

# Millstone 2

## 3Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: FIN Finding

**FIN 05000336/2010004-01, Failure to Implement Timely Corrective Action for a Degraded FRV Results in Manual Reactor Trip**

Green. A self-revealing finding (FIN) of very low safety significance was identified for Dominion's failure to implement timely corrective action for a degraded #2 feedwater regulating valve (FRV) in accordance with procedure PI-AA-200, "Corrective Action." Two weeks after the issue was first identified, the #2 FRV further degraded causing Dominion to trip the reactor when the #2 Steam Generator (SG) level could not be controlled. Dominion entered this issue into their corrective action program (CR382055).

This finding is more than minor because it was similar to NRC Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," Example 4f, in that the failure to correct a condition adverse to quality led to a reactor trip. The finding was associated with the Equipment 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. The finding was of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors determined that this finding had a cross cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Dominion did not take appropriate corrective action to address the degraded #2 FRV in a timely manner, commensurate with its safety significance.[P.1(d)] (Section 4OA3).

Inspection Report# : [2010004](#) (pdf)

**Significance:**  Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 055000336/2010004-01, Failure to Promptly Identify and Correct the Source of a Unit 2 RCS Pressure Boundary Leak).**

Green. The inspector identified a Green, NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for Dominion's failure to promptly identify and correct the source of a reactor coolant system (RCS) pressure boundary leak from July 3, 2009, through July 13, 2009. Dominion subsequently repaired the leak and returned to 100 percent power.

The inspectors determined that Dominion's failure to promptly identify and correct the cause of pressure boundary leakage is a performance deficiency that was reasonably within Dominion's ability to foresee and correct and should have been prevented. This issue is more than minor because the issue is similar to NRC Inspection Manual Chapter (IMC) 0612, Appendix E, and minor example 2.g. The inspectors determined that the issue affects the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspector concluded that this condition, assuming the worst case degradation, would not have affected other mitigating systems resulting in a total loss of their safety function. Accordingly, the finding was determined to be of very low safety significance (Green) using IMC 609, Attachment 0609.004, Phase 1 Screening Worksheet. The inspector determined that this issue had a cross-cutting aspect in the Problem Identification and Resolution cross-cutting area, Corrective Action Program component, because Dominion did not identify the pressure boundary leakage completely, accurately, and in a timely manner commensurate with its safety significance. [P.1(a)] (Section 4OA2)

Inspection Report# : [2010004](#) (pdf)

**Significance:** SL-IV Sep 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2010004-02, Failure to Perform an ASME Code-compliant Radiographic Examination on a Class 1 Weld on the Unit 2 'A' RCP Seal Cooler Piping.**

Severity Level IV. The inspector identified a Severity Level IV, NCV of 10 CFR 50.55a(2)(c)(1) and 10 CFR 50.55a(3), when Dominion did not perform an ASME Code-compliant radiographic examination for a leak in a Class 1 weld on the Unit 2 'A' RCP seal cooler piping before returning the system to service. Dominion was out of compliance with 10 CFR 50.55a(2)(c)(1), 10 CFR 50.55a(3), and Section III of the American Society of Mechanical Engineers (ASME) Code between July 24, 2009, and November 10, 2009. The NRC granted verbal relief from the 10 CFR 50.55a(2)(c)(1), 10 CFR 50.55a(3), and the ASME Code requirements on November 10, 2009. Subsequently, the relief request was approved, in writing, by the NRC on April 26, 2010.

In accordance with IMC 0612, Appendix B, Section 1-2, this finding had the potential to impact the NRC's ability to perform its regulatory function because Dominion verbally informed the NRC on July 17, 2009, that they would repair the affected component in accordance with ASME Code requirements. However, due to Dominion's misinterpretation of the ASME Code, Dominion did not subsequently inform the NRC of its inability to meet Code requirements (i.e. perform a Code compliant radiographic examination of the affected weld) before returning the plant to service. As a result, Dominion's actions had impeded the NRC's ability to evaluate and determine the efficacy of the licensee's actions. The issue was characterized as Severity Level IV because it is similar to the example provided in the NRC Enforcement Policy Section 6.1.d.2, in that, it involved a violation of NRC requirements that resulted in a condition evaluated as having very low safety significance (i.e., Green) by the Significance Determination Process (SDP). The inspector determined that this issue had a cross-cutting aspect in the Human Performance cross-cutting area, Decision Making component, because Dominion did not use conservative assumptions in their decision making when they concluded that Code relief from the NRC would not be necessary to accomplish the repair. [H.1(b)]. (Section 40A2)

Inspection Report# : [2010004](#) (pdf)

