. Corrective actions for this issue included plans to conduct an engineering analysis to determine the new steam generator low-low level trip setpoints and revision of the design change notice and the 10 CFR 50.59 screening.

This finding is more than minor because it is associated with the Initiating Events Cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability. Specifically, an inadequate design change review led to an unanticipated reactor trip. This issue is of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding is related to the cross-cutting aspect of human performance in that Dominion's review and decision making process was not effective at identifying possible unintended consequences when making assumptions for a risk significant design change. (Section 4OA3.2)

Cornerstone: Mitigating Systems

Unit 2

- Green. The inspectors identified a finding when Dominion did not recognize that a portion of the auxiliary feedwater (AFW) discharge header contained air voids after they determined that AFW flow instrumentation was behaving erratically as a result of air in the instrument line. Specifically, Dominion initiated a condition report after identifying that AFW flow instrumentation was air bound but closed out operability concerns based on air only affecting instrumentation and not the potential that air could exist in the discharge portion of the system. As a result, Dominion did not identify existing voids in AFW discharge piping or assess these air voids for impact on AFW operability. Dominion entered this condition into their corrective action program as CR-06-04677. Corrective actions for this issue included conducting ultrasonic testing of the discharge piping, quantifying the air voids in the system, and evaluating operability of the system with these air voids left in place.

This finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. Specifically, Dominion did not investigate or evaluate the existence of air voids in the AFW system discharge piping when air was identified in the system. This finding was determined to be of very low safety significance (Green) because it did not result in a loss of function once the existing air voids were identified and evaluated. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully investigate the existence of air voids in other parts of the AFW system and as a result did not fully evaluate the impact of existing air voids in the AFW system discharge piping. (Section 1R15.1)

Unit 3

- Green. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to fully evaluate and correct a significant condition adverse to quality which led to a repeat occurrence of air introduction in the gravity feed boration line. Specifically, following identification and documentation of air in the "A" gravity feed boration line on September 9, 2004, Dominion did not evaluate and correct the cause which then led to a repeat occurrence of air introduction in the "B" gravity feed boration line on April 13, 2006. The inspectors determined that the cause of both events was due to an inadequate chemical and volume control system (CVCS) fill and vent procedure. Dominion entered this condition into their corrective action program as CR-06-03730. Corrective actions for this issue included venting the air from the gravity feed boration line and plans to revise the CVCS fill and vent procedure.

This finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, excessive air in the gravity feed lines has the potential to damage the operating charging pump if an emergency boration event were to occur. This finding was determined to be of very low safety significance (Green) since full mitigation credit was given for the availability of redundant emergency boration paths. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully evaluate and correct an identified degraded condition discovered in September 2004, which then recurred in April 2006. (Section 1R04).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 operated at essentially 100 percent power for the duration of the inspection period with the following exceptions. On April 1, 2006, the plant was shutdown after the turbine-driven auxiliary feedwater (TDAFW) pump was determined to be inoperable. The TDAFW pump was repaired and retested on April 7, and a reactor startup commenced on April 9. The reactor was returned to 100 percent power on April 10, 2006.

Unit 3 operated at essentially 100 percent power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Seasonal Site Inspection (One Site Sample)

Unit 2 and Unit 3

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

Enclosure

1R04 Equipment Alignment (71111.04)Partial System Walkdowns (71111.04 - Two Unit 2 Samples and Two Unit 3 Samples)a. Inspection Scope

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

Unit 2

- Partial equipment alignment of “A” and “C” reactor building closed cooling water (RBCCW) heat exchangers (HXs) with the “B” RBCCW HX out-of-service, May 9, 2006; and
- Partial equipment alignment of the “B” emergency diesel generator (EDG) during “A” EDG maintenance, May 18, 2006.

Unit 3

- Partial equipment alignment of “A” gravity feed boration line, April 18, 2006; and
- Partial equipment alignment of “A” service water train during a “B” service water train outage, May 10, 2006.

b. FindingsUnit 2

No findings of significance were identified.

Unit 3

Introduction. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for the failure to fully evaluate and correct a significant condition adverse to quality which led to a repeat occurrence of air introduction in the gravity feed boration line. Specifically, following identification and documentation of air in the “A” gravity feed boration line on September 9, 2004, Dominion did not evaluate and correct the cause which led to a repeat occurrence of air introduction in the “B” gravity feed boration line on April 18, 2006. The inspectors determined that both events were due to an inadequate chemical and volume control system (CVCS) fill and vent procedure.

Enclosure

Description. On April 17, 2006, during a routine monthly operational readiness test of the “B” boric acid transfer pump, Operations observed erratic indications on the pump discharge pressure gage. Operations investigated the following day and determined that approximately 29 liters of air was introduced into the “B” gravity feed boration line. Operations determined that the air was introduced following the fill and vent of the “B” charging pump on April 13, 2006. In accordance with Surveillance Procedure (SP)-3604C.8, “Gravity Feed Boration Line Gas Accumulation Monitoring,” this amount of air made the “B” gravity feed line inoperable. Operations entered Technical Requirements Manual (TRM) action statement 3TRM-7.6.1, “Safety Grade Cold Shutdown,” and vented the “B” gravity feed boration line to restore operability.

The inspectors reviewed Operating Procedure (OP)-3304A, “Charging and Letdown”, the control room logs, and associated CRs and technical evaluations. The inspectors identified that a similar event had occurred in September 2004. Specifically, on September 9, 2004, following maintenance on the “A” charging pump, the CVCS system was filled and vented. Approximately nine hours after restoring the “A” charging pump to an operable status, an ultrasonic test revealed that piping on the downstream side of the gravity feed boration valve was zero percent full (3.5 liters of air). In accordance with SP-3604C.8, this amount of air made the “A” gravity feed line inoperable. Operations entered TRM action statement 3TRM-7.6.1, “Safety Grade Cold Shutdown” and removed the air by venting the “A” gravity feed boration line.

