Prairie Island 2
4Q/2013 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: FIN Finding
FAILURE TO EVALUATE CORROSIVE EFFECTS OF BORIC ACID ON THE 22 RESIDUAL HEAT REMOVAL PUMP.
The inspectors identified a finding of very low safety significance on October 7, 2013, due to the failure to perform an adequate boric acid evaluation in accordance with Procedure H2, "Boric Acid Corrosion Control Program." Specifically, the licensee failed to properly evaluate the impact of a boric acid leak following the leak coming into contact with carbon steel components on the 22 residual heat removal pump casing. Corrective actions included moving a carbon steel bolt for visual inspection and completing a technically adequate boric acid corrosion evaluation.
The inspectors determined that this issue was more than minor because if left uncorrected the failure to complete technically adequate boric acid corrosion evaluations could result in components with questionable structural integrity being left in service. The inspectors determined that this issue was of very low safety significance because each of the questions provided in IMC 0609, Attachment 0609.04, Appendix A, Exhibit 2, were answered "no." The inspectors concluded that this issue was cross-cutting in the Human Performance, Decision Making area because the licensee failed to use conservative assumptions while determining the applicability of a previously completed boric acid evaluation to a current plant condition. No violation was identified since all NRC requirements were met (H.1(b)).
Inspection Report# : 2013005 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO ESTABLISH APPROPRIATE DESIGN CONTROL MEASURES FOR SELECTION OF REPLACEMENT PARTS.
The inspectors identified a finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," on October 8, 2013, due to the failure to establish measures for the selection of parts that are essential to the safety-related functions of structures, systems, or components (SSCs). Specifically, the licensee failed to properly evaluate the specifications and quality of replacement parts such as gaskets, o-rings, packing materials, and diaphragms to ensure that these parts were suitable for installation in safety-related systems. As a result, multiple systems were required to be declared operable but non-conforming. Corrective actions for this issue included ensuring personnel understood the requirements regarding parts selection,
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determining the correct parts to be used and initiating work orders to ensure that parts were replaced in the future if required.
The inspectors determined that this issue was more than minor because if left uncorrected, the installation of

parts/materials which failed to meet requirements could lead to subsequent part failure. This failure would adversely impact the ability of safety-related equipment to perform its safety function. The inspectors determined that this issue was of very low safety significance because Question 1 in IMC 0609, Attachment 0609.04, Attachment A, Exhibit 2, was answered "yes." The inspectors concluded that this issue was cross-cutting in the Human Performance, Resources area because the licensee's parts specification and quality level documentation was not complete, accurate and/or up to date (H.2(c)).
Inspection Report# : 2013005 *(pdf)*

Significance: G Sep 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
IMPROPER WORK INSTRUCTIONS RENDERED 2R-49 INOPERABLE.
A self-revealing finding of very low safety significance (Green) and an non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" was identified on July 2, 2013, for the failure to have documented instructions, procedures, or drawings, of a type appropriate to the circumstances while performing maintenance. Specifically, maintenance personnel rendered Unit 2 Containment High Range Area Monitor 2R-49 inoperable after lifting a wire as part of a Unit 1 Containment High Range Area Monitor 1R-49 power supply replacement. Corrective actions for this issue included returning 1R-49 and 2R-49 to service and providing additional supervisory involvement to ensure all maintenance personnel were aware of expectations for ensuring that energized leads were appropriately identified, that adequate barriers were established to prevent inadvertent contact with energized leads, and ensuring that access to leads to be lifted were adequate for safe manipulation.
The inspectors determined that this issue was more than minor because it was associated with the configuration control and procedure quality attributes 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 (i.e., core damage). This issue was of very low safety significance because each of the questions provided in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," were answered "no." This issue was cross cutting in the Human Performance, Work Control area because the licensee failed to appropriately plan work activities by incorporating job site conditions which may impact human performance or plant structures, systems, and components (H.3(a)).
Inspection Report# : 2013004 *(pdf)*

