Byron 1
3Q/2012 Plant Inspection Findings

Initiating Events

Significance: G Jun 30, 2012
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Leakage Detection Trough with Large Accumulation of Boric Acid Identified
A finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors when licensee personnel failed to identify boric acid accumulation that would have impeded flow from the leakage detection trough to the sump. The licensee entered this issue into the Corrective Action Program (CAP) as IR 1339957. Corrective actions included removing the boric acid accumulation from the leakage detection trough and passing water through the drain to verify associated piping was free of obstruction.

The finding was determined to be more than minor because the finding was similar to IMC 0612, Appendix E, Example 4(a). Example 4 focuses on procedural errors. The "not minor if" example indicates that, if a later evaluation shows that the safety-related equipment was negatively impacted, it is more than minor. The flow obstruction in the leakage detection trough would have delayed the flow of water to the sump thereby delaying any subsequent alarm. Therefore, this performance deficiency negatively impacted the Initiating Events Cornerstone objective of Equipment Performance. This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area because licensee personnel failed to ensure that an issue potentially impacting nuclear safety was promptly identified and fully evaluated, and that actions were taken to address safety issues in a timely manner, commensurate with their significance [P.1(d)].
Inspection Report# : 2012003 *(pdf)*

Significance: G Jun 30, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Have Instructions Appropriate to the Circumstances
A self-revealed finding with two examples of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when licensee personnel failed to properly torque an RCS pressure boundary valve closed and failed to properly re-install a Reactor Containment Fan Cooler (RCFC) interior access panel during the previous Unit 1 refueling outage. The licensee replaced the valve and reinstalled the RCFC internal access panel upon identification and entered the item into the Corrective Action Program (CAP) as IR 1339375 and IR 1347450, respectively. Additional corrective actions included modifying the installation procedure to add clarity in the selection of the proper torque value and to add detail and tracking aids for the RCFC interior access panels.

In accordance with IMC 0612, Appendix B, "Issue Screening," the first examples was determined to be more than minor because it was associated with the Procedure Quality attribute of the Initiating Events Cornerstone and adversely affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, this issue increased the risk of a small break loss of coolant accident. The inspectors performed a Phase 1 SDP screening using IMC 0609,

Attachment 4, Table 4a, "Characterization Worksheet for Initiating Events Cornerstone." The inspectors determined that the finding would not result in exceeding the Tech Spec limit for any RCS leakage or could have likely affected other mitigation systems resulting in a total loss of their safety function.

The second example was determined to be more than minor because the finding was associated with the Configuration Control attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers, including the containment, protect the public from radionuclide releases caused by accidents and events. Specifically, this issue decreased the availability and reliability of the RCFCs for use during a design basis accident. The inspectors determined that the issue was of very low safety significance (Green) because the finding did not represent a degradation of the radiological barrier function, did not represent a degradation of the barrier function of the control room, did not represent an actual open pathway in the physical integrity of reactor containment, and did not involve an actual reduction in function of hydrogen igniters in the reactor containment.

Both examples of the finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area [H.4(a)] because licensee personnel failed to properly utilize human error prevention techniques. These two examples of a finding with a cross-cutting aspect were considered as a single NCV.

Inspection Report# : 2012003 *(pdf)*

Mitigating Systems

Significance: G Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Non-Conforming 480/120 Vac Motor Control Contactors
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure qualified components were installed in the plant. Specifically, purchase orders did not specify the minimum pickup voltage for NEMA Size 1 through Size 4 safety-related motor-control contactors such that the installed contactors were not rated to function at the design basis minimum voltage. The licensee entered the issue into their corrective action program and based on a sample testing of contactors demonstrated there was adequate margin between the highest found minimum-pickup voltage and the design basis pickup voltage.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating System Cornerstone attribute of Design Control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, having installed contactors that may not function under degraded voltage conditions could affect the operability of multiple safety-related structures, systems and components during an event. The finding screened as of very low safety significance (Green) because the finding involved a design or qualification deficiency that did not result in a loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : 2012007 *(pdf)*

Significance: G Jun 15, 2012

Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify the CCW System Capability to Withstand a Thermal Barrier Break
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to ensure the component cooling water (CCW) system was capable of withstanding a reactor coolant pump thermal barrier break. Specifically, when assuming a single failure of the automatic isolation function, the licensee failed to evaluate the break effect on the CCW system during the 3 minutes postulated to isolate the leak. The licensee entered the issue into their corrective action program; verified the CCW system would be able to withstand the postulated event, and planned to perform a detailed evaluation of the effect of a thermal barrier break on the CCW system.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to evaluate the effect of the thermal barrier rupture on the CCW system created reasonable doubt whether the system would be capable of withstanding the applied forces of this event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : 2012007 *(pdf)*

