



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

August 6, 2014

Mr. Kevin Davison
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company, Minnesota
1717 Wakonade Drive East
Welch, MN 55089

**SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2;
NRC BIENNIAL PROBLEM IDENTIFICATION AND RESOLUTION
INSPECTION REPORT 05000282/2014007; 05000306/2014007**

Dear Mr. Davison:

On June 27, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed a Problem Identification and Resolution (PI&R) biennial inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. The NRC inspection team discussed the results of this inspection with you and other members of your staff, and documented the results of this inspection in the enclosed report.

The inspection was an examination of activities conducted under your license as they relate to PI&R, compliance with the Commission's rules and regulations, and with the conditions of your license. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the samples selected for review, the inspectors concluded that the corrective action program (CAP) was functioning, but several concerns remained in the areas of problem identification, evaluation, and resolution of issues. The inspectors determined that although some progress had been made in the licensee's implementation of the CAP, the station's inability to clearly improve upon issues noted from the 2012 biennial PI&R inspection and other prior inspections and assessments, was of particular concern. Many of the NRC's concerns from prior assessments of the CAP continued to apply as evidenced by the findings and observations identified during this inspection. Additionally, while varying levels of improvement were made in the areas of evaluation and resolution of issues, a decline in the area of effectiveness of problem identification was apparent.

The inspectors noted recent CAP improvement initiatives; however, due to the relatively recent and ongoing implementation of these initiatives, the inspectors could not assess their adequacy or effectiveness during this inspection. Overall, the inspectors concluded that licensee management understood the site challenges associated with improving CAP implementation, but considering the long history of CAP concerns, the inspectors noted a lack of urgency to correct these concerns.

Based on the results of this inspection, five NRC-identified findings of very low safety significance (Green) were identified during this inspection. All findings were determined to involve violations of NRC requirements, and one finding was determined to be a Severity Level IV violation under the traditional enforcement process. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Prairie Island Nuclear Generating Plant.

If you disagree with any cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III; and the NRC Resident Inspector at the Prairie Island Nuclear Generating Plant.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-282, 50-306, and 72-010
License Nos. DPR-42, DPR-60, and SNM-2506

Enclosure:
IR 05000282/2014007; 05000306/2014007
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282; 50-306; 72-010
License Nos: DPR-42; DPR-60; SNM-2506

Report No: 05000282/2014007; 05000306/2014007

Licensee: Northern States Power Company, Minnesota

Facility: Prairie Island Nuclear Generating Plant, Units 1 and 2

Location: Welch, MN

Dates: June 9-27, 2014

Inspectors: L. Haeg, Senior Resident Inspector,
Duane Arnold, Team Lead
M. Holmberg, Senior Reactor Inspector
S. Sheldon, Senior Reactor Inspector
P. LaFlamme, Resident Inspector, Prairie Island

Approved by: Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

Inspection Report 05000282/2014007; 05000306/2014007; 06/09/14–06/27/14; Prairie Island Nuclear Generating Plant, Units 1 and 2; Biennial Problem Identification and Resolution Inspection (PI&R).

This report covers a 3 week period of announced baseline inspection by one senior resident inspector, two region-based inspectors, and one resident inspector. Five Green findings were identified by the inspectors. The findings were considered non-cited violations of NRC regulations, and one finding was determined to be a Severity Level IV under the traditional enforcement process. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5, dated February 2014.

Problem Identification and Resolution

On the basis of the samples selected for review, the inspectors concluded that the corrective action program (CAP) at Prairie Island was functioning, but several concerns remained in the areas of PI&R of issues. The inspectors determined that although some progress had been made in the implementation of the CAP, the station's inability to clearly improve upon issues noted from the 2012 biennial PI&R inspection and other prior inspections and assessments, was of particular concern. Many of the NRC's concerns from prior assessments of the CAP continued to apply as evidenced by the findings and observations identified during this inspection. In particular, the lack of stability in CAP leadership and consistent accountability for implementing CAP requirements contributed to inconsistencies in the rigor by which issues were evaluated and corrected.

The inspectors noted recent initiatives such as the Prairie Island CAP "Deep Dive" review and Performance Assessment Excellence Plan; however, due to the relatively recent and ongoing implementation of these initiatives, the inspectors could not assess their adequacy or effectiveness during this inspection. Further, it appeared that frequent changes in CAP improvement initiatives to address long-standing issues contributed to the inability to make notable gains in CAP performance. Overall, the inspectors concluded that licensee management understood the site challenges associated with improving CAP implementation, but considering the long history of CAP concerns, the inspectors were troubled by the lack of urgency to correct these concerns.

NRC-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

- **Severity Level IV.** The inspectors identified a Severity Level IV NCV of Title 10 CFR 50.71(e), "Periodic Update of the Final Safety Analysis Report," and an associated Green finding for the licensee's failure to update the Updated Safety Analysis Report (USAR) with a complete list of pressure isolation valves (PIVs) and periodic acceptance test requirements that had been reported to the Commission. Specifically, the licensee did not update Prairie Island Updated Safety Analysis (USAR) Section 4.6.1.2.1 "Pressure Isolation Valves" to include all PIVs and their associated test requirements.