Significance: G Sep 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
IMPROPER WORK INSTRUCTIONS RENDERED REACTOR PROTECTION INSTRUMENT AC INVERTER 13 INOPERABLE.
A self-revealing finding of very low safety significance (Green) and an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" was identified on July 24, 2013, for the failure to have documented instructions, procedures, or drawings, of a type appropriate to the circumstances when performing maintenance on the 2R-49 Unit 2 Containment High Range Area Monitor power supply. Specifically, the #13 reactor protection instrument inverter was rendered inoperable when two terminals were shorted during the power supply replacement. Corrective actions for this issue included returning the #13 instrument inverter to an operable status and providing additional supervisory involvement to ensure all maintenance personnel were made aware of expectations for ensuring that energized leads were appropriately identified, that adequate barriers were established to prevent inadvertent contact with energized leads, and ensuring that access to leads to be lifted were adequate for safe manipulation.

This issue was more than minor because it was associated with the design control, configuration control and procedure quality attributes 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 (i.e., core damage). The inspectors 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." This issue was cross cutting in the Human Performance, Work Control area because the licensee failed to appropriately plan work activities by incorporating job site conditions which may impact human performance; plant structures, systems, and components; human system interface; or include the need for planned compensatory actions (H.3(a)).

Inspection Report# : 2013004 *(pdf)*

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY ASSESS D6 EDG OPERABILITY.
An inspector-identified finding of very low safety significance (Green) and an NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures or Drawings," was identified on August 15, 2013, due to the licensee's failure to follow Procedure FP OP OL 01, "Operability/Functionality Determination." Specifically, the licensee failed to evaluate the ability of the D6 emergency diesel generator (EDG) to perform its specified safety function over the expected voltage range of 3740-4580 volts after identifying that the radiator fan motor overload relays were improperly sized. Corrective actions for this issue included removing the D6 EDG from service to replace the relays and sharing the lessons learned from the failure to follow procedures with engineering personnel.

The inspectors determined that this issue was more than minor because it was associated with the design control and equipment performance attributes 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 (i.e., core damage). The inspectors 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." This issue was cross cutting in the Human Performance, Decision Making area because the licensee failed to use conservative assumptions regarding EDG operating voltage when making decisions regarding the D6 EDG's ability to perform its specified safety function with inadequately sized radiator fan motor thermal overload relays (H.1(b)).

Inspection Report# : 2013004 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: VIO Violation
FAILURE TO MONITOR SSCs AS REQUIRED BY 10 CFR 50.65.
The inspectors identified a finding of very low safety significance (Green) and a violation of 10 CFR 50.65, due to the failure to demonstrate that the performance or condition of multiple SSCs was being effectively controlled through the performance of appropriate preventive maintenance. The licensee also failed to establish goals sufficient to provide reasonable assurance that two SSCs were capable of performing their intended safety function after their performance demonstrations became invalid. Specifically, more than 350 evaluations written between January 2012 and April 2013

to demonstrate whether the performance or condition of specific SSCs was being effectively controlled remained unapproved as of May 2013. In addition, the performance demonstration for one SSC was allowed to remained unvalid for approximately one year before designating the SSC as an (a)(1) system. Corrective actions for this issue included approving the previous evaluations, establishing 50.65(a)(1) action plans when required, and establishing actions to improve the maintenance rule program.

This issue was determined to be more than minor because it was associated with the equipment performance attribute of the Mitigating Systems cornerstone and impacted the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors utilized IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," and concluded that this finding's significance was best characterized by using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." Based upon the fact that none of the equipment issues discussed above rose to a level of greater than very low safety significance, the inspectors determined that this issue was best characterized as having very low safety significance (Green). The inspectors concluded that this finding was cross cutting in the Problem Identification and Resolution, Corrective Action Program area because the licensee failed to take appropriate and timely corrective actions to address the issues identified in November 2011 (P.1(d)).

Inspection Report# : 2013003 *(pdf)*

Significance: G Apr 19, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Verify the Adequacy of Cooling Water System Design.
The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to correctly model the effects of the strainers and isolation valves in the cooling water flow calculations. Specifically, calculations did not account for the strainer backwash differential pressure setpoint and leakage of the ring header isolation valves. This finding was entered into the licensee's Corrective Action Program (CAP) to revise the affected calculations and evaluate the need for additional corrective actions.

