

## Millstone 2

### 2Q/2014 Plant Inspection Findings

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#### Initiating Events

**Significance:**  May 10, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2014003-01, Failure to Maintain Adequate Procedure for RCS Drain/Fill**

Green. The inspectors identified a Green NCV of TS 6.8.1, Procedures, for Dominion's failure to maintain an adequate procedure for reactor filling and draining that incorporates guidance contained in NRC Generic Letter 88-17. Specifically, OP2301E, draining the RCS, permitted operation in a reduced RCS inventory condition without ensuring redundant means of level indication contrary to the inventory control requirements of OU-M2-201, Shutdown Safety Assessment Checklist.

The failure to maintain an adequate procedure for operating in reduced inventory conditions is a performance deficiency. The inspectors determined this performance deficiency is more than minor because it would affect the Initiating Event cornerstone attribute of equipment performance and affects the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. Specifically, inadequate procedural guidance increased the likelihood that operators could experience a loss of level indication during the reduced inventory condition. The inspectors evaluated the significance of the finding using IMC 0609 Appendix G, "Shutdown Operations Significance Determination Process", Attachment 1 "Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings" and the issue screened to a Phase 2 analysis. Using the guidance contained in IMC 0609 Appendix G Attachment 2, "Phase 2 Significance Determination Process Template for PWR During Shutdown," the inspectors worked with regional and headquarters senior reactor analysts to determine the issue screened to Green.

The inspectors determined this issue had a cross cutting aspect in the area of Human Performance, Avoid Complacency, where individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Specifically, the latent error of considering L-112 and LI-112 as independent level instruments even though a single failure impacted both instruments contributed to the issue. (H.12) (Section 1R20)

Inspection Report# : [2014003](#) (*pdf*)

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#### Mitigating Systems

**Significance:**  Dec 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2013005-02, Inadequate Alternative Shutdown Procedure**

• Green. The inspectors identified an NCV of Millstone Unit 2 Operating License Condition 2.C. (3) for failure to implement and maintain all aspects of the approved Fire Protection Program (FPP). Specifically, Dominion had not

adequately implemented an alternative shutdown procedure, as required by 10 CFR 50, Appendix R, Section III.L.3 and the approved FPP. The procedure for a Unit 2 fire, which could lead to control room abandonment, did not ensure the electrical distribution system was correctly configured prior to re-energizing alternating current (AC) buses. As a result, an over-current condition could occur and trip the 4 kilovolt (kV) supply breaker complicating safe shutdown operations and delaying AC bus recovery. In response to this issue, Dominion promptly revised their fire safe shutdown operating procedure prior to the end of the inspection to correct this deficiency.

This finding was more than minor because it was associated with the protection against external factors (e.g., fire) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding in accordance with IMC 0609, Appendix F, "Fire Protection SDP." This finding affected the post-fire safe shutdown category and was determined to have a high degradation rating because the alternative shutdown procedure lacked adequate instructions to ensure correct equipment alignment. A Phase 3 SDP analysis determined that this finding was of very low safety significance (Green) because the best estimate of core damage frequency (? CDF) was in the mid E-7 per year range. This finding did not have a cross-cutting aspect because it was considered to not be indicative of current licensee performance. (Section 4OA5.1)

Inspection Report# : [2013005](#) (*pdf*)

**Significance:**  Aug 08, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2013005-01, Inadequate Alternative Shutdown Procedure**

Green. The team identified a finding of very low safety significance involving a non-cited violation of Millstone Unit 2 Operating License Condition 2.C. (3) for failure to implement and maintain all aspects of the approved Fire Protection Program (FPP). Specifically, Dominion had not adequately implemented an alternative shutdown procedure, as required by 10 CFR 50 Appendix R Section III.L.3 and the approved FPP. The procedure for a Unit 2 fire which could lead to control room abandonment did not ensure the electrical distribution system was correctly configured prior to re-energizing AC buses. As a result, an over-current condition could occur and trip the 4kV supply breaker complicating safe shutdown operations and delaying AC bus recovery. In response to this issue, Dominion promptly revised their fire safe shutdown operating procedure prior to the end of the inspection to correct this deficiency.

This finding was more than minor because it was associated with the Protection Against External Factors (e.g., fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The team evaluated the finding in accordance with NRC Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process (SDP)." This finding affected the post-fire safe shutdown category, and was determined to have a high degradation rating because the alternative shutdown procedure lacked adequate instructions to ensure correct equipment alignment. A Phase 3 SDP analysis determined that this finding was of very low safety significance (Green) because the best estimate of core damage frequency was in the mid E-7 per year range.

This finding did not have a cross-cutting aspect because it was a legacy issue and was considered to not be indicative of current licensee performance. (Section 4OA5.1)

Inspection Report# : [2013010](#) (*pdf*)

**Significance:**  Aug 08, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2013010-02, Spurious Operation of Pressurizer Spray Valves Not Analyzed**

•Green. The team identified a finding of very low safety significance involving a non cited violation of Millstone Unit 2 Operating License Condition 2.C. (3) for failure to implement and maintain all aspects of the approved Fire Protection Program. Specifically, Dominion's safe shutdown methodology postulated spurious operation of the pressurizer spray valves, but had not analyzed the effect of the spurious operations and mitigation actions were not implemented to ensure operators could achieve safe shutdown if the spray valves spuriously opened. In response to this issue, Dominion revised their fire safe shutdown operating procedure prior to the end of the inspection to mitigate spurious opening of the spray valves.