**Significance:**  Jun 30, 2010

Identified By: NRC

Item Type: FIN Finding

**FIN 05000336/2010003-02, Failure to Properly Plan Work Activities for "D" Circulating Water Bay Outage Results in Manual Reactor Trip.**

•Green. A self-revealing finding (FIN) of very low safety significance was identified for Dominion's failure to properly plan the work associated with the "D" circulating water (CW) bay outage in accordance with procedure WM-AA-3000, "Managing Complex Work." The work plan failed to properly sequence work activities to prevent fouling the "C" CW screens. The subsequent fouling of the "C" CW travelling screen resulted in an automatic trip of the "C" CW pump. The loss of the second pump in a condenser bay required the operators to manually trip the reactor. Dominion entered this issue into their corrective action program.

This finding is more than minor because it was similar to NRC Inspection Manual Chapter 0612, Appendix E, "Examples of Minor Issues," Example 4b, in that the implementation of the inadequate work plan caused a reactor trip. The finding 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 power operations. The inspectors determined that the finding was of very low safety significance (Green) because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. The inspectors determined that this finding had a cross cutting aspect in the area of Human Performance, Work Control, because Dominion did not appropriately plan the bay cleaning and demucking work activity to address the risk of impacting the other CW bays. [H.3(a)] (Section 40A3).

Inspection Report# : [2010003](#) (pdf)

**Significance:**  Dec 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2009-03 RCS Drain Down Loss of Configuration Control**

Green. A self revealing NCV (Green) finding of Technical Specification 6.8.1(a) was identified for the failure to adequately implement procedures during partial draining of the reactor coolant system (RCS) in preparation for defueling the core. On October 10, 2009, Dominion did not properly align the reactor vessel vent path prior while partially draining the RCS as required by OP 2301E, "Draining the RCS (ICCE)." This resulted in a loss of positive configuration control during an infrequently conducted risk-significant evolution. A plant equipment operator did not properly lock open the vent valve during a valve lineup prior to the drain down. Dominion entered this issue into their corrective action program as CR-351853. Corrective action was taken to reinforce the standards for valve line ups and independent verification, as well as enhancing the valve line up procedure.

This issue is more than minor because it was associated with the Initiating Events cornerstone objective to limit the likelihood of those events that challenge critical safety functions during shutdown operations. Dominion did not align valve 2-RC-447 to vent the reactor vessel head during a partial RCS drain down in preparation for defueling the core. This resulted in the reactor vessel remaining full of water while the pressurizer and steam generator (SG) tubes were being drained without realizing that the RCS level indication did not accurately reflect the level in the reactor vessel. This condition constituted a loss of positive control of reactor vessel level during the RCS drain down. The finding has a cross-cutting aspect in the area of human performance, component of work practices, where the licensee defines and effectively communicates expectations regarding procedural compliance and personnel follow procedures (H.4.b) (Section 1R20).

Inspection Report# : [2009005](#) (pdf)

**Significance:**  Oct 06, 2009

Identified By: NRC

Item Type: FIN Finding

**FIN 05000336/2009005-02 Implementation of Design Change results in Rapid Shutdown of Reactor**

Green. A self-revealing (Green) finding was identified for Dominion's failure to take adequate precautions and/or adequately schedule maintenance on Unit 2's motor operated disconnect switch (MOD) for their main transformer. Specifically, on October 6, 2009, maintenance personnel began performing a design change to the MOD with Unit 2 on-line at 100% power. While decoupling the vertical shaft of the MOD, the switch shifted. The shift resulted in arching across the phase conductor resulting in increasing conductor temperatures. If temperatures were allowed to continue to rise, the switch would have failed resulting in a turbine trip due to a load reject which would have caused a reactor trip. Dominion recognized the situation and performed a rapid shutdown of the Unit 2 reactor. Dominion has taken corrective action to modify a number of procedures and entered this issue into their corrective action system (CR351109).

This finding is more than minor because it was associated with the equipment 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 power operations. Dominion did not adequately assess and manage the risk involved in implementing design change notice (DCN) DM2-00-093-09, resulting in the need to perform a rapid shutdown of the reactor on October 6, 2009. The inspectors performed a Phase 1 screening, in accordance with IMC 0609, "Significance Determination Process," and determined that the finding is of very low safety significance (Green) because it did not contribute to the likelihood that mitigation equipment or functions would not be available. The finding has a cross-cutting aspect in the area of human performance, licensee plans and coordinates work activities, consistent with nuclear safety including the inclusion of risk insights, because Dominion did not adequately implement work scheduling and include risk insights and compensatory measures (H.3.a)(Section 1R20).

