UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 10, 2007

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 05000336/2007003 AND 05000423/2007003

Dear Mr. Christian:

On June 30, 2007, 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 10, 2007, with Mr. J. Alan Price, Site Vice President, 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 two NRC-identified findings and two self-revealing findings of very low safety significance (Green). All of these findings were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs), consistent 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/

Raymond J. Powell, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 05000336/2007003 and 05000423/2007003
w/Attachment: Supplemental Information

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

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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.:	05000336/2007003 and 05000423/2007003
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Units 2 and 3
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	April 1, 2007 through June 30, 2007
Inspectors:	R. Treadway, Senior Resident Inspector (Acting), Division of Reactor Projects (DRP) S. Schneider, Senior Resident Inspector, DRP J. Benjamin, Resident Inspector, DRP R. Fernandes, Resident Inspector, DRP J. Commiskey, Health Physicist, Division of Reactor Safety (DRS) G. Johnson, Operations Engineer, DRS T. Moslak, Health Physicist, DRS K. Mangan, Senior Reactor Inspector, DRS J. Richmond, Senior Reactor Inspector, DRS A. DeFrancisco, Reactor Inspector, DRS B. Norris, Senior Project Engineer, DRP D. Johnson, Reactor Inspector, DRS
Approved by:	Raymond J. Powell, Chief Projects Branch 5 Division of Reactor Projects

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SUMMARY OF FINDINGS

IR 05000336/2007003, 05000423/2007003; 04/01/2007 - 06/30/2007; Millstone Power Station, Unit 2 and Unit 3; Inservice Inspection, Maintenance Effectiveness, Post-Maintenance Testing, and Surveillance Testing.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by regional inspectors. Four Green non-cited violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

Green. The inspectors identified that Dominion did not follow Boric Acid Corrosion Control program procedures. Specifically, plant personnel failed to adequately perform boric acid leak evaluations as required by Dominion procedure DNAP-1004, “Boric Acid Corrosion Control Program.” This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings.” Dominion’s corrective actions for this issue included a general area cleaning program to remove boric acid residue from target components and ensuring the Boric Acid Corrosion Control program includes clear documentation of evaluations for both the leaking component and any associated target component(s).

This finding was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, “Significance Determination of Reactor Inspection Findings for At-Power Situations.” The finding was determined to be of very low safety significance (Green) because the issue did not result in exceeding the Technical Specification limit for identified reactor coolant system (RCS) leakage or affect other mitigating systems resulting in a total loss of their safety function. Additionally, this finding is similar to IMC 0612, Appendix E, example 4a, in that the licensee routinely failed to perform engineering evaluations on similar issues; i.e., boric acid leaks. The performance deficiency had a cross-cutting aspect in the area of human performance, work practices component, because Dominion did not ensure personnel followed procedures. [H.4.(b)] (Section IR08)

Cornerstone: Mitigating Systems

Green. A self-revealing finding was identified when Dominion did not ensure an adequate work procedure was available for maintenance performed on the Unit 2 'C' charging pump on May 5, 2007, resulting in a failure of the pump on June 11, 2007. Specifically, the work procedure did not give specific guidance for assembly and installation of the suction poppet valve in accordance with direction provided in the vendor technical manual. On June 11, 2007, the 'C' charging pump failed and was declared inoperable due to a seized plunger shaft. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings." Dominion's corrective actions for this issue included repair and retest of the 'C' charging pump, revising the work procedure to include vendor recommendations, and training for maintenance personnel on assembly and installation of charging pump poppet valves.

The finding was more than minor because it was associated with the procedural quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The performance deficiency had a cross-cutting aspect in the area of human performance, resources component, because Dominion did not ensure that a complete, accurate, and adequate work procedure was available for maintenance performed on a safety-related component. [H.2.(c)] (Section 1R12)

Green. The inspectors identified that Dominion did not adequately evaluate surveillance test results to ensure test acceptance criteria had been met on May 10, 2007. Specifically, the inspectors identified that the 'C' charging pump pulsation dampener surveillance test had cited incorrect data and had been accepted as satisfactorily complete, though the test data was outside of the surveillance acceptance criteria. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control." The surveillance was successfully re-performed on May 13, 2007. Dominion's corrective actions for this issue included revising the surveillance to clarify test requirements and required reading for operations personnel on how to adequately document and review surveillance test data.

The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify out of specification data could result in the failure to identify inoperable equipment. The inspectors also concluded that if the failure to properly evaluate charging pump discharge dampener test data was not corrected, a more significant concern could exist in that failure of the dampener has previously resulted in a loss of all charging due to the migration of nitrogen from a failed discharge pulsation dampener to the common suction piping for all three charging pumps (as described in NRC inspection reports

05000336/2006002 and 05000336/2006006). The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The performance deficiency had a cross-cutting aspect in the area of problem identification and resolution, corrective action program component, because Dominion did not identify out of specification test data. [P.1.(a)] (Section 1R19)

Green. A self-revealing finding was identified when Dominion incorrectly performed a safety-related surveillance procedure. Specifically, Operations mistakenly performed a biennial surveillance test that verified remote vent valve position by opening a nitrogen vent path and verifying a decrease in accumulator pressure for the Unit 3 'A' safety injection (SI) accumulator instead of the planned quarterly surveillance. As a result, the 'A' SI accumulator was inadvertently depressurized to below the TS value. This finding was determined to be an NCV of TS 6.8.1, "Procedures." Dominion's corrective actions for this issue included restoring accumulator pressure, performing an apparent cause evaluation to determine the underlying causes associated with the error, training the personnel involved, and scheduling human performance training for Operations during training cycle 07-03.

The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The performance deficiency had a cross cutting aspect in the area of human performance, work practice component, because Dominion's human error prevention techniques such as holding a pre-job brief and peer checking were not used to ensure the surveillance was properly performed. [H.4.(a)] (Section 1R22).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 2 operated at or near 100 percent power for the entire inspection period.

Unit 3 began the inspection period operating at approximately 100 percent power. On April 6, 2007, Unit 3 performed a shutdown in preparation for Refueling Outage (RFO) 3R11. Following completion of RFO activities, Unit 3 achieved criticality on May 18, 2007. Unit 3 reached 100 percent power on May 22, 2007. From May 22, 2007, through the end of the inspection period, the Unit 3 operated at or near 100 percent power.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope (One site sample)

The inspectors performed a review of severe weather preparations during the onset of the hurricane season to evaluate the site's readiness for seasonal susceptibilities. The inspectors reviewed Dominion's preparations for severe weather and the protection of safety-related systems, structures and components (SSCs). 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 procedural requirements to determine whether procedures were consistent with the FSAR. The inspectors performed partial system walkdowns of the Unit 2 and Unit 3 intake structures, service water systems, intake structure traveling screens and emergency diesel generators (EDGs) 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 for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial System Walkdowns

a. Inspection Scope (Two Unit 2 and two Unit 3 samples)

The inspectors performed four partial system walkdowns during this inspection period. The partial equipment alignment inspections were completed during conditions when the equipment was of increased safety significance such as would occur when redundant equipment was unavailable during maintenance or adverse conditions; or after equipment was recently returned to service after maintenance. The inspectors conducted a walkdown of each system to verify that the critical portions of selected systems were correctly aligned in accordance with applicable 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

- Auxiliary feedwater (AFW) system during switchyard maintenance on April 27, 2007; and
- Charging system 'A' and 'B' charging pumps during 'C' charging pump corrective maintenance on June 13, 2007.

Unit 3

- Reactor coolant system (RCS) level instrumentation during reduced inventory operations on April 12, 2007; and
- 'A' EDG due to the 'B' EDG being out-of-service on April 15, 2007.

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope (One Unit 2 sample)

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

The inspectors also conducted a review of outstanding maintenance work orders to verify that the deficiencies did not significantly affect the Unit 2 service water system function. In addition, the inspectors discussed system health with the system engineer and reviewed the condition report database to verify that equipment alignment problems were being identified and appropriately resolved.

Documents reviewed for this inspection activity are listed in the Supplemental Information Attachment to this report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Sample Review

a. Inspection Scope (Six Unit 2 and six Unit 3 samples)

The inspectors performed twelve walkdowns of fire protection areas during the inspection period. The inspectors reviewed Dominion's fire protection program to determine the required fire protection design features, fire area boundaries, and combustible loading requirements for the selected areas. The inspectors walked down 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 all program requirements were being met. The fire protection areas reviewed included:

Unit 2

- Auxiliary Building, West Main Steam Safety Valve Room, 38'6" Elevation (Fire Area A-8, Zone E);
- Auxiliary Building, West Electrical Penetration Area, 14'6" Elevation (Fire Area A-8, Zone D);
- Auxiliary Building, East Piping Penetration Area, -25'6" and -5'0" Elevation (Fire Area A-10, Zone A);
- Auxiliary Building, East Electrical Penetration Area, 14'6" Elevation (Fire Area A-10, Zone B);
- Auxiliary Building, East Main Steam Safety Valve/Blowdown Tank Room, 38'6" Elevation (Fire Area A-10, Zone C); and
- Auxiliary Building, Boric Acid Batch Tank/Chemical Addition Tank, 14'6" Elevation (Fire Area A-12, Zone A).

Unit 3

- Containment, -24'6" Elevation (Fire Area RC-1);
- Containment, -3'8" Elevation (Fire Area RC-1);

- Containment, 24'6" Elevation (Fire Area RC-1);
- Containment , 51'4" Elevation (Fire Area RC-1);
- North EDG Enclosure, 24'6" and 37'0" Elevation (Fire Area EG-31); and
- South EDG Enclosure, 24'6" and 37'0" Elevation (Fire Area EG-4).

Documents reviewed for this inspection activity are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation

a. Inspection Scope (One Unit 3 sample)

Unit 3

The inspectors observed personnel performance during a fire brigade drill on June 19, 2007, to evaluate the readiness of station personnel to fight fires. The drill simulated a fire in the Unit 3 'A' EDG room. The inspectors observed the fire brigade members using protective clothing, turnout gear, and self-contained breathing apparatus and entering the fire area in a controlled manner. The inspectors also observed the fire fighting equipment brought to the fire scene to evaluate whether sufficient equipment was available to effectively control and extinguish the simulated fire. The inspectors evaluated whether the permanent plant fire hose lines were capable of reaching the fire area and whether hose usage was adequately simulated. The inspectors observed the directions of the fire brigade team leader and communications between fire brigade members. The inspectors verified that the pre-planned drill scenario was followed and reviewed the post drill critique items to evaluate if the drill objectives were satisfied and that any drill weaknesses were identified.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07A)

a. Inspection Scope (One Unit 3 sample)

The inspectors reviewed one sample associated with the safety-related 'C' reactor plant closed cooling water (RPCCW) heat exchanger inspection and testing activities to identify any degraded performance or potential for common cause problems that could increase plant risk. The inspectors observed the as-found condition of the heat exchanger once it was opened to verify that any adverse fouling concerns were appropriately addressed. The inspectors reviewed the results of the inspections performed in accordance with Dominion procedures. The inspectors reviewed the inspection results against the acceptance criteria contained within the procedure to determine whether all acceptance criteria had been satisfied. The inspectors also reviewed the FSAR to ensure that heat exchanger inspection results were consistent with the design basis. The inspectors verified that adverse conditions identified by Dominion were appropriately entered into Dominion's corrective action program.

Documents reviewed for this inspection activity are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (71111.08)

a. Inspection Scope (Five Unit 3 samples)

The inspectors assessed the inservice inspection (ISI) activities using the criteria specified in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The inspectors reviewed documentation and interviewed personnel to verify that the activities were performed in accordance with the ASME requirements. The sample selection was based on the inspection procedure objectives and risk priority of those components and systems where degradation would result in a significant risk increase of core damage.

During the Unit 3 RFO, 3R11, the inspectors made direct observations of portions of the following procedures and examinations on code class 1 components:

- Gas Tungsten Arc Welding weld overlay, pressurizer surge nozzle;
- Liquid penetrant surface examination of pressurizer 'B' safety nozzle overlay; and
- Visual examination of reactor vessel head bare metal, and various penetrations including #61 and #21.

The inspectors also reviewed the examination results and the certifications of the individuals responsible for performing both the exams and analyzing the results. The

Welder Maintenance Logs documentation on the PCI contract welders was also reviewed. The inspectors reviewed data packages for the following examinations:

- ASME Section XI, Appendix VIII Performance Demonstration Initiative ultrasonic examination of pressurizer 'C' safety nozzle weld overlay;
- Bare head visual inspection summary report;
- Reactor head penetration ultrasonic examinations, including coverage limitations;
- Ultrasonic examinations of reactor vessel inlet nozzle-to-shell welds, W23 & W31; and
- Automated UT of PWR Vessel Shell Welds, W10 & W12.