The licensee entered this issue into the CAP and initiated actions to change the USAR to incorporate the complete list of PIVs.

The inspectors determined that the licensee's failure to update the USAR with a complete list of PIVs and periodic acceptance test requirements and report the update to the Commission was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Additionally, the failure to include all PIVs in the USAR was more than minor because it was associated with the Initiating Event Cornerstone attribute of Equipment Performance and adversely affected the Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions. 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 "No" to the Loss Coolant Accident of Initiators questions in Exhibit 1, Section A, "Initiating Events Screening Questions." In accordance with Section 6.1.d.3 of the NRC Enforcement Policy, this violation was also categorized as Severity Level IV because the licensee's failure to update the USAR as required by 10 CFR 50.71(e) had not yet resulted in any unacceptable change to the facility or procedures. The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Human Performance, Documentation, and involving the organization creating and maintaining complete, accurate, and up-to-date documentation. [H.7] (Section 40A2.1b.(2))

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and non-cited violation of Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to accomplish FP-PA-ARP-01, "CAP Action Request Process," to notify the shift manager of an operability/reportability concern and initiate a CAP for past periods of plant operation with a cooling water (CL) system strainer isolated. Specifically, with a CL header strainer isolated, a seismic event could lead to operation of the remaining CL strainer with excessive flow (e.g., outside analyzed limits) and adversely affect safety-related components cooled by the CL system. The licensee entered this issue into the CAP and initiated actions to evaluate past periods of operation with isolated CL strainers.

The inspectors determined that the licensee's failure to accomplish procedure FP-PA-ARP-01 was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Additionally, the performance deficiency was also determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of design control 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.” The inspectors answered “Yes” to Question 2 of Section A of Exhibit 2, “Mitigating Systems Screening Questions,” since the CL system may not have been able to perform its design cooling functions during past periods of operation with one CL header strainer isolated. Therefore, the finding required a detailed risk evaluation which had been previously completed by a Senior Reactor Analyst (SRA) for the original finding (NCV 05000282/2013007-02; 05000306/2013007-02). Specifically, the SRA had previously determined that the bounding core damage frequency for this issue was $1.9E-7$ /yr. and concluded the total risk increase to the plant due to this finding was of very low risk significance (Green). The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Human Performance, Consistent Process, and involving individuals using a consistent, systematic approach to make decisions. Specifically, the licensee failed to use the CAP process, in evaluation of the past operability and reportability of the CL system with the CL system strainers isolated. [H.13] (Section 4OA2.1b.(2))

- Green. The inspectors identified a finding of very low safety significance and non-cited violation of Title 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to prescribe a procedure appropriate to the circumstances with respect to the identification of a significant condition adverse to quality (SCAQ). Specifically, FP-PA-ARP-01, “CAP Action Request Process,” provided an overly restrictive definition of what constituted a SCAQ. Consequently, the licensee staff did not identify a failed residual heat removal (RHR) pump shaft as a SCAQ. The licensee entered this issue into the CAP and initiated actions to establish compensatory measures for screening action requests (ARs) until this issue was corrected.

The inspectors determined that the licensee’s failure prescribe a procedure appropriate to the circumstances under FP-PA-ARP-01 was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” because, if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Although, this issue could potentially affect each of the Reactor Safety Cornerstones, the inspectors elected to evaluate this issue under the Mitigating Systems Cornerstone because of the actual example identified associated with the failed Unit 2 RHR pump shaft. 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 “No” to each of the questions in Exhibit 2, Section A, “Mitigating Systems Screening Questions.” The inspectors determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, Self-Assessment, and involving the organization routinely conducting self-critical and objective assessments of its programs and practices. Specifically, the failure to identify the overly restrictive definition of SCAQ during previous audits of the CAP was caused by an insufficiently self-critical audit focus. [P.6] (Section 4OA2.1b.(1))

Cornerstone: Miscellaneous

- Green. The inspectors identified a finding of very low safety significance and non-cited violation of Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to accomplish FP-PA-ARP-01, "CAP Action Request Process." Specifically, the inspectors identified three recent instances where additional questioning by NRC inspectors was required prior to CAP ARs being generated for conditions adverse to quality. As a result, conditions that rendered the 23 Fan Coil Unit (FCU) and the 13 FCU inlet Motor Operated Valve (MOV) inoperable, and identification of additional boric acid deposits on the 21 Reactor Coolant Pump (RCP) support structure, were not evaluated in a timely and effective manner. The licensee entered each of these instances into the CAP individually and collectively to determine the necessary actions to ensure identified conditions adverse to quality are entered into the CAP.