Inspection Report# : [2009005](#) (pdf)

**Significance:** G Jun 30, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2010003-01, Failure to Properly Evaluate a Degraded Governor Results in “A” EDG Inoperability**

•Green. A self-revealing non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion XVI, “Corrective Action” was identified for Dominion’s failure to properly evaluate a condition adverse to quality involving the Unit 2 “A” Emergency Diesel Generator (EDG). Dominion’s corrective actions included replacing the EDG governor and entering the issue into their corrective action process.

This finding is 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. Dominion’s inadequate evaluation of the degraded condition of the governor of the “A” EDG, which resulted from the March 17, 2010 surveillance, did not result in adequate corrective action to address the cause of the rapid load fluctuation. As a result, on May 12, 2010, the “A” EDG again experienced a rapid load fluctuation during surveillance and was declared inoperable. The inspectors determined that the finding was of very low safety significance (Green) because it did not result in a loss of safety function, a loss of safety function of a single train for greater than its technical specification allowed outage time, or a loss of a risk-significant non-technical specification train of equipment. Additionally, it is not risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that this finding had a cross cutting aspect in the area of Human Performance, Decision Making, because Dominion did not use conservative assumptions in its decision making when they could not conclude that the EDG load fluctuations would not recur. [H.1(b)] (Section 40A2).

Inspection Report# : [2010003](#) (*pdf*)

**Significance:** G Nov 15, 2009

Identified By: NRC

Item Type: FIN Finding

**FIN 05000336/2009005-04 Inadequate and Untimely Corrective Actions Causes Loss of Annunciators and Declaration of a NOUE**

Green. A self-revealing (Green) finding was identified for Dominion’s failure to provide effective corrective actions for known degraded conditions on the VR-11 and VR 21 120 volt AC non-vital instrument power supplies. Specifically, VR-11 and VR-21 were known to cycle on and off repeatedly whenever an electrical disturbance on the grid affected the input supply voltages from their respective regulating transformers. The degraded condition on the instrument buses had not been corrected despite prior opportunities. This condition led to a loss of annunciators and declaration of a Notification of an Unusual Event (NOUE) on November 15, 2009. This degraded electrical system response had previously caused a Unit 2 reactor trip on May 22, 2008, and again on July 3, 2009 and as well as several other events.

This finding is more than minor because it was associated with the procedure quality attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring capability of systems that respond to initiating events to prevent undesirable consequences. The main board annunciators provide operators with critical notification and assessment capability during plant upset or transient conditions. Annunciators are used to direct operators to appropriate alarm response procedures (ARP), which further direct operators to Abnormal Operating Procedures (AOP) and direct entry conditions into Emergency Operating Procedures (EOP). Annunciators also provide early warning to operators of adverse trends in key plant parameters before the degradation becomes critical. The Emergency Action Level (EAL) basis for the loss of annunciators EU3 states in part, "This EAL [is] intended to recognize the difficulty associated with monitoring changing plant conditions with the use of a major portion of the annunciation or indication equipment." No violation of regulatory requirements occurred because the annunciator system is not safety-related. Because this finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as a Green finding. Dominion took immediate action by documenting the issue in CR-358168 and expediting the installation of the uninterruptable power supply (UPS) for VR-11 and VR-21. The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program because Dominion did not take appropriate corrective actions to address safety issues and adverse trends in a timely

manner, commensurate with their safety significance and complexity (P.1.d) (Section 40A3).

Inspection Report# : [2009005](#) (*pdf*)

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## Barrier Integrity

**Significance:**  Nov 15, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2009005-01, TS Surveillance Channel Calibration of ICCMS Not Performed**

Green. A NRC identified NCV of very low safety significance (Green) was identified for Dominion's failure to perform a channel calibration of the Unit 2 Inadequate Core Cooling Monitoring System (ICCMS) every 18 months as required by technical specification (TS) 4.3.3.8. Dominion entered the issue into their corrective action program and concluded that the ICCMS was operable, and performed a risk assessment of the missed surveillance in accordance with TS 4.0.3 and determined that the completion of the surveillance could be delayed up to the 18 month surveillance interval without a significant increase in risk.

This finding was more than minor because it is associated with the procedure quality attribute of the Barrier Integrity cornerstone and affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding) protect the public from radionuclide releases caused by accidents or events. Specifically, in 1997, Dominion incorrectly revised the surveillance procedure SP 2407A so that it no longer met the requirements of TS 4.3.3.8. The finding was determined to be of very low safety significance (Green) because it is associated with the fuel barrier. This finding does not have a cross cutting aspect because the performance deficiency is not indicative of current performance (Section 1R15).

Inspection Report# : [2009005](#) (*pdf*)

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## Emergency Preparedness

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## Occupational Radiation Safety

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## Public Radiation Safety

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

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