The inspectors determined that Dominion did not recognize the September 2004 event as a significant condition adverse to quality. The issue was considered a significant condition adverse to quality since damage to an operating charging pump (a safety-related component) would have occurred during a gravity boration event while the excessive air was in the gravity feed lines. The inspectors determined that the failure to take corrective action to preclude repetition from the September 2004 event led to a repeat occurrence of air introduction in the “B” gravity feed boration line on April 13, 2006. The inspectors determined that the cause of both events was due to an inadequate CVCS fill and vent procedure. Because the cause of the September 2004 event was similar to the April 2006 event, the inspectors concluded that the April 2006 event was within Dominion’s ability to foresee and correct, and should have been prevented. The performance issue associated with this finding is that Dominion failed to identify and correct the cause of air introduction into the “A” gravity feed line in September 2004. This then led to a repeat occurrence of air introduction into the “B” gravity feed line in April 2006.

Analysis. This finding is more than minor because it is associated with the Mitigating Systems cornerstone and affects the objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the air volume identified in the boration lines in 2004 and 2006 resulted in their unavailability to perform the intended safety function. The inspectors evaluated this finding in accordance with IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations.” The Significance Determination Process (SDP) Phase 1 screening identified that a SDP workbook Phase 2 evaluation was needed because the inoperable “B” gravity feed line represented a potential loss of

safety function of one or more non-technical specification trains of equipment designated as risk-significant per 10 CFR 50.65 for greater than 24 hours. In Phase 2, the inspectors determined that the event of interest was an anticipated transient without scram (ATWS). The gravity boration feed line is referenced in the ATWS emergency operating procedure as a backup method of emergency boration and selected 10 CFR Part 50, Appendix R, scenarios to achieve cold shutdown conditions. Because redundant trains of emergency boration were available, the inspectors determined that full mitigation credit was appropriate and concluded that this finding is of very low safety significance (Green). This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully evaluate and correct an identified degraded condition discovered in September 2004, which then recurred in April 2006.

Enforcement. Code of Federal Regulations 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. Contrary to the above, following documentation of air introduction into the "A" gravity feed boration line on September 9, 2004, Dominion did not fully evaluate the cause of this condition. This led to a recurrence of air introduction into the "B" gravity feed boration line on April 13, 2006. This issue has been entered in Dominion's corrective action program as CR 06-03730. Corrective actions for this issue included venting the air from the gravity feed boration line and plans to revise the CVCS fill and vent procedure. This issue is being treated as a non-cited violation consistent with Section VI.A of the Enforcement Policy (**NCV 05000423/2006003-01, Did Not Evaluate and Correct a Significant Condition Adverse to Quality Associated with Gravity Feed Boration Lines**).

1R05 Fire Protection (71111.05)

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

a. Inspection Scope

The inspectors performed six walkdowns of fire protection areas during the inspection period. The inspectors reviewed Dominion's fire protection program to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the selected areas. The inspectors walked down these areas to assess Dominion's control of transient combustible material and ignition sources. In addition, the inspectors evaluated the material condition and operational status of fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors then compared the existing conditions of the areas to the fire protection program requirements to ensure that selected program requirements were

being met. The inspectors also interviewed fire protection engineers and other Dominion staff, and evaluated the impact of fire suppression systems on adjacent plant areas. Documents reviewed during the inspection are listed in the Attachment. The fire protection areas reviewed included:

Unit 2

- Auxiliary Building Cable Vault, 25'6" Elevation (Fire Area A-24);
- West DC Switchgear Room, 14'6" Elevation (Fire Area A-21); and
- Railroad Bay Area, 14'6" Elevation (Fire Area A-14).

Unit 3

- Cable Spreading Area, 24'6" Elevation (Fire Area CB-8);
- Floor Area, Auxiliary Building, 43'6" Elevation (Fire Area AB-1); and
- Floor Area, Auxiliary Building, 66'6" Elevation Fire Area AB-1).

b. Findings

No findings of significance were identified.

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

Internal Flooding Inspection

a. Inspection Scope

During the week of April 3, 2006, the inspectors reviewed one sample of flood protection measures for equipment in the Unit 2 Auxiliary Building Cable Vault. This review was conducted to evaluate Dominion's protection of the enclosed safety-related systems from internal flooding conditions. The inspectors performed a walkdown of the area and reviewed the Final Safety Analysis Report, the internal flooding evaluation, and related documents. The inspectors examined the as-found equipment and conditions to ensure that they remained consistent with those indicated in the design basis documentation, flooding mitigation documents, and risk analysis assumptions. The inspectors also interviewed Dominion engineers and other staff. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

Resident Inspector Quarterly Review (71111.11Q - One Unit 2 Sample and One Unit 3 Sample)

a. Inspection Scope

The inspectors observed one sample of Unit 2 licensed operator simulator training on April 12, 2006. The inspectors also observed one sample of Unit 3 licensed operator requalification (operability determination) training on April 21, 2006. The inspectors verified that the training evaluators adequately addressed that the applicable training objectives had been achieved, operator performance was adequate, and evaluators were identifying and documenting crew performance problems. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

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

a. Inspection Scope

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

Unit 2

- Loss of Second Facility of Charging Pumps (CR-06-00243).

Unit 3

- "B" Residual Heat Removal Flow Control Valve Stroke Failed (CR-06-03350).

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - Three Unit 2 Samples and Four Unit 3 Samples)a. Inspection Scope

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

Unit 2

- Emergent work control during week of April 2, 2006, due to failure of the turbine-driven auxiliary feedwater pump;
- Risk assessment during "A" EDG two-year overhaul, May 15-20, 2006; and
- Risk assessment during "B" EDG maintenance, June 1, 2006.

Unit 3

- Risk assessment during turbine-driven auxiliary feedwater pump steam trap maintenance, April 13, 2006;
- Risk assessment due to scheduled "A" EDG maintenance, April 25, 2006;
- Risk assessment due to containment pressure relay replacement, May 5, 2006; and
- Risk assessment during "B" EDG sequencer slave relay testing, May 8, 2006.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Evolutions and Events (71111.14 - One Unit 3 Sample)a. Inspection Scope

The inspectors reviewed one sample of events that demonstrated personnel performance in coping with non-routine evolutions and transients. The inspectors observed operations in the control room and reviewed applicable technical

specifications, operability determination basis documents, and technical evaluations to evaluate the adequacy of Dominion's response to this event. The inspectors also verified the event was entered into the corrective action program to resolve identified adverse conditions. Documents reviewed during the inspection are listed in the Attachment.

