

Prairie Island 1 2Q/2015 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

FAILURE TO FOLLOW FOREIGN MATERIAL EXCLUSION PROCEDURE DURING REACTOR COOLANT PUMP SEAL REPLACEMENT.

A self-revealing finding of very low safety significance and associated NCV of TS 5.4.1 was identified on December 19, 2014, due to the licensee's failure to follow Procedure FP-MA-FME-01, "Foreign Material Exclusion and Control." Specifically, workers failed to implement and adhere to the foreign material exclusion (FME) control requirements for a Level 1 foreign material exclusion area when replacing the Unit 1 reactor coolant pump (RCP) seals and associated piping during Refueling Outage 1R29. The failure to implement and adhere to the FME control requirements resulted in introducing foreign material into the reactor coolant system and the subsequent degradation of the #12 RCP seal in December 2014 and January 2015. The seal degradation led to two Unit 1 reactor shutdowns. Corrective actions for this issue included replacing the RCP seal, flushing the seal piping and establishing a process to review work document quality to ensure that appropriate programmatic requirements were included.

The inspectors determined that the failure to follow Procedure FP-MA-FME-01 was more than minor because it was associated with the equipment performance attribute of the Initiating Events cornerstone and impacted 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 utilized Attachment 0609.04, "Initial Characterization of Findings," and determined that this issue was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," was answered "No." The inspectors concluded that this finding was cross-cutting in the Human Performance, Work Management area, because the organization failed to implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. In addition, the work process failed to include the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities.

Inspection Report# : [2015001](#) (*pdf*)

Significance: G Mar 31, 2015

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

UNTIMELY RESOLUTION OF ENVIRONMENTAL QUALIFICATION ISSUES.

A self-revealing finding of very low safety-significance and a non-cited violation of 10 CFR 50.49 was identified on March 5, 2015, for the licensee's failure to keep environmental qualification (EQ) files current and the failure to replace or refurbish EQ electrical equipment at the end of its designated life. Specifically, the licensee initiated CAP 1431268 in May 2014 to document numerous EQ file errors identified during an in-depth review of the EQ program. These file errors resulted in the EQ designated life for multiple safety-related solenoid valves being non-conservative such that some solenoids were installed beyond their designated life. Corrective actions included taking action to revise the incorrect EQ files and replacing the safety-related solenoids

installed beyond their designated life.

The inspectors determined that this issue was more than minor because if left uncorrected the failure to maintain the EQ files and to replace or refurbish EQ equipment could result in a more significant safety concern. Specifically, the inaccurate files could result in EQ equipment not being refurbished or replaced as required. In addition, the failure to replace or refurbish EQ equipment installed beyond its designated life could result in equipment failure during normal operation or post-accident conditions. The inspectors utilized IMC 0609, Attachment 0609.04, "Initial Characterization of Findings," and determined this issue was of very low safety significance because each of the questions provided in IMC 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," was answered "No." The inspectors concluded that this issue was cross cutting in the Problem Identification and Resolution, Evaluation area because the licensee had not thoroughly evaluated CAP 1431268 to ensure that the resolution addressed the causes and extent of condition commensurate with the safety significance.

Inspection Report# : [2015001](#) (pdf)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Unqualified Reactor Vessel Examination Procedures

The inspectors identified a finding of very low safety significance and a NCV of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," on October 21, 2014, due to the licensee's failure to perform the reactor vessel weld ultrasonic examinations with procedures qualified in accordance with the American Society of Mechanical Engineers (ASME) Code. Corrective actions for this issue included entering the issue into the corrective action program and considering the available options to restore compliance with the ASME Code.

The inspectors determined that this issue was more than minor because if left uncorrected, this deficiency had the potential to lead to a more significant safety concern. Specifically, the failure to properly qualify ultrasonic examination procedures prior to examining the Unit 1 reactor vessel welds could result in the failure to detect weld flaws. In turn, the undetected weld flaws could increase the risk of a loss of coolant accident. The inspectors concluded that this issue was of very low safety significance because Questions 1 and 2 provided in IMC 0609, Appendix A, Exhibit 1, "Initiating Events Screening Questions," were answered "No." In this case, the ultrasonic examination intended to detect weld degradation had not yet affected the ability of the reactor vessel to perform its design functions. This finding was cross-cutting in the Human Performance, Resources area because the licensee did not have adequate supervisory and management oversight of work activities to ensure that the procedures used during the ultrasonic examination of reactor vessel welds were properly qualified in accordance with the applicable ASME Code.

Inspection Report# : [2014005](#) (pdf)

Mitigating Systems

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Implement Winter Plant Operation Procedure

The inspectors identified a finding of very low safety significance and a NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," on December 4, 2014, due to the licensee's failure to follow

procedure during the performance of TP 1637, “Winter Plant Operation.” Specifically, maintenance personnel failed to comply with a step within TP 1637 which directed that a tent and heater be installed around the Unit 2 cooling water (CL) discharge to grade header to prevent ice buildup and subsequent blockage during freezing conditions. Corrective actions for this issue included removing the ice buildup on the cooling water discharge header, installing a tent and heater in accordance with TP 1637, revising the associated procedures and performing an apparent cause evaluation.

