

Prairie Island 1 2Q/2016 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance:  Feb 12, 2016

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Maintain Cold Shutdown Repair Procedure (Section 1R05.9b)

The inspectors identified a finding of very-low safety significance (Green), and an associated Non-Cited Violation of Technical Specifications Section 5.4.1.d for the licensee's failure to maintain Procedure F5 Appendix B. Specifically, the licensee failed to update the procedure to reflect physical changes made in the plant that resulted in the licensee not being able to perform the procedure as written. The licensee entered the issue into their Corrective Action Program, and planned to update drawings and label components in the field and include the proper tools to accomplish the actions specified in the procedure.

The inspectors determined that the performance deficiency was more than minor because the licensee's failure to maintain Procedure F5 Appendix B would have resulted in a delay in achieving and maintaining cold shutdown. The finding was of very low safety significance because it did not impact the licensee's ability to reach hot shutdown. The finding did not have a cross-cutting aspect associated with it because it was not reflective of current performance. (Section 1R05.9b)

Inspection Report# : [2016008](#) (*pdf*)

Significance:  Nov 24, 2015

Identified By: NRC

Item Type: VIO Violation

Failure to Correct an NCV Associated with Inadequate Gas Monitoring of Inaccessible RHR Gas Susceptible Locations (Section 4OA2.1.c(1))

Green. The inspectors identified a finding of very low safety significance (Green), and an associated cited violation of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XVI, "Corrective Actions," for the failure to correct a condition adverse to quality (CAQ). Specifically, on August 1, 2011, the NRC issued an NCV for the failure to monitor five safety-related gas susceptible locations considered to be inaccessible, which is a CAQ. As of November 24, 2015, the licensee had not corrected this CAQ for two of those locations and did not have plans to restore compliance. The licensee captured this issue into their Corrective Action Program (CAP) with a proposed corrective action to develop an alternative monitoring method for these locations when the unit is operating.

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. The finding screened as of very low safety significance (Green) because it did not result in the loss of

operability or functionality of mitigating systems. Specifically, the licensee was able to access and inspect these locations during the refueling outage that was ongoing when this issue was identified and confirmed that they were full of water during the previous operating cycle. In addition, a historical review did not find information that challenged operability due to gas accumulation at these locations. The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not thoroughly evaluate their discovery that the CAQ was not been corrected on July 29, 2013. Specifically, on 2013, the licensee initiated a condition evaluation (CE) to determine if the action plan at the time addressed the NCV associated with the CAQ. However, the CE was closed by crediting actions that were similar to those that resulted in the NCV and other documented observations associated with the inappropriate resolution of the issue. [P.2] (Section 40A2.1.c(1))

Inspection Report# : [2015008](#) (pdf)

Significance:  Nov 24, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Manage Gas Accumulation at the RHR Train Credited for Emergency Core Cooling in MODE 4 (Section 40A2.1.c(2))

Green. The inspectors identified 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,” for the licensee’s failure to manage gas accumulation at the residual heat removal (RHR) train credited for emergency core cooling in MODE 4, “Hot Shutdown.” Specifically, the RHR train credited for emergency core cooling in MODE 4 was not verified to be full of water before its operability was required in MODE 4 following system draining during refueling outage 1R29. The licensee captured this issue into their CAP with a proposed corrective action to revise procedures to explicitly require these inspections prior to transitioning into MODE 4 during startup activities.

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. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee reviewed records associated with gas accumulation management activities during 1R29 and discovered that a non-conforming void was vented 12 – 18 hours after the transition to MODE 4. However, an operability review reasonably determined that this non conforming condition did not result in loss of operability. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance. (Section 40A2.1.c(2))

Inspection Report# : [2015008](#) (pdf)

Significance:  Nov 24, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Establish Procedures to Verify RHR is Full of Water Following Maintenance Outages (Section 40A2.1.c(3))

Green. 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 for the licensee’s failure to establish procedures to verify RHR is operable with respect to gas accumulation following maintenance outages. Specifically, procedures were not established to verify the system is sufficiently full of water when RHR is secured in its standby emergency core cooling system mode of operation during startup activities following maintenance outages. The licensee captured this issue into their CAP. As a long term corrective action, the licensee revised procedures to require gas accumulation inspections of the affected gas susceptible locations as part of the unit startup activities following a maintenance outage.