Unit 3

- On June 30, 2006, with the Unit at 100 percent power, Unit 3 operators questioned whether isolation of room cooling to the "A" rod control motor control center (MCC) room also affected safety-related MCCs in this room. Operators declared the affected switchgear inoperable and entered Technical Specification 3.8.3.1, "Onsite Power Distribution." Engineering personnel reviewed the configuration and established a basis for operability based on existing structural supports, service water cooling margin assuming a maximum leak size for the affecting piping, and ultrasonic examination of upstream and downstream piping. Operators accepted the reasonable assurance of continued operability (RECO), unisolated service water cooling to the room, and exited the technical specification action statement. The inspectors responded to the site and reviewed the basis of the RECO and the adequacy of operator actions.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15 - Six Unit 2 Samples and Five Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed eleven 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 measures were in place and were appropriately controlled. The inspectors reviewed licensee performance to ensure all related TS and 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 in Alert Status (CR-06-03441);
- Air in AFW Discharge Piping (CR-06-03840);
- Instrument Air to AFW Flow Control Valve Bottles (CR-06-01796);
- Charging System Bladder Failure at Reduced Pressure (CR-06-03250);

- Reasonable Expectation of Continued Operability Enclosure Building Filtration System Solenoids Related to NRC Information Notice 88-24 (CR-06-05351);
- Incorrect Wattage DC Lighting and TSAS 3.0.3 Entry (CR-06-05202).

Unit 3

- Charging Pump Cooling System Temperature Control Valve (CR-06-03276);
- Control Building Emergency Air Filtration System Configuration (CR-06-03265);
- TDAFW Header Drain Valve Leaking (CR-06-03578);
- "B" Train Charging due to Air in "B" Gravity Boration Line (CR-06-03730);
- "B" Residual Heat Removal Exchanger Flow Control Valve (CR-06-03350).

b. Findings

Unit 2

- .1 Introduction. The inspectors identified a finding when Dominion did not recognize that a portion of the auxiliary feedwater (AFW) discharge header contained air voids after they determined that AFW flow instrumentation was behaving erratically as a result of air in the instrument line. Specifically, Dominion initiated a condition report after identifying that AFW flow instrumentation was air bound but closed out operability concerns based on air only affecting instrumentation and not the potential that air could exist in the discharge portion of the system.

Description. On April 18, 2006, Operations determined that the Unit 2 AFW flow instrumentation associated with the #2 steam generator was fluctuating with AFW secured. Indicated AFW flow for the instrument was cycling between 0 and 75 gallons per minute (gpm) from control room, remote shutdown, and primary plant computer indications. Dominion determined that there was no TS required action based on the availability of redundant instrumentation. Dominion initiated a work order to vent the instrumentation but had difficulties establishing flow through the low side instrumentation sensing line. Subsequently, a pressurized water source was used to establish flow through this line. Dominion considered recent maintenance performed on the turbine-driven auxiliary feedwater pump as a possible source for the air in the instrumentation line and focused on how the air affected the flow transmitters. Dominion did not investigate whether air voids were present in AFW system discharge piping and, as a result, did not evaluate the impact of discharge piping air voids on the operability of the system.

On April 24, 2006, the inspectors questioned whether or not Dominion had considered the possibility that air voids could be present in other portions of the AFW system and the subsequent effects on the AFW system's capability to deliver the required flow. On April 25, 2006, Dominion conducted ultrasonic testing on various portions of the AFW system and discovered that two sections of the AFW discharge header contained voiding. Specifically, Dominion determined that a 20 foot AFW discharge piping run for the #2 steam generator was 90 percent flooded (approximately 12.68 cubic feet of air). In addition, Dominion determined that a 30 foot length of AFW discharge piping run for

the #1 steam generator was 95 percent flooded (approximately 0.16 cubic feet of air). Operations subsequently determined that this amount of air would not affect AFW system operability based on the volume of air identified in the system, the location of the air and relevance to a previously accepted Millstone Unit 3 Technical Evaluation (M3-EV-05-008), "ECCS Gas Accumulation in Support of Surveillance". The performance deficiency is that Dominion did not recognize the air binding of the AFW feed flow instrument as an indication of the potential for air in the discharge portion of the system and, as a result, did not identify or evaluate air voids that were located in two sections of discharge piping.

Analysis. The finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the reliability of systems that respond to initiating events to prevent undesirable consequences. This finding was determined to be of very low safety significance (Green) by using Phase 1 of Inspection Manual Chapter (IMC) 0609, "Significance Determination Process." Specifically, the finding did not result in a loss of function per NRC Part 9900 Technical Guidance, "Operability Determination Process for Operability and Functional Assessment" and was not related to a seismic, flooding, or severe weather event. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully investigate the existence of air voids in other parts of the AFW system and as a result did not fully evaluate the impact of existing air voids in the AFW system discharge piping.

Enforcement. No violations of regulatory requirements occurred. On April 18, 2006, Dominion did not recognize air binding of the AFW feed flow instrument as an indication for the potential for air in the discharge portion of the system. As a result, Dominion did not identify or evaluate air voids in two sections of discharge piping until questioned by the inspectors on April 24, 2006. This is considered a finding of very low safety significance (Green). This issue has been entered in Dominion's corrective action program as CR-06-05202, CR-06-04677, and CR-06-05318. Corrective actions for this issue included conducting ultrasonic testing of the discharge piping, quantifying the air voids in the system, and evaluating operability of the system with these air voids left in place. Because this finding does not involve a violation of regulatory requirements and has very low significance, it is identified as **(FIN 05000336/2006003-02), Did Not Identify or Evaluate Air Voids Located in Auxiliary Feedwater System.**

Unit 3

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19 - Four Unit 2 Samples and Three Unit 3 Samples)

a. Inspection Scope

The inspectors reviewed seven samples of post-maintenance tests (PMT) during this inspection period. The inspectors reviewed these activities to determine whether the

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

Unit 2

- Adjust Packing on Reactor Coolant System #1 Hot Leg Sample Line Isolation Valve (M2-06-03408);
- Overhaul TDAFW Pump Outboard Mechanical Seal (M2-05-06191);
- TDAFW Pump Outboard Bearing Replacement (M2-06-03091); and
- "B" Control Room Air Conditioning Fuse Replacement Retest (M2-06-04291).

