

## Prairie Island 2

### 1Q/2013 Plant Inspection Findings

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## Initiating Events

**Significance:** G Dec 31, 2012

Identified By: NRC

Item Type: FIN Finding

### **INADEQUATE EVALUATION OF OPERATING CREW DURING ANNUAL REQUALIFICATION EXAMINATION.**

The inspectors identified a finding of very low safety significance on October 6, 2012, due to the failure to properly evaluate an operating crew's annual requalification examination performance in accordance with Procedure FP T SAT 73, "Licensed Operator Requalification Program Examinations." Specifically, the evaluators did not adequately assess the communications competency area when evaluating the crew's overall performance. As a result, the crew's performance was rated as "satisfactory with remediation" rather than as "unsatisfactory." Corrective actions for this issue included providing remedial training to the crew and having the crew complete an additional evaluated scenario as part of their annual examination.

This issue was more than minor because if left uncorrected the failure to properly assess licensed operator performance had the potential to lead to a more significant safety concern. The inspectors determined that this issue could be evaluated using IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process." The inspectors determined that this finding was of very low safety significance because it was related to the licensee's administration of an annual requalification operating test as discussed in Section 03.05 of NRC Inspection Procedure 71111.11, "Licensed Operator Requalification Program." This issue was determined to be cross cutting in the Human Performance, Decision Making area because the licensee did not make conservative assumptions during decisions regarding how this crew of licensed operators was evaluated (H.1(b)).

Inspection Report# : [2012005](#) (*pdf*)

**Significance:** G Jun 30, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **UNIT 2 REACTOR TRIP DUE TO OPERATION OF LOW PRESSURE TURBINE OUTSIDE ITS DESIGN.**

A self-revealed finding of very low safety significance and a non cited violation (NCV) of Technical Specification (TS) 5.4.1 occurred on February 21, 2012 due the licensee's failure to establish, implement and maintain procedures regarding power operations. Specifically, procedure 2C1.4 contained information regarding the operation of the moisture separator reheater control valves that conflicted with Westinghouse Vendor Technical Manual (VTM) XH-2-164-1, "572 MW Steam Turbine Operation and Control Manual." This conflict caused a feedwater heater high level condition during Unit 2 low power operations which resulted in a manual reactor trip. The licensee initiated corrective action document 1325986 to document the trip. Corrective actions for this issue included revising procedure 2C1.4 to eliminate the conflicting information.

The inspectors determined that the failure to establish, implement and maintain procedures for power operation as required by TS 5.4.1 was a performance deficiency that required an SDP evaluation. The inspectors determined that this issue was more than minor because it was associated with the procedure quality attribute of the Initiating Events Cornerstone. This finding also impacted the cornerstone objective of limiting the likelihood of events that upset plant stability and challenged critical safety functions during shutdown as well as power operations. The inspectors

determined that this issue was of very low safety significance because it did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment would not be available. The inspectors concluded that this issue was cross cutting in the Problem Identification and Resolution, Corrective Action Program (CAP) area, because the licensee's resolution of a previous Unit 1 trip, due to the same cause, identified the differences in operation between the VTM and the operating procedures. However, the procedures were not revised and no evaluation was performed to determine why operating outside the designer's recommendation was acceptable (P.1(c)).

Inspection Report# : [2012003](#) (pdf)

## Mitigating Systems

**Significance:**  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 a 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 apprised of the operational impact of work activities and plant conditions that may affect work activities H.3(b).

Inspection Report# : [2013002](#) (pdf)

**Significance:**  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 a non-cited 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:**  Mar 31, 2013

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO PROVIDE ACCURATE PERFORMANCE INDICATOR DATA.**

The inspectors identified a Severity Level IV non-cited 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*)

**Significance:**  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-cited 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*)

**Significance:**  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO REPLACE RUBBER HOSES ON D5 AND D6 IN ACCORDANCE WITH VENDOR RECOMMENDATION.**

The inspectors identified a finding of very low safety significance and an NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," due to the licensee's failure to implement vendor recommendations to replace rubber hoses on the emergency diesel generators (EDGs) at a 10-year frequency. Specifically, some of the installed rubber hoses were found to be in service beyond the vendor recommended service life and if they were to degrade, could impact the safety-related functions of the EDGs. Corrective actions for this issue evaluating the condition and replacing the hoses on specific diesel engines.

The inspectors determined that this issue was more than minor because if left uncorrected, it could become a more significant safety concern because the rubber hoses could continue to degrade until operation of the diesel engines were impacted. The finding was of very low safety significance because each of the questions listed in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," could be answered "no." Due to the age of this issue, the cause of the finding was not reflective of current performance and therefore, a cross cutting aspect was not assigned.

