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

April 8, 2008

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

SUBJECT: MILLSTONE POWER STATION - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000336/2008006 AND 05000423/2008006

Dear Mr. Christian:

On February 29, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Millstone Power Station Unit 2 and Unit 3. The enclosed report documents the inspection results, which were discussed on February 29, 2008, with Mr. Alan Price and other members of your staff.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and the conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

Based on the samples selected for review, the inspectors concluded that in general, problems were properly identified, evaluated, and corrected. Millstone personnel consistently identified problems and entered them into the Corrective Action Program at a low threshold. In general, Dominion prioritized and evaluated issues commensurate with the safety significance of the problems. Corrective actions were generally effective and implemented in a timely manner.

There were three Green findings identified during this inspection. The three findings were determined to involve violations of NRC requirements. However, because each violation was of very low safety significance (Green) and because they were entered into your corrective action program, the NRC is treating these as Non-Cited Violations (NCVs), in accordance with Section VI.A of the NRC's Enforcement Policy. If you deny any of these NCVs, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C., 20555-0001, with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555-0001; and the NRC Resident Inspector at the Millstone Power Station.

In accordance with Title 10 of the Code of Federal Regulations Part 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 the NRC's document system (ADAMS). ADAMS is

accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mel Gray, Chief
Technical Support & Assessment Branch
Division of Reactor Projects

Docket No. 50-336, 50-423
License Nos. DPR-65, NPF-49

Enclosure: Inspection Report No. 05000336/2008006 and 05000423/2008006
w/ Attachment: Supplemental Information

cc w/encl:
J. A. Price, Site Vice President, Millstone Station
C. L. Funderburk, Director, Nuclear Licensing and Operations Support
W. Bartron, Supervisor, Station Licensing
J. Spence, Manager Nuclear Training
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, Jr., Ph.D, Director, State of Connecticut SLO Designee
J. Buckingham, Department of Public Utility Control
C. Meek-Gallagher, Commissioner, Suffolk County, Department of Environment and Energy
V. Minei, P.E., Director, Suffolk County Health Department, Division of Environmental Quality
R. Shadis, New England Coalition Staff
S. Comley, We The People
D. Katz, Citizens Awareness Network (CAN)
R. Bassilakis, CAN

cc w/encl:
J. M. Block, Attorney, CAN
P. Eddy, Electric Division, Department of Public Service, State of New York
P. Tonko, President and CEO, New York State Energy Research and Development Authority
J. Spath, SLO Designee, New York State Energy Research and Development Authority
N. Burton, Esq.

cc w/encl:
J. M. Block, Attorney, CAN
P. Eddy, Electric Division, Department of Public Service, State of New York
P. Tonko, President and CEO, New York State Energy Research and Development Authority
J. Spath, SLO Designee, New York State Energy Research and Development Authority
N. Burton, Esq.

Distribution:
S. Collins, RA
M. Dapas, DRA
D. Lew, DRP
J. Clifford, DRP
G. West, RI OEDO (Acting)
H. Chernoff, NRR
J. Lubinski, NRR
J. Hughey NRR, PM
E. Miller, NRR
J. Schoppy, DRS
M. Gray, DRP
W. Cook, DRS
S. McCarver, DRP
S. Shaffer, SRI
J. Benjamin, RI
R. Powell, DRP
B. Norris, DRP
N. Sieller, DRP
Region I Docket Room (with concurrences)
ROPreports@nrc.gov

SUNSI Review Complete: _____TEW_____ (Reviewer's Initials)
DOCUMENT NAME: T:\DRP\BRANCH TSAB\PIR 2008\Millstone IR0806 rev7.doc
After declaring this document "An Official Agency Record" it will be released to the Public.
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure **"E"** = Copy with attachment/enclosure **"N"** = No copy
ML080990690

OFFICE	RI/DRS/EB1		RI/DRP/BR5/BC		RI/DRS/SRA		RI/DRP/TSAB/BC			
NAME	JSchoppy/TEW FOR		RPowell/RJP		WCook/WAC		MGray/MXG			
DATE	04/01/08		04/01/08		04/01/08		04/07/08			

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-336, 50-423
License No.:	DPR-65, NPF-49
Report No.:	05000336/2008006 and 05000423/2008006
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Units 2 and 3
Location:	P. O Box 128 Waterford, CT 06385
Dates:	February 11 - 29, 2008
Team Leader:	Joseph G. Schoppy Jr., Senior Reactor Inspector, DRS
Inspectors:	Jamie Benjamin, Millstone Resident Inspector, DRP Jennifer Tifft, Reactor Inspector, DRS Sammy McCarver, Project Engineer, DRP
Approved by:	Mel Gray, Chief Technical Support & Assessment Branch Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000336/2008-006, 05000423/2008-006; 2/11/2008 – 2/29/2008; Millstone Power Station Unit 2 and Unit 3; Biennial Baseline Inspection of the Identification and Resolution of Problems; three violations were identified with respect to the implementation of the corrective action program.

This team inspection was performed by three NRC regional inspectors and one resident inspector. Three findings of very low safety significance (Green) were identified during this inspection. Each of the findings was classified as a non-cited violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). 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.

Identification and Resolution of Problems

The inspectors concluded that Dominion was effective in identifying, evaluating and resolving problems. Millstone personnel consistently identified problems and entered them into the Corrective Action Program (CAP) at a low threshold. The inspectors determined that, in general, Dominion appropriately screened issues for operability and reportability, and prioritized issues commensurate with the safety significance of the problems. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. The inspectors determined that corrective actions addressed the identified causes and were generally implemented in a timely manner. However, the inspectors identified several examples of inadequate corrective actions stemming from shortcomings in prioritization and evaluation.

Dominion's audits and self-assessments were thorough and probing. The inspectors concluded that Dominion adequately identified, reviewed, and applied relevant industry operating experience (OE). Based on interviews, observations of plant activities, and reviews of the CAP and the Employees Concerns Program (ECP), the inspectors determined that site personnel were willing to raise safety issues and to document them in the CAP.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure to take adequate corrective actions for a condition adverse to quality involving the potential for Unit 2 control room temperature heat-up challenging equipment operability and personnel habitability thresholds following a reactor trip. Specifically, in 2007, Dominion's associated operability review, issue prioritization, and subsequent evaluation did not adequately consider post-trip time critical operator tasks, operator training, and control room heat-up rate calculations. As a result, Dominion incorrectly concluded that no further action was needed to ensure that control room temperature limits were not exceeded. Dominion's short-term corrective actions included review of a control room heat-up

calculation, providing interim direction to the operating crews concerning control room air conditioning (A/C) restoration, and updating applicable emergency operating procedures to ensure adequate control room cooling was maintained.

The finding is more than minor because it was associated with the procedural quality attribute for the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems (and personnel) that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Dominion did not ensure that control room temperature limits would not be exceeded for non-accident post-trip events involving a loss of control room A/C which could directly impact the reliability of safety-related equipment operated from the control room. This finding is of very low significance because it did not result in the loss of operability or functionality.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion did not properly evaluate a condition adverse to quality including properly classifying, prioritizing, and evaluating for operability (P.1.c). (Section 4OA2.a.3.a)

- Green. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure to take adequate corrective actions for a condition adverse to quality involving a longstanding degraded condition impacting the Unit 2 charging pumps. Specifically, since January 2006, Dominion did not take timely and appropriate corrective actions commensurate with the potential safety significance as the condition presented a potential common cause failure of the charging pumps. Dominion's short-term corrective actions included corrective maintenance on degraded charging pump internal check valves, a reasonable assurance of continued operability evaluation, and development of a charging pump troubleshooting plan.

  The finding is more than minor because it affected the equipment performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the degraded condition resulted in unplanned unavailability of the safety-related charging pumps and represented a challenge to the reliability of the charging system due to the common mode failure vulnerability. The finding was determined to be of very low safety significance (Green) because it was a design deficiency confirmed not to result in loss of system safety function.

  This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion did not take appropriate corrective actions to address a safety issue and adverse trend in a timely manner, commensurate with the safety significance and complexity of the issue (P.1.d). (Section 4OA2.a.3.b)

Cornerstone: Barrier Integrity

- Green. The inspectors identified a Green non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure, in January 2005, to take adequate corrective actions for a condition adverse to quality involving a non-conservative in-service test (IST) procedure for two safety injection (SI) valves (2-SI-659/660). Specifically, Dominion did not update a supporting calculation and make the appropriate changes to the associated IST acceptance criteria for these SI valves. These valves have a design basis function to close on a safety recirculation actuation signal to prevent radioactive release to the environment through the normally vented refueling water storage tank (RWST). In February 2008, Engineering performed a prompt operability determination and determined that the valves remained operable (based on the most recent IST results, calculation review, valve design margin, trend data, and engineering judgment).

  The finding is more than minor because it affected the reactor coolant system equipment and barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, Dominion's non-conservative leakage test did not provide reasonable assurance that the SI valves would provide adequate isolation to preclude a post-accident release through the vented RWST. In addition, the finding is similar to NRC IMC 0612, Appendix E, Example 3.j, because a calculation error resulted in a condition where there was a reasonable doubt on the operability of the associated SI valves. This finding is of very low significance because it did not represent an actual open pathway in the physical integrity of reactor containment. (Section 4OA2.a.3.c)

B. Licensee-Identified Violations

None.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution (Biennial - IP 71152B)

a. Assessment of the Corrective Action Program

1. Inspection Scope

The inspectors reviewed the procedures that describe Dominion's CAP at Millstone Power Station. Dominion identified problems for evaluation and resolution by initiating condition reports (CRs) that were entered into the condition reporting system. The CRs were subsequently screened for operability, categorized by significance, and assigned for further evaluation, resolution and/or trending.

