

Millstone 2

4Q/2004 Plant Inspection Findings

Initiating Events

Significance:  Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ESTABLISH AND IMPLEMENT 10 CFR 50, APPENDIX B, CRITERION XVI, TO ADDRESS REPEATED LIFTING OF MAIN STEAM CODE SAFETY VALVES

The inspectors identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, for the failure to take effective corrective actions to preclude main steam code safety valves from lifting following design basis turbine trips/reactor trips from 100% power. Following two uncomplicated reactor trips at Unit 2 in March 2004, the inspectors noted that main steam code safety valves lifted and reseated. The inspectors determined that Unit 2 had a history of main steam code safety valves lifting and reseating following uncomplicated trips. The inspectors concluded that cycling main steam code safety valves following trips from full power increases the likelihood that they may not reseal. Dominion had not taken effective corrective actions to correct this longstanding issue. Dominion has undertaken a study (to complete by the end of 2004) to evaluate this system condition and to specify long term design changes which will be scheduled for completion in refueling outage 2R17 (fall of 2006). Dominion has entered this issue into their corrective action program. This issue is 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. Cycling of main steam code safety valves results in a greater likelihood that the valves will not reseal properly during an event. The finding was determined to have a very low safety significance since it did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to both 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. Inspection Report# : [2004007\(pdf\)](#)

Significance:  Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

I&C TECHNICIANS AND OPERATIONS PERSONNEL DID NOT VERIFY ALL APPROPRIATE PREREQUISITES OR PERFORM ALL APPLICABLE PROCEDURAL STEPS WHICH THEN RESULTED IN THE ADVERTENT ACTUATION OF A SAFETY-RELATED SYST

The inspectors identified a non-cited violation of Technical Specification (TS) 6.8.1, for the failure to adequately implement post-maintenance testing following replacement of a pressurizer level instrument. On July 28, 2004, Operations and Maintenance personnel failed to meet a "Unit 2 Shutdown" procedural prerequisite and did not perform a procedure step to place charging pump controls in pull-to-lock during post-maintenance testing of pressurizer level control circuitry. As a result, both standby charging pumps started with one charging pump already operating. Dominion has specified training for both Operations and Maintenance organizations describing the circumstances of this event and management expectations for work evolution briefs, peer checking, and actions to be taken for unexpected conditions. Additionally, Maintenance management reinforced work practice expectations for the use of "N/A" in procedures and work planning process improvements. Dominion has entered this issue into their corrective action program. This issue is more than minor because it is associated with the human performance attribute of the Initiating Events Cornerstone and the objective to limit the likelihood of those events that upset plant stability. The start of both standby charging pumps with one charging pump already operating was the precursor to the failure of the charging system on March 7, 2003. The finding was determined to have a very low safety significance since it did not contribute to the likelihood of a primary loss of coolant accident, did not contribute to both 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 Human Performance. Inspection Report# : [2004007\(pdf\)](#)

Significance:  Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY IMPLEMENT PROCEDURES FOR DRAINING THE RCS

The inspectors identified a non-cited violation of Technical Specification 6.8.1a for the failure to adequately implement procedures for draining the reactor coolant system (RCS). During the October 2003 refueling outage, Dominion drained down the RCS for an approximate 1.5 hour period with only one accurate means of level indication. The operator dedicated to monitoring refuel pool level was released from his duties prior to completion of the draindown and the operators in the control room were mis-reading the remote camera indication of the refuel pool level. Also, a recent revision of the procedure controlling the draindown had removed the steps required to conduct a valve line-up of the RCS mid-loop wide range level indicator (LI-112). As a result, LI-112 was not on scale as expected because it was isolated due to a previous maintenance activity. During this period, the only accurate means of refuel pool level was mass balance. This finding is more than minor because it is associated with the initiating event cornerstone attribute of configuration control during shutdown and affected the likelihood of

causing a loss of reactor water inventory to the point that shutdown cooling could be lost. The significance was low because multiple corrective measures available to ensure reactor cooling were maintained. Operators could have stopped the draindown by closing one valve from the control room, the draindown would have been automatically terminated once low pressure safety injection pump pressure lost suction, and operators could have restored shutdown cooling if it was lost. This finding is related to the cross-cutting issue of Human Performance.

Inspection Report# : [2004006\(pdf\)](#)



Significance: Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY IMPLEMENT PROCEDURES FOR STEAM GENERATOR FEED PUMP TESTING WHICH LED TO A REACTOR TRIP

A self-revealing non-cited violation of Technical Specification (TS) 6.8.1a was identified for the failure to adequately implement procedures for Steam Generator Feed Pump (SGFP) testing which led to a reactor trip. On March 15, 2004, the Unit 2 reactor automatically tripped from 100% power while operators were performing quarterly testing of the "B" SGFP. An event review team eliminated equipment failure as a root cause and determined that the root cause of the reactor trip was most likely due to the operators failing to maintain the lockout control switch in position during the surveillance. The lockout control switch is a spring return switch which is held in place by an operator to lockout the SGFP trip circuit while testing the SGFP.

This finding is more than minor because it is associated with the human performance attribute of the Initiating Events cornerstone and is associated with an increase in the likelihood of an initiating event in that a reactor trip actually occurred. The significance of the finding was determined to be very low since this finding did not contribute to the likelihood of a primary or secondary loss of coolant accident initiator, did not contribute to both the likelihood of a reactor trip and the unavailability of mitigation equipment or functions, and did not increase the likelihood of a fire or internal/external flood. This finding is related to the cross-cutting issue of Human Performance.