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. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee performed a past operability review of the limiting void found at the RHR piping after maintenance outages and reasonably concluded that the system remained operable. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance. (Section 40A2.1.c(3))

Inspection Report# : [2015008](#) (pdf)

Significance:  Nov 24, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Manage Potential Gas Accumulation Due to SI Isolation Check Valve Leakage Following Maintenance Outages (Section 40A2.1.c(4))

Green. 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," for the licensee's failure to manage potential gas accumulation due to safety injection isolation check valve leakage following maintenance outages. Specifically, the licensee did not evaluate the potential to accumulate nitrogen at multiple RHR and safety injection gas susceptible locations due to safety injection check valve unseating caused by maintenance outages. As a result, the station did not manage this gas intrusion mechanism. The licensee captured this issue into their CAP with a proposed corrective action to revise procedures to verify that the safety injection check valves are seated as part of the unit startup activities following a maintenance outage.

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. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee performed a past operability review of the limiting void found at one of the affected piping locations and reasonably concluded that the associated system remained operable. The inspectors did not identify a cross-cutting aspect associated with this finding because it was not confirmed to reflect current performance. (Section 40A2.1.c(4))

Inspection Report# : [2015008](#) (pdf)

Significance:  Nov 24, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Identify a Continuous Gas Intrusion into RHR (Section 40A2.1.c(5))

Green. 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," for the licensee's failure to identify a continuous gas intrusion into one train of RHR, which was a CAQ, resulting in a continuous undetected void growth that exceeded the applicable operability limits. The licensee did not consider applicable active gas intrusion mechanisms when evaluating the discovery of a void at the RHR piping. The licensee captured this issue into their CAP and stopped the continuous gas intrusion into the affected piping location.

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. The finding screened as of very low safety significance (Green) because it did not result in the loss of

operability or functionality of mitigating systems. Specifically, the licensee performed a past operability review of the void and reasonably concluded that the system remained operable. The inspectors determined that this finding had a cross cutting aspect in the area of human performance because the licensee did not recognize and plan for the possibility of mistakes when evaluating the gas surveillance results of February 10, 2015. Specifically, the licensee did not plan for the possibility that the unacceptable results were indicative of a different problem than originally determined or a combination of problems. As a result, the licensee failed to identify the continuous gas intrusion incident. [H.12] (Section 40A2.1.c(5))

Inspection Report# : [2015008](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

FAILURE TO DETERMINE COMPENSATORY MEASURES.

A finding of very low safety significance with two examples and an associated non-cited violation of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified by the inspectors for the licensee’s failure to accomplish the requirements of procedure FP-OP-OL-01, “Operability/Functionality Determination,” Revision 14. Specifically, on two occasions, the licensee failed to determine compensatory measures following the identification of a Updated Safety Analysis Report (USAR) non-conforming condition associated with the Units 1 and 2 residual heat removal (RHR) recirculation sump valves on August 31, 2015, and for a degraded condition of the Unit 1 ‘B’ RHR recirculation sump valves on September 14, 2015. The licensee entered the issues into the Corrective Action Program (CAP) as CAPs 01491302 and 01491900.