The inspectors evaluated the process for assigning and tracking issues to ensure that issues were screened for operability and reportability, prioritized for evaluation and resolution in a timely manner commensurate with their safety significance, and tracked to identify adverse trends and repetitive issues. In addition, the inspectors interviewed plant staff and management to determine their understanding of and involvement with the CAP.

The inspectors reviewed CRs selected across the seven cornerstones of safety in the NRC's Reactor Oversight Process (ROP) to determine if site personnel properly identified, characterized, and entered problems into the CAP for evaluation and resolution. The inspectors selected items from functional areas that included chemistry, emergency preparedness (EP), engineering, maintenance, operations, physical security, radiation safety, and oversight programs to ensure that Dominion appropriately addressed problems identified in these functional areas. The inspectors selected a risk-informed sample of CRs that had been issued since the last NRC Problem Identification and Resolution (PI&R) inspection conducted in February 2006. The inspectors considered risk insights from the station's risk analyses to focus the sample selection and plant tours on risk-significant systems and components. Inspector samples focused on, but were not limited to, these systems. The inspectors expanded the corrective action review to five years for evaluation of Dominion's Boric Acid Corrosion Control Program (BACCP).

Items from other processes at Millstone were selected by the inspectors to verify that the issues were appropriately considered for entry into the CAP. Specifically, the inspectors reviewed a sample of engineering requests, operator workarounds, operability determinations (ODs), work orders, and system health reports. The inspectors also reviewed completed work packages to determine if issues identified during the performance of corrective and preventive maintenance were appropriately entered into the CAP. In addition, the inspectors reviewed operator and security logs to determine whether problems described in the logs were entered into the CAP.

The inspectors reviewed CRs to assess whether Dominion personnel adequately evaluated and prioritized identified problems. The issues reviewed encompassed the full

range of evaluations, including root cause evaluations (RCEs), apparent cause evaluations (ACEs), and common cause analyses. CRs that were assigned lower levels of significance which did not include formal cause evaluations were reviewed to ensure that they were appropriately classified. The inspectors observed daily CR screening meetings in which Dominion personnel reviewed new CRs for prioritization and assignment. The inspectors' review included the appropriateness of the assigned significance, the scope and depth of the causal analysis, and the timeliness of resolution. The inspectors assessed whether the evaluations identified likely causes for the issues and identified appropriate corrective actions to address the identified causes. The inspectors also reviewed Corrective Action Review Board (CARB) actions. During CARB meetings, Dominion managers review RCEs and certain ACEs, review associated corrective action assignments, and assess corrective action effectiveness. Further, the inspectors reviewed equipment ODs, reportability assessments, and extent-of-condition reviews for selected problems to determine whether Dominion adequately implemented these processes.

Corrective actions associated with selected CRs were assessed to determine whether the actions addressed the identified causes of the problems. The inspectors reviewed CRs for adverse trends and repetitive problems to determine whether corrective actions were effective in addressing the broader issues. Dominion's timeliness in implementing corrective actions and effectiveness in precluding recurrence for significant conditions adverse to quality were reviewed by the inspectors. The inspectors also reviewed CRs associated with selected NCVs and findings to determine whether Dominion properly evaluated and resolved the issues. The CRs and other documents reviewed, as well as key personnel contacted, are listed in the Attachment to this report.

2. Assessment

Identification of Issues

The inspectors concluded that Millstone personnel consistently identified problems and entered them into the CAP at a low threshold. With very few exceptions, Millstone personnel accurately characterized problems that they documented in the CRs. The inspectors observed managers at the Condition Review Team (CRT) meetings appropriately questioning and challenging CRs that did not contain sufficient information. The inspectors determined that Dominion adequately trended equipment and programmatic issues. The inspectors concluded that personnel were identifying trends at low levels. However, the inspectors noted one example in which Dominion did not demonstrate an appropriate sensitivity to a relatively high (i.e. approximately 20 percent) Unit 2 charging system decay test failure rate given its potential impact on charging system operability (CR-08-01864, see also Section 4OA2.a.3.b).

During plant tours, the inspectors observed that Dominion maintained appropriate standards for housekeeping and cleanliness with the exception of a few areas (Unit 2 service water intake area, and Unit 3 recirculation spray system rooms). The inspectors noted that Dominion senior management had identified housekeeping issues in these

areas, independent of NRC inspector observations. The inspectors noted that Dominion had corrective action initiatives within the CAP for plant areas of concern.

Since Dominion's last refueling outage (3R11) in April 2007, the inspectors determinted that there was improvement in Dominion's BACC performance relative to boric acid leakage identification in radiologically-controlled areas outside of containment. In particular, Millstone personnel identified boric acid issues at a low threshold and plant workers identified a much higher percentage of the leaks. However, the inspectors noted several examples of minor material condition deficiencies that had not been identified by Dominion and entered into the CAP. Dominion initiated CRs 2008-01934, 2008-01432, and 2008-01690 to address these issues.

Prioritization and Evaluation of Issues

The inspectors determined that, in general, Dominion appropriately prioritized and evaluated issues commensurate with the safety significance of the problem. The CRs were screened for operability and reportability, categorized by significance, and assigned to a department for evaluation and resolution. The various CR screening and management review groups appropriately considered human performance issues, radiological safety concerns, repetitiveness, and adverse trends during the conduct of reviews. Causal analyses appropriately considered extent of condition, generic issues, and previous occurrences. Dominion's RCEs were generally thorough, and corrective and preventive actions addressed the identified causes. The inspectors determined that corrective actions addressed the identified causes and were generally implemented in a timely manner. However, the inspectors identified several examples of inadequate corrective actions stemming from shortcomings in prioritization and evaluation.

The inspectors identified that Dominion did not have an adequate OD basis (evaluation) for a Unit 2 loss of control room A/C concern identified on October 31, 2007 (CR-07-11034). Specifically, Dominion determined that it was reasonable to base operator action, following a non-accident post trip event in which control room A/C was lost, on the crew's ability to identify a control room heat-up concern based on ambient conditions and take action outside the nominal emergency operating procedure (EOP) network within ten minutes. The inspectors concluded that this basis was not adequate since the issue had not been communicated to the individual crews, and approved guidance had not been instituted to ensure the crews understood the potential to briefly deviate from the EOP network under certain scenarios. (See Section 4OA2.a.3.a)

The inspectors identified a programmatic prioritization weakness involving Dominion's use of "PNA" (no priority). Once coded as PNA, corrective action due dates were routinely extended out to December 22, 2022. The inspectors found a number of examples of actions classified as PNA that were not administrative in nature and that significant enough to warrant more timely action. Based on a subsequent Dominion review of these items, a classification of at least PLOW (low priority) would have been more appropriate, in accordance with Dominion's classification procedure MP-16-CAP-FAP01.3. In addition, Dominion determined that several of the PNA items screened at a higher priority. Examples of inspector identified PNA issues included:

- In January 2005, engineering personnel completed a CR (04-09883) investigation assignment and documented that a non-conservative differential pressure (D/P) was used in an IST to test two SI valves (2-SI-659/660). However, Dominion prioritized the assigned corrective actions to revise the technical evaluation, revise the IST procedure, and perform an extent of condition review as PNA. (CR-08-01881, see Section 4OA2.a.3.c);

- MP-16-CAP-FAP01.3, Attachment 4, required that actions that address Nuclear Oversight audit deficiencies be classified as medium priority (PMED) or higher. Contrary to this requirement, a corrective action assignment (CR 07-07109, 07003493-02) for an audit deficiency was classified as PNA. (CR-08-01697);

- In April 2003, Nuclear Oversight Audit MP-03-A07 identified a deficiency associated with a Unit 3 liquid radioactive waste line that included socket weld pipes that could increase local radiation source terms (CR 03-03703). Dominion determined that they needed to change Updated Final Safety Analysis Report (UFSAR) Section 11.2.1 to align it with actual as-built plant conditions. In May 2003, Dominion classified this audit deficiency corrective action as low priority. Subsequently, Dominion classified the UFSAR update as a long term corrective action (LTCA) and assigned a due date of December 15, 2008. Dominion classified an associated corrective action assignment to revise various design documents to identify the correct pipe class as PNA. In addition to the prioritization deficiencies (PLOW for an audit deficiency & PNA for design document updates), the inspectors identified that Dominion's failure to perform an associated 10 CFR 50.59 evaluation and failure to update the UFSAR was a minor violation of 10 CFR 50.71(e). During the inspection, Dominion personnel confirmed the as-built configuration of the liquid radiation pipe had not resulted in increased exposure to plant personnel (CR-08-01939);

- In August 2005, Nuclear Oversight Audit 05-09 identified an American Society of Mechanical Engineers (ASME) Code deficiency associated with testing of buried Unit 3 piping from the RWST. Dominion determined that they needed to submit a Code Case relief request to the NRC. Dominion appropriately assigned a medium priority to the action to draft the relief request. However, they classified the action (05005451-04) to track the submittal as PNA. Although not properly prioritized, Dominion eventually submitted the relief request on November 9, 2007. At the time of the inspection, this relief request remained under NRC review. (CR-08-01840);

- MP-16-CAP-FAP01.3, Attachment 4, requires that significance level (SL) 1 CR corrective actions to prevent recurrence be classified as high priority (PHI). Contrary to this, a SL 1 CR (CR 07-05432) corrective action to prevent recurrence was classified as PNA. Although not properly prioritized, Dominion completed this action on its assigned due date (January 7, 2008). (CR-08-01815);

- MP-16-CAP-FAP01.3, Attachment 4, requires a PLOW priority for OE-related corrective actions that may be of minor consequence. Dominion personnel initiated CR 02-12010 to evaluate NRC Information Notice 2002-18, "Effects of Adding Gas

personnel into Water Storage Tanks on the Net Positive Suction Head for Pumps." Dominion personnel assessed dissolved gas impact on auxiliary feedwater (AFW) system operability and concluded that there was no operability impact (OD MP3-023-02). Dominion initiated corrective actions to perform a calculation to confirm AFW pump net positive suction head (NPSH) margin and to review the impact of potential dissolved gas content on reactor coolant pump, charging pump, and residual heat removal pump NPSH calculations. Dominion had classified these two associated corrective action assignments (02008191-04 & 02008191-05) as PNA and had extended the due dates out to December 22, 2022. (CR-08-01808);

- In July 2006, Dominion initiated CR 06-06980 to address a differing professional opinion (DPO) issue concerning the safety/quality classification of items used in safety and non-safety systems, structures, or components (SSCs). MP-16-CAP-FAP01.3, Attachment 4, requires that actions that help resolve DPO issues should be classified as medium priority (PMED) or higher. Dominion had classified two DPO associated corrective action assignments (06003787-05 & 06003787-06) as PNA and had extended the due dates out to December 22, 2022. (CR-08-01844)

In response to the inspectors' concerns, Dominion sampled their backlog of PNA items and discovered several additional prioritization deficiencies (CR 08-01428, CR 08-01439, and CR 08-01440). Based upon this review and the inspectors' identified issues, Dominion initiated a more thorough review of this PNA backlog. This review was not complete at the end of the inspection.

