Millstone 3
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
DID NOT ADEQUATELY EVALUATE A REACTOR PROTECTION SYSTEM SET POINT MODIFICATION
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion III, “Design Control,” for an inadequate design change review for a steam generator low-low water level setpoint modification. Specifically, Dominion did not fully consider the impact of the modification on the ability of the steam generator to accommodate operational transients without exceeding a parameter threshold which would require automatic or manual protective action. This led to a reactor trip on December 1, 2005, while conducting a rapid downpower in response to a reactor coolant system leak from the packing of a loop maintenance stop valve that was collected in a drain tank inside primary containment. At 38 percent power, main turbine vibrations increased above allowable values and the turbine was manually tripped. Following the turbine trip, the reactor unexpectedly automatically tripped on the “C” steam generator low-low level trip setpoint. Dominion entered this condition into their corrective action program as CR-06-04788. Corrective actions for this issue included plans to conduct an engineering analysis to determine the new steam generator low-low level trip setpoints and revision of the design change notice and the 10 CFR 50.59 screening. This finding is more than minor because it is associated with the Initiating Events Cornerstone and affects the cornerstone objective to limit the likelihood of those events that upset plant stability. Specifically, an inadequate design change review led to an unanticipated reactor trip. This issue is of very low safety significance 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 is related to the cross-cutting aspect of human performance in that Dominion’s review and decision making process was not effective at identifying possible unintended consequences when making assumptions for a risk significant design change.
Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 31, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
MISPOSITIONING OF BORIC ACID VALVES RESULTING IN UNINTENDED POSITIVE REACTIVITY ADDITION
A Green self-revealing non-cited violation of Technical Specification 6.8.1, “Procedures”, was identified for adequate implementation of procedures which resulted in an unintended positive reactivity addition. On February 17, 2006, Operations personnel mis-positioned three valves which isolated the “A” boric acid gravity feed flow path and the “A” boric acid transfer pump. This issue manifested itself the following day during a planned blended makeup to the Volume Control Tank which resulted in small positive reactivity addition. Dominion entered their procedural compliance error into their corrective action program for resolution. This issue involved the cross-cutting aspects of human performance in that operators failed to adequately implement procedures which lead to an unintended reactivity addition. This issue was more than minor because it is associated with the human performance and configuration control attributes of the Initiating Events cornerstone. The finding is associated with an increase in the likelihood of initiating events in that an inadvertent positive reactivity addition actually occurred. The inspectors determined that the self-revealing finding was of very low safety significance because the amount of reactivity added was small (approximately 6 pcm) and did not contribute to both the likelihood of a reactor trip and the unavailability of mitigation equipment or functions. (Section 1R14)

Inspection Report# : 2006002 *(pdf)*

Significance: G Mar 03, 2006
Identified By: NRC

Item Type: NCV NonCited Violation
FAILURE TO PERFORM EVALUATIONS ON BORIC ACID LEAKS
The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" for Dominion's failure to follow Boric Acid Corrosion Control Program (BACCP) procedures. Specifically, plant personal routinely failed to perform boric acid leak evaluations as required per Dominion procedure DNAP-1004, "Boric Acid Corrosion Control Program," despite the specified threshold having been met. This finding is more than minor because it is associated with the Initiating Events Cornerstone attribute of human performance and it affects the cornerstone's objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The licensee entered this condition into the corrective action program as CR-06-02088. This finding was characterized as a loss-of-coolant-accident (LOCA) initiator and was determined to be of very low safety significance (Green) because it did not result in exceeding the Technical Specification limit for identified reactor coolant system (RCS) leakage or affect other mitigation systems resulting in a total loss of their safety function. Corrective actions included a planned revision to the Boric Acid Corrosion Control program to ensure evaluations are performed and documented. In addition, the licensee conducted a Boric Acid Corrosion Control program peer review using another nuclear power station boric acid program owner. This finding is related to the cross-cutting area of human performance in that on at least 22 occasions, station personnel did not follow established station procedures requiring boric acid evaluation.
Inspection Report# : 2006006 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
DID NOT EVALUATE AND CORRECT A SIGNIFICANT CONDITION ADVERSE TO QUALITY ASSOCIATED WITH GRAVITY FEED BORATION LINES
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” for the failure to fully evaluate and correct a significant condition adverse to quality which led to a repeat occurrence of air introduction in the gravity feed boration line. Specifically, following identification and documentation of air in the “A” gravity feed boration line on September 9, 2004, Dominion did not evaluate and correct the cause which then led to a repeat occurrence of air introduction in the “B” gravity feed boration line on April 13, 2006. The inspectors determined that the cause of both events was due to an inadequate chemical and volume control system (CVCS) fill and vent procedure. Dominion entered this condition into their corrective action program as CR-06-03730. Corrective actions for this issue included venting the air from the gravity feed boration line and plans to revise the CVCS fill and vent procedure. This finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability of systems that respond to initiating events to prevent undesirable consequences. Specifically, excessive air in the gravity feed lines has the potential to damage the operating charging pump if an emergency boration event were to occur. This finding was determined to be of very low safety significance (Green) since full mitigation credit was given for the availability of redundant emergency boration paths. This finding is related to the cross-cutting aspect of problem identification and resolution in that Dominion did not fully evaluate and correct an identified degraded condition discovered in September 2004, which then recurred in April 2006.
Inspection Report# : 2006003 *(pdf)*