Unit 3

- Repair Leak on TDAFW Pump Steam Trap (M3-06-04349);
- Replace O-rings/Gaskets for #10 Cylinder Water Jumper on Unit 3 "B" Emergency Diesel Generator (M3-06-04363); and
- "B" Residual Heat Removal Heat Exchanger Cooling Outlet Isolation Pilot Replacement and Bettis Actuator Overhaul (M3-04-07920).

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20 - One Unit 2 Sample)

a. Inspection Scope

The inspectors reviewed one sample of a forced outage following a Unit 2 shutdown associated with the turbine-driven auxiliary feedwater pump failure on April 1, 2006, for compliance with Technical Specification requirements and approved procedures, conduct of outage risk evaluations, configuration control, and maintenance of key safety functions. Documents reviewed during the inspection are listed in the Attachment. During this forced outage, the inspectors monitored Dominion's control of the outage activities listed below:

- Shutdown risk evaluations;
- Startup scheduling;
- Reactor startup and criticality;
- Plant startup; and
- Power ascension.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22 - Two Unit 2 Samples and Two Unit 3 Samples)a. Inspection Scope

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

Unit 2

- Turbine-Driven Auxiliary Feedwater and Recirculation Check Valve In-service Testing (IST) (SP-2610BO-002); and
- "B" Emergency Diesel Generator Fast Start, Load Run (SP-2613B).

Unit 3

- Charging Pump Cooling System Valve Operability Test for Temperature Control Valve 37B (SP-3603D.3); and
- "A" Residual Heat Removal Pump Operational IST (SP-3610A.1).

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06 - One Unit 2 Sample and One Unit 3 Sample)a. Inspection Scope

The inspectors observed one sample of the conduct of Unit 2 licensed operator simulator training during a drill conducted on April 12, 2006, and one sample of the conduct of Unit 3 licensed operator simulator training on May 30, 2006. The inspectors evaluated the Operations crew activities related to evaluating the scenario and making proper emergency action level classification determinations. Additionally, the inspectors

assessed the ability of Dominion's evaluators to adequately address operator performance deficiencies identified during the exercise. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

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

a. Inspection Scope

Cornerstone: Initiating Events

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

Unit 2

- Unplanned Scrams per 7000 Critical Hours;
- Unplanned Scrams with Loss of Normal Heat Removal; and
- Unplanned Power Changes per 7000 Critical Hours.

Unit 3

- Unplanned Scrams per 7000 Critical Hours;
- Unplanned Scrams with Loss of Normal Heat Removal; and
- Unplanned Power Changes per 7000 Critical Hours.

The inspectors reviewed portions of the operations logs and initial PI data developed from monthly operating reports and discussed the methods for compiling and reporting the PIs with cognizant licensing and engineering personnel. The inspectors compared graphical representations from the most recent PI report to the initial data to verify that the data was correctly reflected in the report. Documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Review of Items Entered into the Corrective Action Program

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

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

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

b. Findings and Observations

Operability Determinations

No findings of significance were identified. The inspectors continue to evaluate Dominion's improvement initiatives in the area of Operability Determination quality and process implementation. For example, on June 2, 2006, the inspectors reviewed Dominion's response when Operations determined that several non-Appendix R lighting fixtures had higher wattage light bulbs than assumed in the station's DC battery loading calculations. Operations took action to restore operability by opening various breakers associated with the lighting fixtures, thereby, restoring margin to both vital batteries. Dominion did not consider the action to open the breakers supplying the lighting fixtures as a compensatory measure governed under their Operability Determination process. The inspectors discussed with Dominion over the next several weeks the basis for why the action should have been considered a compensatory measure until full system qualification is restored. As a result, Dominion entered CR-06-06890, "Classification needed on what constitutes compensatory measures in Operability Determination Process" into the corrective action program (CAP).

The inspectors have noted some effective corrective actions, particularly in the areas of operations and engineering personnel training. However, the inspectors have determined that sustained performance improvement on the part of both Units needs to be demonstrated in order to evaluate the success of Dominion's recent initiatives. Therefore, the residents will continue to follow these issues, including what constitutes compensatory measures, within the framework of the baseline inspection program and re-visit the Operability Determination trend in subsequent reports.

Enclosure

.3 Annual Sample Review

Operator Work-arounds (One Site Sample)

a. Inspection Scope

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

b. Findings and Observations

No findings of significance were identified. The inspectors determined that operator work-arounds are adequately classified, tracked, and assessed in accordance with Dominion's procedures.

.4 Cross-References to PI&R Findings Documented Elsewhere in this Report

Section 1R04 describes a finding for the failure to identify and correct the cause of the air introduction into the "A" boric acid transfer pump gravity feed line in September 2004. This led to a repeat occurrence of air introduction into the "B" boric acid transfer pump gravity feed line in April 2006. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully evaluate and correct an identified degraded condition discovered in September 2004, which then recurred in April 2006.

Section 1R15 describes a finding for the failure to adequately investigate and assess air voids in the Auxiliary Feedwater System. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully investigate the existence of air voids in other parts of the AFW system and as a result did not fully evaluate the impact of existing air voids in the AFW system discharge piping.

4OA3 Event Followup (71153 - One Unit 2 Sample and One Unit 3 Sample)

.1 (Closed) LER 05000423/2005-004-00, Pressurizer Spray Nozzle Weld Indications

On December 16, 2005, Dominion reported the discovery of flaws in the pressurizer spray nozzle to safe-end bimetallic region. The inspectors reviewed this LER with its

associated condition reports to verify that the cause and corrective actions related to the event described in the LER were adequate. In addition, the inspectors reviewed commitments made with regard to NRC Bulletin 2004-01 to ensure these were appropriately addressed. No findings of significance were identified. This LER is closed.