The inspectors determined that the licensee’s failure to accomplish the requirements of procedure FP-OP-OL-01, “Operability/Functionality Determination,” Revision 14, to properly determine compensatory measures for operable but degraded and operable but non-conforming conditions was a performance deficiency. The performance deficiency, with two examples, was determined to be more than minor and a finding in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, “Issue Screening,” because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee failed on two occasions to properly determine compensatory measures to maintain or enhance operability of Technical Specification (TS) Systems, Structures, and Components (SSCs) that were not fully qualified until final corrective actions were taken. The inspectors applied IMC 0609, Attachment 4, “Initial Characterization of Findings,” to this finding. The inspectors answered “No” to all questions within Table 3, “SDP Appendix Router,” and transitioned to IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” Per Exhibit 2, “Mitigating Systems Screening Questions,” the inspectors 3 determined that because the finding was a qualification deficiency and did not impact operability of the TS SSCs, the finding screened as very low safety significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor for the performance deficiency was associated with the cross-cutting aspect of Consistent Process in the Human Performance cross-cutting area, involving individuals using a consistent, systematic approach to make decisions. Specifically, the licensee did not apply a consistent, systematic approach for determining the appropriateness of compensatory measures while making operability decisions for the degraded and non-conforming conditions associated with the RHR recirculation sump valves.

Inspection Report# : [2015003](#) (*pdf*)

Significance:  Sep 30, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

IMPROPER OPERABILITY DETERMINATION.

A finding of very low safety significance and an associated non-cited violation of Title 10, CFR, Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was identified by the inspectors for the licensee’s failure to accomplish the requirements of procedure FP-OP-OL-01, “Operability/Functionality Determination,” Revision 14. Specifically, on August 9, 2015, following the discovery of a non-functional D6 building ventilation system and declaration of inoperability of Buses 26, 221, 222, and the D6 DG, the licensee improperly declared the affected TS SSCs operable and fully qualified without restoring functionality of the ventilation TS support system or implementing appropriate compensatory measures per the requirements of FP-OP-OL-01. The licensee entered the issue into the Corrective Action Program as CAP 01490027.

The inspectors determined that the licensee’s failure to accomplish the requirements of procedure FP-OP-OL-01, “Operability/Functionality Determination,” Revision 14 was a performance deficiency. The performance deficiency was determined to be more than minor and a finding in accordance with IMC 0612, Appendix B, “Issue Screening,” because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee improperly declared the TS SSCs operable and fully qualified without restoring functionality of a TS support system or implementing appropriate compensatory measures. The inspectors applied IMC 0609, Attachment 4, “Initial Characterization of Findings,” to this finding. The inspectors answered “No” to all questions within Table 3, “SDP Appendix Router,” and transitioned to IMC 0609, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power.” Per Exhibit 2, “Mitigating Systems Screening Questions,” the inspectors answered “No” to all questions under Section A, therefore the finding screened as very low safety significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor for the performance deficiency was associated with the cross-cutting aspect of Challenge the Unknown in the Human Performance cross-cutting area, involving individuals stopping when faced with uncertain conditions and evaluating and managing risk prior to proceeding. Specifically, the licensee did not properly evaluate and manage uncertain conditions associated with the ventilation system and impacts on TS SSC operability prior to proceeding with declaration of full qualification.

Inspection Report# : [2015003](#) (pdf)

Significance:  Sep 04, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

4160 Vac Switchgear Preventive Maintenance Procedure Failed to Provide Adequate Resistance Values and Acceptance Criteria (Section 1R21.3.b(1))

Green. The team identified a finding of very low safety significance, and an associated NCV of Title 10, Code of Federal Regulations (CFR), Part 50, Appendix B, Criterion XI, “Test Control,” for the licensee’s failure to have an acceptance criteria for electrical contact resistance values in preventive maintenance procedures for 4160 Vac switchgear. Specifically, the licensee’s preventive maintenance Procedure PE 0009, “4kV Switchgear Preventive Maintenance,” failed to provide adequate resistance values and acceptance criteria for electrical connections at bus bar connection points and between 4kV switchgear cubicles. The licensee entered this finding into their Corrective Action Program (CAP) with a recommended action to add acceptance criteria into Table 1 of procedure PE 0009.