The inspectors independently evaluated the CAP deficiencies noted above for potential safety significance. The inspectors determined that the individual issues (except for the control room A/C and non-conservation IST concerns) were of minor significance because they did not affect the availability, reliability or capability of the systems or equipment to perform its intended function.

Effectiveness of Corrective Actions

The inspectors concluded that corrective actions for identified deficiencies were typically timely and adequately implemented. Administrative controls were in place to ensure that corrective actions were completed as scheduled and reviews were performed to ensure the actions were implemented as intended. The inspectors also concluded that Dominion conducted in-depth effectiveness reviews for significant issues to determine if the corrective actions were effective in resolving the issue. In some cases, Dominion appropriately self-identified ineffective or improper closeout of corrective actions and re-entered the issue into the CAP for further action. For significant conditions adverse to quality, the inspectors noted that Dominion's actions were comprehensive and thorough, and generally successful at preventing recurrence. However, the inspectors identified two instances where Dominion's past corrective actions were not fully effective in addressing longstanding degraded conditions. Specifically:

- The inspectors noted a longstanding degraded condition related to the Unit 2 "B"

emergency diesel generator (EDG). Specifically, multiple CRs since 2001 had identified that the "B" EDG freshwater expansion tank had unexpectedly overflowed during surveillance testing. The cause of this condition had been previously attributed to minor exhaust gas leakage from the fuel and/or air adapter-to-cylinder gaskets into the freshwater system. The inspectors noted that past corrective actions had been effective at maintaining system operability but were ineffective at eliminating the leakage. The inspectors noted that, more recently, on at least two occasions, a small amount of gas bubbles had appeared in the freshwater system sight glass which could be indicative of a worsening condition. The inspectors determined that Dominion remained sensitive to potential operability impact and had taken appropriate action to date for this degraded condition. Additionally, the inspectors noted that Dominion initiated actions to conduct additional troubleshooting to better characterize the leakage mechanism and to use industry and vendor technical experts to gain independent insight.

- The inspectors also noted a second longstanding degraded condition related to five occurrences in which the Unit 2 charging system pumps had unexpectedly cycled (several times per second) on and off since July 2005. These instances immediately resulted in operations declaring a charging system train inoperable. The inspectors determined that on several occasions these conditions had been entered into Dominion's OD process as a degraded condition only to have full qualification restored after troubleshooting efforts were unsuccessful at identifying the cause. Since a cause could not be identified a targeted corrective action was not taken. The inspectors noted that Dominion's more recent troubleshooting efforts in response to a similar charging pump cycling event were successful at identifying a cause. Dominion determined that the most recent pump cycling issue was related to a degraded pressure switch diaphragm and initiated appropriate corrective actions.

Based on a review of previous NRC inspection reports and Dominion internal audits, the inspectors observed that historically Dominion has been ineffective in taking timely and appropriate corrective actions to address boric acid corrosion concerns. However, since May 2007 (following 3R11), the inspectors noted a more focused and results oriented approach. In addition to the improvements in boric acid leak identification in radiologically-controlled areas outside of containment, Dominion had also made improvements intended to address boric acid leaks during refueling outages and to increase employee awareness of the BACCP.

Overall, corrective actions were effective to prevent reoccurrence. However, the inspector reviewed instances of repeat events in electrical maintenance safety practices, work on the wrong components, and scaffolding impacting safety-related SSCs. In these cases of repeat events, Dominion recognized the adverse trends and responded appropriately to prevent future events. Specifically, Dominion initiated actions to improve training, enhance human performance tools, and to implement a fleet-wide scaffolding process.

The inspectors identified one finding of very low safety significance (Green) concerning effectiveness of corrective actions. The finding involved Dominion's failure to take adequate corrective actions for a condition adverse to quality involving a longstanding degraded condition impacting the Unit 2 charging pumps (see Section 4OA2.a.3.b)

3. Findings

(a) Unit 2 Control Room Heat-Up Concern

Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure to take adequate corrective actions for a condition adverse to quality involving the potential for Unit 2 control room temperature heat-up challenging equipment operability and personnel habitability thresholds following a reactor trip.

Description. On October 31, 2007, Dominion identified that EOP 2525, "Standard Post Trip Actions," did not address conditions within the design basis where the need to align an operating control room A/C train would be required to mitigate control room heat-up (CR-07-11034). One example included a post-trip loss of a vital bus supporting an operating control room A/C train. The CR identified that station procedure OP 2260, "Unit 2 EOP Users Guide," retained the credited ten minute manual operator action, originally required to ensure control room post-accident dose limits were not exceeded, based on control room heat-up concerns for non-accident trips in which control room A/C was lost. The issue CR identified that a similar heat-up rate would be encountered for non-accident post-trip EOPs if the operating control room A/C train was lost. The CR was assigned a level N (the lowest significance level) with two assignments to address corrective action. The inspectors noted that the CR based immediate system operability on the premise that operators would recognize the control room heat-up, post-trip, and take action to restore the redundant train to service within the prescribed ten minutes prior to control room temperature reaching the design temperature limit of 104°F.

On December 21, 2007, Dominion completed their initial investigation. Dominion concluded that steps should be considered to be added to EOP 2525 to always ensure a control room AC train is in operation post-trip. In addition, a separate assignment (assignment 2) was created to review associated control room heat-up rate calculations to determine if any time margin existed in the OP 2260 statement referencing the ten minute critical operator task.

On January 29, 2008, Dominion documented completion of assignment 2 and concluded

that no further action was necessary based on this review. On February 12, 2008, the inspectors interviewed personnel associated with the assignment and determined that Dominion had not reviewed control room heat-up rate calculations as specified in the assigned action. The inspectors identified that absent this review, Dominion did not have an adequate basis to support not updating existing EOPs to ensure a control room A/C unit remained available at all times. In addition, the inspectors determined that the initial OD was inadequate because it was based on operators's recognition to take prompt action for a design basis event outside the nominal EOP non-accident post-trip network and no interim written guidance had been provided. As such, it was not reasonable to assume that operators would restore control room A/C within ten minutes.

On February 13, 2008, Dominion initiated CR-08-01393 to address the inspector's obesrvations. Dominion conducted a preliminary review and determined a conservative heat-up profile using an initial control room temperature of 74°F. The control room heat-up profile indicated that, with no control room A/C in operation, it would take approximately 96 minutes to reach 104°F.

To justify operation until EOP revisions could be made, Dominion concluded that operators would have time to enter and exit the EOP network and enter abnormal operating procedure (AOP) 2503E/F, "Loss of Vital 480 VAC Bus 22E/F," within 90 minutes for the events of concern. The inspectors reviewed the assumptions Dominion used in their preliminary review and determined that an initial control room temperature of 74°F could not be ensured since TS 4.7.6.1 established a maximum control room temperature of 100°F. In response, Dominion initiated an Operations Standing Order to alert the operating crews of the need to ensure that control room A/C remained available to mitigate control room heat-up post-trip.

Analysis. The performance deficiency associated with this finding was that Dominion personnel did not take adequate corrective action following identifying a potential safety issue because they did not adequately evaluate post-trip time critical operator tasks and control room heat-up rate calculations. The issue was reasonably within Dominion's ability to foresee and correct prior to February 2008. The inspectors determined that the issue was more than minor because it was associated with the procedural quality attribute for the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems (and personnel) that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Dominion failed to ensure that control room temperature limits would not be exceeded for non-accident post-trip events involving a loss of control room A/C. The inspectors reviewed this finding using the Phase 1 SDP Table 4a worksheet for Mitigating Systems and determined that the finding was of very low safety significance (Green), because it did not result in loss of operability or functionality.

This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion failed to properly evaluate a condition adverse to quality including properly classifying, prioritizing, and evaluating for operability (P.1.c).

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, from October 31, 2007, to February 12, 2008, Dominion did not adequately evaluate post-trip time critical operator tasks and control room heat-up rate calculations to determine operability and determine whether corrective action was needed to address control room equipment operability and personnel habitability concerns. As a result, Dominion incorrectly concluded that no further corrective action was needed to ensure that control room temperature limits were not exceeded. Since this finding was determined to be of very low safety significance (Green) and has been entered into Dominion's CAP (CR-08-01393) it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000336/2008006-01, Failure to Take Adequate Corrective Actions for a Condition Affecting Control Room Operability and Temperature Limits Post-Trip).**

(b) Unit 2 Charging Pump Common Mode Failure Concern

Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure to take adequate corrective actions for a condition adverse to quality involving a longstanding degraded condition impacting the Unit 2 charging pumps.