The performance deficiency was determined to be 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 the cooling water system to respond to initiating events to prevent undesirable consequences. Specifically, the magnitude of the errors required the licensee to re perform the cooling water flow calculations to assure the system would be able to meet the flow demand. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality. Specifically, the licensee removed conservatisms from the calculations, added the maximum allowable strainer loss, and reasonably determined that the system remained operable. In addition, the licensee determined the isolation valves had not experienced gross leakage. The inspectors did not identify a cross-cutting aspect associated with this finding because it did not reflect current performance due to the age of the performance deficiency.
Inspection Report# : 2013007 *(pdf)*

Significance: G Apr 19, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Review the Suitability of the CL Strainers Under Post seismic Flow Conditions.
TThe inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to review the suitability of the cooling water strainers under post seismic flow conditions. Specifically, the licensee did not recognize the post-seismic hydraulic parameters were greater than the vendor design values for the strainers. This finding was entered into the licensee's CAP to evaluate the condition and initiate further actions as necessary.

The performance deficiency was determined to be 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 the cooling water system to respond to initiating events to prevent undesirable

consequences. Specifically, flow rates higher than design values may impair the cleaning function and cause damage to the strainers affecting the capability of the cooling water system to perform its accident mitigating function. The finding screened as of very low safety significance (Green) because a detailed risk evaluation determined the core damage frequency of this finding was 1.9E 7/yr. The inspectors did not identify a cross-cutting aspect associated with this finding because it did not reflect current performance due to the age of the performance deficiency.

Inspection Report# : 2013007 *(pdf)*

Significance: G Apr 19, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Demonstrate the Ability to Transfer Diesel Fuel Oil Between Unit 1 Fuel Oil Tanks.
The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the failure to demonstrate the ability to transfer diesel fuel oil from any Unit 1 fuel oil storage tank to any Unit 1 emergency diesel generator or diesel driven cooling water pump day tank. Specifically, the licensee did not intentionally or periodically verify the ability to transfer fuel between the Unit 1 tanks as credited in the Technical Specification Basis and Updated Safety Analysis Report. This finding was entered into the licensee's CAP to test the affected flow paths.

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 the Unit 1 emergency diesel generators and diesel drivel cooling water pumps to respond to initiating events to prevent undesirable consequences. Specifically, the failure to verify the fuel oil transfer capability did not ensure the minimum fuel oil volume required by Technical Specifications could be supplied to these systems to support their accident mitigating function. The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality. Specifically, the licensee reviewed the recent history of the affected piping system and determined the affected flow paths were successfully used in 2010 and 2011 providing reasonable assurance the flow paths were available. The inspectors did not find an applicable cross-cutting aspect, which represented the underlying cause of this performance deficiency; therefore, no cross-cutting aspect was assigned.

Inspection Report# : 2013007 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROPERLY SECURE MATERIALS NEAR CRITICAL DRAINAGE PATH.
The inspectors identified a finding of very low safety significance and an non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures,
and Drawings," on February 4, 2013, due to the licensee's failure to follow procedures for material storage near a Unit 2 Turbine Building critical drainage path. Specifically, ten drums were not secured in accordance with Section 6.2.11 of Procedure 5AWI 8.9.0, "Internal Flooding Drainage Control." Corrective actions for this issue included removing the material and providing training to personnel on internal flooding drainage control requirements.

The inspectors determined that this finding was more than minor because if left uncorrected the unsecured material could become buoyant, impede water drainage, and impact the function of safety-related equipment following an internal flood. This finding was of very low safety significance because each question listed in IMC 0609, Appendix A, Exhibit 2, Mitigating Systems Screening Questions," was answered "no." This finding was cross-cutting in the

Human Performance, Work Control area because the licensee failed to keep personnel appraised of the operational impact of work activities and plant conditions that may affect work activities H.3(b).