The inspectors confirmed that the examinations were performed in accordance with approved procedures and that the results were reviewed and evaluated by certified Level III nondestructive examination (NDE) personnel.

The inspectors interviewed staff about evaluations and repairs for weld conditions on the 'B' safety nozzle including evaluations of indications identified by informational surface examinations. The inspectors noted that site personnel utilized their condition report engineering dispositioning process to resolve and plan the repair scope.

The inspectors reviewed one indication dispositioned as unacceptable according to the ASME IWB-3514 criteria on weld MSS-30-FW-6 (Condition Report (CR)-07-03974). The indication was evaluated by the site welding engineer and subsequently reworked by grinding and blending to remove the indication. The remaining wall thickness was verified by ultrasonic testing, and the post-repair weld magnetic particle test was acceptable.

The inspectors interviewed the Dominion NDE Level III staff in regards to Quality Control (QC) presence during reactor head bare metal visual examinations. The inspectors reviewed the QC observations report and discussed the results with site staff. One observation included that Dominion site staff incorporated QC recommendations to include a subject matter expert as part of onsite staff performing visual testing examinations.

For the boric acid corrosion control program (BACC), the inspectors reviewed the results of the first 3R11 Mode 3 walkdown visual testing. The inspectors also reviewed corrective action program CRs generated for leakages identified both during the current and previous outages. The following components leakage screenings/evaluations were reviewed: residual heat removal system (RHS)*V009, 3SIH*AV8882, 3CHS*RV835, 3SIH*RV8870 and 3RHS*RV37B. The inspectors noted that Dominion had recently developed and trained program staff on a new database program used to collect information on components with boric acid leakage. The inspectors completed a direct visual walkdown of areas of containment to assess Dominion's ability to identify sources and targets of boric acid leakage. Based on a review of boric acid leak evaluation activities from 3R11, a finding of very low safety significance was identified, as described below.

The inspectors also reviewed a sample of issue reports from various NDE activities to assess Dominion's effectiveness in problem identification and resolution and determined that they are identifying ISI and NDE issues at an appropriate threshold and entering them into the corrective action program. The inspector sampled issue reports from the 3R11 and the 3R10 refueling outages, and a short duration outage from January-February, 2007.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

Introduction. The inspectors identified that Dominion did not follow Boric Acid Corrosion Control program procedures. Specifically, plant personnel failed to adequately perform boric acid leak evaluations as required by Dominion procedure DNAP-1004, "Boric Acid Corrosion Control Program." This finding was of very low safety significance (Green) and determined to be a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

Description. Dominion procedure DNAP-1004, "Boric Acid Corrosion Control Program," required that all identified boric acid leaks be reported in the site corrective action system. Additionally, Dominion procedure DNAP 1004, Attachment 1, "Boric Acid Corrosion Control Program Screening," provided severity threshold criteria for performing engineering evaluations of the identified boric acid leaks. The procedure specified that personnel should be trained to not disturb or remove the suspected boric acid deposit before a maintenance threshold screening is performed. The procedure also stated in Attachment 2, "Evaluation Methodology," to determine the safety significance of all the affected components. During the Unit 3 refueling outage 3R11, in several instances, evaluations were not completed, or the evaluations did not include all the required information specified by the procedure. Leak evaluation forms for components identified with boric acid leaks did not consistently include the identification of the evaluator or date the evaluation was performed; reference the CR initiated from the current outage's mode 3 walkdown; document condition trending for the leaking components; or, reference whether qualified VT-2 inspections of affected components had been performed as part of the evaluation process. Examples were:

- 'A' residual heat removal (RHR) system loop outboard drain 3RHS*V009. Dominion had identified and tagged it for cleaning, but had not performed an inspection of the components located underneath the leak (target components). Subsequent to the NRC inspectors reporting a boric acid accumulation that had leaked through the grating below, Dominion cleaned the affected components without first documenting the leakage, or evaluating the components' material susceptibility to effects of the leakage.

- 'B' RHR suction header containment relief 3RHS*RV37B. This valve was replaced during the 2007 refueling outage. The removed valve was bench tested and found to be inoperable during the lift test. Work orders written in March and October of 2005 referenced boric acid leaks at the threaded nozzle joint and on the spherical bearing of an attached strut. Leakage present in the

photographs for the fasteners and body of the as-found valve during the 2007 refueling outage were not addressed in a CR or evaluated for prior operability concerns.

- Boron recovery tank 'B' inlet header isolation, 3BRS-V846. Dominion photographed the leakage during the 2007 refueling outage, but had not documented a CR since the 2005 refueling outage (CR-05-04388). The 2005 CR did not have an attached screening form to assess whether an evaluation was required to be performed, as required by procedure.

- Reactor coolant loop '4' drain isolation, 3RCS*AV8037D (V211). Dominion photographed boric acid on the fasteners and flange during the 2007 refueling outage, and documented CR-07-03509 as being a duplicate condition report to CR-05-11061. No further evaluation was performed based on the current leakage, which could possibly have affected the work scope planned in 2005 for 3R11.

Analysis. The performance deficiency associated with this finding was that licensee activities affecting quality were not accomplished in accordance with procedure DNAP-1004, in that, in several instances, the licensee failed to perform boric acid leak evaluations as required. Dominion's corrective actions for this issue included a general area cleaning program to remove boric acid residue from target components and ensuring the BACC program includes clear documentation of evaluations for both the leaking component and any associated target component(s).

This finding was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue did not result in exceeding the TS limit for identified RCS leakage or affect other mitigating systems resulting in a total loss of their safety function. Additionally, this finding is similar to IMC 0612, Appendix E, example 4a, in that the licensee routinely failed to perform engineering evaluations on similar issues; i.e., boric acid leaks.

The performance deficiency had a cross-cutting aspect in the area of human performance, work practices component, because Dominion personnel did not follow procedures.

Enforcement. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, and drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Dominion procedure DNAP-1004, Attachment 1, "Boric Acid Corrosion Control Program Screening," provided threshold criteria for performing engineering evaluations on boric acid leaks; and, Attachment 2, "Evaluation Methodology" provided information to be included in the evaluation. Contrary to the above, on several occasions during April and May, 2007, Dominion failed to accomplish boric acid leak evaluations in accordance with procedure DNAP-1004. However, because this issue was determined to be of very low safety significance (Green) and has been entered into the licensee's corrective action program in condition report CR-07-04184, this violation is being treated as a NCV consistent with section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000423/2007003-01, Failure to Perform Evaluations on Boric Acid Leaks)**

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope (One Unit 1 and one Unit 2 sample)

The inspectors observed one simulator training scenario of a Unit 2 licensed operator classroom training on June 12, 2007, and one Unit 3 licensed operator simulator training on June 21, 2007. The inspectors verified that the training evaluators adequately addressed that the applicable training objectives had been achieved. Additionally, the inspectors assessed whether the simulator adequately reflected the plant's response, operator performance met Dominion's procedural requirements, and the simulator instructor's critique identified crew performance issues. Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope (Two Unit 2 samples)

The inspectors reviewed two samples of Dominion's evaluation of degraded conditions, involving safety-related SSCs for maintenance effectiveness during this inspection period. The inspectors reviewed licensee implementation of the Maintenance Rule (MR), 10 CFR 50.65, and verified that the conditions associated with the referenced CRs were appropriately evaluated against applicable MR functional failure criteria as found in licensee scoping documents and procedures. The inspectors also discussed these issues with the system engineers and MR 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.

The following conditions were reviewed:

Unit 2

- Service water leak from red rubber gasket joint on supply line to 'A' EDG on April 19, 2007 (CR-07-01788); and
- 'C' charging pump repair following a failure of the pump on June 11, 2007 (CR-07-06525).

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

Introduction. A self-revealing finding was identified when Dominion did not ensure an adequate work procedure was available for maintenance performed on the Unit 2 'C' charging pump on May 5, 2007, resulting in a failure of the pump on June 11, 2007. Specifically, the work procedure did not give specific guidance for assembly and installation of the suction poppet valve in accordance with direction provided in the vendor technical manual. On June 11, 2007, the 'C' charging pump failed and was declared inoperable due to a seized plunger shaft. This finding was of very low safety significance (Green) and determined to be an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings."

Description. On June 11, 2007, with the plant operating at 100 percent power, operations personnel noted charging header flow had lowered from its normal value of 43.5 gallons per minute (gpm) to 29 gpm. Operators in the control room secured the running charging pump, declared the 'C' charging pump inoperable, and entered abnormal operating procedure (AOP) 2512, "Loss of Charging." The operators verified no leaks were occurring in containment and that the trend in pressurizer level decrease was consistent with normal reactor coolant pump seal leak-off with no charging pumps in service. The operators also performed bladder checks on the discharge pulsations dampeners for all three charging pumps to ensure gas binding was not the cause of the lowering charging flow, started the 'A' charging pump, and quarantined the 'C' charging pump. Charging header flow returned to normal and operators exited the AOP.

Normal charging pump operation uses the pumping action of three plungers to increase water pressure to 2350 psig to pump borated water in the reactor vessel, which is at 2250 psig. The three plungers are driven from a common eccentric shaft connected to a motor and work together to increase water pressure to overcome RCS pressure. During normal plant operations there are three charging pumps available and each is capable of injecting the desired concentration of boric acid into the vessel.

Dominion determined that the cause of the lowering charger header flow was that one of three plungers for the 'C' charging pump was bound inside the pump drive assembly shaft. Upon further investigation, during the licensee's apparent cause evaluation (ACE), it was determined that the fastener connecting the suction poppet valve to the valve body associated with this plunger had become detached and was then crushed

into smaller pieces by the reciprocating action of the plunger. After several days of the fastener being broken into smaller pieces by the plunger, one of the fastener pieces had wedged itself between the plunger and the shaft of the pump drive assembly causing the plunger to become bound to the shaft. The ACE determined the cause of the fastener becoming detached from the valve body was due to inadequate maintenance performed on the pump during maintenance activities on May 5, 2007. Specifically, the work procedure did not give specific guidance for assembly and installation of the suction poppet valve in accordance with direction provided in the vendor technical manual.

During the inspectors review of the event, the inspectors noted an additional contributing cause to the pump being run to failure. On June 9, 2007, operators noted an abnormal noise from the suction of the drive pump assembly. The operators noted the condition in the control room logs and contacted the system engineer. After describing the noise to the system engineer, the engineer recommended to the operators to isolate and secure the 'C' charging pump, and start one of the standby pumps. Operations personnel, however, evaluated the system performance as normal and decided to continue running the 'C' charging pump. The inspectors concluded that Dominion had missed an opportunity to secure the pump prior to the pump being run to failure. Dominion generated CR-07-06897 to document the inspectors observation.

Analysis. The performance deficiency associated with this finding was that an inadequate work procedure which was approved and used during a maintenance activity on a safety-related pump, resulting in a failure of the pump. Dominion's corrective actions for this issue included repair and retest of the 'C' charging pump, revising the work procedure to include vendor recommendations and training for maintenance personnel on assembly and installation of charging pump poppet valves.

The finding was more then minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the finding is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This performance deficiency had a cross-cutting aspect in the area of human performance, resources component, because Dominion did not ensure that a complete, accurate and adequate work procedure was available for maintenance performed on a safety-related component.

Enforcement. 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions,

procedures, or drawings. Contrary to the above, Dominion did not ensure an adequate work procedure was available for maintenance conducted on the 'C' charging pump on May 5, 2007. However, because the finding was of very low safety significance (Green) and has been entered into the corrective action program in condition report CR-07-06525, this violation is being treated as an NCV, consistent with section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000336/2007003-02, Inadequate Work Procedure for the Unit 2 'C' Charging Pump Results in Pump Failure)**

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

a. Inspection Scope (Three Unit 2 and six Unit 3 samples)

The inspectors reviewed nine 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. 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

- Reserve station service transformer (RSST) supply line insulator replacement on April 12, 2007;
- Troubleshooting spurious generator field ground alarms on April 24, 2007; and
- Emergent risk assessment of Unit 3 loss of offsite power impact to Unit 2 operation on April 25, 2007.

Unit 3

- 3R11 cumulative shutdown risk management on April 1, 2007;
- Shutdown risk assessment on April 7, 2007, and April 8, 2007;
- Reduced inventory operations on April 11, 2007;
- Emergent risk assessment during severe weather on April 15, 2007;
- Emergent risk assessment for unplanned orange shutdown risk associated with power availability on April 25, 2007; and
- Reduced inventory operations on May 1, 2007.