Inspection Report# : [2012005](#) (*pdf*)

**Significance:**  Dec 31, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO DEMONSTRATE PERFORMANCE OR CONDITION OF RADIATION MONITORS WERE EFFECTIVELY CONTROLLED THROUGH THE PERFORMANCE OF MAINTENANCE.**

A finding of very low safety significance and an NCV of 10 CFR 50.65 was identified by the inspectors on August 22, 2012, due to the licensee's failure to demonstrate that the performance or condition of the radiation monitoring system was being effectively controlled through the performance of appropriate preventive maintenance such that the structure, system or component (SSC) remained capable of performing its intended function. Specifically, the licensee failed to perform maintenance rule evaluations following the failure of multiple radiation monitors in July 2010. Since the evaluations were not completed, the licensee was unable to demonstrate that the performance of the radiation monitors was being effectively controlled through the performance of maintenance. Corrective actions for this issue included performing the evaluations and comparing the results to pre-established performance monitoring criteria. The inspectors determined that this finding was more than minor because it impacted the equipment 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. This finding

also impacted the SSC and barrier performance attributes of the Barrier Integrity Cornerstone by affecting the reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents and events. The inspectors determined that this issue was of very low safety significance because each of the questions listed in IMC 0609, Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," could be answered "no." The inspectors determined that this finding was cross cutting in the Problem Identification and Resolution, Corrective Action Program area because the licensee failed to thoroughly evaluate this problem such that the resolution addressed the cause and extent of condition as necessary (P.1(c)).

Inspection Report# : [2012005](#) (pdf)

**Significance:**  Sep 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO PERFORM ADEQUATE PAST OPERABILITY EVALUATIONS AFTER DISCOVERING DEGRADED COMPONENT COOLING HEAT EXCHANGERS**

The inspectors identified a finding of very low safety significance and an associated non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to adequately verify the adequacy of the design of systems needed during a Design Basis Accident (DBA). Specifically, the licensee failed to verify that the degradation identified during as-found inspections on the 21 and 22 Component Cooling (CC) Water Heat Exchangers would not have prevented the heat exchangers (HXs) from performing their safety functions if a DBA had occurred. The licensee entered this issue into their corrective action program as CAPs 1348544 and 1349624. The licensee concluded by additional analysis, and engineering judgment, that the Heat Exchangers had remained operable. The licensee was also considering flushing the heat exchangers more frequently; inspecting and cleaning the HXs more frequently; modifying the CC heat exchangers to provide a more effective flush; and changing plant documents and/or programs to require opening, inspecting, and cleaning of the HXs following major dredging near the plant intake. This issue was determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of Design Control and impacted the objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. The as-found condition of the HXs challenged the capability of the CC system to fulfill its safety function; however, the licensee did not fully evaluate the condition. The finding was of very low safety significance because the design deficiency did not result in a loss of operability or functionality. The inspectors determined the finding was cross-cutting in the Human Performance, Work Control, Work Practices area because the licensee did not properly ensure that supervisory and management oversight of work activities, including contractors, supported nuclear safety (H.4(c)). Specifically, licensee personnel reviewing and approving Engineering Changes (ECs) 20044 and 20222 did not require the preparer to provide adequate technical support as part of the past operability evaluation discussed in the ECs.

Inspection Report# : [2012004](#) (pdf)

**Significance:**  Jun 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**FAILURE TO PROPERLY ASSESS AND MANAGE RISK**

A finding of very low safety significance and a non-cited violation (NCV) of 10CFR 50.65(a)(4) was identified by the inspectors due to the licensee's failure to properly assess plant risk upon obtaining information which challenged the continued availability of the 21 Residual Heat Removal (RHR) pump. On April 21, 2012, licensee personnel failed to promptly recognize the unplanned orange risk condition when the 21 RHR Pump vibrations exceeded the inservice test (IST) criteria of procedure SP 2092B, "Safety Injection Check Valve Test (Head Off) Part B: RWST to RHR Flow Path Verification." Corrective actions for this event included raising the reactor cavity level 20 feet above the reactor vessel flange per TS requirements.