.2 (Closed) LER 05000423/2005-005-00 and LER 05000423/2005-005-01, Automatic Reactor Trip of Millstone Unit 3 Due to Low-Low Steam Generator Level

a. Inspection Scope

The inspectors interviewed Dominion personnel and reviewed this LER with its associated condition reports to verify that the root cause and corrective actions related to the event described were adequate.

b. Findings

Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, "Design Control," for an inadequate design change review for a steam generator low-low water level setpoint modification which led to a reactor trip on December 1, 2005, while conducting a rapid downpower in response to a reactor coolant system (RCS) leak.

Description. On December 1, 2005, with the plant in Mode 1 at 38 percent power, an automatic reactor trip occurred on a "C" steam generator low-low level (S/G low-low level) protection signal. At the time of the reactor trip, a rapid downpower to 30 percent was in progress to facilitate a containment entry to locate and repair a RCS leak from the packing of a loop maintenance stop valve that was collected in a drain tank inside primary containment. As turbine load and reactor power were reduced, main turbine vibrations increased above the allowable limits and the main turbine was manually tripped in accordance with procedures. After the turbine was manually tripped, the reactor tripped unexpectedly on "C" S/G low-low level. At the time of the trip, the reactor protection system S/G low-low level trip setpoint was being maintained at 27 percent versus the original value of 18 percent to address nuclear steam supply system vendor identified S/G level inaccuracies associated with the S/G mid-deck plate differential pressure.

Based on a review of the event, interviews, the LER, associated CRs and other applicable documents, the inspectors determined the design change review in April 2002 for the S/G low-low level setpoint change was inadequate. The review did not take into account the impact of the S/G low-low level setpoint modification on the margin to accommodate S/G level changes due to operational transients. Unit 3 Final Safety Analysis Report, Chapter 15, Section 15.0.1.1, "Accident Analysis," states, "Condition I occurrences are accommodated with margin between any plant parameter and the value of that parameter which would require either an automatic or manual protective action." The inspectors determined that the Condition I occurrences under consideration for the S/G low-low setpoint change included, in part, operational

transients defined in FSAR, Chapter 15 such as step load changes (+/- 10 percent), ramp load changes (up to 5 percent/minute), and load rejection up to and including a design full load rejection transient. The design change review (DCN DM3-00-0077-02, "RPS, ESF, AMSAC Low Steam Generator Level Trip Setpoint Change") and associated 10 CFR 50.59 screening concluded that there was no impact on the nuclear steam supply system and balance of plant design bases. The design change had no evaluation or discussion of FSAR, Chapter 15 operational transients. However, as discussed in the LER, the direct cause of the trip was a low-low level in the "C" S/G that resulted from the shrink in S/G water level created by the manual turbine trip and that operation at the increased S/G low-low level setpoint (27 percent) reduced the margin available to accommodate S/G level transients that occur following a turbine trip at power.

In addition, the inspectors identified that a license amendment should have been submitted for the S/G low-low level setpoint change pursuant to 10 CFR 50.59, "Changes, Tests, and Experiments." Specifically, a change to the S/G low-low setpoint Technical Specification (TS 2.2.1, Table 2.2-1, "Reactor Trip Instrumentation Trip Setpoints") is required because the actual setting of the nominal trip setpoint (NTS) (27 percent) is not consistent with the Technical Specification stated value of the NTS (18 percent). The change to the S/G low-low NTS was made in April 2002 with no action identified to initiate a Technical Specification change. The performance deficiency associated with this finding is that Dominion did not conduct an adequate design change review associated with a S/G low-low level trip setpoint modification. This led to a reduction in automatic protective action margin available to accommodate steam generator level changes for operational transients and resulted in an unintended reactor trip.

Analysis. This finding is more than minor because it is associated with the Design Control attribute of the Initiating Events cornerstone and affects the objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding is associated with an increase in the likelihood of initiating events in that a reactor trip actually occurred. The inspectors determined that the finding was of very low safety significance (Green) through performance of a Phase 1 SDP in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Specifically, this finding did not involve a loss-of-coolant accident or external event initiators or contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. All safety systems performed as designed following the reactor trip. This finding is related to the cross-cutting aspect of human performance in that Dominion's review and decision making process was not effective at identifying possible unintended consequences when making assumptions for a risk significant design change.

Enforcement. Code of Federal Regulations 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, "design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable

testing program.” Contrary to this requirement, in April 2002, Dominion did not conduct an adequate design review of the S/G low-low level setpoint modification which led to an unanticipated reactor trip on December 1, 2006. This issue has been entered into Dominion’s corrective action program as CR-06-04788. Corrective actions for this issue included plans to conduct an engineering analysis to determine new S/G Low-Low level setpoints and revision of the design change notice and the 10 CFR 50.59 screening. This issue is being treated as a non-cited violation consistent with Section VI.A of the Enforcement Policy (**NCV 05000423/2006003-03, Did Not Adequately Evaluate a Reactor Protection System Setpoint Modification**).

4OA5 Other Activities

Implementation of Temporary Instruction (TI) 2515/165 - Operational Readiness of Offsite Power and Impact on Plant Risk

a. Inspection Scope

The objective of TI 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," was to gather information to support the assessment of nuclear power plant operational readiness of offsite power systems and impact on plant risk. The inspectors evaluated Dominion procedures against the specific offsite power, risk assessment and system grid reliability requirements of TI 2515/165. They also discussed the attributes with Dominion personnel.

