Prairie Island 2
3Q/2016 Plant Inspection Findings

Initiating Events

Significance: G Dec 31, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Meet ANSI N14.6 Section 5.3.1 Requirements
Green. Inspectors identified a finding of very low safety significance (Green), and an associated NCV of Title 10, Code of Federal Regulations, Part 50, Appendix B, Criteria III, “Design Control,” for the licensee’s failure to incorporate the American National Standards Institute (ANSI) N14.6-1978, Section 5.3.1 required testing frequency on the reactor vessel head and reactor vessel internals lifting devices into the controlling preventive maintenance procedure. Compliance with the ANSI standard was documented in the safety evaluation report for the licensee’s control of heavy loads.

The inspectors determined the licensee’s failure to comply with ANSI N14.6-1978, Section 5.3.1, for the continuing use testing of special lifting devices was a performance deficiency (PD). The PD was determined to be more-than-minor and a finding because the PD was associated with the Initiating Events Cornerstone attribute of design control, and adversely affected the cornerstone objective to limit the likelihood of those events that upset the plant stability and challenge critical safety functions during shutdown, as well as power operations. Specifically, compliance with ANSI N14.6 1978, Section 5.3.1, is to ensure safe load handling of heavy loads over the reactor core, and/or over safety-related systems through establishing testing for the continued functionality of the special lifting devices. The failure to perform the required frequency of testing on special lifting devices would increase the likelihood of a load drop and would decrease the load handling reliability of the lifting device in that lifting device could be returned to service with potentially unacceptable flaws. The inspectors determined the finding could be evaluated using the Significance Determination Process in accordance with Inspection Manual Chapter 0609, “Significance Determination Process,” Attachment 0609.04, “Phase I - Initial Screening and Characterization of Findings,” Table 3. Since the finding was associated with shutdown conditions, the inspectors used Inspection Manual Chapter 0609, Appendix G, and “Shutdown Operations Significance Determination Process.” The inspectors determined that none of the conditions constituting a loss of control were met as described in Appendix G, Attachment 1, “Phase I Operational Checklists for Both PWRs [Pressurized Water Reactors] and BWRs [Boiling Water Reactors],” for this finding and no Phase II or Phase III analysis was required. Therefore, the inspectors determined that this finding was of very low safety significance (Green). The inspectors determined that this finding has a cross-cutting aspect in the area of Human Performance, Resources, for the licensee’s failure to ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. Specifically, the licensee staff evaluated NRC Information Notice (IN) 2014-12, “Crane and Heavy Lift Issues Identified during NRC Inspections,” in corrective action program (CAP) document 01457469. However, in CAP 01457469, the licensee concluded that issues identified in IN 2014-12 related to other licensees not performing testing in accordance with ANSI N14.6 requirements was not applicable to the licensee at the Prairie Island Nuclear Generating Plant site. Therefore, the inspectors determined that there was a recent missed opportunity for the licensee to have reasonably identified that the current preventive maintenance procedure for special lifting devices (PM 3560-52) was not in accordance with the ANSI N14.6-1978 requirements as referenced in the Safety Evaluation Report. [H.1]

Inspection Report# : 2015004 *(pdf)*

Mitigating Systems

Significance: G Jun 24, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
21 safegaurds diesel exhaust fan connectors not fully engaged or aligned
A finding of very low safety significance and associated non-cited violation of Technical Specification Section 5.4.1, "Procedures," was identified by the inspectors for the licensee's failure to ensure the 21 safeguards diesel exhaust fan main contact connectors were fully engaged and aligned as required per electrical maintenance procedures to ensure proper operation of the breaker. As part of their corrective actions, the licensee aligned and re-engaged the main contact connectors as necessary. In addition, the licensee ensured maintenance personnel were aware of the operating experience to prevent the same issue from occurring in the future. The violation was entered into the licensee's corrective action program as Action Request 1525844.
The finding was determined to be more than minor because the finding was associated with the Mitigating Systems Cornerstone and the breaker failure led to the inoperability of the 21 safeguards diesel exhaust fan and impacted the availability of the 22 cooling water system diesel driven pump. This finding represented a loss of the 22 safeguards diesel cooling water pump function for longer than the Technical Specification allowed 3
outage time of 7 days and therefore required a detailed risk evaluation. The regional senior reactor analyst performed a detailed risk evaluation of this finding using the Prairie Island Standardized Plant Analysis Risk Model revision 8.19 and determined the finding was of very low safety significance (Green). The inspectors did not identify a cross-cutting aspect associated with this finding because it was not indicative of current performance.
Inspection Report# : 2016007 *(pdf)*

Significance: G Jun 24, 2016
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to perform required operability evaluations
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," Revisions 14 and 15. Specifically, on two occasions, the licensee failed to properly evaluate potential operability concerns associated with the Unit 2 emergency diesel generator (EDG) day tanks and the Unit 2 train 'A' cooling water (CL) system piping. The licensee entered the issues into the Corrective Action Program as Action Requests 1525842 and 1526070
The inspectors determined that the licensee's failure to accomplish the requirements of procedure FP–OP–OL–01, "Operability/Functionality Determination," Revisions 14 and 15, to properly evaluate the operability issues associated with the Unit 2 EDG day tank fuel oil level and the Unit 2 CL system piping (both safety-related, mitigating systems) was a performance deficiency. The performance deficiency, with two examples, was determined to be more than minor in accordance with Inspection Manual Chapter

(IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," it was associated with the Mitigating Systems Cornerstone attributes of Equipment Performance (for the Unit 2 EDGs) and Protection against External Factors (for the Unit 2 CL piping) and adversely affected the Cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events. The inspectors utilized IMC 0609, “Significance Determination Process,” Attachment 0609.04, “Initial Characterization of Findings,” and IMC 0609, Appendix A, “The Significance Determination Process for Findings At-Power,” and determined that the finding screened as very low safety significance (Green) since the inspectors answered “Yes” to Question 1 of Section A of Exhibit 2, “Mitigating Systems Screening Questions.” The inspectors concluded that this issue was cross-cutting in the area of Problem Identification and Resolution in the aspect of Evaluation. As defined in IMC 0310, “Aspects Within the Cross-Cutting Areas,” this aspect states, “The organization thoroughly evaluates issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance.” Specifically, the licensee had not thoroughly evaluated the operability issues associated with the Unit 2 EDG day tank levels and the Unit 2 CL piping structural integrity. [P.2](Section 4OA2.1.b(2)(B))
Inspection Report# : 2016007 *(pdf)*

Significance: G 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: G 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 4OA2.1.c(1))

Inspection Report# : 2015008 *(pdf)*

Significance: G 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 4OA2.1.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 4OA2.1.c(2))

Inspection Report# : 2015008 *(pdf)*

Significance: G 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 4OA2.1.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 4OA2.1.c(3))

Inspection Report# : 2015008 *(pdf)*

Significance: G 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 4OA2.1.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 4OA2.1.c(4))

Inspection Report# : 2015008 *(pdf)*

Significance: G Nov 24, 2015
Identified By: NRC
Item Type: NCV Non-Cited Violation
Failure to Identify a Continuous Gas Intrusion into RHR (Section 4OA2.1.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 4OA2.1.c(5))

Inspection Report# : 2015008 *(pdf)*

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

Significance: G 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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