

Byron 1

3Q/2013 Plant Inspection Findings

Initiating Events

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE IDENTIFICATION OF FIRE CURTAIN SPRINKLER DEGRADATION FOR AN AUXILIARY BUILDING STAIRWELL

The inspectors identified a finding of very low safety significance and an associated NCV of Byron Operating License (OL) Condition 2.C.6 for Unit 1 and 2.E for Unit 2 when licensee personnel failed to identify that a fire sprinkler curtain on Elevation 346' had degraded. Specifically, a ball valve had a twisted stem, which had the effect of indicating that an isolation valve was fully open, when in fact it was significantly closed. As part of their immediate corrective actions, the licensee declared the auxiliary building Elevation 346' fire curtain inoperable and initiated compensatory measures that included fire watches until the isolation valve stem was replaced. The licensee entered this issue into their CAP as IR 1560667, "Adverse Trend in Main Drain Results for 346 AB [Auxiliary Building] Sprinkler System."

The performance deficiency was determined to be more than minor because it was associated with the External Factors 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. The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," because it was associated with fire protection defense-in-depth strategies involving fire confinement. The inspectors determined that while flow to the sprinkler heads was significantly degraded, because less than 10 percent of the heads were obstructed or fouled, and no adjacent heads were fouled, the water curtain had a low degradation rating in accordance with IMC 0609, Appendix F, Attachment 2. Therefore, in accordance with IMC 0609, Appendix F, Attachment 1, Step 1.3.1.B, the finding was determined to be of very low safety significance (Green). This finding had a cross-cutting aspect in the CAP component of the PI&R cross-cutting area (P.1.(a)), because licensee personnel twice failed to identify the degraded sprinkler curtain and when NRC personnel identified the issue and informed licensee personnel, the issue was not entered into the licensee's CAP in a timely manner.

Inspection Report# : [2013007](#) (*pdf*)

Mitigating Systems

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PROPERLY ASSESS OPERABILITY OF THE 2A EDG FOLLOWING POST-MODIFICATION TESTING

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification

(TS) 3.8.1 when licensee personnel failed to properly assess the operability of the 2A emergency diesel generator (EDG) following a post-maintenance test that rendered the 2A EDG ventilation fan, a credited support system, incapable of performing its auto-start support system function for a period of two days. As part of the licensee's immediate corrective actions, a trip signal that prevented the 2A EDG fan from starting was reset. The licensee entered this issue into their CAP as IR 1252529, "2A DG [EDG] Vent Fan Trip Signal Not Reset."

The performance deficiency was determined to be more than minor because it was associated with the Configuration Control and Human Performance attributes of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, following an August 15, 2011, post-maintenance test of the 2A EDG room ventilation system high differential pressure (D/P) trip time delay, the licensee failed to implement the necessary procedural steps that ensured the high D/P trip signal was reset. This resulted in the 2A EDG room ventilation fan from auto-starting, resulting in the inoperability of the 2A EDG from August 15-17, 2011. The inspectors determined that this finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings at Power," Exhibit 2, "Mitigating Systems Screening Questions," as it did not represent an actual loss of function of at least a single train of safety-related equipment for greater than its Technical Specification (TS) allowed outage time and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This issue 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 use appropriate human performance techniques to ensure that work tasks were performed safely and individuals do not proceed in the face of uncertainty.

Inspection Report# : [2013007](#) (pdf)

Significance:  Sep 27, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

ACCEPTANCE CRITERIA FOR BATTERY VOLTAGE IN TS SURVEILLANCE PROCEDURE FAILED TO ACCOUNT FOR TEST EQUIPMENT UNCERTAINTY

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," when licensee personnel failed to account for test instrument uncertainty in the acceptance criteria for TS Surveillance procedure 2BOSR 8.6.1-2, "125VDC [Volt Direct Current] ESF [Engineered Safety Feature] Battery Bank and Charger 212 Operability Weekly Surveillance." As part of the licensee's immediate corrective actions, the voltage of the affected battery charger was adjusted. The licensee also planned to perform a fleet-wide evaluation of the issue. The licensee entered this issue into their CAP as IR 0156440, "125 VDC Battery TS Surveillance Values."

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the acceptance criteria for the battery voltage did not assure the availability of the safety-related direct current (DC) batteries that would meet the minimum voltage as required by the TSs. This finding screened as having very low safety significance, in accordance with Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings for At-Power," because it was a design deficiency confirmed not to 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. Specifically, the decision to not include the instrument uncertainty was made in 2003, as part of an evaluation for a previously identified issue.