The information gathered while completing this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation on April 3, 2006.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Integrated Report Exit Meeting Summary

On July 11, 2006, the resident inspectors presented the overall inspection results to Mr. A. Skip Jordan and other members of his staff, who acknowledged the findings. The inspectors asked Dominion whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

J. Armstrong, Unit 2 Fire Protection Engineer
B. Bartron, Licensing
B. Burnham, I&C Engineer
G. Closius, Licensing
K. Cortis, AOV Program Coordinator
D. Dodson, Licensing
R. Fuller, Configuration Control
R. Griffin, Director, Nuclear Station Safety and Licensing
T. Ickes, IST Coordinator
A. Jordan, Director, Nuclear Station Operations and Maintenance
M. Kai, Safety Analysis
R. MacManus, Director, Nuclear Engineering
J. Mangeno, Unit 3 Fire Protection Engineer
A. Price, Site Vice President - Millstone
N. Sacco, Configuration Control
J. Semancik, Unit 3 Assistant Operations Manager

NRC personnel

J. C. Benjamin, Resident Inspector, Division of Reactor Projects (DRP)
J. A. Bobiak, Reactor Inspector, Division of Reactor Safety (DRS)
G. Johnson, Reactor Inspector, DRS
S. R. Kennedy, Resident Inspector, DRP
S. M. Schneider, Senior Resident Inspector, DRP
N. S. Sieller, Reactor Engineer, DRP

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000423/2006003-01	NCV	Did Not Evaluate and Correct a Significant Condition Adverse to Quality Associated with Gravity Feed Boration Lines (1R04)
05000336/2006003-02	FIN	Did Not Identify or Evaluate Air Voids Located in Auxiliary Feedwater System (1R15.1)

A-2

05000423/2006003-03	NCV	Did Not Adequately Evaluate a Reactor Protection System Setpoint Modification (4OA3.2)
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Closed

05000423/2005-004-00	LER	Pressurizer Spray Nozzle Weld Indications (4OA3.1)
05000423/2005-005-00, 01	LER	Automatic Reactor Trip of Millstone Unit 3 Due to Low-Low Steam Generator Level (4OA3.2)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

AOP-2560, Revision 010-01, Storms, High Winds, and High Tides
SP-2615, Revision 006-01, Flood Level Determination
C OP 200.6, Revision 002, Storms and Other Hazardous Phenomena
MP-2721C, Revision 007-01, Protection and Restoration of Service Water Pump Motor During a Hurricane

Section 1R04: Equipment Alignment

OP-2346A, Revision 026-04, "A" Emergency Diesel Generator
DWG EM-104A, Revision 30, Chemical and Volume Control System
DWG EM-104C, Revision 46, Chemical and Volume Control System
CR-06-04511, Very Loud High Pitched Harmonic Coming from RBCCW Piping
OP-2330A, Revision 023-00, RBCCW System
DWG EM-133A, Revision 44, Service Water
SP-3604C.8, Revision 000, Gravity Feed Boration Line Gas Accumulation Monitoring
SP-3604C.8-001, Gravity Feed Boration Line Gas Volume Calculation for Mode 1, 2, and 3 dated September 9, 2004, and April 17, 2006.
CR-01-12135, Document and Track Closure of Recommendations Provided in Technical Evaluation M3-EV-98-0126 Revision 1, Gas Accumulation in Gravity Feed Boration Piping
OP-3304A, Revision 029-07, Charging and Letdown
MP-EV-98-0126, Revision 1, Technical Evaluation for Gas Accumulation in Gravity Feed Boration Piping
Reportability Determination for CR-06-03730, Found "B" Gravity Boration Line Essentially Empty
Unit 3 Final Safety Analysis Report
Unit 3 Control Room Log
CR-06-03730, Found "B" Gravity Boration Line Essentially Empty as Followup to CR-06-03712
CR-04-08235, Train "A" Gravity Feed Boration Line Gas Accumulation Monitoring Surveillance 3604C.8 Failed

Attachment

Section 1R05: Fire Protection

Millstone Unit 2 Fire Hazards Analysis, Revision 9
Millstone Unit 2 Individual Plant Examination of External Events
Millstone Unit 3 Fire Hazard Analysis Boundary Drawing, Revision
Millstone Unit 3 Fire Protection Evaluation Report, Revision 17.3
Suppression Effects Analysis, January 1998
Unit 2 Fire Fighting Strategy
MP-PROG-OPS-SFP18, Revision 001-02, Establishing Ventilation for East West 480VAC
125VDC Switchgear Room
CR-06-05029, Drumming Area and Railway Access Sprinkler Failed Design Function Test
EPM Calc. No. 186, Revision 1, Combustible Loading Re-Analysis

Section 1R06: Flood Protection

Millstone Unit 2 Final Safety Analysis Report, Change 8
Millstone Unit 2 Internal Flooding Evaluation, Revision 0
Millstone Unit 2 Individual Plant Examination of External Events
Suppression Effects Analysis, January 1998
SFP-17, Revision 002-00, Fire Penetration Seal and Barrier Inspections
AOP-2559, Revision 007-04, Millstone Unit 2 Fire
Unit 2 Fire Fighting Strategy, Updated on July 15, 2002

Section 1R11: Licensed Operator Requalification Program

Lesson Plan C06306L, Operability Worksheets
MP-26-EPI-FAP06-02, Revision 004-01, Millstone Unit 2 EAL Tables
MP-26-EPI-FAP07-001, Revision 001-01, Incident Report Form
Drill Exercise Sequence of Events, Revision 2, Dated April 12, 2006

Section 1R12: Maintenance Effectiveness

CR-06-00243, Entered TSAS 3.0.3 for Loss of Second Facility of Charging Pumps
CR-06-03350, 3RHS-HC607 Position Indicator did not Return to Original Position during
Portions of Valve Stroking
MP-24-MR-FAP710, Revision 001, Maintenance Rule Functional Failure and Evaluations
Maintenance Rule Functional Failure Evaluation Performed on 2/10/2006

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

MP-20-WM-FAP02.1, Revision 011, Conduct of On-Line Maintenance
MP-13-PRA-FAP01.1, Revision 001, Performing Risk Reviews
CR-06-04628, Unit 3 SBO Diesel Alarms on SBO D/G Control Panel - Section 3
SP-2619G, Revision 000-04, TS 3.8.1.b.4, One EDG Inoperable for Extended Maintenance
Outage Performed 0033, 5/15/2006
AWO M2-05-09256, 2-CH-512 Freeze Seal Contingency Plan

NRC Inspection Manual Part 9900 Technical Guidance, Mechanical Freeze Plugs
Control Room and Maintenance Logs
Unit 2 Work Week Schedule for 5/15/2006

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

CR-06-06124, Unplanned TS, TRM Entries, Minor SWP Brazed Joint Leak on
SWP-003-05-3(A-)
RECO for CR-06-06124, A Minor Leak was Discovered in Line 3SWP-003-003-86-3 in the
Supply to 3HVR*ACU1A (CR-06-06124)
Engineering Record of Correspondence (ERC) 25212-ER-06-0041, Evaluation of Flaw
Resulting from Loss of Braze in SW Blowdown Line Leak (CR-06-05056)