Description. On January 9, 2006, a charging system common mode failure occurred at Unit 2. After a charging pump was secured, nitrogen from a failed discharge bladder migrated backwards through the charging pump's internal check valves and into the common suction line. This resulted in the redundant standby charging pumps becoming gas bound shortly after they were started. An associated NRC inspection finding (NCV 05000336/2006006-03, "Inadequate Suitability of Application Evaluation for Dampener Modification") identified that Dominion had failed to adequately evaluate the suitability of a previous bladder modification for this common mode failure. In response, Dominion initiated OD MP2-008-06 to ensure that the common mode failure would not be reintroduced until a final corrective action could be implemented to ensure long term success. The OD assumed that upon a bladder failure, and with the associated charging pump secured, that it would take at least two hours for nitrogen gas to adversely impact the common suction header. Dominion determined that the charging system remained operable since the OD instituted a compensatory measure that required operators to shut a charging pump's suction valve within two hours of securing a pump in order to prevent the nitrogen gas from reaching the common suction line.

On January 17, 2006, Dominion identified that a pressure decay test performed on the "B" charging pump indicated that only 30-40 minutes existed to isolate the "B" charging pump's suction valve before the pump could experience gas intrusion under a failed bladder condition. The associated CR (CR-06-00471) was assigned a level N significance

and determined not to be a condition adverse to quality. On January 24, 2006, maintenance processed a work order to improve the leak tightness of the internal check valves. Dominion conducted an extent of condition review and determined that this condition was limited to the “B” charging pump since historical pressure decay data of varying age supported the two hour availability for the “A” and “C” charging pumps (CR-06-00471 assignment 01).

On May 4, 2007, the “C” charging pump was secured for routine operations and in the process of performing a bladder integrity check, the pump’s discharge header pressure had decayed to 0.0 psig in less than 90 minutes. Since the observation was indicative of potential internal check valve leakage, the pump was isolated from the charging system. Dominion determined that the decay surveillance activity performed on March 8, 2007, had minimum leakage (150 psig in approximately 1.5 hours) and determined that the results discovered on May 4, 2007, were unexpected. This condition was assigned a level N and maintenance was performed on the check valves. Dominion initiated a new corrective action to increase the charging pump decay test surveillance frequency from semi-annually to quarterly based on an extent of condition review of passed decay test data that correlated run time hours to projected check valve deterioration (CR-07-04896, CR-07-05053, CR-07-05225).

On November 1, 2007, the “A” charging pump failed its scheduled pressure decay surveillance (CR-07-11058). Discharge pressure decayed from 2205 psig to 1475 psig in 38 minutes and then dropped rapidly to 18 psig. This condition was entered into Dominion’s CAP and assigned a level 2 ACE. The ACE concluded that maintenance procedures had not been updated to reflect more stringent internal check valve maintenance and testing criteria as required from a related previously identified condition (CR-06-04359).

On February 14, 2008, the “B” charging pump failed its scheduled pressure decay surveillance (CR-08-01864). Discharge pressure had dropped from 2340 psig to 1600 psig in nine minutes and then to 120 psig three minutes later. The issue was entered into Dominion’s CAP and assigned a level 2 ACE (CR-08-01443). Dominion had not completed the ACE prior to the end of the inspection period. Based on multiple past failures, the inspectors questioned charging system operability relative to an extent of condition concern. In response Dominion initiated a second OD and concluded that the charging system remained operable based on recently performed check valve maintenance, surveillance history, and run time history.

The inspectors noted that the safety-related charging pumps have two credited safety functions associated with normal operation and shutdown of the reactor plant, inventory control and boration for reactivity control. The inspectors reviewed the past failures (surveillances and CRs) since January 9, 2006, and determined that Dominion did not take adequate corrective actions to address a degraded condition involving a potential common mode failure of the charging pumps. The inspectors determined that the charging pump pressure decay surveillances had an approximately 20 percent failure rate (3 out of 16). The inspectors reviewed the failure data (surveillances and CRs) against the surveillance acceptance criteria of 1600 psig and the 1300 psig acceptance criteria

contained in Dominion engineering calculation number 06-ENG-04222M2, Revision 0, "MP2 Charging Discharge Piping Depressurization Following a Failed Pulsation Dampener." Based on this review, the inspectors concluded that the Unit 2 charging system was susceptible to a common mode failure on four separate occasions since January 9, 2006. Specifically, these failures (excessive internal check valve leakage) represented a design vulnerability in that a discharge bladder failure (a single failure), could result in gas migration to the common suction line (a proven common mode failure phenomenon) before operators could perform the OD compensatory action following pump stoppage. The inspectors identified that two of these failures had been incorrectly assigned the lowest significance level (level N) and characterized as a condition not adverse to quality. The inspectors identified that this characterization was not adequate since these failures represented a challenge to system functionality. Overall, the inspectors concluded, that Dominion had not recognized that these failures should have been evaluated at a system vice single train level.

Dominion's short-term corrective actions included: performing an OD to evaluate the impact that a relatively high charging pump pressure decay test surveillance failure rate could have on immediate charging system operability, maintenance on degraded charging pump internal check valves, system troubleshooting to correlate charging pump run hours to check valve leakage, consideration for a new testing frequency, and a review to ensure prior failures have been properly screened for past reportability requirements.

Analysis. The performance deficiency associated with this finding was that Dominion engineering did not take timely and appropriate corrective actions to address a charging system common mode failure vulnerability. The issue was reasonably within Dominion engineering's ability to foresee and correct prior to February 2008. This finding was determined to be more than minor since it was associated with the equipment performance attribute for the Mitigating System cornerstone and affected the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the degraded condition resulted in unplanned unavailability of the safety-related charging pumps and represented a challenge to the reliability of the charging system due to the common mode failure vulnerability. The inspectors reviewed this finding using the Phase 1 SDP Table 4a worksheet for Mitigating Systems and determined that the finding was of very low safety significance (Green), because it was a design deficiency confirmed not to result in loss of safety function. The finding did not screen as risk significant due to a seismic, flooding, or severe weather initiating event using the Table 4b worksheet.

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion failed to take appropriate corrective actions to address a safety issue and adverse trend in a timely manner, commensurate with the safety significance and complexity (P.1.d).

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, from

January 17, 2006, to February 14, 2008, Dominion failed to take adequate corrective action for a condition adverse to quality involving a Unit 2 charging system common mode failure vulnerability. Since this finding was determined to be of very low safety significance (Green) and has been entered into Dominion's CAP (CR-08-01783, CR-08-01875, CR-08-01817, and CR-08-01864) it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. **(NCV 05000336/2008006-02, Failure to Take Adequate Corrective Actions For a Unit 2 Charging System Common Mode Failure Vulnerability)**

(c) Non-conservative In-Service Test for Unit 2 Safety Injection Valves

Introduction. The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for Dominion's failure to take adequate corrective actions for a condition adverse to quality involving a non-conservative IST procedure for two SI valves (2-SI-659/660).

Description. On November 4, 2004, Dominion initiated CR 04-09883 to evaluate a concern associated with the adequacy of the IST D/P value used to test 2-SI-659/660. These are risk significant valves that have a design basis function to close on a safety recirculation actuation signal (SRAS) to prevent radioactive release to the environment through the normally vented RWST. Initially, Dominion assigned a significance level N and assessed the issue as a condition not adverse to quality (CNAQ). On January 7, 2005, engineering completed the associated CR investigation assignment and documented that Technical Evaluation M2-EV-98-0142 for RWST backleakage calculated a non-conservative D/P that was used in procedure SP 2605P, "RWST Valves Backleakage IST," to test 2-SI-659/660. The evaluator assigned corrective actions to revise the technical evaluation, revise the IST procedure, and perform an extent of condition review. However, in January 2005, Dominion prioritized these actions as PNA (no priority) contrary to MP-16-CAP-FAP01.3, Attachment 4, "Corrective Actions Priority Model."

The inspectors concluded that (1) Dominion revised the technical evaluation in April 2006 but did not include the more conservative values, (2) Dominion closed out the action to revise the IST procedure in August 2006, without revising it, based on the revised technical evaluation and a less than adequate review, and (3) the extent of condition review remained open with a due date of December 22, 2022. The inspectors discussed these observations with engineering personnel. Engineering personnel performed an independent review and similarly concluded that non-conservative D/P values were used in the IST procedure used to test 2-SI-659/660. Dominion initiated CR-08-1881 for this corrective action deficiency.

Engineering personnel performed an analysis to evaluate the condition and determined that the correct maximum D/P for these SI valves should be approximately 1227 psid (vice the previous technical evaluation value of 1090 psid). These air operated valves (AOVs) are designed to close against a D/P of 1238 psid (with an additional 5.8 percent margin

available). The maximum upstream pressure seen by these valves is approximately 1272 psig (vice the previous technical evaluation value of 1134 psig). The IST procedure tested to a range of 1170 to 1200 psig. The SI system design pressure is 1750 psig. Based on the historical leakage trends for these valves, engineering extrapolated the leakrate out for the higher pressure and determined that there was sufficient margin to the leakrate limit. Engineering performed a prompt OD and determined that the valves remained operable based on the most recent IST results, a detailed calculation review, valve design margin, IST trend data, and engineering judgment. The inspectors determined that engineering's OD was reasonable and based on appropriate data.

