

Millstone 2

2Q/2009 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2008

Identified By: Self-Revealing

Item Type: FIN Finding

(FIN 05000336/2008004-01, Installation of Incorrect Internal Trim Package in Valve 2-HD-103A Results in Reactor Trip)

A self-revealing finding of very low safety significance (Green) was identified for Dominion's failure to ensure the proper internal trim package (cage) was installed in valve 2-HD-103A, the 1A feedwater heater level control valve as required by Millstone Procedure MP-16-MMM, "Organizational Effectiveness (Corrective Action Program, Operating Experience Program, Independent Safety Engineering Function)". This resulted in level oscillations in feedwater heater 2A during Unit 2 turbine control valve testing and a loss of feedwater, requiring the operators to manually trip the plant. Dominion's corrective actions included installing the correct cage in the valve and entering the issue into their corrective action program.

This finding was more than minor because it is associated with the human performance attribute of the initiating event 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 finding was determined to be of very low 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. This finding has a cross cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program, because Dominion did not identify the issue of the incorrect part for 2-HD-103A completely, accurately, and in a timely manner. [P.1(a)] (Section 40A3)

Inspection Report# : [2008004](#) (pdf)

Significance:  Sep 30, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

(NCV 05000336/2008004-02 Failure to Correct Safety Valve Lifting Following Uncomplicated Reactor Trips).

A self-revealing non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, was identified for failure to take effective corrective actions to prevent a Millstone Unit 2 (MP2) steam generator safety valve from lifting following uncomplicated reactor trips from 100% power. Following reactor trips on May 22, 2008 and June 28, 2008, a steam generator safety valve lifted due to a delayed quick open signal to the condenser steam dumps and atmospheric dump valves. In July 2008, Dominion had taken corrective actions by changing the power supplies of the quick open signal controller inputs to ensure an immediate quick open signal to both the condenser steam dump valves and the atmospheric dump valves. Dominion has entered this issue into their corrective action program.

The issue was more than minor because it affects the equipment performance attribute of the Initiating Events Cornerstone and the objective to limit the likelihood of those events that upset plant stability. The cycling of the steam generator safety valves results in a greater likelihood that the valves will not reseal properly during an event. The finding was determined to have very low safety significance since it did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to the likelihood of a reactor trip and the unavailability of mitigating equipment, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the cross-cutting area of Problem Identification and Resolution, Corrective Action Program [P.1(d)]. (Section 40A3)

Inspection Report# : [2008004](#) (pdf)

Mitigating Systems

Significance:  Mar 06, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Performance Testing of Safety Related Batteries

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XI, "Test Control," in that, Unit 2 and Unit 3 written test procedures for battery performance testing were not adequate and did not ensure that test results were properly documented and evaluated to assure that the test requirements were satisfied. Specifically, the battery performance test procedure did not ensure that the correct discharge rate was used, that the test was terminated correctly, and that the battery capacity and subsequent decrease in capacity were correctly calculated and evaluated. In response, Dominion entered the issue into the corrective action program and determined that there was sufficient battery margin to assure operability of the station batteries.

The finding is more than minor because it is associated with the procedure quality attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of Human Performance, Resources Component, because Dominion did not ensure that complete, accurate, and up-to-date procedures were available and adequate to assure nuclear safety. Specifically, the battery performance test procedure did not ensure that the correct discharge rate was used, that the test was terminated correctly, and that the battery capacity and subsequent decrease in capacity were correctly calculated and evaluated.

Inspection Report# : [2009006 \(pdf\)](#)

Significance:  Mar 06, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Action for Degraded Battery Cell

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," in that, Dominion did not take did not take corrective actions for a degraded cell in a Unit 2 safety related battery. Specifically, although testing of the 'B' battery between 1996 and 2008 indicated a degraded cell, actions were not taken to initiate a condition report or evaluate the impact of the degraded condition. In response, Dominion entered the issue into the corrective action program and determined that there was sufficient battery margin to assure operability of the battery.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual

loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion did not thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, although data indicated cell 10 was degraded, no action was taken to evaluate the reduced cell capacity on the overall battery.

Inspection Report# : [2009006](#) (pdf)

Significance:  Mar 06, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Action for Safety Related Inverter Out-of-Calibration Results

The team identified a finding of very low safety significance involving a non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," in that, Dominion did not take corrective actions for repeated out-of-calibration test results associated with Unit 2 safety related inverters. Specifically, although testing of the safety related inverters between 2005 and 2008 indicated that the as-found results were frequently out-of-calibration, actions were not always taken to initiate a condition report; and condition reports that were generated, did not evaluate the repetitive failure to remain in calibration. In response, Dominion entered the issue into the corrective action program and determined that the out-of-calibration results did not render the safety related instrument panels inoperable.

The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The team determined the finding was of very low safety significance (Green) because it was not a design or qualification deficiency, did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train, and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of Problem Identification and Resolution, Corrective Action Program Component, because Dominion did not thoroughly evaluate the problem such that the resolution addressed the cause. Specifically, although testing of the safety related inverters between 2005 and 2008 indicated regular out-of-calibration as-found results, actions were not always taken to initiate a condition report; and condition reports that were generated, did not evaluate the repetitive failure to remain in calibration.

