

Millstone 2

1Q/2008 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: FIN Finding

Failure to Evaluate a Unit 2 Charging System Non conforming Condition against the Current Licensing Bases

The inspectors identified a finding for Dominion's failure to evaluate a non-conforming plant condition against the current licensing basis (CLB) as required by Dominion procedure OP-AA-102-1101, Revision 0, "Development of Technical Basis to Support Operability Determinations." Specifically, Dominion, in multiple instances, failed to evaluate the impact that a potential common mode charging system failure would have on the Updated Final Safety Analysis Report Chapter 14.6.1, "Inadvertent Opening of Power Operated Relief Valves (PORVs)," event, the analysis of record for which credited both charging and safety injection availability. Corrective actions for this issue included the initiation of an operations standing order and crew briefings to ensure all crews understood the CLB related to Unit 2 charging and the need to implement the compensatory action for this chapter 14.6.1 event, and a subsequent operability determination (OD) revision to ensure charging was properly evaluated and documented within the OD.

This finding is more than minor because, if left uncorrected, the issue would become a more significant safety concern. Specifically, degraded and non-conforming plant conditions must be evaluated against their credited functions in the CLB to ensure the adverse condition is properly evaluated for operability. This finding was determined to be of very low safety significance (Green) because it did not result in a loss of charging system operability or functionality. This finding has a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program component, because Dominion did not thoroughly evaluate a Unit 2 charging system non-conforming condition against the CLB [P.1(c)].

Inspection Report# : [2008002](#) (*pdf*)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify Unacceptable Unit 2 Charging Pump Surveillance Test Data

The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XI, "Test Control," for Dominion's failure to adequately evaluate surveillance test results to ensure test acceptance criteria had been met on June 20, 2007. Specifically, the inspectors identified that the "A" charging pump pulsation dampener surveillance test had incorrect data (i.e., testing duration time) and had been accepted as satisfactorily complete, although the test data was outside the surveillance acceptance criteria. The test, in part, demonstrated that nitrogen gas from a failed charging pump discharge dampener would not migrate into the common suction line prior to the credited operator action to shut the pump's suction valve. A subsequent review determined the surveillance test data was incorrect and the "A" charging pump was operable. Dominion's corrective actions for this issue included briefings to provide additional coaching and heighten awareness to the Unit 2 operations shift crews, a review of actual surveillance computer data and review of subsequent surveillances to ensure system operability, and the creation of a trend condition report including other related human performance errors (CR-08-03220).

This finding was 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 of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the failure to identify out of specification data could result in the failure to identify inoperable equipment. The inspectors also concluded that if the failure to properly evaluate charging pump discharge dampener test data was not corrected, a more significant concern could exist (i.e. common mode failure of charging). The finding was determined to be of very low significance

(Green), because it was a deficiency confirmed to result in loss of safety function. The performance deficiency had a cross-cutting aspect in the area of Problem Identification and Resolution, Corrective Action Program component, because Dominion did not identify out of specification test data [P.1(a)].

Inspection Report# : [2008002](#) (pdf)

Significance:  Mar 31, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify a Service Water Bypass Flow Path following a Failed IST

The inspectors identified a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for Dominion’s failure to identify a condition adverse to quality after the “B” service water (SW) pump failed a Technical Specification in-service test (IST). Specifically, on March 9, 2008, Dominion declared the “B” Service Water (SW) pump operable, despite a failed IST flow surveillance. Dominion based this declaration on the incorrect assumption that the failed pump differential pressure (dp) was indicative of faulty test equipment vice an actual equipment issue. On March 10, 2008, Dominion determined that the unacceptable “B” SW dp was caused by back pressure from the running “C” SW pump through the shut “B” swing pump cross connect valve (2-SW-79B). The inspectors identified that Dominion did not have a reasonable basis to consider the IST invalid based on the information available at the time. Corrective actions for this issue included implementing an alternate plant configuration to ensure train separation, performing an assessment to evaluate past operability and to establish a bounding service water temperature at which the “B” service water pump would be considered inoperable, and incorporating the 2-SW-97B leakage repair in the 2R18 refueling outage.

This finding was more than minor because it was associated with the equipment performance attribute of the Mitigating System cornerstone, and affected the cornerstone’s objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, Dominion concluded that the “B” SW pump IST containing unacceptable dp data was invalid based, in part, on an inability to justify the results (i.e. high dp and nominal flow). Consequently, the “B” SW pump was inappropriately declared operable and the actual degraded condition was not promptly identified and corrected. This finding is of very low safety significance (Green) because it did not result in a confirmed loss of service water train operability. This finding has a cross cutting aspect in the area Human Performance, Decision Making Component, because Dominion did not use conservative assumptions in restoring “B” SW pump operability following a failed IST surveillance [H.1(b)].