Analysis. The performance deficiency associated with this finding was that Dominion engineering did not take timely and appropriate corrective actions to address non-conservative test acceptance criteria for risk significant SI valves that provide an isolation function during accident conditions. The issue was reasonably within Dominion engineering's ability to foresee and correct prior to February 2008. The finding is more than minor because it affected the reactor coolant system equipment and barrier performance attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. Specifically, Dominion's non-conservative leakage test did not provide reasonable assurance that the SI valves would provide adequate isolation to preclude a post-accident release through the vented RWST. This finding is of very low significance (Green), because it did not represent an actual open pathway in the physical integrity of reactor containment.

The inspectors determined that the finding had no cross-cutting aspect as it was not indicative of current Dominion performance (the PI&R prioritization and evaluation aspect dates back to January 2005). In addition, in response to the inspectors' questions regarding this issue in February 2008, Dominion promptly and properly prioritized and evaluated the concern.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, from November 4, 2004, through February 26, 2008, Dominion failed to take adequate corrective actions for a condition adverse to quality involving a test deficiency. Specifically, Dominion did not take timely and appropriate actions to correct a non-conservative IST procedure for two SI valves (2-SI-659/660). Because the failure to correct this condition adverse to quality is of very low significance and has been entered into the CAP (CR-08-01881), this violation is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy, issued May 1, 2000 (65FR25368). **(NCV 05000336/2008006-03, Failure to Take Adequate Corrective Actions for a Condition Adverse to Quality Involving a Non-conservative IST Procedure)**

b. Assessment of the Use of Operating Experience

1. Inspection Scope

The inspectors selected a sample of industry OE issues to confirm that Dominion had evaluated the OE information for applicability to Millstone and had taken appropriate actions, when warranted. The inspectors reviewed OE documents to ensure that Dominion appropriately considered the underlying problems associated with the issues for resolution via their CAP. The inspectors also observed plant activities to determine if industry OE was considered during the performance of routine and infrequently performed activities. A list of the documents reviewed is included in the Attachment to this report.

2. Assessment

The inspectors determined that Dominion appropriately considered industry OE information for applicability, and used the information for corrective and preventive actions to identify and prevent similar issues. The inspectors assessed that OE was appropriately applied and lessons learned were communicated and incorporated into plant operations. Dominion also appropriately screened issues at Millstone for external OE distribution.

The inspectors observed that OE was routinely considered during the performance of plant activities. For example, Millstone personnel consistently discussed relevant OE during CR scoping and CRT activities. In general, the inspectors noted that system engineers demonstrated an effective use and thorough evaluation of industry OE in their respective system health reports.

3. Findings

No findings of significance were identified in the area of OE.

c. Assessment of Self-Assessments and Audits

1. Inspection Scope

The inspectors reviewed a sample of Nuclear Oversight audits, including the most recent audit of the CAP, departmental self-assessments, and assessments conducted by independent organizations. These reviews were performed to determine if problems identified through these assessments were entered into the CAP, when appropriate, and whether corrective actions were initiated to address identified deficiencies. The effectiveness of the audits and assessments was evaluated by comparing audit and assessment results against self-revealing and NRC-identified observations made during the inspection.

The inspectors also reviewed the most recent Safety Culture Survey report and discussed actions taken and planned with Dominion management in order to determine if appropriate action had been taken to address identified issues. A list of documents reviewed is included in the Attachment to this report.

2. Assessment

The inspectors concluded that self-assessments, Nuclear Oversight audits, and other assessments were critical, thorough, and effective in identifying issues. The inspectors observed that these audits and self assessments were completed in a methodical manner by personnel knowledgeable in the subject. The audits and self-assessments were completed to a sufficient depth to identify issues that were subsequently entered into the CAP for evaluation. Corrective actions associated with the issues were implemented commensurate with their safety significance. The inspectors noted that Dominion's audits and self-assessments were consistent with the inspectors' observations.

The inspectors determined that the Safety Culture Survey provided insights into the safety culture of the site workforce. Dominion managers evaluated the results and initiated appropriate actions to focus on areas identified for improvement.

3. Findings

No findings of significance were identified in the area of audits and self-assessments.

d. Assessment of Safety Conscious Work Environment

1. Inspection Scope

During the interviews with staff personnel, the team assessed whether there were issues that may represent challenges to the free-flow of information or factors at the site that could produce a reluctance to raise safety concerns. In support of this, the inspectors assessed whether staff were willing to enter issues into the CAP or raise safety concerns to their management and/or the NRC. The team also interviewed the station ECP coordinator to determine the number and types of issues being raised into the program and the program's effectiveness at addressing potential safety issues. The team reviewed a sample of the ECP files to ensure that issues were entered into the CAP, as appropriate.

2. Assessment

All persons interviewed demonstrated an adequate knowledge of the CAP and ECP. Based on these limited interviews, the inspectors did not identify a reluctance to raise safety issues or significant challenges to the free flow of information.

Based on interviews, observations of plant activities, and reviews of the CAP and the ECP, the inspectors determined that site personnel were willing to raise safety issues and to document them in the CAP. The inspectors identified that, in general, security officers did not personally initiate CRs as they channeled their concerns through the security sergeants. Based on the interviews, the security guards expressed a comfort level and confidence in the ability to voice their concerns through their onsite sergeants and security

management. However, the inspectors noted that the security officers' low CR generation rate and lack of direct CAP involvement appeared to reduce security's overall CAP effectiveness. Based on the inspectors' observations and an independent review of the security officer CR generation rate, security management initiated actions to provide additional CR initiation training to security officers and to facilitate better computer access.

The inspectors noted that Dominion's senior management took the initiative to establish an ECP Peer Group which functions independent from the ECP staff. Individual departments maintained separate representatives; who conducted monthly meetings, were intended to be attentive to emerging workforce issues throughout the organization, and have the ability to take issues/concerns to the ECP program. Based on the interviews, the program was well received by the onsite personnel\.

3. Findings

No findings of significance were identified related to the safety conscious work environment at Millstone.

4OA6 Meetings, Including Exit:

On February 29, 2008, the team presented the inspection results to Mr. Alan Price, Site Vice President, and other members of the Millstone staff. The team verified that no proprietary information reviewed during the inspection was retained.

ATTACHMENT: Supplemental Information

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

J. Armstrong	Nuclear Engineer
J. Barill	System Engineer
B. Bartron	Supervisor, Licensing
E. Bassham	Supervisor, Nuclear Maintenance
M. Binkowski	PI&R Team Liaison, Operations
R. Bonner	Operations Support
J. Campbell	Manager, Nuclear Protection Services
J. Chadbourne	System Engineer
C. Chapin	Unit 2 Operations
G. Closius	Licensing Engineer
M. Gelinas	Coordinator, Nuclear Security Programs
J. Kunze	Operations Support
J. Langan	Manager, Nuclear Oversight
L. Lebaron	System Engineer
R. MacManus	Director, Nuclear Engineering
J. Majewski	System Engineer (Unit 2 CVCS)
S. Mazzola	Supervisor, Emergency Preparedness
M. O'Connor	Manager, Systems and Component Engineering
J. Pandolfo	Securitas Project Manager
A. Price	Site Vice President
T. Ryan	Nuclear Engineer
R. Seee	Project Manager
A. Smith	System Engineer
T. Thull	BACCP Coordinator
D. Tilton	Supervisor, Nuclear Corrective Action
A. Vomastek	Employee Concerns Program Specialist
L. Wagnecz	System Engineer
J. Williams	Technical Specialist
N. Williams	System Engineer
B. Willkens	Manager, Nuclear Organizational Effectiveness

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000336/2008006-01	NCV	Failure to take adequate corrective actions for a condition affecting control room operability and temperature limits post-trip. (Section

		4OA2.a.3.a)
05000336/2008006-02	NCV	Failure to take adequate corrective actions for a Unit 2 charging system common mode failure vulnerability. (Section 4OA2.a.3.b)
05000336/2008006-03	NCV	Failure to take adequate corrective actions for a condition adverse to quality involving a non-conservative IST procedure. (Section 4OA2.a.3.c)

LIST OF DOCUMENTS REVIEWED

Audits and Self-Assessments

Audit 06-06, Corrective Action, dated 5/26/06
Audit 06-14, Independent Audit of Nuclear Oversight Activities at dominion, dated 7/7/06
Audit 07-01, Security & Fitness For Duty, dated 2/9/07
Audit 07-05, Corrective Action and Independent Review, dated 6/15/07
ITC-SA-06-05, Boric Acid Corrosion Control Program (BACCP), dated 8/22/06
MP-SA-06-02, Performance Objectives (PI.2), Operating Experience, Criteria 8, dated 3/3/06
MP-SA-06-04, Lubrication Program, dated 3/13/06
MP-SA-06-06, Corrective Action Program Implementation/Effectiveness, dated 6/30/06
MP-SA-06-08, Systematic Approach to Training – Security Training, dated 6/9/06
MP-SA-06-16, Work Order Quality, dated 3/1/06
MP-SA-06-59, Gap Analysis between Millstone Master Manual 20 and EPRI Report 1011903 'Maintenance Work Package Planning Guidance', dated 6/2/06
MP-SA-06-62, High Radiological Risk Work Control, dated 9/28/06
MP-SA-06-74, Review of Portable HP Instrument Calibration Procedures, dated 12/31/06
MP-SA-07-07, Work Control SRO Human Performance Vulnerabilities, dated 9/4/07
MP-SA-07-22, Problem Identification and Resolution at Millstone Power Station, dated 1/10/08
MP-SA-07-35, CAS/SAS Operation, dated 9/28/07
MP-SA-07-40, Utilization of Temporary Scaffolding in Long Term Applications, dated 9/6/07
MP-SA-07-45, Operability Determination Process Implementation, dated 11/28/07
MP-SA-07-57, Siren Testing and Maintenance, dated 6/8/07
Nuclear Oversight – Millstone Site Vice President's Brief, dated 2/12/08
Nuclear Oversight Assessment No. 07-40-M, System Performance Monitoring and Trending, dated 1/10/08
Nuclear Oversight Department Quarterly Report, Fourth Quarter 2007
Nuclear Oversight Department Quarterly Report, Third Quarter 2007
SA 000182, Electrical Safety, dated 12/29/07
SA-07-37, Air Operated Valve (AOV) Program Periodic Assessment Millstone Power Station, dated 9/27/07