Inspection Report# : [2009006](#) (pdf)

Significance:  Dec 05, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

NCV 05000336/2008008-01, Failure to Ensure Equipment Necessary For Fire Safe Shutdown Available.

The team identified that Dominion failed to administratively control and ensure the availability of all necessary fire safe shutdown equipment to perform manual actions in the 4kV upper switchgear room. This finding was determined to be of very low safety significance (Green) and a NCV of the Millstone Nuclear Power Station, Unit 2 Operating License condition 2.C.(3), Fire Protection.

The team determined that this finding was more than minor because it was associated with the external factors attribute (fire) of the mitigating systems 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, Dominion did not ensure that an electrical flash jacket necessary to perform local breaker operations was available in the upper 4kV switchgear room. Actions to restore the A diesel generator would have been delayed for a fire in the

lower 4kV switchgear room. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, Fire Protection Significance Determination Process. This finding affected post-fire safe shutdown systems. This finding screened to very low safety significance (Green) in Phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because additional electrical flash jackets were onsite and the local breaker operations would likely have been performed within 3 hours. The safe shutdown analysis most restrictive timeline for a fire in the lower switchgear room required a charging pump restored within 3 hours for reactor coolant system makeup. Local breaker operations in the upper 4kV switchgear room would be needed to support ac power to a charging pump. The team determined that this finding had a cross cutting aspect in the area of human performance because personnel did not return an electrical flash jacket to its proper storage location even though it was clearly labeled for the upper 4kV switchgear room. (H.4(b)) (Section 1R05.01)

Inspection Report# : [2008008](#) (*pdf*)

Significance:  Dec 05, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

NCV 05000336/2008008-02, Failure to Ensure Timely Manual Action Consistent with the Post-Fire Safe Shutdown Analysis.

The team identified that Dominion failed to ensure that a post-fire manual action to restore auxiliary feedwater (AFW) flow to a steam generator (SG) would be performed within 30 minutes of a plant trip consistent with the Millstone Unit 2 fire safe shutdown analysis. This finding was determined to be of very low safety significance (Green) and a NCV of the Millstone Nuclear Power Station, Unit 2 Operating License condition 2.C.(3), Fire Protection.

The team determined that this finding was more than minor because it was associated with the external factors attribute (fire) of the mitigating systems 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, a timely manual action to restore AFW to SG 1 within 30 minutes of the plant trip for a fire in Fire Area R-2 was not ensured for all circumstances and was validated by Dominion in 1999 to take at least 40 minutes. This finding was similar to more than minor example 3.i in NRC Inspection Manual Chapter (IMC) 0612, Power Reactor Inspection Reports, Appendix E, Examples of Minor Issues. The team assessed this finding in accordance with NRC IMC 0609, Appendix F, Fire Protection Significance Determination Process. This finding affected post-fire safe shutdown systems. This finding screened to very low safety significance (Green) in Phase 1 of the SDP because it was assigned a low degradation rating. A low degradation rating was assigned because Dominion performed a sensitivity analysis of S-02824-S2, Millstone Unit 2, R-2 Fire, Appendix R Analysis, Rev. 2, and determined that restoring AFW flow to steam generator 1 could be delayed for 50 minutes and result in acceptable plant performance during a safe shutdown event. (Section 1R05.01)

Inspection Report# : [2008008](#) (*pdf*)

Significance:  Aug 29, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

B.5.b Phase 2 and 3 Mitigating Strategy

This finding, affecting the Barrier Integrity Cornerstone, is related to mitigative measures developed to cope with losses of large areas of the plant; in response to Section B.5.b. of the February 25, 2002, Interim Compensatory Measures (ICM) Order (EA-02-026) and related NRC guidance. This finding has been designated as "Official Use Only - Security-Related Information;" therefore, the details of this finding are being withheld from public disclosure. This finding has a cross-cutting aspect in the area of Human Performance (Resources). [H.2(c)]. See inspection report for more details.

Inspection Report# : [2008007](#) (*pdf*)

Emergency Preparedness

Occupational Radiation Safety

Significance:  Apr 20, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

NCV 05000336/2009003-01, Failure to Survey a Contaminated Component

Green. An NRC-identified finding of very low safety significance (Green) was identified for Dominion's failure to effectively survey, label, and control contaminated tools and equipment. Specifically, Dominion failed to perform adequate surveys to identify a hose fitting having a contact dose rate measurement of 160 mrem per hour as required by 10 CFR 20.1501. Dominion entered this issue into their corrective action program as CR322737.

This finding was more than minor because it was associated with the program and process attribute of the radiation safety cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. By not surveying and labeling the hose fitting, workers could have received unplanned exposure by not being informed of the radiological hazard present. The finding has a cross cutting aspect in the area of work practices, because the licensee did not assure that personnel follow procedures [H.4(b)]. Specifically, procedure RPM 2.4.2, "Radiological Control of Material and Vehicles," was not properly implemented to assure compliance with 10 CFR 20 requirements. (Section 2OS1).

Inspection Report# : [2009003](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

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