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Byron 1 – Quarterly Plant Inspection Findings

2Q/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:  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*)

Significance:  Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

DOST Flood Barrier Door Left Open

Green. A finding of very low safety significance and an associated NCV of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures and Drawings," was self-revealed on September 14, 2016, when a station employee discovered that the flood barrier door for the Unit 1 Train B (1B) diesel oil storage tank (DOST) was open and unattended for three hours and six minutes. The watertight door was installed to protect the DOST fuel oil transfer pumps from the effects of a postulated failure of a circulating water expansion joint at the condenser water boxes in the turbine building, and the open door rendered the 1B diesel generator inoperable. An operator was dispatched to assess the door and, after finding no mechanical issue with the door, closed the door to restore operability to the 1B diesel generator. The issue was entered into the licensee's Corrective Action Program (CAP) as IR 02699674.

The inspectors determined that the issue was more than minor because it was associated with the Configuration Control attribute of the Mitigating Systems Cornerstone and adversely impacted 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 close and dog the 1B DOST door impacted the availability of the 1B diesel generator during postulated events. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Appendix A, "The Significance Determination Process (SDP) For Findings at Power," because the inspectors answered the Exhibit 2 - Mitigating Systems Screening Question B as "Yes." The inspectors determined that the finding involved the degradation of equipment specifically designed to mitigate a flooding event and used Exhibit 4 of the same Appendix

to evaluate the significance. The inspectors determined that with the flood door open, this single condition during a turbine building flood event would degrade two trains of a multi-train system. Specifically, the turbine building flood would impact the diesel fuel transfer pumps for both Unit 1 emergency diesel generators. Therefore, a Detailed Risk Evaluation was performed by a Senior Risk Analyst who concluded that the change in core damage frequency (delta CDF) associated with the finding was 4.6E-10/year and since the total estimated delta CDF was less than 1.0E-7/year, the issue screened as having very low safety significance (i.e., Green) using IMC 0609, Appendix H, "Containment Integrity Significance Determination Process," for large early release frequency (LERF). The inspectors assigned a cross-cutting aspect in the Avoiding Complacency element of the Human Performance Area (IMC 0310 H.12) to this finding because an individual accessing the room through the doorway failed to challenge the door to ensure proper closure in a manner that would have revealed the door was not properly latched.

Inspection Report# : 2016003 (*pdf*)

Barrier Integrity
Emergency Preparedness
Occupational Radiation Safety
Public Radiation Safety

Significance: G Sep 30, 2016

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

Failure to Properly Block and Brace a Radioactive Shipment for Transport

Green. A finding of very low safety significance and an associated NCV of 10 CFR 71.5(a) and 49 CFR 171.1(b)(12) was self-revealed when the licensee failed to properly block and brace a Radioactive Waste (Radwaste) Shipment that was shipped to a waste processing facility for disposal. The failure to properly block and brace the Radwaste Shipment caused a breach of the shipping package while in transit to the waste processing facility. When the shipment breach was discovered at the waste processing facility, contamination surveys were immediately conducted and it was determined that no loss of content had occurred during transportation. The surveys also determined that radiation dose limits from the package were below NRC and Department of Transportation (DOT) limits. The waste processing facility notified the licensee of the breach during transport and the licensee entered the event into their CAP as IR 02665985.

The inspectors determined that the issue was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety Cornerstone and adversely impacted the cornerstone objective of ensuring adequate protection to public health and safety from exposure to radiation from routine civilian nuclear operations. Specifically, the breach of the transportation package by its content could lead to the inadvertent spread of radioactive contamination to the public domain if conditions had been slightly altered. The finding was determined to be of very low safety significance, or Green, in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated February 12, 2008, because the finding did not involve: (1) a radioactive shipment above radiation limits; (2) a certificate of compliance issue; (3) the failure to make emergency notifications; or (4) a low-level burial issue. A breach of the transportation package occurred during transit. However, the shipment contained less than a Type A quantity of material (LSA II shipment), and there was no loss of package contents or radioactive contamination. The inspectors assigned a cross-cutting aspect in the Resources element of the Human Performance Area (IMC 0310 H.1) to this finding due to inadequate procedures. (Section 2RS8.4)

Inspection Report# : 2016003 (*pdf*)

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 : September 05, 2017

Page Last Reviewed/Updated Wednesday, June 07, 2017