Boric Acid Corrosion Control Program Evaluations

DNAP-1004 Attachment 1 BACCP Screening for CR-03-08351, dated 6/25/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-05575, dated 5/16/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-05578, dated 6/15/07

DNAP-1004 Attachment 1 BACCP Screening for CR-07-05579, dated 6/15/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-05581, dated 5/16/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-05587, dated 5/16/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-05619, dated 5/16/07
DNAP-1004 Attachment 1 BACCP Screening for CR-07-12623, dated 2/6/08
M3-EV-07-0024, Technical Evaluation for 3R11 NOP/NOT Flange Bolting Evaluations Per Code Case N-566-1 Millstone Unit 3, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-03-08351, dated 6/25/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-06-11425, dated 6/14/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-04248, dated 4/29/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05564, dated 5/17/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05565, dated 5/17/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05566, dated 5/15/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05568, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05570, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05572, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05573, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05574, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05576, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05577, dated 5/17/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05580, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05582, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05583, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05584, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05595, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05600, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05601, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05602, dated 5/17/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-05624, dated 5/16/07
MP-24-BACC-FAP03-001 Boric Acid Corrosion Evaluation for CR-07-10277, dated 11/13/07

Calculations

02-CP-01924M3, Evaluation of Section of Service Water Pipe Located on Line 3-SWP-006-035-03, Rev. 0
04-AOV-04121M2, Millstone Unit 2 – Bench and Regulator Setting 2-MS-220A/B, 2-RB-68.1A/B, 2-SI-659/660, Rev. 0
06-ENG-04222M2, MP2 Charging Discharge Piping Depressurization Following a Failed Pulsation Dampener, Rev. 0
90-069-01130M3, Millstone Unit 3 Service Water System Summary of Westinghouse Heat Exchanger Calculations, Rev. 1
97-122, Millstone Unit 2 ECCS System Analysis, Rev. 2
97-ENG-01427D3, Service Water Heat Exchanger Pressure Drop Surveillance Limits, Rev. 1
12179-SP-3EGA-1, 3EGA-PS28 A1, A2, B1, B2 Low reservoir Pressure Alarm, Rev. 1
ENG-04281M3, Evaluation of MP3 EDG Intercooler HX (3EGS*E1A/B) Performance with 250 Versus 258 Tubes Under Design Conditions, Rev. 0
M2-EV-98-0142, Millstone Power Station Unit 2 Technical Evaluation for RWST Backleakage, Rev. 1

Completed Surveillances

C SP 750, Unit 2 – Battery Quarterly Inspection, dated 11/29/07 & 12/31/07
C SP 750, Unit 3 – Battery Quarterly Inspection, dated 1/17/08
SP 2604A, "A" HPSI Pump and Check Valve IST, dated 1/24/08
SP 2604C, "A" LPSI Pump and Minimum Flow Header Check IST, dated 12/6/07
SP 2605I, Containment Close Out Inspection, dated 11/14/06, 11/17/06, & 11/23/06
SP 2610BO, TDAFP and Recirculation Check Valve IST, dated 2/4/08
SP 2613K, Periodic DG Slow Start Operability Test, Facility 1 (Loaded Run), dated 1/23/08
SP 2613L, Periodic DG Slow Start Operability Test, Facility 2 (Loaded Run), dated 2/6/08
SP 2664, Charging Pump "A" Pulsation Dampener Test, dated 1/10/06, 1/4/07, 7/10/07, 7/19/07, 9/13/07, 11/2/07, 11/18/07, and 1/22/08
SP 2664, Charging Pump "B" Pulsation Dampener Test, dated 1/25/06, 2/1/07, 8/16/07,12/2/07, and 1/25/08
SP 2664, Charging Pump "C" Pulsation Dampener Test, dated 1/10/06, 5/7/07, 5/10/07, 6/21/07, 12/13/07, and 2/7/2008
SP 3604A.2, 3CHS*P3B Operational Readiness Test (Two Charging Pumps Aligned for Service), dated 11/14/07
SP 3608.2, Safety Injection Pump B Operational Readiness Test, dated 11/21/07
SP 3610A.2, 3RHS*P1B Operational Readiness Test in Mode 1, 2, 3, or 4 (when aligned for injection), dated 11/15/07
SP 3612A.1, Containment Inspection, dated 5/14/07 & 5/15/07
SP 3622.3, TDAFW Pump Operational Readiness Test, dated 2/5/08
SP 3626.5, Service Water Pump 3SWP*P1B Operational Readiness Test, dated 1/11/08
SP 3646A.1, Emergency Diesel Generator A Operability Tests, dated 1/29/08
SP 3646A.2, Emergency Diesel Generator B Operability Tests, dated 1/15/08

Condition Reports

01-12411	06-00243	06-02890	06-04173	06-06396	06-09835
02-06609	06-00378	06-02929	06-04253	06-06612	06-09890
02-08748	06-00471	06-03071	06-04347	06-06651	06-09906
02-12010	06-00724	06-03250	06-04352	06-06664	06-10683
03-03703	06-00808	06-03306	06-04371	06-06980	06-10882
03-08199	06-01330	06-03318	06-04375	06-07157	06-11095
04-00929	06-01463	06-03442	06-04389	06-07708	06-11364
04-06873	06-01989	06-03586	06-04464	06-07824	06-11528
05-00206	06-02042	06-03606	06-04468	06-07957	06-11736
05-02221	06-02088	06-03646	06-04512	06-07979	06-11855
05-05567	06-02102	06-03695	06-04789	06-08181	06-12022
05-07933	06-02128	06-03740	06-05135	06-08268	06-12213
05-07945	06-02134	06-03753	06-05213	06-08340	06-12353
05-08140	06-02136	06-03885	06-05337	06-08342	06-12361
05-08141	06-02140	06-03897	06-05379	06-08588	06-12384
05-08914	06-02234	06-03957	06-05422	06-08719	06-12414
05-09242	06-02286	06-03969	06-05486	06-08842	06-12415
05-11077	06-02295	06-04036	06-05565	06-08860	06-12417
05-11234	06-02334	06-04099	06-05566	06-08961	06-12540
05-13883	06-02382	06-04148	06-05757	06-09026	07-00042
06-00088	06-02421	06-04149	06-05817	06-09203	07-00066
06-00233	06-02471	06-04163	06-06182	06-09688	07-00123

07-00155	07-02144	07-06903	07-10667	08-00516	08-1440*
07-00159	07-02187	07-06907	07-10761	08-00639	08-01443
07-00214	07-02484	07-06912	07-10792	08-00670	08-1457*
07-00231	07-02651	07-06923	07-10861	08-01054	08-1458*
07-00234	07-03158	07-06975	07-11034	08-01182	08-01491
07-00322	07-03321	07-07028	07-11058	08-01215	08-1690*
07-00374	07-03436	07-07109	07-11078	08-01218	08-1697*
07-00403	07-03531	07-07190	07-11094	08-01224	08-01714
07-00408	07-03637	07-07253	07-11454	08-01231	08-01715
07-00473	07-03730	07-07307	07-11482	08-01232	08-01732
07-00564	07-03766	07-07388	07-11483	08-01251	08-01754
07-00612	07-03984	07-07402	07-11570	08-01268	08-1783*
07-00661	07-04096	07-07463	07-11617	08-01306	08-1784*
07-00686	07-04184	07-07492	07-11647	08-01310	08-1785*
07-00836	07-04340	07-07844	07-11781	08-01311	08-1786*
07-00854	07-04944	07-07861	07-11859	08-01317	08-1794*
07-00940	07-04969	07-07881	07-12042	08-1318*	08-1795*
07-00974	07-05053	07-07974	07-12083	08-1319*	08-1796*
07-01060	07-05183	07-08003	07-12143	08-01320	08-1808*
07-01068	07-05225	07-08043	07-12265	08-1322*	08-1815*
07-01076	07-05327	07-08186	07-12301	08-1323*	08-1828*
07-01080	07-05345	07-08656	07-12514	08-01328	08-1840*
07-01130	07-05371	07-08781	07-12545	08-1329*	08-1844*
07-01212	07-05380	07-09051	07-12668	08-01341	08-1864*
07-01273	07-05432	07-09449	08-00064	08-1348*	08-1881*
07-01312	07-05498	07-09674	08-00085	08-01349	08-01889
07-01353	07-05877	07-09730	08-00212	08-01360	08-01902
07-01380	07-06121	07-09813	08-00260	08-01365	08-1934*
07-01400	07-06301	07-09827	08-00261	08-01371	08-1936*
07-01453	07-06525	07-09900	08-00298	08-01388	08-1939*
07-01532	07-06704	07-09906	08-00311	08-1393*	
07-01625	07-06789	07-09925	08-00336	08-01403	
07-01846	07-06842	07-10184	08-00338	08-1428*	
07-01853	07-06852	07-10268	08-00345	08-1432*	
07-02077	07-06888	07-10277	08-00422	08-1439*	

*NRC Identified During Inspection

Corrective Action Trending Reports
Dominion Nuclear Trend Report Millstone Station, 2nd Quarter 2007
Dominion Nuclear Trend Report Millstone Station, 3rd Quarter 2007
Second Quarter 2007 CR Review for Trends Equipment Reliability Health
Third Quarter 2007 CR Review for Trends Equipment Reliability Health