Inspection Report# : [2008002](#) (pdf)

Significance:  Nov 14, 2007

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Failure to Ensure ESF Building Protection from Missiles Generated by a Design Based Tornado

Green. The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for Dominion’s failure to identify that the engineered safety featured (ESF) building was not adequately protected against the effects of postulated missiles generated by a design basis tornado. Specifically, the inspectors identified that Dominion had missed multiple opportunities from May 2007 through November 2007 to identify significant challenges in shutting the normally open ESF building tornado doors. When shut, these doors ensure that the associated portion of the ESF building is protected from a spectrum of postulated missiles generated by a design basis tornado. Corrective actions for this issue included performing an operability assessment to address immediate operability/functionality concerns and an engineering evaluation to address the door’s material condition. In addition, Dominion plans to develop long term corrective action and implement that action prior to entering a season of increased tornado risk.

This finding was more than minor because it was associated with the protection against external factors (i.e. tornado) attribute of the Mitigating System Cornerstone, and affected the cornerstone’s objective of ensuring 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 safety related systems and components were adequately protected against postulated missiles generated by a design basis tornado. The inspectors, in consultation with the Region I Senior Reactor Analyst, determined that this finding was of very low risk significance (Green), because, given the low initiating event probability and segregation of the safety-related equipment within cubicles in the ESF building, the probability of two or more trains of a single safety function being adversely impacted by this condition is extremely low. This finding has a cross cutting aspect in the area of Problem Identification and Resolution (PI&R), Corrective

Action Program, because Dominion did not identify that significant time delays would have interfered with the station's ability to protect safety-related equipment in the ESF buildings from a design basis tornado in a timely manner [P.1(a)].

Inspection Report# : [2007005 \(pdf\)](#)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Work Procedure for the Unit 2 'C' Charging Pump Results in Pump Failure

A self-revealing finding was identified when Dominion did not ensure an adequate work procedure was available for maintenance performed on the Unit 2 'C' charging pump on May 5, 2007, resulting in a failure of the pump on June 11, 2007. Specifically, the work procedure did not give specific guidance for assembly and installation of the suction poppet valve in accordance with direction provided in the vendor technical manual. On June 11, 2007, the 'C' charging pump failed and was declared inoperable due to a seized plunger shaft. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings." Dominion's corrective actions for this issue included repair and retest of the 'C' charging pump, revising the work procedure to include vendor recommendations, and training for maintenance personnel on assembly and installation of charging pump poppet valves.

The finding was more than minor because it was associated with the procedural 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 inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The performance deficiency had a cross-cutting aspect in the area of human performance, resources component, because Dominion did not ensure that a complete, accurate, and adequate work procedure was available for maintenance performed on a safety-related component. [H.2(c)]

Inspection Report# : [2007003 \(pdf\)](#)

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Adequately Evaluate Surveillance Test Data

The inspectors identified that Dominion did not adequately evaluate surveillance test results to ensure test acceptance criteria had been met on May 10, 2007. Specifically, the inspectors identified that the 'C' charging pump pulsation dampener surveillance test had cited incorrect data and had been accepted as satisfactorily complete, though the test data was outside of the surveillance acceptance criteria. This finding was determined to be an NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control." The surveillance was successfully re-performed on May 13, 2007. Dominion's corrective actions for this issue included revising the surveillance to clarify test requirements and required reading for operations personnel on how to adequately document and review surveillance test data.

The finding was 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 of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to identify out of specification data could result in the failure to identify inoperable equipment. The inspectors also concluded that if the failure to properly evaluate charging pump discharge dampener data was not corrected, a more significant concern could exist in that failure of the dampener has previously resulted in a loss of all charging due to the migration of nitrogen from a failed discharge pulsation dampener to the common suction piping for all three charging pumps (as described in NRC inspection reports 05000336/2006002 and 05000336/2006006). The inspectors conducted a Phase 1 SDP screening in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." The finding was determined to be of very low safety significance (Green) because the issue is not a design or qualification deficiency, does not represent the loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The performance deficiency had a cross-cutting aspect in the area of problem identification and resolution, corrective

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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

Last modified : June 05, 2008