The finding was more than minor because it was similar to Example 3.k of NRC Inspection Manual Chapter (IMC) 0612, Appendix E, and was associated with the Protection Against External Factors (e.g., Fire) attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective to ensure the reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The team performed a Significance Determination Process (SDP) screening, in accordance with IMC 0609, Appendix F, and "Fire Protection Significance Determination Process." This finding affected the post-fire safe shutdown category, and was determined to have a low degradation rating because a subsequent evaluation determined that that the performance requirements of Appendix R Section III.L.1 were satisfied. This finding did not have a cross-cutting aspect because it was a legacy issue and was considered to not be indicative of current licensee performance. (Section 1R05.05.2)

Inspection Report# : [2013010](#) (*pdf*)

**Significance:**  Aug 08, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336, 423/2013010-03, Failure to Maintain Cold Shutdown Material On-Site**

•Green. The team identified a finding of very low safety significance, involving 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 and maintain all aspects of the approved Fire Protection Program. Specifically, Dominion used large motors, pre-staged in the on-site warehouse for Appendix R cold shutdown (CSD) repairs, as spare parts to accomplish preventative maintenance tasks. As a result, Dominion could not have performed the designated CSD repairs and achieved CSD conditions within 72 hours as required for both Units 2 and 3 during the time period that the old motors were off-site for refurbishment. In addition, Dominion had not taken any compensatory measures to reduce the likelihood of a fire or its consequence, in lieu of not having required repair material on-site. Dominion entered these issues into its corrective action program as condition reports 522722, 522740, 522848, and 522850 and has planned corrective actions to ensure CSD repair material is never intentionally made unavailable or removed from the site.

This finding was more than minor because it was associated with the Protection Against External Factors (e.g., fire) attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability and reliability of systems that respond to initiating events to prevent undesirable consequences. The team performed a Significance Determination Process (SDP) screening, in accordance with NRC Inspection Manual Chapter 0609, Appendix F, and "Fire Protection Significance Determination Process." This finding screened to very low safety significance in Phase 1 of the SDP because it only affected the ability to reach and maintain cold shutdown conditions. This finding did not have a cross-cutting aspect because it was a legacy issue and was considered to not be indicative of current licensee performance. (Section 1R05.05.9)

Inspection Report# : [2013010](#) (*pdf*)

## Barrier Integrity

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### Emergency Preparedness

**Significance:**  Jun 30, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**.NCV 05000336/2014003-03 and 05000423/2014003-03, Failure to Adequately Maintain EALs**

Green. The inspectors identified a Green NCV associated with emergency preparedness planning standard 10 CFR 50.47(b)(4) and the requirements of Sections IV.B and IV.C of Appendix E to 10 CFR Part 50. Specifically, Dominion did not maintain the Millstone Units 2 and 3 emergency action level (EAL) schemes for assessing a loss of forced flow cooling during refueling operations. Dominion entered this issue into the corrective action program and implemented temporary corrective actions which included procedure changes to direct operators to the shutdown safety assessment checklists to determine representative RCS temperature increases in order to assess the initiating conditions for this situation.

The inspectors determined that the failure by Dominion to provide site specific criteria for operators to adequately implement the EALs for a loss of forced flow cooling during refueling was a performance deficiency that was reasonably within their ability to foresee and prevent. The finding is more than minor because it is associated with the Procedure Quality attribute of the Emergency Planning Cornerstone and affected the cornerstone objective to ensure that Dominion is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. In accordance with the IMC 0609, Appendix B, "Emergency Preparedness Significance Determination," the inspectors determined that this finding is of very low safety significance because the performance deficiency was an issue where two EAL initiating conditions (ICs) had been rendered ineffective such that an Unusual Event and an Alert would not be declared, or declared in a degraded manner for a loss of forced flow cooling during refueling. The finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Identification, in that Dominion did not implement a CAP with a low threshold for identifying issues. Dominion's self-assessment for two previous NCVs regarding EAL deficiencies failed to identify the lack of specific criteria to assess the ICs for EALs UE1.2 and EA2.1 for a loss of forced cooling flow during refueling [P.1]. (Section 4OA5)

Inspection Report# : [2014003](#) (*pdf*)

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### Occupational Radiation Safety

**Significance:**  Apr 20, 2014

Identified By: NRC

Item Type: NCV NonCited Violation

**NCV 05000336/2014003-02, Failure to Utilize Respiratory Protection as Specified in Work Control Documents**

Green. The inspectors identified a self-revealing Green NCV of Technical Specification (TS) 6.81, Regulatory Guide 1.33, Appendix 'A', Radiation Work Permits (RWP) and as low as reasonably achievable (ALARA) procedures, for Dominion's failure to utilize respiratory protection, as required by the applicable RWP and associated ALARA evaluation for work on replacement of valve 2-SI-227 on April 20, 2014. This failure resulted in an unplanned intake of radioactive material for one worker. Dominion subsequently enforced the respiratory protection requirements to

complete the work, and entered this issue into their corrective action program (CAP) (CR546439).

Failure to use respiratory protection during machining work as required by Dominion procedure was a performance deficiency that was reasonably within Dominion's ability to foresee and correct. The inspectors determined that the performance deficiency was more than minor because it affected the Radiation Safety – Occupational Radiation Safety Cornerstone attribute of Program and Process associated with exposure/contamination controls, because it resulted in the unintended internal exposure of a worker. A cross-cutting aspect of “Conservative Bias” (H.14) in the “Human Performance” cross-cutting area was associated with the Finding. Specifically, radiation protection staff did not adhere to the RWP requirements. (Section 2RS3)

Inspection Report# : [2014003](#) (*pdf*)

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## Public Radiation Safety

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### Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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### Miscellaneous

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