Significance: G Mar 03, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO INCLUDE ACCEPTANCE CRITERIA IN MAINTENANCE PROCEDURES
The inspectors identified a Green NCV of 10 CFR 50, Criterion V, "Instructions, Procedures, and Drawings" for failing to include appropriate acceptance criteria associated with the measurement of the Unit 3 TDAFW pump governor control valve stuffing box inner diameter in the applicable maintenance procedure. In addition, the maintenance procedure did not specify the equipment required to measure the control valve stem/gap measurements and did not require the recording of measurements needed to verify the maintenance activity had been satisfactorily accomplished in accordance with vendor

requirements. The licensee evaluated this issue for immediate operability and entered the issue into their corrective action program as CR-06-02043 and CR-06-02044. Corrective actions included revising the maintenance procedure to update the clearance values as well as instructing maintenance system team personnel on the event relative to utilizing the correct MT&E for the work scope. This finding is more than minor because it affected the procedure quality attribute of the Mitigating Systems Cornerstone. Specifically, if left uncorrected, the finding would become a more significant safety concern as governor stuffing box internal diameters continued to increase resulting in additional control valve stem binding issues and associated TDAFW pump overspeed and failure events. The inspectors determined that the finding was of very low safety significance (Green) because the finding did not involve a design or qualification deficiency, represent an actual loss of system or TDAFW pump safety function, or involve seismic, flooding, or severe weather initiating events. This finding is related to the cross-cutting aspect of problem identification and resolution in that the licensee failed to translate appropriate vendor acceptance criteria into the TDAFW governor control valve maintenance procedure despite receipt of new vendor requirements which were published and available in 1999.
Inspection Report# : 2006006 *(pdf)*

Significance: G Mar 03, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO EVALUATE AND CORRECT CONDITION ADVERSE TO QUALITY ASSOCIATED WITH TDAFW PUMP
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to take effective corrective action to prevent a repeat failure of the Unit 3 turbine-driven auxiliary feedwater (TDAFW) pump. Specifically, following identification and documentation of excessive internal stuffing box wear, which was identified following an overspeed trip event that occurred in April 2005, the licensee failed to fully evaluate this condition which was later documented as a contributing cause to a recurring failure that occurred on January 9, 2006. The licensee entered this condition into their corrective action program as CR-06-00244. Corrective actions for this issue included repacking of the TDAFW pump governor control valve, repair of a cam plate, and plans to conduct a stuffing box repair within three months of the January 2006 pump failure. This finding is more than minor because it is associated with the Mitigating Systems Cornerstone and affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, because the degraded stuffing box was not adequately evaluated and corrected in April 2005, the reliability of the TDAFW pump was adversely affected. Following Phase 1, 2, and 3 SDP evaluations, this finding was determined to be of very low safety significance (Green) since TDAFW pump recovery credit was given during a restart attempt that would occur during a design basis event. This finding is related to the cross-cutting area of problem identification and resolution in that the licensee did not fully evaluate and correct an identified degraded condition.
Inspection Report# : 2006006 *(pdf)*

Barrier Integrity

Significance: G Mar 03, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IMPLEMENT EFFECTIVE CORRECTIVE ACTIONS ASSOCIATED WITH REPETITIVE LLRT FAILURES
The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action", for failure to take adequate corrective actions to prevent repetitive local leak rate test failures associated with the Unit 3 reactor plant chilled water system (CDS) inboard containment isolation valve, 3CDS*CTV40A. As a result, there was a loss of redundancy which reduced reliability of the containment isolation function. This condition was entered into the licensee's corrective action program as CR-05-10651, a condition report which documented a licensee action to create a plan to resolve the failures. This finding is more than minor because it is associated with the Barrier Integrity Cornerstone objective of maintaining containment functionality and the attribute of structure/system/component (SSC) and Barrier Performance. This finding is of very low safety significance because there was no actual open pathway in the physical integrity of the reactor containment or an actual reduction of the atmospheric pressure control function of the containment. This finding is

related to the cross-cutting area of problem identification and resolution in that the licensee did not implement effective corrective actions to prevent a recurring component failure.
Inspection Report# : 2006006 *(pdf)*