Significance: G Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Non-Conservative Calibration Tolerance Limits for Electrical Relay Settings
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to specify in a design calculation the allowable relay setpoint calibration tolerances. Specifically, the acceptance criteria used in relay setting calibration procedures was not bounded by the relay setting design calculations. The licensee entered this finding into their corrective action program and verified the calibrated relay settings would still provide adequate electrical protection coordination capability.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Equipment Performance, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to adequately evaluate the design requirements of the relay settings could have resulted in a loss-of-relay coordination and could allow a fault on one piece of equipment to propagate to other safety-related equipment outside the designed isolation boundary. The finding screened as very low safety significance (Green) because the finding was design deficiency confirmed not to result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : 2012007 *(pdf)*

Significance: G Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Design Analyses Did Not Adequately Address Potential Flooding of the Auxiliary Building
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately analyze potential design basis internal

flooding events in the auxiliary building. Specifically, the licensee's analysis did not account for the possible single failure of an essential service water motor-operated isolation valve or its associated power supply, which would have prevented break isolation within 30 minutes. The licensee entered the issue into their corrective action program; verified essential service water piping in the auxiliary building would meet the "crack exclusion" pipe stress criteria, and planned to the revise the flooding analysis.

The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and objective of ensuring the capability of the system to respond to an initiating event to prevent undesirable consequences. Specifically, the failure to adequately analyze potential design basis internal flooding events in the auxiliary building would affect the capability of safety-related equipment to withstand the postulated event. The finding screened as very low safety significance (Green) because the design deficiency did not result in a loss of operability or functionality. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.

Inspection Report# : 2012007 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Incomplete Component Cooling Water System and Essential Service Water System Code Examinations
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR 50.55a(g)(4) when licensee personnel failed to perform system leakage testing in a timely manner as required by Section XI of the ASME Code following modification activities that added piping and associated welds between Unit 1 and Unit 2 CC and SX systems. The licensee performed the required leakage tests which were all found to be acceptable.
Inspection Report# : 2012002 *(pdf)*

Significance: G Mar 31, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Control the Operating Status of Eight New Valves Affecting Two Safety Related Systems
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, App B, Criterion XIV, "Inspection, Test, and Operating Status," when licensee personnel failed to control the operating status of eight manual isolation valves that were installed as part of a modification. The licensee placed temporary identification tags on the valves and initiated a clearance order to control the position of these valves.
Inspection Report# : 2012002 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY VOIDED SECTIONS OF AF PIPING
The inspectors identified a finding of very low safety significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when licensee personnel failed to identify non-conforming conditions associated with voided piping within the Unit 1 and Unit 2 safety-related diesel driven auxiliary feedwater (AF) systems (i.e., between the AF 006B and 017B valves.) These sections of piping had been historically voided until they were recently re-design to be filled and maintained filled with water to address a NRC identified 10 CFR Part 50, Appendix B, Criterion III, "Design Control" Green non-cited violation (NCV). The licensee entered this issue into their corrective action program as IR 1296819, IR 1292337, and IR 1295760. Corrective actions include instituting a Operations standing order, replacement of the Unit 1 AF drain valve, and a capping the Unit 2 AF drain

valve.

The inspectors determined that the failure to identify the voided sections of AF piping prior to and following the inspector's observations and interactions with licensee staff and management was a performance deficiency. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of findings," Table 4a for the Mitigation Systems cornerstone. Specifically, the inspectors answered yes to question 1; design or qualification deficiency confirmed not to result in a loss of operability or functionality. This conclusion was reached after conservatively assuming that both sections of piping were completely voided and after reviewing tests performed by the licensee in response to the previously documented design control violation. This finding was associated with a cross-cutting aspect in the Human Performance, Resources component H.2(c). Specifically, the licensee did not have adequate procedures to ensure that these sections of piping were maintained filled with water. (Section 1R15)

Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011
Identified By: NRC
Item Type: NCV NonCited Violation
HIGH ENERGY LINE BREAK OPEERABILITY EVALUATION
The inspectors identified that the licensee did not meet multiple Operability Determination Process standards after identifying a non-conservative condition related to assumed closure times for hazard barrier dampers separating the turbine building from various safety-related rooms within the Auxiliary Building. The wall between these two building that house the dampers are commonly referred to as the "L-wall." The issues raised by the inspectors during their review of the Operability Evaluation (Revision 1 and Revision 2) resulted in the station: re-evaluating the non-conservative condition against aspects of the current licensing basis not previously considered, including applicable affected extent of condition room areas, and evaluating multiple common mode failures that the station had not previously considered under this review. In addition to the issues with the Operability Evaluation, the inspectors identified that applicable station calculations of record did not assume the correct licensing basis single failure. The licensee entered these issues into the their Corrective Action Program as IR 1184258, IR 1237133, IR 1238611, IR 1240295, IR 1244251, and IR 1276895. Corrective actions included two revisions of the Operability Evaluation, an assignment to reconstitute the applicable design basis calculation records, and plans to re-design "L-wall" HELB ventilation barriers to restore compliance.
This performance deficiency was determined to be more than minor because it was similar to the "not minor if" aspect of NRC Manual Chapter 0612, Appendix E, "Example of Minor Issues" example "3j" and dissimilar from the "minor because" aspect of this example to reasonably conclude that the finding was associated with the Mitigating Systems Design Control attribute and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 – Initial Screening and Characterization of Findings," Table 4a, for the Mitigating Systems Cornerstone. The inspectors answered "No" to all of the Mitigating Systems Cornerstone questions in Table 4a of IMC 0609.04, and, as a result, the finding screened as having very low safety significance (Green). This finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution cross-cutting area [P.1(c)] since the licensee failed to adequately evaluate a non-conforming condition associated with hazard barrier closure times. As a result, the licensee would not have implemented effective corrective actions to resolve the non-conformance. (Section 1R15)

Inspection Report# : 2011005 *(pdf)*

Significance: G Dec 31, 2011

Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO IDENTIFY HAZARDOUS MATERIALS ON TRANSPORTATION MANIFEST
A self-revealed finding of very low safety significance and an associated NCV of 10 CFR 71.5 was evaluated by the inspectors. Specifically, the licensee failed to comply with 49 CFR 172.203(c) and shipped a package of radioactive material with a transport manifest that did not document all applicable hazardous substances. The issue was entered in the licensee's corrective action program as IR 1285148. The licensee's immediate corrective actions were to provide a corrected copy of the transport manifest to the waste processor and to initiate an apparent cause investigation to identify corrective actions to avoid recurrence.

The finding is more than minor because it was associated with the Public Radiation Safety cornerstone attribute of Program and Process (transportation program) and affected the cornerstone objective, in that, providing incorrect information, as part of hazard communication, could impact the actions of response personnel. The finding was determined to be of very-low safety significance because using the Public Radiation Safety, significance determination process (SDP) the inspector determined that: (1) radiation limits were not exceeded; (2) there was no breach of a package during transit; (3) it did not involve a certificate of compliance issue; (4) it was not a low level burial ground nonconformance; and (5) it did not involve a failure to make notifications or provide emergency information. These events occurred because the shipper did not control the items placed in the waste packages and was not present when the boxes were loaded. Consequently, the inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for work control H.3(b). Specifically the licensee did not coordinate work activities by incorporating actions to address the impact of the work on different job activities, and the need for work groups to maintain interfaces with offsite organizations, and communicate, coordinate, and cooperate with each other during activities in which interdepartmental coordination is necessary to assure adequate human performance. (Section 2RS8)

Inspection Report# : 2011005 *(pdf)*

Barrier Integrity

Significance: G Jun 15, 2012
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Provide Means to Detect Leak in Emergency Core Cooling Flow Path
The inspectors identified a finding of very low safety significance and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes, which was contrary to the Updated Final Safety Analysis Report. Specifically, the licensee failed to provide a means to detect and isolate a leak within 30 minutes in that neither sump alarms nor radiation monitors were provided for the safety injection pump rooms. The licensee entered the issue into their corrective action program and planned to evaluate options for modifications to address detection of emergency core cooling system leakage.

The performance deficiency was determined to be more than minor because it was associated with the Barrier Integrity cornerstone attribute of Design Control and affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the failure to provide a means to detect and isolate a leak in the emergency core cooling flow path within 30 minutes could result in a delayed isolation of such a leak after an accident and result in a greater radionuclide release to the auxiliary building and the environment. The finding screened as very low safety significance (Green)

because the finding did not represent an actual open pathway in the physical integrity of reactor containment. The inspectors did not identify a cross-cutting aspect associated with this finding because the finding was not representative of current performance.
Inspection Report# : 2012007 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

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

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