Inspection Report# : [2013007](#) (*pdf*)

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: NCV NonCited Violation

EMBEDMENT PLATE DESIGN DEFICIENCIES

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when licensee personnel failed to properly evaluate the structural steel embedment plate which supported Safety Injection (SI) pipe supports 1SI06025V and 1SI06030S. Specifically, the licensee failed to demonstrate compliance with the American Institute of Steel Construction (AISC) and Seismic Category I linear elastic requirements. The licensee entered this issue into their corrective action program (CAP) as Issue Report (IR) 1478188. As part of their immediate corrective actions, the licensee performed an operability evaluation and concluded the structural steel embedment plate was operable, but nonconforming.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to demonstrate compliance with AISC and Seismic Category I linear elastic requirements to ensure the structural steel embedment plate would maintain structural integrity when subjected to a design basis load. The inspectors determined that because the finding did not result in a loss of operability or functionality, the finding was of very low safety significance (Green). This finding did not have a cross-cutting aspect as it was not indicative of current performance.

Inspection Report# : [2013002](#) (*pdf*)

Significance: G Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

FAILURE TO PROPERLY SCOPE ALL PERTINENT EXTERNAL FLOOD PROTECTION FEATURES INTO WALKDOWN LISTS IN ACCORDANCE WITH INDUSTRY GUIDANCE NEI 12-07

The inspectors identified a finding of very low safety significance (Green) when licensee personnel failed to develop inspection lists that included all external flood protection features credited in current licensing bases (CLB) documents as specified in Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Walkdowns of Plant Flood Protection Features." Specifically, concrete flood barriers in the fuel handling building (FHB) that protected safety-related equipment in the auxiliary building and flood barriers for the spent fuel pool cooling pumps were not included in the licensee's flooding inspection lists, although these passive components were a critical element of the licensee's flood mitigation strategy. The licensee entered this issue into their CAP as IR 1466355. Corrective actions included plans to perform an inspection of the NRC-identified features that were omitted from the inspection lists and an extent-of-condition review.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors (Flood Hazard) attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Because the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors), the finding was of very low safety significance (Green). This finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because licensee personnel failed to properly apply human error prevention techniques such as peer checking and proper documentation of activities [H.4(a)].

Inspection Report# : [2013002](#) (pdf)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO PREVENT EXCESSIVE SILT BUILDUP IN THE 1b SAFETY INJECTION PUMP OIL COOLER

A finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when the licensee failed to properly address 1B SI pump oil cooler silting on August 25, 2010, and, as a result, the 1B SI pump oil cooler became blocked by silt and was unable to be supplied with sufficient SX flow during pump testing on September 28, 2012. The licensee entered this issue into their Corrective Action Program (CAP) as IR 1419800. Corrective actions included cleaning the 1B SI pump oil cooler, cleaning the oil cooler approach piping, ensuring the oil cooler outlet valve was fully open, and assessing the oil cooler approach piping for other similar coolers.

Inspection Report# : [2012005](#) (pdf)

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

INADEQUATE WORK INSTRUCTIONS LEAD TO FAILURE OF THE 1B SX PUMP MOTOR

A finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed when the 1B SX pump tripped when a motor lug failed as a result of an inadequate motor maintenance procedure. Specifically, Work Order (WO) 525476-02, "Unit 2 ESW [Essential Service Water] Pump 2SX01PB Remove Existing Motor and Install Rebuilt Motor," contained instructions to de-terminate the motor leads to the 1B SX pump motor, but failed to specify the removal of bus bars, which subsequently damaged the motor cables and motor lug during shipment for motor refurbishment. The licensee entered this issue into their CAP as IR 1414688. Corrective actions included replacing the failed motor termination lug, reterminating the remaining two lugs on the 1B SX pump motor, initiating the replacement of lugs on the remaining SX pump motors, adding steps in work instructions to de-terminate motor termination lugs when removing the SX pump motors for preventive maintenance, and checking similar motor leads on other systems for similar issues.

Inspection Report# : [2012005](#) (pdf)

Barrier Integrity

Significance:  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

FAILURE TO SUBMIT A 10 CFR 50.73(A)(2)(V) REPORT FOR INOPERABLE CONTAINMENT AREA RADIATION MONITORS

The inspectors identified a Severity Level IV NCV of 10 CFR 50.73(a)(2)(v) when licensee personnel failed to report a condition that resulted in a loss of safety function when both containment area radiation monitors were declared inoperable. Specifically, on May 24, 2011, the licensee identified that when reducing reactor power with the isolation setpoints for containment area radiation monitors 1/2AR11J and 1/2AR12J constant and background radiation levels decreasing, the TS setpoint limit for containment area radiation monitors were exceeded and could have prevented the fulfillment of a safety function to automatically isolate containment. The inspectors determined that although this

condition represented a loss of safety function in accordance with the 10 CFR 50.73 reporting requirements and NUREG-1022, "Event Reporting Guidelines: 10 CFR 50.72 and 10 CFR 50.73," Revision 2, the condition was not reported as required. This issue was entered into the licensee's CAP as IR 1463675. Corrective actions included an action to report this event in accordance with NRC requirements.

Inspection Report# : [2012005](#) (*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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