Drawings
25203-24039, Access Control Area A/C System Plans and Sections, Rev. 0
25203-24071, Fire Damper Schedule, SHs 1-4 Rev. 1, SH 5 Rev. 2, SH 6 Rev. 1
25203-26018, Diesel Generators Starting Air, Rev. 13
25203-26028, Containment and Enclosure Building Ventilation, Rev. 43

Curve N-420 (HPSI C), Millstone Unit 2 Emergency Core Cooling Systems Pump Curve Data Report, dated 5/6/98

Evaluations
ER-96-0358, Seismic Qualification of Racked-Down GE Switchgear Breakers, Rev. 1
ER-96-0362, Seismic Concern for Buckets on MCC & 480 V SWGR. When Left in "Out" Position, Rev. 0
M3-EV-07-0022, Technical Evaluation for Corrosion of Nitrided Ferrules Millstone Unit 3, Rev. 3
MG-EV-07-0002, Effect of Thermally Induced Currents on High Range Radiation Monitoring Systems for MP2 and MP3, dated 7/31/07
OD MP2-002-08, B EDG Jacket Water Expansion Tank Overflow and Observation of Small Bubbles in the Jacket Water Sightglass, Rev. 0
OD MP2-004-08, CR-08-00639, B Charging Pump Cycling, Rev. 0
OD MP2-008-06, New Failure Mode Discovered with Unit 2 Charging, Rev. 4
Root Cause Evaluation M-06-01463, Work Performed on the Wrong Component and on the Wrong Unit, Rev. 0
Root Cause Evaluation M-06-07708, Unit 2 Upward Trend in Particulate Levels for the Unit 2 Diesel Generator Fuel Oil Storage Tank, Rev. 0
Root Cause Evaluation M-06-09203, Temporary Scaffold Renders 'A' MSIV Inoperable, Rev. 0
Root Cause Evaluation M-06-12526, Temporary Scaffold Impairs Turbine Driven Auxiliary Feedwater Pump Room Blowout Panel, Rev. 0
Root Cause Evaluation M-07-00864, Unit 3 RCS Leak at 3RCS*V999, dated 2/23/07
Root Cause Evaluation M-07-03531, Incorrect Valve Removed While Working 3LOS-V992 Under M3-05-17235, Rev. 0
Root Cause Evaluation M-07-04036, Water in "C" Charging Pump Cubicle, dated 5/16/07
Root Cause Evaluation M-07-05371, A Late Identification of the Degraded Condition of 3RCS*V185 During 3R11, Rev. 2
Root Cause Evaluation M-07-05432, A Security Weapon Was Found to be Unattended – 5.62, dated 7/16/07
Root Cause Evaluation M-07-10184, Security Incident Within the owner controlled area (OCA) Millstone Power Station,
Rev. 0

Licensee Event Reports (LERs)
2006-004-00, Failure to Enter Technical Specification Action Statement for Inoperable Reactor Protection System Trips (Unit 2)
2006-006-00 & 2006-006-01, Loss of Charging Function (Unit 2)
2006-006-00 & 2006-006-01, Scaffolding Built for Work on Main Steam Isolation Valve (2-MS-64A) Prevented the Valve From Closing (Unit 2)
2006-008-00, Scaffold Impairment of Turbine Driven Auxiliary Feedwater Pump Room HELB Blowout Panel (Unit 2)

Maintenance Rule Monitoring
Millstone Maintenance Preventable Functional Failure Database, dated 3/1/06 – 12/31/07
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the 120 Volt Instrument AC System (3345B), Rev. 0
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Emergency Generator Loading Sequencer (3405), Rev. 0
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Emergency Lighting System (2352 &

3720B), Rev. 1
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the ESF Building Ventilation (HVQ) System (3314D), Rev. 1
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Motor Control Center System (3344B), Rev. 0
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the MP2 480 Volt AC Load Centers (2344A), Rev. 5
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Non-System (2000A), Rev. 0
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Reactor Coolant System (2301-1), Rev. 0
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Service Water System (3326), Rev. 5
Millstone Unit 3 Maintenance Rule (a)(1) Evaluation for the Traveling Screen System (3327), Rev. 0

Miscellaneous
2R17 Personnel Contamination Summary Report
3R11 Personnel Contamination Summary Report
Boric Acid Corrosion Control Program Action Items, dated 2/19/08
Boric Acid Corrosion Control Program Computer Based Training for Millstone Power Station
DBS 2314B, Containment/Enclosure Building Purge, Rev. 1
DBS 2346A, Emergency Diesel Generator, Rev. 0
DBS 2404, Process and Area Radiation Monitoring System, Rev. 0
DM2-00-0084-00, Setpoint Change for PS 7985A and 7985C, A EDG AC and DC Starting Air Compressor Pressure, dated 4/12/00 (Design Change Notice)
Dominion Cause Evaluation Handbook, Rev. 9
Electrical Safety Needs Analysis, dated 10/26/07
Electrical Training Review Board Meeting Agenda and Minutes, dated 11/8/07
Fuel Oil Particulates Tracking Sheets, dated 2/27/08
GO Form 602-1, Daily Security Weapons Accountability, dated 2/19/08 & 2/20/08
Human Performance Excellence Plan Notebook, dated 2/14/08
Maintenance Department Focus on 4 Results, December 2007
Maintenance Rule (a)(1) Evaluation for Non-System 2000A, Rev. 0
Millstone Power Station – BACCP Process Flowchart, Draft
Millstone Power Station Units 2 and 3 10CFR 50.55a Alternative Requests From ASME Section
Millstone Site Operations Review Committee Meeting Minutes, dated 4/28/06, 5/18/06, 5/25/06, 11/2/06, 2/15/07, and 8/8/07
Millstone Station Measures for Success, December 2007
Millstone Station Measures for Success, November 2007
Millstone Station Measures for Success, October 2007
Millstone Station Safety Culture Survey, Performed 6/15/07
Personnel Skin and Clothing Contaminations Tracking Sheets, December 2007
SO-08-005, Unit 2 Standing Order - Control Room Heatup, dated 2/27/07
Unit 2 Fire Codes of Record
Unit 2 Fire Damper Information Spreadsheet, dated 2/25/08
Unit 2 Fire Hazards Analysis, Rev. 9
WCAP-16755-NP, Operator Time Critical Action Program Standard, Rev. 0
XI, IWA-5244, Buried Pipe, dated 11/9/07

Non-Cited Violations

50-336/06-02-02, Failure to Comply with TS during WRNI Surveillances
50-336/06-04-01, Failure to Implement Corrective Actions to Prevent Repeat Vital AC 480V Switchgear Cooling Damper Failures
50-336/06-05-04, Failure to Identify Scaffolding Rendered the #1 SG MSIV Inoperable
50-336/06-06-03, Inadequate Suitability of Application Evaluation for Dampener Modification
50-336/07-03-03, Failure to Adequately Evaluate Surveillance Test Data
50-336/423/06-06-01, Failure to Perform Evaluations on Boric Acid Leaks
50-336/423/06-07-01, Failure to Protect Safeguards Information from Unauthorized Disclosure
50-423/06-04-04, Failure to Account for All Shipped Radioactive Material on the Uniform Manifest
50-423/06-04-05, Failure to Comply with Technical Specification Required Actions for Inoperable Containment High Range Radiation Monitors
50-423/07-03-01, Failure to Perform Evaluations on Boric Acid Leaks

Operating Experience

10 CFR 50 Part 21 Report 2007-01-00: Potential Degradation of Hydraulic Snubber Fluid (EN 43071), dated 1/3/07
10 CFR 50 Part 21 Report 2007-05-00, Tyco Electronics Recall of E7000 Relays, dated 12/6/06
10 CFR 50 Part 21 Report 2007-27-00, ABB, Electroswitch Corp. Assembly Missing a Spacer Bushing, dated 9/25/07
DNC Response to NRC Information Notice 2006-23: Events Involving Potential Tampering or Malfeasance by Persons Granted Unescorted Access, dated 4/5/07
DNC Response to NRC Information Notice 2007-24: Summary of Fitness For Duty Program Performance Reports for Calendar Year 2006, dated 9/17/07
Millstone Power Station Units 2 and 3 Response to NRC Bulletin 2002-01: Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity, dated 4/2/02
Millstone Power Station Units 2 and 3 Response to NRC Bulletin 2007-01: Security Officer Attentiveness, dated 2/8/08
NRC Information Notice 83-69: Improperly Installed Fire Dampers at Nuclear Power Plants, dated 10/21/83
NRC Information Notice 94-63: Boric Acid Corrosion of Charging Pump Casing Caused by Cladding Cracks, dated 8/30/94
NRC Information Notice 2002-18: Effects of Adding Gas into Water Storage Tanks on the Net Positive Suction Head for Pumps, dated 6/6/02
NRC Information Notice 2004-21: Additional Adverse Effect of Boric Acid Leakage: Potential Impact on Post-Accident Coolant pH, dated 11/24/04
NRC Information Notice 2006-29: Potential Common Cause Failure of Motor-Operated Valves as a Result of Stem Nut Wear, dated 12/14/06
NRC Information Notice 2006-31: Inadequate Fault Interrupting Rating of Breakers, dated 12/26/06
NRC Information Notice 2007-27: Recurring Events Involving Emergency Diesel Generator Operability, dated 8/6/08
NRC Regulatory Issue Summary 2003-13: NRC Review of Responses to NRC Bulletin 2002-01, “Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity,” dated 7/29/03

Procedures

AOP 2501, Diagnostic for Loss of Electrical Power, Rev. 1
AOP 2503E, Loss of Vital 480 VAC Bus 22E, Rev. 003-07
AOP 2503F, Loss of Vital 480 VAC Bus 22F, Rev. 003-09