Emergency Preparedness

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO COMPLY WITH TECHNICAL SPECIFICATION REQUIRED ACTIONS FOR INOPERABLE CONTAINMENT HIGH RANGE RADIATION MONITORS
A Green NCV was identified regarding the site engineering organization's failure to evaluate, in a timely manner, the effects that thermally induced currents (TIC) have on the operability of the Unit 3 containment high range radiation monitors (HRRM) (RMS*RE-04A and RMS*RE-05A) during a design basis accident, as required by Technical Specification 3.3.3.6. On September 6, 2006, site engineering issued condition report (CR-06-08181), documenting that engineering calculations demonstrated that the Unit 3 containment HRRMs (RMS*RE-04A and RMS*RE-05A) would provide false indications due to TICs that would occur following a loss of coolant accident (LOCA). Upon review of the matter, Dominion declared both channels of the Unit-3 containment HRRM monitoring system inoperable on September 6, 2006, in accordance with Technical Specification Action Statement 3.3.3.6. Immediate corrective actions included submitting a Special Report as required by TS 3.3.3.6 and revision of operating procedures to identify alternative methods for monitoring Unit 3 containment radiological conditions, when required. Additionally, Dominion generated CR-06-08340 to identify its untimely response to this condition and affect corrective measures to prevent recurrence. This finding is more than minor because it is associated with the facilities and equipment attribute of the Emergency Preparedness Cornerstone and adversely affects 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. This finding was evaluated using Sheet 1, Failure to Comply, of Inspection Manual Chapter 0609, Appendix B, Emergency Preparedness Significance Determination Process (SDP). The finding is of low safety significance because the performance deficiency was a failure to comply with a non-risk significant planning standard and no planning standard function failure occurred since other parameters could be used to validate the indications from the Unit 3 containment HRRMs. The cause of the finding is related to the cross-cutting element of problem identification and resolution, in that, Dominion failed to adequately evaluate and correct the condition for impact on operability.
Inspection Report# : 2006004 *(pdf)*

Occupational Radiation Safety

Public Radiation Safety

Significance: G Sep 30, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ACCOUNT FOR ALL SHIPPED RADIOACTIVE MATERIAL ON THE UNIFORM MANIFEST
A self-revealing NCV of 10 CFR 20, Appendix G, "Requirements for Transfers of Low-Level Radioactive Waste Intended for Disposal at Licensed Land Disposal Facilities and Manifest," was identified for failure to list on a shipping manifest all radioactive materials that were shipped to a waste processor. On February 24, 2006, Dominion shipped a spent filter liner (Shipment No. 06-019) to a waste processor. On March 2, 2006, the waste processor notified Dominion that upon opening the liner, two bags, containing contaminated rags and mop heads, were not accounted for on the manifest. This issue was entered into Dominion's corrective action program (CR 06-02234). Corrective action for this issue included informing the

waste processor by phone of the correct activity, weight, and volume of this material and providing an amended uniform manifest. The finding is more than minor because it is associated with Public Radiation Safety Cornerstone and involves a failure to comply with NRC regulations. This finding is of very low safety significance because the quantity of radioactive material did not involve under-classifying the shipment's waste (Class C) or the Department of Transportation shipping category (LSA II). This finding is related to the cross-cutting aspect of human performance because Dominion did not adequately implement procedures for preparation of the manifest.
Inspection Report# : 2006004 *(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Mar 03, 2006
Identified By: NRC
Item Type: FIN Finding
PROBLEM IDENTIFICATION AND RESOLUTION TEAM INSPECTION RESULTS
The inspectors identified that the licensee was effective at identifying problems and entering them into the corrective action program (CAP). The licensee's effectiveness at problem identification was evidenced by the relatively few deficiencies were identified by external organizations (including the NRC) that had not been previously identified by the licensee, during the review period. The licensee effectively used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementing corrective actions. Corrective actions, when specified, were generally implemented in a timely manner. Licensee audits and self-assessments were found to be generally effective. On the basis of interviews conducted during this inspection, workers at the site felt free to input safety concerns and issues into the CAP program. However, the inspectors did identify some missed opportunities to identify issues and enter them into their corrective action program. In addition, there were some instances where issue evaluations and corrective actions were not effective in resolving problems.
Inspection Report# : 2006006 *(pdf)*

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