Documents reviewed for this inspection the Attachment.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope (Two unit 2 and three Unit 3 samples)

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, as appropriate, to ensure that the measures, as appropriate, were in place and were appropriately controlled. The inspectors reviewed licensee performance to ensure all related TS and FSAR requirements were met. The inspectors reviewed the following degraded or non-conforming conditions:

Unit 2

- Degraded intake structure floor drain used for service water pipe break flood protection (CR-07-03322); and
- Evaluation of fairbanks morse engine 10 CFR 21 report 2007-10-00 (CR-07-03568).

Unit 3

- New inverters ‘2' and ‘4' have high frequency noise causing false counts on source range nuclear instruments and gamma metric instrumentation (CR-07-04924);
- Degraded spent fuel pool storage rack locations (CR-07-05197); and
- Degraded ‘A’ EDG intercooler heat exchanger (CR-07-06800).

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17A)

a. Inspection Scope (Two Unit 3 samples)

The inspectors reviewed two permanent plant modifications on Unit 3. The inspectors performed a walkdown of the relevant areas, as appropriate, and reviewed the FSAR, licensing and design basis documents, and the engineering dispositions. These reviews were conducted to ensure (1) the modified components remained consistent with the assumptions indicated in the design basis documents, (2) that system availability, reliability, and functional capability were maintained, and (3) no unrecognized conditions that were introduced as a result of the modifications. The following permanent plant modifications were reviewed:

Unit 3

- Charging pump alternate minimum flow modification (DCM 3-2A); and

- Installation of ferrite beads to dampen noise affects on source range nuclear instruments and gamma metric instrumentation (DM3-00-0163).

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were determined.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope (Three Unit 2 and six Unit 3 samples)

The inspectors reviewed nine samples of post-maintenance tests (PMTs) 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. The following maintenance activities and their associated PMTs were evaluated:

Unit 2

- 'C' channel of containment pressure is erratic and unreliable (M2-07-03190);
- Re-pack of the 'C' charging pump (M2-07-03275); and
- 'C' charging pump repair following pump failure (M2-07-04329).

Unit 3

- Packing replacement of loop stop valves 3RCS*8001A and 3RCS*8002A (M3-06-02617);
- Inverter '2' and inverter '4' replacement (M3-07-06740);
- Charging pump alternate minimum flow modification (M3-05-09947);
- Valve 3SIH*V5 rework (M3-07-06253);
- 'B' service water check valve replacement (M3-05-06229); and
- Reactor internal lifting rig clamp replacement (M3-05-14215).

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

Introduction. The inspectors identified that Dominion did not adequately evaluate surveillance test results to ensure test acceptance criteria had been met on May 10, 2007. Specifically, the inspectors identified that the 'C' charging pump pulsation dampener surveillance test had cited incorrect data and had been accepted as satisfactorily complete, though the test data was outside of the surveillance acceptance criteria. This finding was of very low safety significance (Green) and determined to be an NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control."

Description. On May 10, 2007, the inspectors reviewed surveillance form SP 2664-003, "Charging Pump 'C' Pulsation Dampener Test," as part of a PMT review for maintenance that had been performed on the 'C' charging pump. The inspectors noted that the acceptance criteria for the charging pump discharge pressure had not been met given the data recorded in the procedure. Specifically, the final extrapolated pump discharge pressure was determined to be greater than the initial pulsation dampener precharge pressure, when in fact the recorded data indicated otherwise.

During conduct of the surveillance, review of the surveillance results, and final approval of the surveillance, approximately five operations personnel had accepted this data as being satisfactory. Following the observation, the inspectors notified system engineering and operations personnel of this discrepancy, and they agreed that the acceptance criteria had not been met. The surveillance was successfully re-performed on May 13, 2007.

Analysis. The performance deficiency associated with this inspector identified finding involved an inadequate evaluation of surveillance test results to ensure test acceptance criteria had been met. Dominion's corrective actions for this issue included revising the surveillance to clarify test requirements and required reading for operations personnel on how to adequately document and review surveillance test data.

The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify out of specification data could result in the failure to identify inoperable equipment. The inspectors also concluded that if the failure to properly evaluate charging pump discharge dampener test data was not corrected, a more significant concern could exist in that failure of the dampener has previously resulted in a loss of all charging due to the migration of nitrogen from a failed discharge pulsation dampener to the common suction piping for all three charging pumps (as described in NRC inspection reports 05000336/2006002 and 05000336/2006006).

The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss

of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The performance deficiency had a cross-cutting aspect in the area of problem identification and resolution, corrective action program component, because Dominion did not identify out of specification test data.

Enforcement. 10 CFR 50, Appendix B, Criterion XI, "Test Control," states, in part, that test results shall be documented and evaluated to assure that test requirements have been satisfied. Contrary to the above, Dominion failed to adequately evaluate the surveillance data so as to identify that the surveillance acceptance criteria had not been met. However, because this finding is of very low safety significance (Green) and has been entered into the licensee's corrective action program in condition report CR-07-05345, this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000336/2007003-03, Failure to Adequately Evaluate Surveillance Test Data)**

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope (One Unit 3 sample)

Dominion began the Unit 3 RFO 3R11 on April 6, 2007, and returned the unit to full power operation on May 22, 2007. The inspectors evaluated the outage plan and outage activities to confirm that Dominion had appropriately considered risk, had developed risk reduction and plant configuration control methods, had considered mitigation strategies in the event loss of safety functions occurred, and had adhered to license and TS requirements. The inspectors observed portions of the shutdown, cooldown, heatup, and the startup procedure processes. Additionally, the inspectors conducted an initial containment walkdown to evaluate the as-found condition of the containment to ensure no loose material or debris which could be transported to the containment sump was present. The inspectors verified that conditions adverse to quality were entered into the corrective action program for resolution. Some of the specific activities the residents observed included:

- Reactor shutdown and cooldown;
- Steam generator safety valve simmer testing;
- Reactor water level drain down to the reactor flange;
- Reduced inventory operations;
- RCS fill and vent;
- Pressurizer 600 weld overlays;
- Restoration of the RSST;
- Core barrel heavy load lift and heavy load analysis;
- Fuel handling, core loading, and fuel element assembly tracking;
- RCS pressure, level, and temperature instrumentation operability;
- Containment as-left walkdown;
- Mode '0' valve work;
- Reactor heatup;
- Reactor startup;

- Low power physics testing;
- Reactor power ascension; and
- Main turbine over speed testing.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were determined.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope (Three Unit 2 and six Unit 3 samples)

The inspectors reviewed nine samples of surveillance activities to determine whether the testing adequately demonstrated equipment operational readiness and the ability to perform its intended safety-related function. The inspectors attended pre-job briefs, verified that selected prerequisites and precautions were met and that the tests were performed in accordance with the procedural steps. Additionally, the inspectors evaluated the applicable test acceptance criteria to verify consistency with associated design 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. The following surveillance activities were evaluated:

Unit 2

- 'A' EDG surveillance test (SP-2613K);
- Containment spray system '2' containment isolation valve in-service test (IST) (SP-2606C); and
- AFW system feedwater regulating valve stroke timing IST (SP-26120CO).

Unit 3

- 'A' engineered safety feature/loss of power (LOP) surveillance test (SP-3646A.17);
- 'A' train LOP surveillance test (SP-3646A.15);
- Main steam valve simmer surveillance test (SP-3712G);
- Reactor coolant system cooldown surveillance test (SP-3601G.2);
- Low power physics surveillance test (SP-31008); and
- 'A' safety injection accumulator vent valve IST (SP 3610B.2).

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings

Introduction. A self-revealing finding was identified when Dominion incorrectly performed a safety-related surveillance procedure. Specifically, Operations mistakenly performed a biennial surveillance test that verified remote vent valve position by opening a nitrogen vent path and verifying a decrease in accumulator pressure for the Unit 3 'A' safety injection (SI) accumulator in addition to the planned quarterly surveillance. As a result of performing the biennial procedure vice the planned quarterly surveillance, the 'A' SI accumulator was inadvertently depressurized to below the TS value. This finding was of very low safety significance and determined to be an NCV of TS 6.8.1, "Procedures."

Description. On May 16, 2007, in Mode 3, Operations was performing section 4.11 of procedure SP 3610B.2, "Low Pressure Safety Injection Valve Operability Test - Train A." The purpose of this test was to verify that the 'A' SI accumulator vent valves met the design and IST stroke time requirements. In addition to the planned quarterly surveillance, Operations mistakenly performed the biennial surveillance that verified remote vent valve position by opening a vent path and verifying a decrease in accumulator pressure. As a result, the 'A' SI accumulator was inadvertently depressurized to below the TS allowed value. Operability of the SI accumulator was restored once operations personnel isolated the accumulator vent path and re-pressurized the accumulator to within the TS allowed range.

Dominion performed an ACE and determined the cause of the event was related to human performance. Specifically, Dominion did not conduct a pre-job brief prior to the surveillance to ensure Operations personnel clearly understood the steps involved in the test and the expected plant response. The inspectors also noted that no peer checking was used which could have provided an additional level of control. The operating crew believed the surveillance operator was planning on performing the quarterly portion of the surveillance and not the biennial remote position indication verification. Dominion also determined that the surveillance operator did not fully consider changing plant conditions following the refueling outage mode changes involved in the startup and the requirements to maintain SI accumulators operable.

Analysis. The performance deficiency associated with this finding is that Dominion did not properly implement a safety-related surveillance procedure to test the 'A' SI accumulator vent valves. Dominion's corrective actions for this issue included restoring accumulator pressure, performing an ACE to determine the underlying causes associated with the error, training the personnel involved, and scheduling human performance training for Operations during training cycle 07-03.

The finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the

issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

This performance deficiency had a cross-cutting aspect in the area of human performance, work practice component, because Dominion's human error prevention techniques such as holding a pre-job brief and peer checking were not used to ensure that a surveillance was properly performed.

Enforcement. TS 6.8.1, "Procedures," requires, in part, that written procedures be implemented covering surveillance activities on safety-related equipment. Contrary to the above, on May 16, 2007, Dominion incorrectly implemented surveillance procedure SP 3610B.2, Revision 013-08, "Low Pressure Safety Injection Valve Operability Testing - Train A," Section 4.11, "Quarterly Stroke Time Test of 3SIL*SV8875A-H." As a result, the 'A' SI accumulator was inadvertently depressurized to below the TS 3.5.1, "Accumulators," allowed value of 636 psia for approximately 27 minutes until the required pressure was restored. However, because this finding was of very low safety significance (Green) and was entered into Dominion's corrective action program in condition report CR-07-05596, this violation is being treated as an NCV, consistent with section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000423/2007003-04, Failure to Implement Safety-Related Surveillance Procedure Resulted in 'A' Safety Injection Accumulator Inoperability)**

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope (One Unit 3 sample)

The inspectors reviewed one sample of a temporary modification involving temporary power being available during inverter '2' and '4' replacement for Unit 3. The inspectors verified that the modification did not adversely affect the function of the safety system. The inspectors reviewed this temporary modification and its associated 10 CFR 50.59 screening against the FSAR and TS to ensure the modification did not adversely affect the system operability or availability. Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope (One Unit 2 and one Unit 3 sample)

The inspectors observed a Unit 2 licensed operator training emergency planning drill on June 12, 2007, and a Unit 3 licensed operator training emergency planning drill on June 21, 2007. The inspectors observed the operating crews performance at the simulator and emergency response organization performance at the site emergency operations center and technical support center. The inspectors verified that the classification, notification and protective action recommendations were accurate and timely. Additionally, the inspectors assessed the ability of Dominion's evaluators to adequately address operator performance deficiencies identified during the exercise.

Documents reviewed for this inspection activity are listed in Attachment.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significance Areas (71121.01)

a. Inspection Scope (Eleven Site Samples)

During the period April 23-26, 2007, the inspector conducted the following activities to verify that Dominion was properly implementing physical, administrative, and engineering controls for access to locked high radiation areas and other radiologically controlled areas, and that workers were adhering to these controls when working in these areas during the Unit 3 refueling outage and during power operations at Unit 2. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, Unit 2 and Unit 3 TS, and Dominion's procedures. This inspection activity represents completion of eleven (11) samples relative to this inspection area.

Plant Walkdown and Radiation Work Permit (RWP) Reviews

- During the Unit 3 refueling outage, the inspector identified exposure significant work areas in the Unit 3 containment building. The inspector reviewed radiation survey maps and RWPs associated with these areas to determine if the radiological controls were acceptable. Work areas included the refueling canal, pressurizer cubicle, D-steam generator cubicle, and containment sump area.

- The inspector performed independent surveys of selected areas in the Unit 3 containment building, auxiliary building, and engineered safeguards building to

confirm the accuracy of survey maps, the adequacy of postings, and that TS locked high radiation areas (LHRA) and very high radiation areas (VHRA) were properly secured and posted. Areas in containment surveyed included; the seal table, steam generator cubicles, pressurizer spray/relief lines, reactor cavity drain line, and locked gates to the regenerative heat exchanger room.

