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Byron 1 – Quarterly Plant Inspection Findings

4Q/2017 – Plant Inspection Findings

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Initiating Events

Significance: G Jun 30, 2017

Identified By: Self-Revealing

Item Type: FIN Finding

Failure to Verify Computer Software during Transformer Replacement Modification

Green. A finding of very low safety significance was self-revealed on March 28, 2017, when operators rapidly reduced generator load in response to a loss of forced cooling for the newly installed Unit 1 East main power transformer (1E MPT) and an indicated rapid rise in transformer winding hotspot temperature caused by vendor data entry errors in the monitoring system software. The process detailed in CC-AA-256-101, "Software Quality Assurance Process for Plant Digital Instrumentation and Control Systems and Components," to verify and validate the software/firmware during updates was not implemented after the vendor made changes to the digital software during the modification process. The issue was entered into the licensee's corrective action program (CAP) and corrective actions included replacement of the cooling group supply breaker, correction of the software errors, and revision of the alarm response procedure and supporting documentation.

The inspectors concluded that the issue was more than minor because it adversely impacted the Design Control attribute of the Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during plant operations. Specifically, rapid power changes or load reject could challenge operating safety limits. In this event, the rapid rise in the calculated winding hotspot indications and subsequent operator actions to rapidly reduce load over 300 megawatts electric (MWe) was the result of two software errors: (1) an incorrect Current-Turns (CT) Ratio and (2) the incorrect configuration of the MPT cooling groups in series within the software. The inspectors utilized Exhibit 1, "Initiating Events Screening Questions" of IMC 0609, "Significance Determination Process," Appendix A, dated June 19, 2012, to conclude that the finding was Green, or of very low safety significance, because the event did not cause a reactor trip and the event did not affect any mitigation equipment. A cross-cutting aspect in the Challenge the Unknown element of the Human Performance Area (IMC 0310 H.11) was assigned because the engineering group based the risk evaluation on the vendor input that the scope of the change was limited. The flawed assumption that the vendor input was correct without verification resulted in a failure

to manage the risk prior to implementation through the verification/validation of the software/firmware. [Section 40A2.4]

Inspection Report# : 2017002 (*pdf*)

Mitigating Systems

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Prevent Secondary Missiles Following a Postulated HELB

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to ensure that the design basis for the main steam safety valve (MSSV) room maintenance hatches was maintained. Specifically, the high energy line break (HELB) analysis performed for the MSSV rooms and steam tunnels prior to initial construction concluded that no secondary missiles were generated as a result of a HELB although maintenance hatches in the ceiling of the MSSV rooms were identified to become secondary missiles following a HELB in the MSSV rooms and steam tunnels. As part of their immediate corrective actions, the licensee entered this issue into their corrective action program (CAP) as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC [Structure, System, and Component], does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 71111.15)

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Blow Out Panel Design Control

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when the licensee originally designed the MSSV blow out panels in a manner that

prevented them from functioning properly. The licensee entered this issue into their CAP as AR 4075608 and corrected the design issue in March of 2009.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(1))

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Properly Correct Errors in Design Analysis for Main Steam Line Break in Main Steam Tunnel

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when the licensee failed to promptly correct errors in the design analysis for a main steam line break in the main steam tunnel. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and completed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(2))

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Untimely Corrective Action for Secondary Missiles

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," when the licensee failed to promptly address the identification of secondary missiles following a HELB event. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(3))

Inspection Report# : 2017010 (*pdf*)

Significance:  Dec 15, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inaccurate Analysis of Record

The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," when the licensee failed to maintain an accurate and up-to-date analysis of record for a postulated HELB in the MSSV rooms and steam tunnels. As part of their immediate corrective actions, the licensee entered this issue into their CAP as AR 4075608 and performed an operability evaluation.

The finding was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control 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). In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," the inspectors answered "Yes" to Question 1, "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability or functionality?" because the

finding did not result in a loss of operability or functionality. Therefore, this finding was of very low safety significance. No cross-cutting aspect was assigned to this finding as it was not reflective of current performance. (Section 40A2.1.a.(4))

Inspection Report# : 2017010 (*pdf*)

Significance:  May 19, 2017

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Perform 10 CFR 50.59 Evaluation for UFSAR Change (Section 1R17.1b)

Severity Level IV. The inspectors identified a Severity Level IV, Non-Cited Violation of 10 CFR 50.59, "Changes, Tests, and Experiments," Section(d)(1) and an associated finding of very low safety significance (Green) for the licensee's failure to provide a written evaluation which provided the basis for the determination that a change did not require a license amendment. Specifically, the licensee failed to provide a basis for why a change to the surveillance frequencies of emergency diesel generators described in the Updated Final Safety Analysis Report did not require prior NRC approval.

The inspectors determined that the performance deficiency was more than minor because the inspectors could not reasonably determine that the changes would not have ultimately required NRC prior approval. The associated finding screened to Green (very low safety significance) because it did not result in the loss of operability or functionality. The diesel generators passed their most recent surveillances. As a result the violation is categorized as Severity Level IV in accordance with section 6.1.d of the NRC Enforcement Policy. The issue did not have a cross-cutting aspect because it was not reflective of current performance. (Section 1R17.1b)

Inspection Report# : 2017009 (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Security

The security cornerstone is an important component of the ROP, which includes various security inspection activities the NRC uses to verify licensee compliance with Commission regulations and thus ensure public health and safety. The Commission determined in the staff requirements memorandum (SRM) for SECY-04-0191, "Withholding Sensitive Unclassified Information Concerning Nuclear Power Reactors from Public Disclosure," dated November 9, 2004, that specific information related to findings and performance indicators associated with the security cornerstone will not be publicly available to ensure that security-related information is not provided to a possible adversary. Security inspection report cover letters will be available on the NRC Web site; however, security-related information on the details of inspection finding(s) will not be displayed.

Miscellaneous

Current data as of : February 01, 2018

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