Inspection Report# : [2004005\(pdf\)](#)



Significance: Mar 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO ADEQUATELY IMPLEMENT VENDOR TECHNICAL MANUAL REQUIREMENTS INTO WRITTEN PROCEDURES WHICH CONTROL THE ALIGNMENT AND OPERATION OF ELECTRICAL POWER SOURCES TO VITAL SHUTDOWN COOLING COMPONENTS

A self-revealing non-cited violation of Technical Specification (TS) 6.8.1 was identified for the inadequate implementation of vendor technical manual requirements into operating procedures for vital shutdown cooling component power supplies. Specifically, an incorrect version of a vendor technical manual was used as the basis for establishing switch lineups in a procedure that paralleled two alternating current (AC) sources to a vital electrical panel. The incorrect steps allowed the two AC sources to be paralleled out of phase. The electrical panel was supplying power to shutdown cooling equipment and the improper switch lineup resulted in paralleling the two AC sources without synchronous protection. When the sources were paralleled, they were out of phase resulting in the loss of both power supplies and a temporary loss of shutdown cooling. Dominion restored power within 15 minutes, the shutdown cooling system configuration was regained, and control of reactor coolant system temperature was reestablished.

The finding is more than minor because it was associated with the initiating event cornerstone attribute of procedure quality and affected the likelihood of a loss of shutdown cooling (SDC) in that an actual loss of SDC occurred. However, the finding was determined to be of very low safety significance (Green) since there was not a significant loss of thermal margin and the finding did not degrade Dominion's ability to recover shutdown cooling once it was lost. This finding is related to Dominion's Problem Identification and Resolution process.

Inspection Report# : [2004005\(pdf\)](#)

Mitigating Systems



Significance: Feb 27, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO IMPLEMENT ADEQUATE DESIGN CONTROL AND SUITABLY TEST A MODIFICATION TO THE CHARGING SYSTEM

The team identified a non-cited violation of 10 CFR 50 Appendix B, Criterion III, "Design Control," which requires that design control measures be established and implemented to assure that applicable regulatory requirements and the design basis for structures, systems, and components are correctly translated into specifications, drawings, procedures, and instructions. The charging system was modified to install pulsation dampeners, however, a suitable test program was not developed to ensure that the dampeners would remain available to support the charging system during postulated events.

This finding was more than minor because the condition of the pulsation dampeners subsequently degraded, which affected the design control and equipment performance attributes and the availability, reliability, and capability objective of the mitigating systems cornerstone. The

degraded condition of the pulsation dampeners challenged the reliability of the charging system to mitigate design basis events. This finding was determined to be of very low safety significance (Green) based on the results of a bounding risk assessment.

Inspection Report# : [2004002\(pdf\)](#)

G

Significance: Feb 27, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO CORRECT SAFETY INJECTION TANK LEAKAGE

The team identified a non-cited violation of 10 CFR 50 Appendix B, Criterion XVI, "Corrective Action," which requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. The licensee failed to take appropriate corrective actions in a timely manner to address and correct repeat instances, over a multiple year period, of safety injection tank (SIT) leakage at Unit 2. The finding was more than minor because it affected the equipment performance attribute and the availability, reliability, and capability of the mitigating systems cornerstone. The chronic leakage problem resulted in an increased unavailability of a high pressure safety injection system train during the periods of time when the system was realigned and used to fill the SITs. This finding was determined to be of very low safety significance (Green) since an actual loss of the safety system function had not occurred and the high pressure safety injection train was removed from service for less than the Technical Specification allowed outage time.

Inspection Report# : [2004002\(pdf\)](#)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

G

Significance: Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

HIGH CONCENTRATION OF AIRBORNE RADIOACTIVE MATERIAL DURING FILTER TRANSFERS

Dominion did not use process or other engineering controls, to the extent practical, to control the concentration of radioactive material in air during handling of radioactive spent Unit 2 filters on September 29, 2004. As a result, elevated concentrations of radioactive material in air was generated and two workers sustained unplanned intakes of airborne radioactive material. This was a self-revealing, non-cited violation of 10 CFR 20.1701, "Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas, Use of Process or Other Engineering Controls." The finding was greater than minor, in that it was associated with the program and processes for exposure control and monitoring attribute of the Radiation Safety Cornerstone attributes and did affect the objective of the Cornerstone. The finding was determined to be of very low risk significance (Green) using NRC Manual Chapter 0609, Appendix C, in that it involved an ALARA exposure control finding, but the three year rolling average collective occupational dose for Millstone did not exceed 135 person-rem. Dominion suspended the work activity and initiated a root cause investigation. This finding was related to the cross-cutting area of Human Performance in that Dominion did not use process or engineering controls, to the extent practical, resulting in exposure of two workers to elevated concentrations of airborne radioactive material..

Inspection Report# : [2004008\(pdf\)](#)

Public Radiation Safety

Physical Protection

[Physical Protection](#) information not publicly available.

Miscellaneous

Significance: N/A Feb 27, 2004

Identified By: NRC

Item Type: FIN Finding

PROBLEM IDENTIFICATION AND RESOLUTION TEAM INSPECTION RESULTS

The team determined that the licensee was generally effective at identifying discrepant conditions at an appropriate threshold and entering them into the corrective action program. Once entered into the system, issues were usually prioritized appropriately and in a timely fashion; and were properly evaluated commensurate with the safety significance. Overall, the evaluations reasonably identified the causes of the problem, the extent of the condition, and provided for corrective actions to address the causes. However, in some cases, the corrective action program was not effectively used to resolve and prevent problems. There were some instances where issue evaluations, as well as the associated corrective actions, were not effective in resolving problems. There were also some examples in which condition reports were characterized at a lower category than prescribed by the corrective action program.

Inspection Report# : [2004002\(pdf\)](#)

Last modified : March 09, 2005