Section 1R15: Operability Evaluations

CR-06-03441, MP2 P4 Terry Turbine Pump Outboard Bearing Vibration in the Vertical Direction
is Acceptable But is Outside the IST Normal Range
CR-06-03578, 2-MS-342 Leaks by Seat
CR-06-03730, Found "B" Gravity Boration Line Essentially Empty as Followup to CR-06-03712
CR-06-03712, Abnormal Discharge Pressure While Starting 3CHS*P2B for SP-3604C.1-001
CR 06-03276, 3CCE*37B Charging Pump Cooler 3CCE*E1B Temperature Control Valve Failed
Stroke Time Test
CR-06-03265, Unplanned LCO, Both Control Building Filters Inoperable Due to Tagging
CR-06-03840, Difficulty Venting Flow Transmitters FT-5278A/B
CR-06-04047, UT of AFW Piping in Aux Bldg East and West Penetration (38'6") Revealed
Piping Volume not 100% Flooded in Some Sections
CR-06-03718, Control Room Panel Deficiency #2451. F5278B-1, #2 Steam Generator Aux
Feed Flow Indication, Fluctuating with Aux Feedwater Secured
CR-06-04500, Add Additional AFW Flow Indication to the PPC
CR-06-04677, Lessons Learned. Recent CRs on Problems with MP2 AFW Flow Indication
Could Have Used RECO/OD to Document Operability Discussions
CR-06-04538, FT-5278A/B Observations, Regarding Oscillations on AFW Flow Meter
CR-06-00140, Aux Feedwater Flow Transmitters FT-5277B and FT-5278B as Found Data
Found Out of Spec. Cal'd per Procedure as Date Within Spec.
CR-06-03588, F5278 S/G Aux Feedwater Flow Indication Erroneous. This is Control Panel
Deficiency
CR-06-01796, Reactor Trip Due to a Loss of Instrument Air
CR-06-03250, Charging Pulsation Dampeners May Have Been Adversely Impacted By
Chattering During Cooldown
CR-06-03442, "A" Charging Pulsation Dampener Bladder Has Failed
CR-06-05318, EBFS Control Dampeners not Rated to MOPD
CR-06-05202, Larger Wattage Bulbs Installed in DC Lighting than Called for in Drawing
CR-06-05355, After Adjusting Air Regulators for EBFS Fan Discharge Dampeners, 2-EB-42
and 52, the Dampeners Would Not Close on Demand
CR-06-05351, Unplanned Entry into Tech Spec 3.0.3 for Enclosure Building Filtration
OP-2314G, Revision 014-03, Enclosure Building Filtration System

Regulatory Guide 1.52, Revision 3, June 2001, Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants
NRC Information Notice 88-24, Failures of Air Operated Valves Affecting Safety-Related Systems Dated May 13, 1988
M2-EV-04-0018, Revision 00, Precharge Requirements for MP2 Charging Pump Dampeners Bladders for Low Pressure Operation
DWG 25203-20150, Sheet 516, Unit 2 AFW Isometric Drawing
DWG 25203-26005, Sheet 3 of 4, Revision 62, P&ID Condensate Storage and Aux Feed MP3 TS, Section 3/4.7, Plant Systems
Unit 2 FSAR, Section 10.4.5, Revision 21, Condensate and Feedwater System
DCR M2-99005, Revision 0, Auxiliary and Main Feedwater Control and Isolation Issues
M2-EV-99-0046, Revision 0, Motor Driven AFW Pump Cycling Requirements During Turbine Building HELB

Section 1R19: Post-Maintenance Testing

AWO M2-06-03408, Inspect 2-RC-001 Packing at NOP/NOT
AWO M2-06-03208, Adjust Packing and Perform Flowscan Testing
AWO M2-05-06191, Overhaul Terry Turbine Outboard Mechanical Seal
AWO M2-06-03091, Replace Turbine-Driven Auxiliary Feedwater Pump Outboard Bearing
AWO M2-06-04291, "B" Control Room Air Conditioning Compressor Assembly
AWO M3-06-04349, Active Steam Leak on TDAFW Pump Steam Trap
AWO M3-06-04363, M33EGS*EGB Replace O-rings/Gaskets for #10 Cylinder Water Jumper
AWO M3-04-07920, RHR Hx Cooling Outlet isolation Pilot Replacement
AWO M3-03-00495, RHR Hx Cooling Outlet Insolation Bettis Actuator Overhaul
SP-3646A.2-1, Revision 018-02, Emergency Diesel Generator "B" Operability Tests
SP-3630A.7-008, Revision 000-02, "B" Train RPCCW Valve Stroke Time Test
Troubleshooting Sheet Associated with AWO M2-06-04291
DWG 25203-32023, Sheet 56, Revision 5, Control Room A/C Air Cool Condenser MF36B
DBS-2315A, Revision 0, Control Room Air Conditioning Design Bases Summary

Section 1R20: Refueling and Outage Activities

OP-2203, Revision 017-01, Plant Startup
OP-2202, Revision 021-00, Reactor Startup IPTE
OP-2205, Revision 014-02, Plant Shutdown
OP-2206, Revision 011-00, Reactor Shutdown

Section 1R22: Surveillance Testing

SP-3603D.3, Revision 006-01, Charging Pump Cooling System Valve Operability Test
SP-2610BO-002, Revision 000-00, TDAFW and Recirculation Check Valve IST
SP-2613B, Revision 021-01, Periodic DG Operability Test, Facility 2 (Fast Start, Loaded Run)
Performed on 5/17/2006
SP-3610A.1-001, Revision 010-03, 3RHS*P1A Operational Readiness Test in Mode 1, 2, 3 or 4

CR-06-03276, 3CCE*37B Charging Pump Cooler 3CCE*E1B Temperature Control Valve Failed Stroke Time Test