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
IMPROPERLY SIZED MOTOR OVERLOAD HEATERS RENDER D6 EDG INOPERABLE.
The inspectors identified a finding of very low safety significance and an non-citied violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to establish measures for the selection and review for suitability of application of parts that are essential to the safety-related functions of structures, systems and components (SSC). Specifically, the licensee failed to ensure that the D5 and D6 EDG radiator fan motor thermal overload heaters were sized in accordance with Procedure H6.3, "General Electric Thermal Overload Heater Sizing for Non-Motor Operated Valve Motors." This resulted in the D6 EDG becoming inoperable due to Fan #2 on Engine #1 tripping during surveillance testing conducted on December 17, 2012.
This issue was determined to be more than minor because it impacted the equipment performance attribute of the Mitigating Systems Cornerstone. In addition, this issue impacted the cornerstone objective of ensuring the availability, reliability and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that this finding was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 2 was answered "no." The

inspectors determined that this issue was cross cutting in the Problem Identification and Resolution, Corrective Action Program area because the licensee did not take appropriate corrective actions to address safety issues in a timely manner commensurate with their safety significance and complexity P.1(d).
Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
FAILURE TO PROVIDE ACCURATE PERFORMANCE INDICATOR DATA.
The inspectors identified a Severity Level IV non-citied violation
of 10 CFR Part 50.9, "Completeness and Accuracy of Information," and an associated finding of very low safety significance (Green) due to the licensee's failure to provide information to the Commission that was complete and accurate in all material respects. Specifically, the licensee failed to follow procedures to ensure that the Mitigating Systems Performance Index (MSPI) for the emergency alternating current power systems was accurately reported for the third and fourth quarters of 2012. Once the information inaccuracies were corrected, the Unit 2 MSPI performance indicator (PI) changed from green to white. Corrective actions for this issue included correcting the inaccurate information, assigning dedicated resources to manage the PI reporting process, and performing an extent of condition review to ensure that the remaining PIs were appropriately reported.

This issue was determined to be more than minor because it was related to a PI and caused the PI to exceed a threshold. This finding was evaluated for significance using IMC 0609, Appendix M, because the other SDP methods and tools were not adequate to determine the significance of the finding. After consulting with NRC management, the inspectors determined that this finding was of very low safety significance because the actual time the PI was inaccurately reported was short and the reporting inaccuracies had no impact on the ability of safety related equipment to perform its safety function. The inspectors determined that this finding was cross cutting in the Human Performance, Work Practices area because the inaccurate reporting was caused by a failure to follow procedures H.4 (b).

The violation of 10 CFR Part 50.9 impacted the ability of the NRC to perform its regulatory oversight function and was determined to be Severity Level IV based upon Example 6.9.d.11 of the NRC Enforcement Policy.

Inspection Report# : 2013002 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
FAILURE TO FOLLOW PROCEDURE DURING FUSE REMOVAL ACTIVITIES.
A self-revealed finding of very low safety significance and an non-citied violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," occurred on March 19, 2013, due to the licensee's failure to follow Procedure 5AWI 3.10.1, "Methods of Performing Verifications." Specifically, Appendix A of Procedure 5AWI 3.10.1 required that concurrent verification be performed for any action involving circuits that were opened at fuses or sliders. The failure to perform concurrent verification during the removal of a fuse during clearance order activities resulted in the incorrect fuse being removed which rendered a containment isolation valve inoperable. Corrective actions for this issue included re-installation of the fuse and returning the containment isolation valve to service. The licensee was developing additional actions to address the performance of the operators at the conclusion of the inspection period.

The inspectors determined that this finding was more than minor because if left uncorrected, the failure to properly conduct verification activities could become a more significant safety concern. This finding was of very low safety significance because each question provided in IMC 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," was answered "no." The inspectors determined that this finding was cross cutting in the Human Performance, Work Practices area because the licensee failed to assure human error prevention techniques were used such that work activities were performed safely H.4(a).

Inspection Report# : 2013002 *(pdf)*

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 : February 24, 2014