The performance deficiency was determined to be more than minor because it was associated with the procedural quality 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. The finding screened as of very low safety significance because it was a design or qualification deficiency that did not represent a loss of operability or functionality. Specifically, the licensee determined the 4160 Vac switchgear cubicles were operable using guidance from Electric Power Research Institute Technical Report 1013457. The finding had a cross-cutting aspect associated with resources in the area of human performance. Specifically, the licensee management failed to ensure procedures are available to support successful work performance. [H.1] (Section 1R21.3.b(1))

Inspection Report# : [2015007](#) (pdf)

Significance:  Sep 04, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Inadequate Calculations for Motor-Operated Valve Thermal Overload Relays (Section 1R21.3.b(2))

Green. The team 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 assure the safety-related thermal overload relay heaters were properly sized. Specifically, the licensee failed to consider the effects of the higher acceptable stroke time limits specified in motor operated valve Surveillance Test Procedure SP 1137, “Recirculation Mode Valve Functional Test,” in safety-related thermal overload sizing calculation H6.1, “Motor Operated Valve Thermal Overload Heater Sizing for General Electric Motor Control Centers,” Rev. 5. The licensee entered this finding into their CAP, and has actions in-place to stroke motor-operated valves to prevent a thermal overload relay trip. The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. The finding screened as very low safety significance because the finding was a design deficiency confirmed not to result in a loss of safety function of a system or a train. Specifically, the licensee performed preliminary calculations and determined the thermal overload relays were operable. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency. (Section 1R21.3.b(2))

Inspection Report# : [2015007](#) (pdf)

Significance:  Sep 04, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Replacement Containment Fan Cooling Unit Component Not Designed in Accordance with ASME Section III (Section 1R21.5.b(1))

Green. The team 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 design all components of the replacement Containment Fan Coil Units in accordance with Section III of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. Specifically, the licensee failed to use Section III design rules to evaluate the Containment Fan Coil Unit header box as specified in the replacement Containment Fan Coil Unit design specification. The licensee entered this finding into their CAP with a recommended action to perform a condition evaluation for the new Containment Fan Coil Units to be installed in the upcoming refueling outage to ensure proper design code alignment with the design specification and the design report.

The performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of design control, and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. The finding screened as of very low safety significance because it was a design or qualification deficiency that did not represent a loss of operability or functionality. Specifically, the licensee’s use of design rules from American Society of Mechanical Engineers, Section VIII, provided reasonable assurance for the Containment Fan Coil Unit header box pressure boundary integrity. The team did not identify a cross-cutting aspect associated with this finding because it was confirmed not to be reflective of current performance due to the age of the performance deficiency. (Section 1R21.5.b(1))

Inspection Report# : [2015007](#) (pdf)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance:  Dec 31, 2015

Identified By: NRC

Item Type: NCV Non-Cited Violation

Failure to Adequately Calibrate Liquid Effluent Monitors

Green. The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation (NCV) of TS 5.5.1.a for the failure to comply with the Offsite Dose Calculation Manual (ODCM) for not using calibration sources which were traceable to the National Institute of Standards and Technology (NIST) or equivalent during the calibration of station effluent monitors. The licensee entered the issues into the corrective action program (CAP) as CAPs 01490581 and 01500149. Immediate corrective actions included the re-calibration of impacted monitors and the performance of an extent of condition to evaluate other radiation monitor calibrations.

The performance deficiency was determined to be of more than minor safety significance in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," dated September 7, 2012, because it was associated with the cornerstone of Public Radiation Safety and it adversely impacted the objective of ensuring adequate protection of public health and safety due to failure to properly calibrate certain effluent monitors. Subsequent calibration of the monitors determined that the monitor efficiency was previously overstated. The inspectors also reviewed IMC 0612, Appendix E, "Examples of Minor Issues," dated August 11, 2009, but did not identify any similar examples. The finding was assessed using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," dated, February 12, 2008, and determined to be of very low safety significance (Green), because it was associated with the effluent release program but was not a failure to implement an effluent program, public dose did not exceed Appendix I criteria and the limits in Title 10 of the Code of Federal Regulations 20.1301(e) were not exceeded. A cross-cutting aspect was not assigned as this issue occurred numerous years ago. The station has since performed monitor calibration(s) with radioactive sources with known quality.

Inspection Report# : [2015004](#) (*pdf*)

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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