Additionally, surveys were performed in Unit 2, including the auxiliary building, radwaste storage building, and fuel storage building.

- In evaluating RWPs, the inspector reviewed electronic dose/dose rate alarm setpoints, and alarm reports, to determine if the setpoints were consistent with survey indications and plant policy. The inspector verified that workers were knowledgeable of the actions to be taken when a dosimeter alarms or malfunctions for tasks being conducted under selected RWPs. Work activities reviewed included core barrel lift for an ISI (RWP 304/3), removing internals from steam generator cross-over valve 3RCS*MV 8003D (RWP 354/1), pressurizer relief line welding (RWP 400/1) and management tours (RWP 219/2).

- The inspector reviewed Personnel Contamination Reports (PCR) and the associated dose assessments. The inspector determined that no contamination resulted in an internal dose exceeding 10 mrem.

Jobs-In-Progress Review

- The inspectors observed the preparations and various work stages for several tasks including raising the core barrel to perform ISI, removal of the internals for steam generator cross over valve 8003D and pressurizer relief line weld overlay. The inspectors attended the pre-job briefing for the core barrel lift (Work Order 9510526) and for removal of the 8003D valve internals (Work Order 05-14584) to determine that radiological controls were adequately communicated to the workers.

- The inspectors determined that additional dosimetry and area monitoring was implemented for dose significant jobs including issuing extremity dosimetry to personnel for removing the internals for valve 8003D, due to significant dose gradients, and installing teledosimetry instrumentation to monitor dose fields during the core barrel lift.

High Risk Significant, High Dose Rate, and VHRA Controls

- The inspector reviewed the preparations made for various potentially high dose rate jobs including the initial removal of the core barrel from the reactor vessel, reactor head inspections and steam generator eddy current testing (ECT). On April 23, 2007, the inspector attended the pre-job briefing for raising the core barrel for performing in-service inspections, reviewed the associated RWP (No. 304/3), and Work Order (No. 9510526), and observed the activity through the use of a video monitoring system.

- The inspector inventoried keys to VHRAs and TS LHRAs stored at the Unit 3 Control Point and in the Control Room to verify that all keys were accounted for. During tours of Unit 2, the inspector verified that all keys to locked high radiation areas were accounted for at the control point.

- The inspector verified that Unit 3 VHRAs, such as the under vessel hatchway and the incore instrument area, were properly secured and posted and that surrounding area dose rates and postings met regulatory criteria.

Radiation Worker and Radiation Protection Technician Performance

- Several radiologically related CRs were reviewed to evaluate if the incidents resulted from repetitive worker errors and to determine if an observable pattern traced to a similar cause was evident.

- Radiation Protection technicians and radworkers were questioned regarding their knowledge of plant radiological conditions and associated controls.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope (Seven Unit 3 samples)

During the period April 23 - 26, 2007, the inspector conducted the following activities to verify that Dominion was properly implementing operational, engineering, and administrative controls to maintain personnel exposure as low as reasonably achievable (ALARA) for tasks conducted during the Unit 3 refueling outage. Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, applicable industry standards, and Dominion's procedures. This inspection activity represents completion of seven (7) samples relative to this inspection area.

Radiological Work Planning

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

The inspector reviewed the refueling outage work scheduled during the inspection period and the associated work activity exposure estimates. Scheduled work included; reactor head inspections, core barrel ISI, pressurizer relief line weld repair, steam generator internal inspections, containment sump modification, valve repairs, and

various 10 year in-service inspections. The inspector compared the current actual dose accrued for these activities with the initial exposure estimates.

Additionally, the inspector reviewed the ALARA Reviews, Work-In-Progress ALARA Reviews, ALARA Challenge Board presentations, and ALARA pre-job briefing materials that addressed estimating and controlling dose for other outage activities. Jobs reviewed included: fuel removal, insulation removal, scaffolding installation, reactor disassembly, steam generator eddy current testing, and steam generator secondary side inspections.

The inspector evaluated the effectiveness of exposure mitigation requirements specified in RWPs and associated ALARA reviews. Jobs reviewed include reactor vessel disassembly (RWP 301/302/303, AR 3-07-01), steam generator eddy current testing (RWP 306, AR 3-07-02), motor-operated valve maintenance (RWP 354, AR 3-07-11), and scaffolding installation (RWP 231/331, AR 3-07-13).

The inspector evaluated the departmental interfaces between radiation protection, operations, maintenance crafts, and engineering to identify missing ALARA program elements and interface problems. The evaluation was accomplished by reviewing recent ALARA Council meeting minutes and ALARA Challenge Board presentations. The inspector also attended two pre-job briefings, a daily Plan-of-the-Day meeting, and a daily management outage status meeting to assess interdepartmental coordination.

Through job site observations and radiation survey measurements, the inspector determined if work activity planning included the use of temporary shielding, system flushes, and operational considerations; i.e., scheduling work when steam generators were filled, to further minimize worker exposure. The inspector reviewed temporary shielding requests and performed independent measurements on various system components including: the pressurizer relief lines, reactor vessel level indication system, containment sump modification area, and various reactor building and auxiliary building work areas to determine if temporary shielding was appropriately used.

Verification of Dose Estimates and Exposure Tracking Systems

The inspector reviewed the assumptions and basis for the annual site collective exposure and the Unit 3 refueling outage dose projection.

The inspector reviewed Dominion's method for adjusting exposure estimates, and re-planning of work when actual dose approached estimated dose. The inspector reviewed ALARA Council meeting minutes regarding expanding the scope of valve inspections/repairs following a boric acid walkdown that would require allocating additional dose to the BACC project.

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

Job Site Inspection and ALARA Controls

The inspector observed maintenance activities being performed in containment, including sump modification, pressurizer relief line welding, core barrel lift, and 8003D valve repairs. The inspector verified that the appropriate radiological controls were implemented, including: pre-job briefings, radiation protection technician coverage, contamination mitigation, proper dosimetry, and that workers were knowledgeable of radiological conditions.

Source Term Reduction and Control

The inspector reviewed the current status and historical trends of the Unit 3 source term. Through interviews with the Radiation Protection and Chemistry Manager and the ALARA Supervisor, the inspector evaluated Dominion's source term measurements and control strategies. The inspector reviewed reactor coolant chemistry data to evaluate the effectiveness of post-shutdown source term reduction efforts. Specific strategies being employed included filtration, system flushes, installation of temporary shielding, and chemistry controls.

Radiation Worker Performance

The inspector observed radiation worker and radiation protection technician performance for selected tasks. Tasks observed included: core barrel lift for performing in-service testing, replacing internals in 3RCS*MV8003D, containment sump modifications, pressurizer relief line weld repair, and steam generator secondary side inspections. The inspector determined that the individuals were aware of radiological conditions and access controls that applied to their tasks.

The inspector reviewed condition reports related to radiation worker and radiation protection technician errors and PCR to determine if an observable pattern traceable to a common cause was evident.

Declared Pregnant Workers

The inspector determined that no declared pregnant workers were employed to perform outage related activities in the radiologically controlled areas.

Problem Identification and Resolution

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

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator (PI) Verification (71151)

a. Inspection Scope (Two Unit 2 samples)

Cornerstone: Barrier Integrity

The inspectors reviewed two samples of Dominion's program to gather, evaluate, and report information on the two PIs associated with the Barrier Integrity cornerstone of the reactor safety strategic performance area. The inspectors used the guidance provided in the Nuclear Energy Institute 99-02, Revision 4 "Regulatory Assessment Indicator Guideline," to assess the accuracy of Dominion's reporting of the PI data. The inspectors reviewed Dominion's monthly operating reports, operations logs, NRC inspection reports, and any associated corrective action program condition reports. The inspectors verified the accuracy and completeness of the reported data for the following PIs:

- "Reactor coolant system specific activity" between January 1, 2006, and March 31, 2007; and,
- "Reactor coolant system leak rate" between January 1, 2006, and March 31, 2007.

Documents reviewed for this inspection activity 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 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. Documents reviewed for this inspection activity are listed in the Attachment.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope (One Site Sample)

The inspectors performed a semi-annual review including Dominion's corrective action program documents to identify trends that could indicate the existence of a more

significant safety issue. The review also included Unit 2 and Unit 3 PI monthly reports, CRs, system health reports, plant health reports, quality assurance audits, self-assessment reports, and NRC inspection reports. The inspectors review was focused on repetitive equipment problems, human performance issues, and program implementation issues. The results of the trend review by the inspectors were compared with the results of normal baseline inspections. The inspectors review considered a six-month period of January 2007 through June 2007. Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings and Observations

The inspectors did not identify trends that indicated the existence of a more significant safety issue. The inspectors have observed less than adequate implementation of standards for human error prevention techniques, procedural compliance, and procedural adequacy during their inspection activities and have documented several findings in these areas in the first two quarters of 2007. The inspectors also noted that Dominion identified, in June 2007, an extensive backlog (approximately 700 CRs) of elective corrective action program condition reports. Dominion acknowledged the inspectors concerns and stated they were in the process of developing a plan to correct the backlog in the corrective action program.

The resident inspectors noted in the 4th quarter 2006 NRC integrated inspection report (IR 05000336/2006005 and IR 05000423/2006005) that there appeared to be an adverse trend in the number of scaffolding deficiencies. No adverse conditions relative to scaffolding were identified during this inspection period (See Section 4OA2.3.a for additional information).

.3 Annual Sample Review (Three Unit 2 Samples)

Adverse Trend in Scaffold Installations Affecting Equipment

a. Inspection Scope

The inspectors reviewed the licensee's actions relative to an adverse trend with respect to scaffold construction, as noted in the 4th quarter 2006 integrated inspection report. That report documented a self-revealing NCV for scaffolding that prevented a Unit 2 main steam isolation valve (MSIV) from closing during surveillance testing. The report also contained a licensee-identified violation for scaffolding constructed on top of the safety-related high energy line break (HELB) blowout panel for the Unit 2 turbine-driven auxiliary feedwater (TDAFW) pump room.

During this inspection period, the inspectors performed a focused PI&R sample on the corrective actions that the licensee has taken to prevent recurrence. The inspectors reviewed the procedures used for the installation and removal of scaffolds, a sample of work orders for existing scaffolds, the licensee event reports (LERs) associated with the two specific issues described above and all of the associated scaffolding CRs initiated since January 1, 2007. The inspectors interviewed personnel associated with the scaffold process, and conducted a walk-down of both units to inspect a sample of the

scaffolds in-place around safety-related components. Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings and Observations

No findings of significance were identified. The inspectors noted that Dominion has incorporated into procedure MP-20-WP-GDL20, Attachment 15, "Scaffolding," detailed instructions and cautions with respect to the construction of scaffolding near equipment. Attachment 15.1, "Scaffold Evaluation," of the same procedure had a checklist for use by the scaffold planner and the operations/engineering departments for pre-installation and post-installation walkdowns of the area. In addition, the scaffolds are re-inspected by the lead scaffold individual at least quarterly.

The inspectors did note that there were a large number of scaffolds that had been in-place for an extended period of time. At least thirty of the scaffolds in the plant during this inspection were greater that two years old; at least half of those were greater than five years old and one was in place for over ten years. The inspectors determined that none of the scaffolds affected the nearby equipment.

Unit 2 Partial Loss of Instrument Air Root Cause

a. Inspection Scope

Based on a plant specific risk assessment and resident inspector input, the inspectors selected CR-06-01796, "Reactor Trip due to Instrument Air Loss," as a PI&R sample for a detailed follow-up review. On February 23, 2006, Millstone Unit 2 reactor was manually tripped due to a transient caused by a partial loss of instrument air. At the time, a minor maintenance activity was in-progress to replace a pipe support clamp on a two-inch copper instrument air header pipe, when a nearby ½ inch air pipe separated from the header. The loss of air pressure resulted in a steam generator feed pump trip and subsequent manual trip of the reactor. This CR documented Dominion's root cause evaluation and corrective actions for a reactor trip due to a loss of instrument air.

The inspectors assessed Dominion's problem identification threshold, cause analyses, extent of condition reviews, compensatory actions, and the prioritization and timeliness of Dominion's corrective actions to determine whether Dominion was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were appropriate.

Documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings and Observations

No findings of significance were identified. The inspectors determined that Dominion's overall response to the issue was comprehensive and timely. The inspectors noted that Dominion's evaluation and follow-up corrective actions were partially implemented by a significance level-1 CR and root cause evaluation completed March 29, 2006, and

partially implemented by a lower level MR functional failure (a)(1) evaluation, completed May 8, 2006.

