

# Millstone 2

## 4Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:**  Dec 31, 2010

Identified By: NRC

Item Type: FIN Finding

**(FIN 05000336/2010005-01, Failure to Provide an Adequate Procedure for Backwashing Condenser Water Boxes Results in Reactor Trip).**

Green. A self-revealing finding of very low significance was identified for Dominion's failure to provide an adequate procedure for backwashing the Unit 2 condenser water boxes in accordance with procedure MP-05-MMM, "Manuals, Procedures, Guidelines, Handbooks and Forms". Specifically, in implementing the procedure, the 'A' circulating water (CW) pump automatically ramped down to zero speed shortly after securing the 'B' CW pump. This resulted in a loss of condenser vacuum, which caused an automatic turbine trip. The turbine trip caused an automatic reactor trip. Dominion entered the issue into their corrective action program and revised the backwashing procedure, OP 2325D.

The inspectors determined that Dominion's failure to provide an adequate procedure for backwashing the Unit 2 water boxes in accordance with procedure MP-05-MMM, "Manuals, Procedures, Guidelines, Handbooks, and Forms" was a performance deficiency. The 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 an inadequate procedure led to a reactor trip. The finding was associated with the procedure quality 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. Specifically, Dominion's failure to provide an adequate procedure for backwashing Unit 2 condenser water boxes resulted in the variable frequency drive (VFD) logic securing only the CW pump running in that condenser and subsequently caused a reactor trip. 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 Human Performance area, Resources component, and because Dominion did not provide an accurate and up-to-date procedure for the backwashing of the Unit 2 water boxes. [H.2(c)] (Section 4OA3)

Inspection Report# : [2010005](#) (*pdf*)

**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 4OA2)

**Significance:** **G** 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).

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## Mitigating Systems

**Significance:** **G** Sep 22, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2010008-01; 05000423/2010008-01, Failure to Properly Control Fire Fighting Strategies.**

Green. The team identified a non-cited violation of Millstone Unit 2 Operating License Condition 2.C.(3), and Unit 3 Operating License Condition 2.H, for the failure to implement all provisions of the approved Fire Protection Programs. Specifically, Dominion did not implement adequate review, approval and distribution of fire fighting strategies to provide for the adequate development and maintenance of effective strategies. As a result, the team found that Dominion did not provide adequate guidance in the fire fighting strategies for several areas that included the Unit 2 "8" emergency diesel generator (EDG) room, and the Unit 3 west switchgear room. This issue was entered into Dominion's corrective action program as condition report (CR) 388786. The team determined that the failure to administratively control fire fighting strategies as required by the fire protection program was a performance deficiency. This finding was more than minor because it adversely affected the availability and capability objectives of the protection against external events (i.e., fire) attribute under the Mitigating Systems Cornerstone. Specifically, the above examples would likely cause delays in manual fire fighting activities and, therefore, adversely affected the defense-in-depth aspect of the fire protection program to limit fire damage by quick suppression of those fires that occur. The team performed a Phase 1 SDP screening, in accordance with NRC IMC 0609, Appendix F, "Fire Protection Significance Determination Process." This finding affected fire prevention and administrative controls, and was screened to very low safety significance (Green) because this failure to control fire fighting strategies was determined to represent a low degradation rating. This finding had a cross-cutting

aspect in the area of human performance because Dominion failed to ensure complete and accurate fire fighting strategies were available to the fire brigade to support timely extinguishment of fires. [H.2(c)] (Section 1 R05.03)

Inspection Report# : [2010008](#) (pdf)

**Significance:**  Sep 22, 2010

Identified By: NRC

Item Type: VIO Violation

**VIO 05000336/2010008-02, Failure to Protect Safe Shutdown Equipment From the Effects of Fire .**

Green. The team identified a cited violation of 10 CFR Part 50, Appendix R, Section III.G.2 for the failure to protect required post-fire safe shutdown components and cabling to ensure one of the redundant trains of equipment remains free from fire damage. In lieu of providing the required separation, Dominion utilized unapproved operator manual actions to mitigate component malfunctions or spurious operations caused by a single fire induced circuit fault (hot short, open circuit or short to ground). Dominion has entered this issue into the corrective program for resolution. The team found the manual actions to be reasonable interim compensatory measures pending final resolution by Dominion.

Dominion's failure to protect components credited for post-fire safe shutdown from fire damage caused by single spurious actuation is considered a performance deficiency. The performance deficiency was more than minor because it affected the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to an external event to prevent undesirable consequences in the event of a fire. Specifically, the use of operator manual actions during post-fire shutdown is not as reliable as normal systems operation which could be utilized had the separation requirements of 10 CFR 50, Appendix R, Section III.G.2 been met and therefore prevented fire damage to credited components and/or cables. The team used IMC 0609, Appendix F, "Rre Protection Significance Determination Process (SDP)," Phase 1 and an SRA conducted Phase 3 evaluation, to determine that this finding was of very low safety significance (Green). The team determined the finding had a low degradation rating because the manual actions were reviewed by the team and were found to be acceptable interim compensatory measures (pending licensee actions to resolve the non-compliances or obtain exemptions) because they did not require complicated actions, adequate time was available to accomplish the actions and the actions were properly included in the appropriate abnormal operating procedures. This finding had a cross cutting aspect in the area of problem identification and resolution associated with the corrective action program because Dominion did not completely and accurately identify deficiencies related to single spurious actuations of credited post-fire safe shutdown components. [P.1.(a)] (Section 1 R05.06)

Inspection Report# : [2010008](#) (pdf)

**Significance:**  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*)

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## **Barrier Integrity**

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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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