Millstone 2
2Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Aug 01, 2014
Identified By: NRC
Item Type: FIN Finding
Inadequate Implementation of Dominion's Design Change Process
The NRC identified a finding of very low safety significance (Green), in that Dominion did not ensure correct implementation of their design change process procedure when establishing licensing basis requirements for removal of the SPS. Specifically, Dominion did not correctly evaluate the impact of removing the system on the requirements of General Design Criterion (GDC) 17 and did not address the failure mechanism of this new design in the design change documents, as required by their design change procedure. Dominion entered this issue into the corrective action program for resolution (CR 553967 and CR 551068).
The team determined that Dominion's failure to implement their design change process procedure was a performance deficiency. This performance deficiency was more than minor because it was associated with the design control attribute of the Initiating Events Cornerstone and affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown and power operations. The team performed a risk screening in accordance with IMC 0609, Appendix A, "Significance Determination Process for Findings At-Power," using Exhibit 1, "Initiating Events Screening Questions," Section C, "Support System Initiators." The answer to the question in Section C would be NO, because the finding did not increase the likelihood of a loss of two transmission lines with one line out of service (OOS), and affect mitigation equipment. The team determined that this finding had a cross-cutting aspect in the area of Human Performance, Procedure Adherence, because the design change process procedure was not adequately followed, in that the impact of the change on the current design basis and licensing bases was not evaluated correctly [H.8]
Inspection Report# : 2014011 *(pdf)*

Mitigating Systems

Significance: G May 01, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Reactor Building Closed Cooling Water System Pump Oil Leakage Results in Technical Specification Inoperability
The team identified a non-cited violation (NCV) of Millstone Power Station Unit 2, Technical Specification (TS) 3.7.3.1 the reactor building component cooling water (RBCCW) system Limiting Condition of Operation (LCO) in that Dominion failed to maintain two loops of RBCCW operable. The team found that following the identification of a degraded condition for the "C" RBCCW pump, Dominion incorrectly concluded the loop remained operable. Specifically, the team determined that from February 4 to February 23, 2015, the RBCCW "B" loop was inoperable because oil leakage from the "C" RBCCW outboard pump bearing would have caused the complete loss of oil to the pump bearing, without operator compensatory

action, before the “C” RBCCW train would have completed its design basis 30-day mission time. Using IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” Section A, “Mitigating Systems, Structures or Components and Functionality,” the team determined that the finding required a detailed risk evaluation due to actual loss of function of at least a single train for greater than its TS allowed outage time. The Region I Senior Reactor Analyst (SRA) identified that because the finding involved the “C” RBCCW pump function to run for its mission time, the only accident events adversely impacted are the large break loss of coolant accident (LLOCA) sequences. The condition was conservatively modeled assuming an exposure period of one year with the “C” RBCCW pump failure to run basic event set to True. The resultant change in risk was estimated at mid E-8, or very low safety significance (Green). The dominated risk sequences involve a LLOCA with the failure of the remaining RBCCW pumps due to common cause. Since the estimated risk increase was less than 1E-8, no additional evaluation of external events contribution or change in large early release frequency (LERF) was required. The team concluded that this issue has a cross-cutting aspect in the Human Performance cross-cutting area of Conservative Bias: Individuals use decision-making practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop. Specifically, Dominion determined that the qualitative bubbler leak rate was acceptable without evaluation against quantified operability criteria. (H.14)
Inspection Report# : 2015007 *(pdf)*

Significance: G May 01, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Inadequate Evaluation of Circuit Breaker Interrupting Capability
The team identified a finding of very low safety significance (Green) involving a non-cited violation (NCV) of Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, “Design Control,” in that Dominion did not correctly evaluate the capability of 4.16 kV breakers to function properly during 3-phase bolted fault design condition. The team reviewed Millstone Unit 2 electrical distribution system analysis calculation (MP2-ENG-ETAP-04014E2), which evaluated adequacy of the circuit breakers for their interrupting rating in accordance with the Institute of Electrical and Electronics Engineers/American National Standards Institute (IEEE/ANSI) C37 series standards, and determined that Dominion’s shortcircuit fault current calculation did not assume the maximum plant operating voltage as a prefault voltage at the 4.16 kV bus and did not evaluate the plant configuration when emergency diesel generators (EDG) are operating in parallel with offsite power on the associated 4.16 kV emergency bus. The team determined this short-circuit fault current calculation was not in accordance with IEEE/ANSI C37 series standards and was non-conservative in some cases. Dominion entered the issue into their corrective action program and performed additional analysis to determine if the inability of the breaker to interrupt the fault current would result in the fault current affecting the other safety related bus. Dominion concluded that the other bus would not be affected. The team reviewed the analysis and determined it to be acceptable. The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone Design Control attribute and adversely affected the cornerstone’s objective and was similar to Example 3.j in Appendix E of the NRC IMC 0612. Using the NRC IMC 0609, “Significance Determination Process,” Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” Exhibit 2, “Mitigating Systems Screening Questions,” the finding was determined to be of very low safety significance (Green). There was no crosscutting aspect assigned to the finding because it was not an indicative of current performance.

Inspection Report# : 2015007 *(pdf)*

Significance: G Mar 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Replace Defective Fuses in the "A" EDG Resulting in Generator Failure
The inspectors identified a Green, Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI associated with Dominion's failure to prevent recurrence of a significant condition adverse to quality, installation of defective fuses in the Unit 2 EDGs from September 26, 2015 until October 23, 2015. Dominion took corrective actions to replace the defective fuses in both EDGs and assess the extent of condition in other safety systems.

This finding was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012, as it represented a challenge to the equipment performance attribute of the Reactor Safety – Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. This finding screened to be of very low safety significance because the finding did not represent an actual loss of function of a single train for greater than its allowable outage time. The inspectors assigned a cross-cutting aspect in the Problem Identification and Resolution cross-cutting area associated with Operating Experience, in that Dominion failed to effectively implement relevant internal and external operating experience. [P.5]

Inspection Report# : 2015001 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Significance: G Dec 31, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Maintain Radiation Exposure ALARA During Refueling Outage 2R22 Activities
A self-revealing finding (FIN) of very low safety significance (Green) was identified due to the accrual of excessive unintended occupational collective radiation exposure during Millstone refueling outage 2R22. This resulted from performance deficiencies in planning and work control while performing scaffolding work, valve maintenance, and a valve replacement during the Unit 2 refueling outage. No violation of NRC requirements was identified.

The unintended collective radiation exposures were due to work planning and work control deficiencies that were reasonably within Dominion's ability to control and prevent. The finding was more than minor because it was associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective to ensure the adequate protection of the worker from radiation exposure. The

performance deficiency is similar to examples in Appendix E of IMC 0612; in that the actual collective dose exceeded 5 person-rem and exceeded the planned, intended dose by more than 50 percent. The finding has a cross-cutting aspect in the area of Human Performance, Work Management, in that the Millstone organization did not implement a process of planning, controlling, and executing work activities such that station-established radiation exposure goals could be met. [H.5]

Inspection Report# : 2014005 *(pdf)*

Public Radiation Safety

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.

Miscellaneous

Last modified : August 07, 2015