The inspectors identified several weaknesses in Dominion's root cause evaluation that appeared to have been adequately addressed by the subsequent lower level MR evaluation.

Root cause evaluation weaknesses included:

- Focused on performance of maintenance activity and copper pipe joint failure;
- Did not identify any previous Millstone Unit 2 internal operating experience; and
- Concluded that no effective action could be taken to identify other susceptible copper air pipe joints.

In contrast, the lower level MR (a)(1) evaluation identified:

- Cause of the reactor trip was an improperly evaluated/engineered 1982 design change (old design issue) that added excess flow check valves into the air headers;
- Significant previous Millstone Unit 2 operating experience on instrument air joint failures, including 2 previous reactor trips, between 1976 and 1982, caused by similar air pipe joint failures; and
- Identified risk informed approach to mitigate future failures, by reworking joints associated with reactor trip sensitive air loads.

The inspectors determined that several weaknesses existed with regards to the corrective actions associated with the root cause evaluation. However, because the MR (a)(1) evaluation was comprehensive and timely, the inspectors concluded that the overall corrective actions were adequate and addressed the issue.

Unit 2 - Multiple Unplanned LCO 3.0.3 Entries in 2006

a. Inspection Scope

The inspectors reviewed Dominion's actions in response to multiple unplanned entries into Limiting Condition for Operation (LCO) 3.0.3 during 2006. Entry into LCO 3.0.3 should be a rare occasion since the entry is typically based on a loss of function of a safety-related SSC in which the specific system's TS action statement do not contain requirements. The inspectors reviewed the LCO 3.0.3 entries to determine if the entries were appropriate and if the entries shared a common root cause. In addition, the inspectors reviewed how Dominion's corrective action process addressed each issue. The inspectors interviewed responsible system engineers and operators.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings and Observations

No findings of significance were identified. The inspectors reviewed four cases during 2006 for which LCO 3.0.3 was entered. In each case, the LCO 3.0.3 entry was appropriate. However, the inspectors identified that improvements could be made to the process for reviewing reference documents when design changes are made. In two of the four cases, incomplete documentation of a design change was cited as the cause of the condition leading to the LCO 3.0.3 entry.

.4 ALARA Planning and Controls

a. Inspection Scope (One Unit 3 sample)

The inspector reviewed 10 condition reports, 2 radiation protection department self-assessments, 5 Nuclear Oversight field observation reports, and a 3R11 ALARA Behaviors summary report, relating to keeping personnel exposure ALARA during the Unit 3 refueling outage, to evaluate the threshold for identifying, evaluating, and resolving radiological control problems. This review was conducted against the criteria contained in 10 CFR 20, TS, and Dominion's procedures. Additional documents reviewed for this inspection activity are listed in the Supplemental Information attachment to this report.

b. Findings and Observations

No findings of significance were identified.

4OA3 Event Followup (71153) (10 samples)

.1 Unit 3 Unidentified RCS Leakage

a. Inspection Scope

On April 1, 2007, Operations identified that the threshold of unidentified RCS leakage had exceeded the values specified in a NRC confirmatory action letter (CAL) issued on March 27, 2007. The CAL required Dominion to evaluate unidentified RCS leakage above certain thresholds and to determine whether the leakage was potentially from the pressurizer. If Dominion could not determine that the leakage was not from the pressurizer within 72 hours, then a reactor plant shutdown would be required. On April 3, 2007, operations and engineering department personnel determined that the RCS leakage was not from the pressurizer. The inspectors reviewed Dominion's evaluation and agreed with the conclusion.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Unit 3 Notice of Unusual Event - Loss of Normal Power in Mode 0

a. Inspection Scope

On April 25, 2007, at 10:47 a.m., with the reactor de-fueled in Mode 0, the station responded to a loss of offsite power event at Millstone Unit 3. The event was caused by a CONVEX (Connecticut Valley Electrical Exchange) switching error resulting in disconnecting offsite power from Millstone Unit 3. Operations entered Emergency Operating Procedure (EOP) 3501, "Loss of all AC Power (Mode 5,6, and Zero)," and EOP 3505, "Loss of Shutdown Cooling and/or RCS Inventory." Operations verified that the 'A' EDG automatically started and operated as designed. Operations then took manual action to start the 'A' spent fuel pool cooling pump from the 'A' EDG powered vital bus. At 11:01 a.m., the Shift Manager classified the event as an Unusual Event, based on off-site power not being available within 15 minutes and the 'A' vital bus powered from the 'A' EDG. The station terminated the Unusual Event declaration after the electrical lineup was restored to a stable lineup following restoration of offsite power. The inspectors responded to the control room and evaluated the adequacy of operator actions and Unusual Event declaration. The inspectors assessed the station's emergency response performance from the control room and in the field. In addition, the inspectors performed walkdowns in the service water intake structure, auxiliary building, and spent fuel pool building to verify vital equipment was operating properly.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

.3 Discovery of RCS Valve Packing Gland Follower Degradation

a. Inspection Scope

On May 11, 2007, Dominion identified that RCS valve V185, the pressurizer level transmitter 459 isolation, exhibited boric acid corrosion of the packing gland follower. Dominion conducted an extent of condition review and identified an additional RCS valve, V184, the pressurizer level transmitter 460 isolation, also exhibited boric acid corrosion of the packing gland follower. The inspectors reviewed Dominion's corrective actions for the specific degraded valves and reviewed Dominion's BACC program since the condition of these valves had not been discovered as part of the BACC program discovery phase. Dominion replaced the packing gland follower on V184 and V185 with an equivalent design component.

On May 15, 2007, the inspectors and Region I staff discussed the BACC program with Dominion personnel given that the Dominion BACC had not identified the RCS valve degradation earlier in the outage during the discovery phase. The inspectors noted that the Dominion BACC program had identified, evaluated, and corrected a significant population of boric acid issues during the outage. However, the inspectors also noted that a more systematic approach in conducting the discovery phase of the BACC program (e.g., a detailed review of recent maintenance on RCS valves in containment) could have led to the identification of the condition of V184 and V185 during the BACC discovery phase. The inspectors verified that the need to enhance the BACC program was being tracked as a Site Vice President Level 1 issue.

Documents reviewed for this inspection activity are listed in the Attachment.

b. Findings

No findings of significance were identified.

.4 (Closed) LER 05000336/2006006-00 & LER 05000336/2006006-01, Scaffolding Built for Work on Main Steam Isolation Valve (2-MS-64A) Prevented the Valve from Closing.

On October 7, 2006, with the plant in Mode 3, scaffolding prevented the '1' MSIV from fully closing during surveillance testing. The scaffold interference was removed within an hour of discovery. The scaffold was built on August 25, 2006, when the unit was in Mode 1, to support planned maintenance during the refueling outage which started on October 6, 2006. The MSIVs are required to close automatically upon receipt of a main steam isolation signal, to prevent blow-down of the steam generators during a steam line break downstream of the MSIVs. The valves are closed manually in the event of a steam generator tube rupture.

The issue was documented in NRC Inspection Report 05000336/2006005 as a self-revealing NCV. The inspectors determined that the corrective actions taken by Dominion to prevent recurrence appeared adequate. The original LER, and the subsequent revision, were reviewed and no additional findings were identified. These LERs are closed.

.5 (Closed) LER 05000336/2006008-00, Scaffold Impairment of Turbine Driven Auxiliary Feedwater (TDAFW) Pump Room HELB Blowout Panel.

On December 21, 2006, with the plant in Mode 1 at 100 percent power, the licensee identified that scaffolding was erected on top of the HELB blow-out panel for the TDAFW pump room. The scaffolding had been constructed on December 11, 2006. The scaffolding would have restricted the ability of the blow-out panel to perform the safety function of lifting in the event of a HELB event and the failure to lift could have resulted in the breaching of the wall separating the TDAFW pump room from the motor driven auxiliary feedwater pump room. The scaffolding was removed approximately four hours later, returning all of the AFW pumps to an operable status.

The issue was documented in NRC Inspection Report 05000336/2006005, as a licensee-identified NCV. The inspectors determined that the corrective actions taken by Dominion to prevent recurrence appeared adequate. The LER was reviewed and no additional findings were identified. This LER is closed.

.6 (Closed) LER 05000423/2007001-00, Failure of Two Main Steam Safety Valves to Lift within the Acceptance Criteria.

On April 5, 2007, with the plant in Mode 1 and 100 percent power, two main steam safety valves (MSSVs) failed to lift within the (+/- 3 percent) acceptance criteria during a planned test. Specifically, MSSV 3MSS*RB22B lifted at 1221.3 psig (1.3 psig above the allowable limit, approximately 3.1 percent), and MSSV 3MSS*RB22D lifted at 1232.8 psig (12.8 psig above the allowable limit, approximately 3.8 percent). Dominion attributed the failure of the MSSVs to lift within the required pressure range was due to a corrosive oxide locking action between the surface layer materials of the disc-seat interface. The inspectors reviewed this LER and associated CR to verify that Dominion's causal analysis and corrective actions were adequate. No findings of significance were identified. This LER is closed.

.7 (Closed) LER 05000423/2007002-00, Loss of Offsite Power Caused by Transmission System Operator while Defueled.

On April 25, 2007, with the plant shutdown and defueled, a loss of offsite power occurred due to an offsite transmission system operator switching error. Specifically, the station 345 KV ring bus breaker 15G-13T-2 was inadvertently opened instead of the planned 15G-15T-2 breaker during a evolution intended to remove an offsite line from service. The inspectors reviewed this LER and associated condition report to verify that Dominion's causal analysis and corrective actions were adequate.

The inspector determined that no violations of regulatory requirements occurred. This LER is closed.

.8 (Closed) Unresolved Item (URI) 05000336/2006010-01, NRC to Review Consideration of EDG Frequency Affects on Design Bases Calculations.

The inspectors reviewed the URI documented in Inspection Report 05000336/20060010. The URI was opened to assess if the minimum EDG frequency, as specified in the Unit 2 TS, should be accounted for in the minimum pump flow and head test acceptance criteria for pumps that could potentially be powered from this electric source. The inspection team noted that at reduced EDG output frequencies, the pump motor rotation speed is reduced. This would result in a lower developed pump flow and head.

The inspectors found that the licensee's TS acceptance criteria for EDG frequency was 60 hz +/- 1.2 hz. The inspectors determined that this acceptance criteria is verified on a 18 month bases during surveillance testing when the EDG is operated in isochronous mode. The inspectors also reviewed the EDG operating procedure and found the operating procedure requires that operators adjust EDG frequency to 60 hz when in isochronous operation. Additionally, the inspectors found that when the EDG receives an auto start signal, a digital 60 hz signal is sent to the governor control circuit regardless of the status of the EDG or the manual speed setting. Finally, the ability of the operators to adjust EDG frequency above 60 hz is tested quarterly via synchronizing procedures with the grid. The inspector concluded that the ability of operators to control EDG frequency and maintain it at 60 hz is proceduralized, tested, and easily accomplished.

The inspector also reviewed the testing requirements and supporting design documentation for the Unit 2 service water pump. This pump was selected by the Component Design Basis Inspection team and the associated flow and head test acceptance criteria was the basis for the URI. The inspector found that the test acceptance criteria had sufficient margin (over 7 percent) to account for potential inaccuracies in the service water system computer modeling. These errors could include pump flow and head inputs. Additionally, the inspector determined that the licensee monitors the model via actual flow and head measurements. The results confirm that the model is more accurate than the 7 percent assumed error.

The inspectors determined that no violations of regulatory requirements occurred. This URI is closed.

.9 (Closed) URI 05000336/2006010-02, NRC to Review Licensee Evaluation of Removal of Check Valve CS-26 Internals.

The URI was opened to evaluate if the current licensing basis would require that the internals of CS-26 be removed in order to reduce the overall risk to the Unit 2 Core Damage Frequency and to review Dominion's evaluation of the need to keep the internals in the valve.

The check valve is in the flow path of the minimum flow recirculation line for both divisions of Unit 2's containment spray pumps, high pressure safety injection pumps and low pressure safety injection pumps. Should the valve fail to open, when required, it would represent a potential common cause failure mechanism for all the pumps. The inspector concluded that the failure of a check valve to open would be considered a passive failure. The plant's licensing basis does not require that passive failures be considered until the recirculation phase of an accident. Because this check valve is not needed during this phase of an accident, a failure is not considered as part of the design basis.

The inspector noted that the valve is verified operable during several quarterly pump surveillance tests. Additionally, the inspector reviewed the inspection Dominion performed on the internals of the check valve in October 2006 and verified the valve was working properly. This inspection is performed every 18 months. Finally, the inspector verified Dominion had entered the issue into their corrective action program in CR-06-05010 and had completed an evaluation of the need for the check valve in the system. The inspector found that Dominion had concluded that the valve internals could be removed and has preliminarily scheduled the work associated with the removal for the next refueling outage.