ARP 2590B-046 B-12, Charging Pump A Trip, Rev. 000-01
ARP 2590B-057 A-15, Charging Flow LO, Rev. 000-02
ARP 2591A-033, Starting Air Pressure Low, Rev. 1
ARP 2591A-034, D.C. Air Compressor Started, Rev. 1
C SP 600.1, Paging and Evacuation Alarm System Operability Test, Rev. 1
C SP 600.3, State Police, Waterford Police, and Tri-Town Radio Systems Operability Test, Rev. 001-02
DNAP-0110, Identifying and Addressing Nuclear Safety and Quality Concerns, Rev. 1
DNAP-1004, Boric Acid Corrosion Control Program, Rev. 7
DNAP-1909, Electrical Safety, Rev. 9
DNAP-3002, Dominion Nuclear Operating Experience (OE) Program, Rev. 1
ECP-GL-1, “Nuclear Employee Concerns Program”, Rev. 4
EOP 2525, “Standard Post Trip Actions”, Rev. 021-01
EOP 2526, “Reactor Trip Recovery”, Rev. 18
EOP 2528, “Loss of Offsite Power/Loss of Forced Circulation”, Rev. 017-01
EOP 2541, Appendix 23, “Restoring Electrical Power”, Rev. 0
EOP 2541, Appendix 37, “Placing CRACS in Service”, Rev. 0
ER-AA-MRL-100, Implementing Maintenance Rule, Rev. 0
ER-MP-BAC-101-1001, Millstone Boric Acid Corrosion Control Planned Inspections, Rev. 0
GO 605, Work Hours Monitoring Guideline, Rev. 2
GO 612-3, Condition Report Writers Guide, Rev. 0
GO-MP-0103, Security Officer Attentiveness, Rev. 0
LI-AA-600, Facility Safety Review Committee (FSRC), Rev. 0
MA-AA-1002, Leakage Management, Rev. 2
MA-MP-1001, Boric Acid Leak Identification and Disposition, Rev. 0, Draft D
MP-08-MP-GDL04, ARC Flash Protection Guidelines, Rev. 0
MP-08-MP-GDL04A, Supplemental Electrical Safety Guidelines, Rev. 0
MP-16-CAP-FA01.2, Corrective Action Department Responsibilities, Rev. 005-01
MP-16-CAP-FAP01.1, Condition Report Screening and Review, Rev. 008-06
MP-16-CAP-FAP01.3, ACR/CR Owner, Action, Owner/Investigator Responsibilities, Rev. 009-04
MP-16-CAP-GDL01, Station Trending, Rev. 004-01
MP-16-CAP-SAP01, Condition Report Initiation, Rev. 002-02
MP-16-CAP-SAP02, Differing Professional Opinion Resolution, Rev. 1
MP-16-MMM, Organizational Effectiveness, Rev. 011-02
MP-16-PI-GDL01, Maintenance of NRC Performance Indicators, Rev. 2
MP-20-WP-GDL10, Work Identification, Screening, Prioritization, Classification, and Process, Selection, Rev. 13
MP-20-WP-GDL20, Work Order, Preparation, Rev. 16
MP-24-BACC-FAP01, Boric Acid Corrosion Control Planned Inspections, Rev. 001-01
MP-24-BACC-FAP02, Boric Acid Corrosion Control (BACCP) Initial Refueling and Forced Outage Inspections, Rev. 000-04
MP-26-EPA-FAP01, Management Program for Maintaining Emergency Preparedness, Rev. 2
MP-26-EPA-FAP09, Public Alerting System Test and Maintenance, Rev. 002-03
OP 3353.EGPA, Emergency Generator Panel A Annunciator Response, Rev. 4
OP 3370A, Electrical Breaker Procedure, Rev. 015-01
OP-AA-102, Operability Determination, Rev. 1
PI-AA-200-2001, Trending, Rev. 0
PI-AA-200-2002, Effectiveness Reviews, Rev. 0
PI-AA-300, Cause Evaluation, Rev. 1

PI-AA-5000, Human Performance, Rev. 1
RW 46047, Radioactive Material Shipment Surveys, Rev. 005-01
RW 46053, Packaging Radioactive Waste Filters, Rev. 005-01
RW 46074, Cask Handling Procedure CNS 21-300, Rev. 6
SP 2605P, RWST Valves Backleakage IST, Rev. 001-01
SP 2664, Charging Pump Pulsation Dampener Test, Rev. 3
SP 3646A.1, Emergency Diesel Generator A Operability Test, Rev. 017-03
SP 3670.1-008, Plant Equipment Rounds - Outside, Rev. 5
SY-AA-102, Dominion Nuclear Security Work Hour Controls, Rev. 0

Risk and Margin Management
Millstone Power Station Unit 3 PRA Risk Summary, Rev. 0
MPS2 RA.PR.3.RO.doc, Millstone 2 Core Damage Risk
NUCENG-07-03, Unit 3 Margin Management Issues, Rev. 4
NUCENG-07-10, Unit 2 and Site Margin Management Issues, Rev. 4
Risk-Informed Inspection Notebook for Millstone Nuclear Power Station Unit 2, Rev. 2.1a
Risk-Informed Inspection Notebook for Millstone Nuclear Power Station Unit 3, Rev. 2.1a

System Health Reports and Trending Data
3CHS*P3B Charging Pump IST Vibration Trending Data, dated 5/27/02 – 11/15/07
A and B CCI Heat Exchanger Piping NDE Trending Data, dated 4/17/07 – 1/3/08
Flow Accelerated Corrosion, 4th Quarter 2007
Heat Exchangers, 4th Quarter 2007
M2 Air Operated Valves, 4th Quarter 2007
M3 Air Operated Valve, 4th Quarter 2007
Motor Operated Valves, 4th Quarter 2007
Unit 2 & Unit 3 Safe Shutdown Lighting, 4th Quarter 2007
Unit 2 120 Volt Vital Regulated Instrument AC System, 4th Quarter 2007
Unit 2 Auxiliary Feedwater, 4th Quarter 2007
Unit 2 Load Centers, 4th Quarter 2007
Unit 2 RBCCW, 4th Quarter 2007
Unit 2 Reactor Coolant, 4th Quarter 2007
Unit 2 Service Water, 4th Quarter 2007
Unit 2 Vital Switchgear Emergency Cooling, 4th Quarter 2007
Unit 3 120 Volt Instrument AC System, 4th Quarter 2007
Unit 3 Auxiliary Feedwater, 4th Quarter 2007
Unit 3 Chemical & Volume Control and Charging Pump Cooling, 4th Quarter 2007
Unit 3 EDG Air Receiver Pressure Trending Data, dated 1/3/08 – 2/17/08
Unit 3 EDG Enclosure HVAC, 4th Quarter 2007
Unit 3 Emergency Diesel Generator and EDG Fuel Oil, 3rd Quarter 2007
Unit 3 ESF Ventilation, 4th Quarter 2007
Unit 3 High Head Safety Injection (SIH), 4th Quarter 2007
Unit 3 Intake Area Temperature Monitoring EEQ Data Logger Data, dated 3/05 – 2/08
Unit 3 SBO Diesel Generator, 4th Quarter 2007
Unit 3 Service Water, 4th Quarter 2007
Unit 3 Traveling Screen and Screenwash, 3rd Quarter 2007
Valve Summary Report Millstone Unit 2 for 2-SI-659, dated 3/10/03 – 10/19/06
Valve Summary Report Millstone Unit 2 for 2-SI-660, dated 3/10/03 – 10/19/06

Work Orders

M2 04-05424	M2 07-00632	M2 07-01248	M3 07-03249	MP 06-03114
M2 06-04192	M2 07-00863	M3 06-11876	M3 07-03250	
M2 06-05817	M2 07-01172	M3 07-00319	M3 07-07128	
M2 06-06066	M2 07-01173	M3 07-02299	MP 06-02239	

LIST OF ACRONYMS

2R18	Unit 2 refueling outage No. 18
3R11	Unit 3 refueling outage No. 11
A/C	air conditioning
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
AFW	auxiliary feedwater
AOP	abnormal operating procedure
AOV	AIR OPERATED VALVE
ARP	alarm response procedure
ASME	American Society of Mechanical Engineers
BACC	boric acid corrosion control
BACCP	Boric Acid Corrosion Control Program
BART	Boric Acid Response Team
CAP	Corrective Action Program
CARB	Corrective Action Review Board
CAS	central alarm station
CCLG	Crucial Conversations Learning Group
CFR	Code of Federal Regulations
CNAQ	condition not adverse to quality
CR	condition report
CRT	Condition Review Team
CVCS	chemical & volume control system
DBS	design basis summaries
D/P	differential pressure
DPO	differing professional opinion
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
ECP	Employee Concerns Program
EDG	emergency diesel generator
EOP	Emergency Operating Procedure
EP	Emergency Preparedness
IMC	Inspection Manual Chapter
IST	in-service test
LER	Licensee Event Report
LTCA	Long Term Corrective Action
M2	Millstone Unit 2
M3	Millstone Unit 3
NCV	non-cited violation
NPSH	net positive suction head
NRC	Nuclear Regulatory Commission

OCA	owner controlled area
OD	operability determination
OE	operating experience
PARS	Publicly Available Records System
PI&R	Problem Identification and Resolution
RCE	Root Cause Evaluation
RCS	Reactor Coolant System
ROP	Reactor Oversight Program
RWST	refueling water storage tank
SAS	secondary alarm station
SCWE	Safety Conscious Work Environment
SDP	Significance Determination Process
SI	safety injection
SL	significance level
SRAS	safety recirculation actuation signal
SSC	system, structure, or component
ST	surveillance test
TS	technical specification
UFSAR	Updated Final Safety Analysis Report