Section 1EP6: Drill Evaluation

MP-26-EPI-FAP06-02, Revision 004-01, Millstone Unit 2 EAL Tables
MP-26-EPI-FAP07-001, Revision 001-01, Incident Report Form
Drill Exercise Sequence of Events, Revision 2, Dated April 12, 2006
MP-26-EPI-FAP04, Revision 003, Emergency Operation Facility Activation Operation
CR-06-04173, A SERO Rehearsal Drill was Conducted During Which a Number of Areas for Improvement were Identified
CR-06-03548, Millstone Paging Application Failure
CR-06-04371, A Rehearsal Drill was Conducted on 4/12/06 During Which a Number of Information Technology (IT) Related Comments Were Received
CR-06-04220, Field Team Air Sample Could Not Obtain Flow Rate Specified in MP-26-EPI-FAP15-003
LORTSE58, Operational Exam 58, Simulator Guide Approval Sheet

Section 4OA1: Performance Indicator (PI) Verification

NEI 99-02, Revision 2, Regulatory Assessment Performance Indicator Guidance

Section 4OA2: Identification and Resolution of Problems

MP-14-OPS-GDL400, Revision 007-01, Operations Administrative Procedures Unit 2 and Unit 3 Shift Turnover Reports
Unit 2 and Unit 3 Operator Work-arounds, Burdens, and Distraction database
CR-06-00372, Transient Combustible Fire Load did not have a Permit
CR-06-04691, Combustible Material Storage not Appropriate for Area or No Permit Provided
CR-06-00805, Trend in Poor Housekeeping/Combustible Permit Process Adherence
CR-06-00984, Poor Housekeeping and Lack of Combustible Permits for the MP2 Aux -45'
CR-05-07551, Review of Compensatory Measures for a Fire Protection Permit
CR-06-06890, Classification Needed on What Constitutes Compensatory Measures in Operability Determination Process
WC-7, Revision 005-03, Fire Protection Program

Section 4OA3 Event Followup

LER 2005-004-00, Pressurizer Spray Nozzle Weld Indications
LER 2005-005-00 and LER 2005-005-01, Automatic Reactor Trip of Millstone Unit 3 Due to Low-Low Steam Generator Level
CR-05-13356, Millstone Unit 3 Reactor Trip
Design Change Notice DM3-00-0077-02, RPS, ESF and AMSAC Low Steam Generator Level Trip Setpoint Change, Dated January 28, 2002
CR-05-11047, 3RCS*TK1 6" Spray Line has 2 Linear Indications that are Rejectable by ASME Section XI

CR-05-11382, Automated Ultrasonic Examination of the Pressurizer Spray Nozzle has Identified 3 Flaw Indications
 CR-05-11521, Indications in the Pressurizer Spray Nozzle to Safe End Weld Exceed ASME Section XI Allowable Size
 CR-06-04788, Inadequate Screen for DCN DM3-00-0077-02
 CR-02-01362, SG Mid-Deck Plate Pressure Loss That May Affect SG Low-Low Water Level Reactor Protection Setpoints
 Unresolved Indication Report MP3-05-009, Spray Nozzle to Safe End Weld Flaw
 M3-EV-05-0035, Evaluation of Unresolved Indication Report MP3-05-009
 Dominion 60 day Response to NRC Bulletin 2004-01, Dated July 27, 2004
 Dominion Clarification to the 60 day Response to NRC Bulletin 2004-01, Dated March 31, 2005
 NRC Issuance of Relief from Code Requirements for Millstone Unit 3, Dated January 23, 2006
 M3-05-14477, Pressurizer Spray Nozzle to Safe End Weld Overlay
 NRC Bulletin 2004-01, Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized Water Reactors, Dated May 28, 2004
 Westinghouse Nuclear Safety Advisory Letter, NSAL-02-3, Revision 1, Steam Generator Mid-deck Plate Pressure Loss issue
 Unit 3 Final Safety Analysis Report

Section 40A5: Other Activities

AOP-2580, Revision 003-02, "Degraded Voltage"
 ARP-2590J, Revision 001-01, "Alarm Response for RFL Supervisory Panel, C909"
 ARP-2590F, Revision 008-00, "Alarm Response for Control Room Panel, C-08"
 ARP-2592E, Revision 001-00, "Alarm Response for RSST, 15G-22S"
 CR-04-09302, AOP 2580, "Degraded Voltage" Needs Additional Tech Spec Applicability Guidance on Switchyard Voltage
 CR-04-09304, Recommended Change to Procedure to Add Tech Spec Applicability Guidance on Switchyard Voltage
 CR-05-05487, Alarm on the Warning I-Dent-A-Tech at the South Access Point will not Alarm When Taking the Devices Designed to Make it Alarm Through the Detector
 CR-05-09287, Tracking CR for ISO-New England Procedure Revision
 MP-13-PRA-FAP01.1, Revision 001, "Performing Risk Reviews"
 MP-14-OPS-GDL600, Revision 004-01, "Plant Status and Configuration Control"
 MP-20-OM-FAP02.1, Revision 001-04, "Shutdown Risk Management"
 MP-20-WM-FAP02.1, Revision 010-01, "Conduct of Online Maintenance"
 OP-2351, Revision 010-01, "CONVEX 345 KV Switchgear"
 OP-3353.MB8A, "Main Board 8A Annunciator Response"

LIST OF ACRONYMS

AFW	auxiliary feedwater
AOP	abnormal operating procedure
AMSAC	ATWS mitigating system actuation circuitry

ATWS	anticipated transient without scram
CFR	Code of Federal Regulations
CR	condition report
CVCS	chemical and volume control system
DCN	design change notice
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	emergency diesel generator
FIN	finding
FSAR	Final Safety Analysis Report
HX	heat exchanger
IMC	Inspection Manual Chapter
IST	in-service testing
LER	licensee event report
MCC	motor control center
MR	maintenance rule
NCV	non-cited violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NTS	nominal trip setpoint
OD	operability determination
OP	operating procedure
PI	performance indicator
PMT	post-maintenance testing
RBCCW	reactor building closed cooling water
RCS	reactor coolant system
RECO	reasonable expectation of continued operability
SDP	significance determination process
SG	steam generator
SP	surveillance procedure
TDAFW	turbine-driven auxiliary feedwater
TI	temporary instruction
TRM	Technical Requirements Manual
TS	technical specification
UT	ultrasonic test