The inspector determined that no violations of regulatory requirements occurred. This URI is closed.

.10 (Closed) URI 05000336/2007002-01, Maintenance Rule (a)(1) Evaluation of Unit 2 Vital Switchgear Emergency Cooling Failure.

This URI was opened to reviewed Dominion's MR (a)(1) evaluation for the vital switchgear cooling system following the determination that air conditioning (A/C) unit A/C-3 B51 and A/C-4 B61 had an insufficient refrigerant charge as documented in corrective action program CR-06-01138 dated November 21, 2006. In accordance with MP-24-MR-FAP710, "Maintenance Rule Functional Failures and Evaluations," the evaluation concluded that there was no functional failure because the failures were considered design deficiencies that could not have been prevented by post modification testing or predictive maintenance. The inspectors conducted additional interviews with Dominion staff to better understand controls on the implementation of design changes into maintenance procedures and practices. The inspectors concluded that the air conditioner design requirements were properly incorporated into station procedures and that the issue was properly classified in Dominions maintenance rule program.

The inspectors determined that no violations of regulatory requirements occurred. This URI is closed.

4OA5 Other Activities

.1 Temporary Instruction (TI) 2515/166 - Pressurized Water Reactor Containment Sump Blockage

a. Inspection Scope

The inspectors performed the inspection in accordance with TI 2515/166. The TI was developed to support the NRC review of licensee activities in response to NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors (PWR)." Specifically, the inspectors verified the implementation of the modifications and procedure changes were consistent with the proposed actions committed to in the GL response. The inspectors reviewed a sample of the licensing and design documents to verify that they were either updated or in the process of being updated to reflect the modifications. A sample of material specifications, testing and surveillance procedures, and calculations were reviewed to verify that they were updated to reflect the effects of the modification, and the new requirements for the containment sumps and debris generation sources. The inspectors performed a walkdown of the strainer installation to verify it was performed in accordance with the approved design change package. Finally, the inspectors verified that all choke-points were accounted for by the licensee's calculations that could prevent water from reaching the recirculation sump during a design basis accident.

b. Evaluation of Inspection Requirements:

The TI requires the inspectors to evaluate and answer the following questions:

1. Did the licensee implement the plant modifications and procedure changes committed to in their GL 2004-02 response?

   The inspectors verified that actions implemented by the licensee as described in response to GL 2004-02 were complete as it related to the installation of the sump screen and evaluation of potential debris sources. Additionally, the inspectors found that procedures to programmatically control potential debris generation sources were updated. The inspectors noted that the sump surface area that was installed had a smaller surface area than was discussed in the GL response; however, updated calculations supported the smaller size. Dominion intends to update the Millstone Unit 3 GL 2004-02 response to reflect these changes. The inspectors noted that Dominion had not completed downstream effects evaluation or the effects of chemical precipitants on the strainer head loss at the time of the inspection.

2. Has the licensee updated its licensing basis to reflect the corrective actions taken in response to GL 2004-02?

   The inspectors verified that changes to the facility or procedures, as described in the FSAR, that were identified in the licensee's GL 2004-02 response were reviewed and documented in accordance with 10 CFR 50.59 and the licensee

had obtained NRC approval prior to implementing those changes that require such approval as stated in 10 CFR 50.59. Dominion had submitted and received permission to change the recirculation pump start signal via licensee amendment number 233. Although this action was not mentioned in the GL response, it was needed to ensure sufficient net positive suction head was available for the recirculation system. Additionally, the inspectors noted that Dominion had submitted a TS amendment to change the inspection surveillance required by TS 4.5.2. The amendment was under review by the NRC at the time of the inspection. Finally, the inspectors verified that Dominion intends to update the Millstone Unit 3 licensing bases to reflect the final modification and associated procedure changes taken in response to GL 2004-02.

The TI will remain open to allow for the review of portions of the GL response that have not been completed. Specifically, Dominion had not completed their downstream effects analysis or chemical precipitant analysis. The results of these analyses have the potential to impact the final size of the strainer, licensing basis and programmatic procedures. Therefore, the inspection will be considered incomplete until the results are reviewed and accepted. Dominion plans to evaluate the strainer for adequacy once the test results that quantify the head loss are known. The NRC has set a December 2007 deadline, as specified in GL 2004-02, for the completion of these evaluations.

c. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

Occupational Radiation Safety Exit Meeting Summary

On April 26, 2007, the inspector presented the overall inspection results to Mr. Alan Price, Site Vice President, and other members of his staff, who acknowledged the findings. The inspector asked Dominion whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

Inservice Inspection Exit Meeting Summary

On April 26, 2007, the inspectors presented the overall inspection results to Mr. Alan Price, Site Vice President, and other members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary information reviewed during the inspection period was returned to Dominion.

Deputy Regional Administrator Site Visit

On June 25, 2007, a site visit was conducted by Mr. Marc L. Dapas, Deputy Regional Administrator for the NRC Region I office. During Mr. Dapas' visit, he toured the plant and met with Dominion managers.

Integrated Report Exit Meeting Summary

On July 10, 2007, the inspectors presented their overall findings to members of Dominion's management led by Mr. Alan Price, Site Vice President, and other members of his staff who acknowledged the findings. Two separate updates to the inspection results were presented to Mr. D. Dodson by telephone on July 19, 2007, and later on July 27, 2007. The inspectors confirmed that proprietary information reviewed during the inspection period was returned to Dominion.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel
G. Allen - Plant Equipment Operator
J. Armstrong, Fire Protection Supervisor
M. Bain, Shift Manger
R. Bracall, Manager, Nuclear Maintenance
C. Chapin, Shift Manager
G. Closius, Licensing Engineer
D. Delcore, Supervisor, Health Physics Operations
C. Dempsey, Assistant Plant Manager
D. Dodson, Supervisor, Licensing
M. Gagnon, Plant Equipment Operator
R. Griffin, Director, Nuclear Station Safety & Licensing
P. Grossman, Manager, Nuclear Engineering
C. Janis, MR Coordinator
A. Jordan, Plant Manager
K. Kirkman, Operations
E. Laine, Manager, Radiological Protection & Chemistry
R. MacManus, Director - Nuclear Engineering
T. Moore, Service Water Systems Engineer
M. Nappi, Supervisor, Radiation Protection - ALARA
F. Perry, Senior Radiation Protection Technician (contracted)
J. Preston, Plant Equipment Operator
A. Price, Site Vice President
A. Smith, EDG Systems Engineer
S. Turowski, Supervisor-HP Technical Services

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened		
05000423/2515/166	TI	Pressurized Water Reactor Containment Sump Blockage (4OA5.1)
Opened and Closed		
05000423/2007003-01	NCV	Failure to Perform Evaluations on Boric Acid Leaks (Section 1R08)
05000336/2007003-02	NCV	Inadequate Work Procedure for the Unit 2 'C' Charging Pump Results in Pump Failure (Section 1R12)
05000336/2007003-03	NCV	Failure to Adequately Evaluate Surveillance Test Data (Section 1R19)

05000423/2007003-04	NCV	Failure to Implement Safety-Related Surveillance Procedure Resulted in the 'A' Safety Injection Accumulator Inoperability (Section 1R22)

Closed

05000336/2006010-01	URI	NRC to review consideration of EDG frequency affects on design bases calculations (Section 4OA3.8)
05000336/2006010-02	URI	NRC to review licensee evaluation of removal of check valve CS-26 internals (Section 4OA3.9)
05000336/2007002-01	URI	Maintenance Rule (a)(1) Evaluation of Unit 2 Vital Switchgear Emergency Cooling Failure (Section 4OA3.10)
05000336/2006006-00	LER	Scaffolding Built for Work on Main Steam Isolation Valve (2-MS-64A) Prevented the Valve from Closing (Section 4OA3.4)
05000336/2006006-01	LER	Scaffolding Built for Work on Main Steam Isolation Valve (2-MS-64A) Prevented the Valve from Closing (Section 4OA3.4)
05000336/2006008-00	LER	Scaffold Impairment of Turbine Driven Auxiliary Feedwater Pump Room HELB Blowout Panel (Section 4OA3.5)
05000423/2007001-00	LER	Failure of Two Main Steam Safety Valves to Lift within the Acceptance Criteria (Section 4OA3.6)
05000423/2007002-00	LER	Loss of Offsite Power Caused by Transmission System Operator while Defueled (Section 4OA3.7)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures
AOP-3569, Rev 016-00, Severe Weather Condition
SP-2665, Rev 005-01, Building Flood Gate Inspections
SP-2615, Rev 006-00, Flood Level Determination
OP 200.6, Rev 002-1, Storms and other Hazardous Phenomena Preparation and Recovery

Other Documents
Unit 2 Technical Specifications
Unit 3 Technical Specifications
Unit 2 UFSAR
Unit 3 UFSAR

Section 1R04: Equipment Alignment

Procedures
MP-16-MMM, Organizational Effectiveness
MP-16-CAP-SAP01, Rev 002-01, Condition Report Initiation
OP-2322, Rev 026-03, Auxiliary Feedwater System Lineup
OP-3446A, Rev 022-01, Emergency Diesel Generator
OP-3260I, Rev 000, RCS Inventory Tracking
OP-3216, Rev 008-06, Reactor Coolant System Drain (IPTE)
OP-2326A Rev 000-02, Service Water Alignment Verification
SP 2664, Rev 002-08, Charging Pump Pulsation Dampener Test

Condition Reports
07-06525, 07-06615, 07-06756, 07-05225, 07-05053, 07-6897

Work Orders
M2-07-03275

Other Documents
VTM 25203-309-002A, Reciprocating Charging Pumps
MP2703C9, Rev 005-03, Charging Pump Liquid End Maintenance
Unit 2 Control Room logs for June 9, 2007 thru June 11, 2007
PPC data for charging pump flow for months of April, May and June
FSAR Chapter 14 Analysis for Charging System
FSAR Chapter 9.7 Service Water System

Section 1R05: Fire Protection

Other Documents
Millstone Nuclear Power Station Unit 3 Fire Protection Evaluation Report
FPI 50-001, Revision 010-00, Fire Brigade Drill Assessment Data Sheet
Millstone Unit 3 Fire Dill Scenario for 6/19/2007, Fire in the “A” EDG Room

Section 1R07: Heat Sink Performance

Work Orders
M3-06-02923, M3-07-07304

Condition Reports
07-06058

Section 1R08: Inservice Inspection

Procedures
MP-24-BACC-PRG, Rev 000-01, Millstone Station Boric Acid Corrosion Control Program,
MP-24-BACC-FAP03, Rev 000-01, Millstone Station Boric Acid Corrosion Control Program Evaluations
MP-24-BACC-FAP01-003, Millstone Unit 3 Bottom Mounted Nozzle Inspection Form

Work Orders
M3-06-02508, M3-02-00346, M3-05-04786, M3-05-15980, M3-07-05971, M3-06-03604, M3-05-15827, M3-07-06026

Condition Reports
07-03974, 07-03865, 07-03515, 07-03604, 06-02088, 05-07753, 05-11061, 07-04776, 07-00703, 05-12048, 05-13383, 05-12048, 05-12023, 07-04309, 07-04150, 05-04388, 07-00712, 07-01109, 07-04184, 07-03848, 07-00889, 07-03865

Personnel Certifications
PCI Energy Services NDE Level II Personnel Certificate, Visual Testing, Penetrant Testing
Dominion Supplemental NDE Personnel Certification Review Checklist
PCI Energy Services ASME WPQs, various welders
Task Qualification Record, Boric Acid Corrosion Evaluator

Other Documents
Head Penetration UT Coverage above/below J-groove weld spreadsheet
ISI Unresolved Indication Report, AWO M3-06-08221
Pressurizer 'B' Safety Nozzle Weld Overlay Process Traveler with Sacrificial Layer, Pressurizer Nozzle Overlay, Rev. 0
PCI Energy Services Weld Repair Data Sheets, Traveler 03-X-5648-B-T-OL1
Wesdyne International Ultrasonic Calibration Sheet, Pressurizer Safety 'B', 0^{o}
Wesdyne International 'B' Safety Overlay Baseline Contour Profile Document
PCI Energy Services Report of NDE Liquid Penetrant Examination, PT-900701-002, 021, 003, 020, 004001, 006
PCI Energy Services Nonconformance Report, NCR No. 900701-02
PCI Energy Services NDE Liquid Penetrant Examination, Weld No. 03-X-5650-D-T-OL1
Westinghouse MRS-SSP-2096 Millstone Unit 3 Structural Weld Overlay
Dominion Boric Acid Corrosion Control Program, DNAP-1004, Rev.'s 0-6
AREVA NDE Procedure Visual Examination for Leakage of Reactor Head Penetrations, 54-ISI-367-07
AREVA NDE Procedure Remote Underwater Visual Inspection of Reactor Pressure Vessels,Vessel Internals and Components in Pressurized Water Reactors
AREVA NDE Procedure 54-ISI-801-02, Automated UT of PWR Vessel Shell Welds, dated 2/14/2006
AREVA NDE Procedure 54-ISI-855-04, Automated Ultrasonic Examination of Reactor Vessel Nozzle to Shell Welds & Inner Radius Regions From the Nozzle Bore, dated 2/14/2006