The inspectors determined that this issue was more than minor because, if left uncorrected, the failure to properly assess and manage risk could result in a loss of shutdown cooling (a more significant safety concern) due to a loss of the RHR function. Since Unit 2 was shut down in Mode 6, the Senior Risk Analyst (SRA) assessed the risk significance of the event in accordance with IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." The SRAs reviewed Attachment 1, "Phase 1 Operational Checklists for Both PWRS and BWRS." The applicable checklist was Checklist 3, "PWR Cold Shutdown and Refueling Operation RCS Open and Refueling Cavity Level < 23' OR RCS Closed and No Inventory in Pressurizer Time to Boiling < 2 hours." The risk result was calculated to be 3.3E-7. Since the total estimated change in core damage frequency was greater than 1.0E-7/yr, the potential risk contribution for this finding from large early release frequency was screened using the guidance of IMC 0609, Appendix H, "Containment Integrity Significance Determination Process." The inspectors determined that this issue was of very low safety significance because it was not a design deficiency; it did not represent a loss of system safety function; it did not present a loss of safety function for one train for greater than the TS allowed outage time; and it did not screen as potentially risk significant due to a seismic, flooding or severe weather initiating event. This finding was determined to be cross-cutting in the Human Performance, Work Control area since the licensee did not plan and coordinate work activities consistent with nuclear safety (H.3(a)).

Inspection Report# : [2012003](#) (*pdf*)

**Significance:**  May 30, 2012

Identified By: NRC

Item Type: FIN Finding

**FAILURE TO TAKE CORRECTIVE ACTION FOR REACTOR COOLANT SYSTEM LEVEL INDICATION ISSUES.**

An inspector-identified finding of very low safety significance was identified due to the failure to take corrective action for a Condition Adverse to Quality. The inspectors determined that the failure to correct for the loss of reactor coolant system (RCS) level indication during the 2010 refueling outage was a performance deficiency that required an evaluation using the SDP. This deficiency was more than minor as the loss of RCS level indication during draining, may result in level decreasing to the point where the function of the safety-related residual heat removal system may be affected. These level indication issues recurred during the RCS draining on March 6, 2012, resulting in a Notice of Unusual Event (NOUE) being declared. The licensee initiated Action Request (AR) 1329470 to evaluate this issue. This finding was determined to be crosscutting in the Problem Identification and Resolution, area because the licensee had not taken appropriate corrective actions to address the RCS level indication issues (P.1 (d)). This finding was not considered a violation, as the affected RCS level indicators were not considered safety-related.

Inspection Report# : [2012011](#) (*pdf*)

**Significance:**  May 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

**INADEQUATE PROCEDURE FOR DRAINING OF REACTOR COOLANT SYSTEM.**

An inspector-identified finding of very low safety significance and a non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, was identified due to the licensee's use of an inadequate procedure during draining of the RCS. The inspectors determined that the procedure used during the March 6, 2012, draining of the reactor coolant to the vessel flange level, did not contain adequate guidance for identifying and compensating for inadequate reactor vessel level indication due to over pressurization of the reactor vessel. This was a performance deficiency that required an evaluation using the SDP. This deficiency was more than minor as inaccurate RCS level indication resulted in plant operators declaring an NOUE and overdraining the RCS to the point where the function of the safety-related residual heat removal system was potentially affected. The licensee initiated Action Request (AR) 1329465 to evaluate this issue.

This finding was determined to be crosscutting in the Resources area, because the licensee has not maintained complete, up-to-date procedures for performing RCS draining (H.2(c)). The licensee had prior instances where RCS level indication was lost due to vessel overpressure; however, the licensee decided not to revise the procedures based on an incorrect assumption that the procedures contained adequate guidance.

Inspection Report# : [2012011](#) (*pdf*)

**Significance:**  May 30, 2012

Identified By: NRC

Item Type: NCV NonCited Violation

#### **FAILURE TO UPDATE THE CALCULATIONS FOR STEAM GENERATOR DRAINING.**

An inspector-identified finding of very low safety significance and an NCV of 10 CFR 50, Appendix B, Criterion III, was identified due to the licensee's failure to update engineering calculations for the amount of nitrogen to be used during steam generator tube draining. Specifically, the failure to correctly include the number of plugged steam generator tubes into the engineering calculations was considered a performance deficiency. This deficiency was more than minor, as it contributed to the vessel overpressure that resulted in overdraining of the RCS on March 6 2012, and a NOUE. The licensee initiated ARs 01328420, 01329464, and 01328366 to evaluate this issue.

This finding was determined to be cross-cutting in the area of Resources, specifically having complete and up-to-date design documentation (H.2.(c)). Because the licensee inappropriately placed the engineering calculations in "non-active" status, they were not updated to reflect the actual number of plugged steam generator tubes. This resulted in the station procedure incorrectly stating the amount of nitrogen needed and the amount of water removed during steam generator tube draining.

Inspection Report# : [2012011](#) (*pdf*)

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## **Barrier Integrity**

**Significance:**  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 a non-cited 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*)

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## **Public Radiation Safety**

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## **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.

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## **Miscellaneous**

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