The inspectors determined that this issue impacted the Mitigating Systems cornerstone and was more than minor because if left uncorrected, this issue could become a more significant safety concern. Specifically, with freezing conditions present coupled with the existence of leakage and resultant ice buildup on 20-CL-61, the potential existed for subsequent ice blockage and resultant inoperability of the cooling water system. This issue was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” was answered “No.” The inspectors concluded that this finding was associated with a conservative bias cross cutting aspect in the human performance cross cutting area. Specifically, operations and maintenance personnel did not utilize prudent decision making practices to ensure the cooling water header was adequately protected against freezing conditions.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Dec 31, 2014

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Follow Procedures during Emergency Diesel Generator 24 Hour Load Test

The inspectors identified a finding of very low safety significance and a NCV of 10 CFR Part 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” on September 29, 2014, due to the licensee’s failure to follow procedure during the performance of SP 1335, “D2 Diesel Generator 18 Month 24 Hour Load Test.” Specifically, operations personnel failed to comply with steps within SP 1335 which directed that the emergency diesel generator’s (EDG’s) kVAR loading be adjusted until a power factor of less than or equal to 0.85 was achieved or Bus 16 voltage was between 4350 and 4375 volts. An extent of condition review determined that operations personnel failed to comply with a similar procedure step during the 24 hour load test of the D1 EDG performed in May 2013. As a result, the licensee had to re perform the tests which resulted in additional EDG inoperability and unavailability. Corrective actions for this issue included training the operators on the need to maintain the power factor or bus voltage within limits during testing, requiring all data collected by the operations department during Technical Specification (TS) surveillance testing to be independently verified, and requiring all TS surveillance requirement results to be reviewed and approved by two senior reactor operators.

The inspectors determined that this finding was more than minor because it was associated with the human performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone’s objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, operations personnel were required to declare the D1 and D2 EDGs inoperable and unavailable to perform their safety functions while the 24 hour load testing was re performed. The inspectors concluded that this issue was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 2, “Mitigating Systems Screening Questions,” was answered “No.” This finding was cross cutting in the Human Performance, Avoid Complacency area because operations personnel failed to implement appropriate error reduction tools to ensure that the power factor or bus voltage requirements were met during the surveillance test.

Inspection Report# : [2014005](#) (*pdf*)

Significance:  Sep 30, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

FAILURE TO HAVE ADEQUATE PROCEDURES TO ADDRESS LOW BUS VOLTAGE CONDITIONS.

A self-revealing finding and a NCV of Technical Specification 5.4.1 was identified on June 23, 2014, due to the failure to establish, implement and maintain the applicable procedures to address degraded power sources as recommended in Section 6 of Regulatory Guide 1.33, Revision 2, Appendix A, Revision 2. Specifically, Procedure 1C20.5, "Unit 1-4.16kV [kilovolt] System," failed to provide adequate guidance to address a degraded power condition on the 10 Bank Transformer, the 1R Transformer and Bus 15 (one of two safety-related 4.16 kV buses). This resulted in these components experiencing a low voltage condition for an extended period of time, Bus 15 voltage cycling near the degraded voltage actuation setpoint, and the automatic start of the D1 EDG. Corrective actions for this issue included repairing the equipment that led to the degraded voltage condition and revising Procedure 1C20.5 or developing a new procedure to provide guidance on responding to degraded voltage conditions. This issue was more than minor because it impacted the procedure quality attribute of the Mitigating Systems cornerstone. In addition, the performance deficiency impacted the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the lack of procedural guidance resulted in delaying operator action to restore voltage to Bus 15. The inspectors utilized IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and determined that this issue was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," was answered "No." The inspectors concluded that this finding was cross cutting in the Human Performance, Resources area because the licensee had not ensured that procedures were available and adequate to support nuclear safety (H.1).

Inspection Report# : [2014004](#) (pdf)

Significance:  Sep 30, 2014

Identified By: Self-Revealing

Item Type: NCV Non-Cited Violation

D1 EDG REVERSE POWER TRIP.

A self-revealing finding of very low safety significance and a NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," was identified on June 23, 2014, due to the failure to properly implement Procedure 1C20.7, "D1/D2 Diesel Generators." Specifically, operations personnel were unable to comply with a caution statement prior to Step 5.3.5.H which directed that control switch CS-46950, "Bus 15 Source from D1 Diesel Generator," be placed in trip momentarily if D1 Emergency Diesel Generator (EDG) load was less than 100 kilowatts to prevent motorizing the EDG. The failure to implement the actions directed by the caution statement in a timely manner resulted in the D1 EDG tripping on reverse power. Corrective actions for this issue included briefing all operations personnel on this event and revising Procedure 1C20.7 to include additional information on EDG operation at low loads.

This issue was more than minor because it impacted equipment performance attribute of the Mitigating Systems cornerstone. In addition, the performance deficiency 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 follow procedure resulted in the D1 EDG tripping on reverse power which extended the amount of time the EDG was inoperable. The inspectors utilized IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and determined that this issue was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," was answered "No." No cross cutting aspect was assigned to this finding as none of the aspects directly related to why operations personnel were unable to comply with the proceduralized caution statements.

Inspection Report# : [2014004](#) (pdf)

Barrier Integrity

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

Last modified : August 07, 2015