2/28/03 Answer to Order for Interim Inspection Requirements for RPVH's at Pressurized Water Reactors
2/23/07 Supplemental Information Regarding Request IR-2-46 for Relaxation of Requirements of Order EA-03-009 Regarding Reactor Pressure Vessel Head Penetrations
5/16/06 Relaxation of the Requirements of Order EA-03-009 Regarding Reactor Pressure Vessel Head Inspections, Request IR-2-46
3R11 Outage/ALARA Challenge Board Presentation on RV Head Stand Modification and RV Head Inspections
3R11 Outage/ALARA Challenge Board Presentation on RV 10 year ISI Inspection & Bottom Mounted Nozzles Inspection
Alternative for the Weld Overlay of Pressurizer Nozzle Welds - Response to Request for Additional Information
Westinghouse Drawing No. 10058C82, Millstone Unit 3 Pressurizer Safety/Relief Nozzle SWOL Design
Millstone Unit 3 Steam Generator Condition Monitoring and Operational Assessment Refueling Outage 11, M3-EV-07-0016, Rev. 0
Millstone Unit 3 - 2007 10 Year RV ISI Logistics Drawing 801724E, Sheet 4 of 15, Rev. 001
Millstone Unit 3 Steam Generator Integrity Degradation Assessment R11, M3-EV-07-0006, Rev. 1
Millstone, Units 2 and 3, Request for Additional Information, Bulletin 2002-01, Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity, 60-Day Response
3R11 List of BACC AWO's, not packing or cleaning
BACCP Screening, 3RHS*V009
Millstone Unit 3 Refueling Outage Boric Acid Corrosion Inspections 3R11

Section 1R11: Licensed Operator Requalification Program

Other Documents
Unit 3 Licensed Operator Simulator Training Lesson Plan for June 21, 2007
Unit 2 Evaluated Simulator Session ES07301B

Section 1R12: Maintenance Effectiveness

Procedures
MP-24-MR-FAP730, Rev 000-03, Maintenance Rule Goal Setting and Monitoring
S2-EV-98-0060, Revision 1, Pipe Linings in the MP2 Service Water System

Condition Reports
07-01788, 07-00737

Other Documents
Millstone Unit 2 Maintenance Rule Scoping Table, Service Water
Root Cause Evaluation M-07-00737, Service Water Leak from Red Rubber Gasket Joint in Supply to "A" EDG, Unit 2

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

OP-3260A, Rev 016-01, Conduct of Outage
OP-3215, Rev 007-05, Response to Intake Structure Degraded Condition
SP-3665.2, Rev 008-01, Intake Structure Condition Determination
MP-13-PRA-FAP01.1, Rev 002-02, Performing a 4 Risk Review
AOP-2504A, Rev 003-08, Loss of Non-Vital Instrument Panel VR-11

Condition Reports
07-03503, 07-04514, 07-04546

Work Orders
M2-07-02969

Other Documents
Equipment Out-Of-Service Risk Assessment Tool
Unit 2 Technical Specifications

Section 1R15: Operability Evaluations

Procedures
SP 2664, Rev 002-08, Charging Pump Pulsation Dampener Test
MP2703C9, Rev 005-03, Charging Pump Liquid End Maintenance
MP-16-MMM, Organizational Effectiveness
MP-16-CAP-SAP01, Rev 002-01, Condition Report Initiation
MP-00-0590, Evaluation for corrective maintenance on Charging Pump
MP-07-03275, 'C' Charging Pump Assembly

Work Orders
M2-07-03275

Condition Reports
07-06525, 07-06615, 07-06756, 07-05225, 07-05053, 07-6897, 07-03322, 07-03568, 07-05073, 07-04921, 07-05197, 07-09680

Other Documents
MP2-002-06, Operability Determination for Charging System
Fairbanks Morse Engine 10CFR21 Report 2007-10-00
Unit 2 UFSAR 8.3
Unit 2 T.S. 3.8.1.1/3.8.1.2
RECO MP2-807-07, Degraded Intake Structure Floor Drain Used for SW Pipe Break Flood Protection
RECO MP3-007-07, New Vital Inverters 3VBA*INV2 and 3VBA*INV4 Have High Frequency Noise Affecting SR NI and Gamma Metric Instrumentation
Technical Evaluation M3-EV-07-0020, Inventor 2 and 4 Operability
RECO/OD MP3-008-07, Two Composite Stainless Steel and Boral Sheets Have Become Detached
Nuclear Instrumentation Lesson Plans
Unit 3 TS 3.9.1.3, Spent Fuel Pool - Reactivity
Unit 3 TS 3.9.1.4, Spent Fuel Pool - Storage Pattern

VTM 25203-309-002A, Reciprocating Charging Pumps
Unit 2 Control Room logs for June 9, 2007 thru June 11, 2007
Unit 2 PPC data for charging pump flow for months of April, May and June
Unit 2 FSAR Chapter 14 analysis for Charging System

Section 1R17: Permanent Plant Modifications

Condition Reports
07-05185, 07-04914

Other Documents
DM3-00-0163-07, Gamma Metrics Source Range Instrument Noise Suppression (3NME*CHAN2) MELP Correction
DM3-00-0166-07, Westinghouse NIS Source Range 32 Channel Noise Suppression (3NMS*DWR032)
DCM 3-2A, Rev 011-01, Charging System Alternate Minimum Flow Line Modifications
VIAC2 Supplied From New Invertor 2
Unit 3 50.59/72.48 Screen Form
Unit 3 FSAR Chapter 3.10, Seismic Qualification of Seismic Category I Instrumentation and Electrical Equipment
Technical Evaluation M3-EV-07-0020, Revision 0, Inverter 2 and 4 Operability
RECO MP3-007-07, New Vital Inverters 3VBA*INV2 and 3VBA*INV4 have High Frequency Noise Affecting SR NI and Gamma Metrics
Unit 3 Nuclear instrument lesson Plans

Section 1R19: Post-Maintenance Testing

Procedures
OP 2304E21, Rev 000-00, 'C' Charging Pump and Discharge Check IST, Operating
OP 2304E21-001, Rev 00-00, "C" Charging Pump and Discharge Check IST, Operating
SP-2402PC, Rev 002, Channel "C" Spec 200 Safety Parameters Functional Test Data Sheet
SP-2402BR, Rev 000, Channel "C" Pressurizer Pressure Rack Calibration Data Sheet
SP-2403DC, Rev 000-07, Channel "C" Containment Pressure Calibration
SP-2664-3, Rev 001-02, Charging Pump "C" Pulsation Dampener Test
SP-2664, Rev 002-08, Charging Pump Pulsation Dampener Test
SP-2664, Rev 001-03, Charging Pump 'C' Pulsation Dampener Test

Condition Reports
07-05345

Work Orders
M3-06-02617, M3-07-06740, M3-05-09947, M3-07-06253, M3-05-06229, M3-05-14215, M2-07-03275, M2-07-03190, M2-07-03201

Section 1R20: Outage and Other Activities

Procedures
OP 3201, Rev 020-013, Plant Heatup
OP 3202, Rev 020-00, Reactor Startup
OP 3203, Rev 018-07, Plant Startup
OP 3207, Rev 013-03, Reactor Shutdown
OP 3208, Rev 020-19, Plant Cooldown
OP 3209A, Rev 008-00, Estimated Critical Conditions
OP 3210B, Rev 009-02, Refueling Operations
OP 3210A, Rev 013-16, Refueling Preparations
OP 3216, Rev 008-07, RCS Drain
OP 3217, Rev 006-02, RCS System Fill
OP 3218, Rev 007-05, RCS Fill and Sweep
OP 3250.01, Rev 010-10, Individual Loop Drain and Fill
OP 3260A, Rev 016-01, Conduct of Outages
OP 3260A-004, Rev 014-01, Shutdown Safety Assessment Checklist
OP 3203A, Rev 010-02, Spent Fuel Bridge
OP 3303D, Rev 011-06, Fuel Handling Tools
OP 3345, Rev 016-00, 125V DC
EOP 3501, Rev 014-01, Loss of All AC in Modes 5,6, and 0
EOP 3505, Rev 010-02, Loss of Shutdown Cooling and or Inventory Control
EOP 3505A, Rev 006-00, Loss of Spent Fuel Pool Cooling
FP02.1, Rev 001-06, Shutdown Risk Management
MP 3704B Control of Heavy Loads
MP-24-HL-PRG Heavy Loads

Condition Reports
07-03165, 07-03167, 07-03284, 07-03321, 07-03478, 07-03479, 07-03567, 07-03653, 07-03661, 07-03710, 07-03716, 07-03733, 07-03842, 07-03512, 07-04184, 07-04201, 07-04340, 07-04514, 07-04551, 07-04590, 07-04619, 07-04786, 07-04801, 07-05226

Other Documents
96-ENG-1252-C3 MP3 Structural Evaluation of RPV Head Drop (41')
3R11 Outage Risk Management Plan
Dominion Response to Generic Letter 88-17, Reduced Inventory and Mid-Loop Conditions
NRC Generic Letter 87-12, “Loss of RHR while the RCS is Partially Filled
NUREG-1269, Loss of RHR, Diablo Canyon
NRC Generic Letter 88-17, Loss of Decay Heat Residual Heat Removal
NUREG-1410, Loss of Vital AC Power and RHR System during Mid-Loop Operations
NUREG-1449, Shutdown and Low-Power Operations at Commercial Nuclear Power Plants in the United States

Section 1R22: Surveillance Testing

Procedures
OP-2346A, Rev 026-06, “A” Emergency Diesel Generator
M3-05-14054, Main Steam Safety Valve Simmer Testing
MP-05-DC-FAP01.1-005, Rev 002-01, Train A [engineered safety features] ESF with LOP Test
SP-2613K, Rev 003-04, Diesel Generator Slow Start Operability Test, Facility 1
SP-2619G, Rev 002-00, AC Electrical Sources Inoperability
SP-2624A, Rev 002-04, “A” Emergency Diesel Generator Auxiliaries Inservice Testing
SP-2670, Rev 010-04, Saltwater Cooled HX D/P Determination
SP-3646A.15, Rev 016-02, Train A Loss of Power Test (IPTE)
SP-3646A.17, Rev 016-02, Train A with Loss of Power Test (IPTE)
SP-3712G, Rev 008-01, Main Steam Code Safety Valve Surveillance Testing (IPTE)
SP-3601G.2, Rev 008-03, RCS and Pressurizer Heatup and Cooldown Rate
SP-3601G.2-002, Rev 008, Pressurizer Heatup and Cooldown Rate and Surge Line Temperature Monitoring
SP-3601G.2-001, Rev 005, RCS Heatup and Cooldown Rate
SP-3610B.2, Rev 2, Accumulator Vent Valves
SP 31008, Rev 004-01, Lower Power Physics Testing (IPTE)
SP 2606C, Rev 010-00, CS-4.1A Valve Tests, Facility 1
SP 2610CO, Rev 000-03, 2-FW-43A and 2-FW-43B Failure Mode and Stroke Timing IST

Drawings
DWG. 25212-39241, Sheet 189, Rev 7, Emergency Generator Load Sequencing
P&ID 25203-26015, sheet1, Containment Spray System

Condition Reports
07-03710, 07-03256, 07-03257, 07-03478, 07-05596

Other Documents
Letter from Dresser Consolidated to Dominion dated 2/16/2007 Re: Certification of Compliance/Conformance of Hydroset S/N HS-641
Unit 2 TS 3.4.9.1 and Bases, Pressure/Temperature Limits
Unit 2 TS 6.1.9, Component Cyclic or Transient Limit
Unit 2 TS 3.6.3, Containment Isolation Valves
Unit 2 TRM 3.4.9.2 and Bases, Pressurizer

Section 1R23: Temporary Plant Modifications

Other Documents
SPROC ENG07-3-001, Rev 000, DCR M3-06004 inverter Replacement
WC 10-004, Rev 000-03, Temporary Modification Control Sheet
DCM 3-2A, Rev 011-01, Unit 3 Vital Inverters Replacement
DCM 03-007A, Rev 015-02, MP3 Vital Inverter 2 Replacement

Section 1EP6: Drill Evaluation

Other Documents
Unit 3 Drill Exercise Plan for 6/21/2007 Drill
Unit 2 Drill Exercise Plan for 6/12/2007 Drill

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

Procedures
RPM 1.3.8, Rev 8, Criteria for Dosimetry Issue
RPM 1.3.12, Rev 8, Internal Monitoring Program
RPM 1.3.13, Rev 8, Bioassay Sampling and Analysis
RPM 1.3.14, Rev 7, Personnel Dose Calculations and Assessments
RPM 1.4.1, Rev 7, ALARA Reviews and Reports
RPM 1.4.2, Rev 2, ALARA Engineering Controls
RPM 1.4.4, Rev 2, Temporary Shielding
RPM 1.5.2, Rev 4, High Radiation Area Key Control
RPM 1.5.5, Rev 4, Guidelines for Performance of Radiological Surveys
RPM 1.5.6, Rev 3, Survey Documentation and Disposition
RPM 1.6.4, Rev 3, Siemens Electronic Dosimetry System
RPM 2.1.1, Rev 5, Issuance and Control of RWPs
RPM 2.1.2, Rev 2, ALARA Interface with the RWP Process
RPM 2.4.1, Rev 6, Posting of Radiological Control Areas
RPM 2.10.2, Rev 11, Air Sample Counting and Analysis
RPM 5.2.2, Rev 10, Basic Radiation Worker Responsibilities
RPM 5.2.3, Rev 3, ALARA Program and Policy
RPM-GDL-008, Rev 0, Electronic Dosimeter Alarm Set Points

Condition Reports
07-00925, 07-03426, 07-01940, 07-02141, 07-02651, 07-02856, 07-03299, 07-03730, 07-03738, 07-04358

ALARA Council Meeting Notes
Meetings conducted: 04/11/07, 04/12/07, 04/18/07, 04/20/07

Nuclear Oversight Department Field Observation (NODFOB) Reports
07-008, 07-010, 07-006, 07-027, 07-034

ALARA Reviews
3-07-01, Reactor Disassembly
3-07-02, Steam Generator Eddy Current Inspection (S/G-B&D)
3-07-05, ISI Weld Inspections & Boric Acid Corrosion Control Program
3-07-11, MOV Maintenance
3-07-13, Scaffold Installation & Removal
3-07-14, Insulation Removal

ALARA Pre-Job Briefing Materials
Reactor Defueling
Insulation Removal
Routine Maintenance
Reactor Disassembly
Scaffolding Installation
Steam Generator Eddy Current Testing
Steam Generator Secondary Side Cleaning & Inspection

Radiation Protection Department Self-Assessments
MP-SA-06-48, Release of Material from Radiologically Controlled Area Boundaries
MP-SA-07-12, Radiological Protection Accredited Training

Other Documents
No M3-07-00, Personnel Contamination Report
3R11 Reactor Cavity Decontamination Plan
Unit 3 Source Term Data
3R11 ALARA Behaviors Report (Summaries from 3R11 Work Observation Focus Card)
Dose & Dose Rate Alarm Report for the period April 1 - 25, 2007

Section 4OA1 - Performance Indicator (PI) Verification

Procedures
SP 2619A, Rev 044-09, Control Room Daily Surveillance, Modes 1 & 2
SP 2831, Rev 008-04, Reactor Coolant Gros Specific Activity Determination
SP 2830, Rev 007-02, Sampling Reactor Coolant for Dissolved Oxygen, Chloride and Fluoride Analysis

Other Documents
Millstone Unit 2 RCS leakage data sheet from January 1, 2006 thru March 31, 2007
Millstone Unit 2 RCS Activity data sheet from January 1, 2006 thru March 31, 2007

Section 4OA2 - Identification and Resolution of Problems

Procedures
C-MP-720A, Scaffold Erection, Use and Removal, Rev 003-01
MP-20-WP-GDL20, Work Order Preparation, Rev 16
MP-SA-07-31, Formal Self-Assessment Report for Fire Protection System
MP-SA-07-06, Informal Self-Assessment Plan/Report for 2006/7

Condition Reports
06-01457, 06-01791, 06-01796, 06-01846, 06-02067, 06-02245, 06-02544, 06-03091, 06-05342, 06-05479, 06-05481, 06-05482, 06-06921, 06-07783, 06-08327, 06-08367, 06-09944, 07-06694, 05-07367, 06-09203, 06-12526, 06-12555, 07-05826, 07-05276, 07-05371, 07-05376, 07-05445, 01-00904, 07-03937, 07-03447, 06-10100, 06-07999, 05-13883

Work Orders
M2-06-02234, M2-06-03895, M2-06-03896, M2-06-03898,M2-02-06224-8,M3-04-01088
M2-05-09339, M3-01-18643, M3-04-00484

Other Documents
DM2-00-0183-06, Unit 2 Instrument Air Excess Flow Valve Removal
Maintenance Rule (a)(1) Evaluation for Instrument Air Function 1.01, dated May 23, 2006
MP2 PRA Instrument Air Model Notebook, revision 2
Root Cause Evaluation M-06-01796, Reactor Trip due to Instrument Air Loss
Effectiveness Review for Root Cause Evaluation CR-06-01796, dated April 5, 2007
Licensee Event Report 05000336/2006-002-00, Manual Reactor Trip of both Feed Pumps following a Loss of Instrument Air
System Health Reports for Instrument Air, 2006 Quarters 1 thru 4, and 2007 Quarter 1
System Health reports for Unit 2 Maintenance Rule (a)(1) systems

Section 4OA3: Followup of Events and Notices of Enforcement Discretion

Procedures
MP-26-EPA-REF03, Rev 008, Loss of Power
EOP-3501, Rev 014-01, Loss of All AC Power (Mode 5, 6, and Zero)
EOP-3505, Rev 010-02, Loss of Shutdown Cooling and/or RCS Inventory
EOP-35 GA-1, Rev 001-00, Energizing MCC 32-3T
SP-2671, Rev 006-08, OMOC Duty Officer Requirement Following Unplanned Reactor Trip, Reactor Transient, or ESF Actuation
OP-3314F, Rev 020-08, Control Building Heating Ventilation Air Conditioning and Chill Water
OP-3346A, Rev 022-01, Emergency Diesel Generator

Condition Reports
06-00233, 06-05351, 06-06057, 06-09203, 06-11527, 06-11638, 05-07367, 06-09203, 06-12526, 06-12555, 07-05826, 07-03104, 07-04514, 07-03256, 07-03167, 07-01325

Other Documents
CT-07-03256, Valve 3MSS*RV22D Failed As-found Set Pressure Testing
Engineering Record of Correspondence 25212-ER-07-0038 dated 4/3/07
Engineering Record of Correspondence 25212-ER-07-0038 dated 4/5/07
NCV 05000336/2006005-04, Failure to Identify Scaffolding Rendered the #1 SG MSIV Inoperable
NCV 05000336/2006005, Licensee Identified, Failure to Implement Adequate Corrective Actions to Prevent Recurrence with Respect to Scaffolding Affecting Safety-Related Equipment
Event Review Team Report, Millstone 3 Loss of Offsite Power Event, April 25, 2007
Millstone Unit 2 Technical Specifications
Operator Logs, January 9, 2006
MP-SA-07-31, Dominion Formal Self-Assessment for Fire Protection System
MP-SA-07-06, Dominion Informal Self-Assessment of Quality Review for Past Design Changes
Millstone Unit 2/Unit 3 2007 Qtr 1 System Health Reports
Millstone Unit 2/Unit 3 2007 Qtr 1 Plant Health Reports
LER 2006-006-00 & -01, Scaffolding Built for Work on Main Steam Isolation Valve

(2-MS-64A) Prevented the Valve from Closing
LER 2006-008-00, Scaffold Impairment of Turbine Driven Auxiliary Feedwater Pump Room HELB Blowout Panel
LER 2007-001-00, Failure of Two Main Steam Safety Valves to Lift within the Acceptance Criteria
LER 2007-002-00 , Loss of Offsite Power Caused by Transmission System Operator while Defueled
NRC Confirmatory Action Letter to Dominion dated March 27, 2007

Section 4OA5: Other Activities

Procedures
OP 2346A, "A" Emergency Diesel Generator, Rev 026-06
MS 12179-123a, Removable Thermal Insulation, Rev 1
SP 2612A, "A" SW Pump and Facility 1 Discharge Check Valve IST, Rev 002-00
SP 2612A, "A" Service Water Pump Tests, Rev 010-02
SP 2613G, Facility 1 ESF Integrated Test Data Sheet, Rev 008
SP 3612A.1, Containment Inspections, Rev 016
SP 3612A.1, Containment Sump Inspection, Rev 005
SP-ME-691, General Thermal Insulation Design and Installation

Condition Reports
07-04117

Other Documents
108788-US(B)-372, Simplified Containment Recirculation Spray System (RSS) NPSH and Suction Hydraulic Analysis Without Debris Transport, Rev 0
12179-249, Determination of Max. Water Level Inside Containment Following a LOCA, Rev 3
CALC 05-ENG-04155C3, MPS Determination of Latent Debris Inside Containment, Rev 0-2, 3
DCM 03 Attachment 9, Rev 014-03, Design Engineering Screening Evaluation
DCR M3-05003, Replacement of [emergency core cooling system] ECCS Sump Strainer per GL 2004-02, GSI 191, Rev 0
Dominion Nuclear Connecticut, Inc., Virginia Electric and Power Company, Millstone Power Station Units 2 and 3, North Anna Power Station Units 1 and 2, Surry Power Station Units 1 and 2, NRC Generic Letter 2004-02: Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors, 90 Day Response, dated March 4, 2005
Dominion Nuclear Connecticut, Inc., Virginia Electric and Power Company, Millstone Power Station Units 2 and 3, North Anna Power Station Units 1 and 2, Surry Power Station Units 1 and 2, NRC Generic Letter 2004-02: Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors, dated September 1, 2005
PT 21416H1, MP 2 "A" Diesel Generator (H7A) Woodward 2301A Replacement and Adjustment, Rev 002-02
PT 21416H3, MP2 "A" Diesel Generator (H7A) Woodward Digital Reference Unit Installation and Adjustments, Rev 002-02
PT 21416G1, MP2 Diesel Generator Woodward 2310A Bench Test, Rev 002

PT 21416G2, MP-2 Diesel Generator Woodward Digital Reference Unit (DRU) Bench Test, Rev 002-02
Unit 3 Updated Final Safety Analysis Report
06-838, Letter from USNRC to Dominion, Millstone Power Station, Unit NO. 3 Issuance of Amendment (No. 233) RE: Recirculation Spray System
Temporary Instruction (TI) 2515/166 - Pressurized Water Reactor Containment Sump Blockage
06002757, 2008 Project Plan for Check Valve 2-CS-26
25203-ER-98-0301, Design Basis for Safety Related Pump Testing, Rev 06
98-ENG-02697M2, Service Water Pumps Acceptance Curve, Rev 0-01
ED 21221, Swing Check Valve Inspection Data Sheet Sketch, performed Oct 18, 2006
M2-EV-99-0014, IST Pump Performance Testing Acceptance Criteria, Rev 4
VTM 25203-138-006, Woodward Governor, Rev 1

LIST OF ACRONYMS

3R11	Unit 3 refueling outage
A/C	air conditioning
ACE	apparent cause evaluation
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
AOP	abnormal operating procedure
ASME	American Society of Mechanical Engineers
BACC	boric acid corrosion control
CAL	Confirmatory Action Letter
CFR	Code of Federal Regulations
CONVEX	Connecticut Valley Electrical Exchange
CR	condition report
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	emergency diesel generator
EOP	emergency operating procedure
FSAR	Final Safety Analysis Report
GL	generic letter
gpm	gallons per minute
HELB	high energy line break
IMC	inspection manual chapter
ISI	inservice inspection
IST	inservice test
LCO	limiting condition for operation
LER	licensee event report
LHRA	locked high radiation area
LOP	loss of power
MR	maintenance rule
MSIV	main steam isolation valve
MSSV	main steam safety valve
NCV	non-cited violation
NDE	nondestructive examination
NRC	Nuclear Regulatory Commission

PCR	personnel contamination report
PI	performance indicator
PMT	postmaintenance testing
PWR	pressurized-water reactor
QC	quality control
RCS	reactor coolant system
RFO	refueling outage
RHR	residual heat removal system
RPCCW	reactor plant closed cooling water
RSST	reserve station service transformer
RWP	radiation work permit
SSC	systems, structures and components
SDP	significance determination process
SI	safety injection
TDAFW	turbine-driven auxiliary feedwater
TI	temporary instruction
TS	technical specification
UFSAR	updated final safety analysis report
VHRA	very high radiation area