The inspectors determined that the failure to properly accomplish FP-PA-ARP-01 was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Because all three instances discussed above qualitatively impacted the containment system, the finding is associated with the Barrier Integrity Cornerstone. 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 Appendix M of IMC 0609, "Significance Determination Process Using Qualitative Criteria." Based upon the fact that the three instances discussed above did not rise 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 determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, and involving the organization implementing a CAP with a low threshold for identifying issues. Specifically, the licensee did not implement the corrective action program at an appropriate threshold for identifying issues to ensure that conditions adverse to quality were addressed in a timely manner. [P.1] (Section 4OA2.1b.(1))

- Green. The inspectors identified a finding of very low safety significance and non-cited violation of Title 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings for the failure to accomplish Attachment 14, "CAP to External Process Interface," of procedure FP-PA-ARP-01, "CAP Action Request Process." Specifically, the inspectors identified three examples where severity level "C" CAP actions were closed to processes outside the CAP, and then subsequently cancelled without appropriate justification or documentation. The licensee entered this issue into the CAP and initiated actions to develop barriers within the CAP processes.

The inspectors determined that the licensee's failure to accomplish procedure FP-PA-ARP-01 was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected it would have the potential to lead to a more significant safety concern. The inspectors utilized IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial

Characterization of Findings,” and concluded that because the programmatic deficiency potentially affected all NRC cornerstones, the significance was best characterized by using IMC 0609, Appendix M “Significance Determination Process Using Qualitative Criteria.” Based upon the fact that the examples identified did not rise 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 determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, and involving the organization taking effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, following the realization in April of 2013 of the potential flaws in the CAP processes to allow inappropriate cancellations of “C” severity level CAPs after being closed to the non-CAP PCR process, the station failed to correct the vulnerabilities that also existed for other non-CAP processes. [P.3] (Section 4OA2.1b.(3))

Licensee-Identified Violations

No violations were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution (71152B)

The activities documented in Sections .1 through .4 constituted one biennial sample of Problem Identification and Resolution (PI&R) as defined in Inspection Procedure (IP) 71152.

.1 Assessment of the Corrective Action Program Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's Corrective Action Program (CAP) implementing procedures and attended CAP meetings to assess the implementation of the program by site personnel. The inspectors also interviewed a number of licensee staff in several departments, including nuclear oversight, operations, maintenance, security, chemistry, and radiation protection, to gain insights on the CAP implementation.

The inspectors reviewed risk and safety significant issues in the licensee's CAP since the last NRC biennial PI&R inspection in August of 2012. The selection of issues ensured an adequate review of issues across NRC cornerstones. The inspectors used issues identified through NRC generic communications, self-assessments, licensee audits, operating experience (OE) reports, and NRC documented findings as sources to select issues. Additionally, the inspectors reviewed CAP action requests (ARs) generated as a result of facility personnel's performance in daily plant activities. In addition, the inspectors reviewed a selection of completed investigations from the licensee's various investigation methods, which included root cause, apparent cause, equipment cause, and common cause evaluations.

The inspectors selected several high risk systems, which included the emergency diesel generator (EDG) and electrical switchgear systems, to review in detail. The inspectors' review was to determine whether the licensee staff were properly monitoring and evaluating the performance of these systems through effective implementation of station monitoring programs. A 5 year review was also undertaken to assess the licensee staff's efforts in monitoring for system degradation due to aging aspects. The inspectors also performed partial system walk downs.

During the reviews, the inspectors determined whether the licensee staff's actions were in compliance with the facility's corrective action program and Title 10 CFR Part 50, Appendix B requirements. Specifically, the inspectors determined if licensee personnel were identifying plant issues at the proper threshold, entering the plant issues into the station's CAP in a timely manner, and assigning the appropriate prioritization for resolution of the issues. The inspectors also determined whether the licensee staff assigned the appropriate investigation method to ensure the proper determination of root, apparent, and contributing causes. The inspectors also evaluated the timeliness and effectiveness of corrective actions for selected issue reports, completed investigations, and NRC findings, including non-cited violations (NCVs).

Assessment

(1) Effectiveness of Problem Identification

Based on the results of the inspection, the inspectors concluded that, in general, the licensee was effective in identifying issues at a low threshold and entering them into the CAP. The inspectors determined that problems were generally identified and captured in a complete and accurate manner in the CAP. The licensee appropriately screened issues from both NRC generic communications and industry OE at an appropriate level and entered them into the CAP when applicable. The inspectors also noted that deficiencies that were identified by external organizations (including the NRC) that had not been previously identified by licensee personnel were entered into the CAP for resolution.

Workers were familiar with the CAP and felt comfortable raising concerns. This was evident by the large number of CAP items generated annually; which were reasonably distributed across the various departments. However, considering the issues identified during the inspection, as well as insights from other assessments and observations at Prairie Island, timely and consistent use of the CAP to document issues appears to have declined since the 2012 PI&R inspection results.

The inspectors also identified concerns with some items assigned an apparent cause evaluation (ACE) versus a root cause evaluation (RCE). The 2012 biennial PI&R report noted examples where the characterization of some safety significant issues was questionable. The 2014 biennial PI&R inspection team noted that the CAP procedure definition of what constituted a significant condition adverse to quality (SCAQ) was different from the definition in the Prairie Island Quality Assurance Topical Report (QATR) and the committed 1994 Edition of American Society of Mechanical Engineers (ASME) NQA-01, "Quality Assurance Requirements for Nuclear Facility Applications." Because of this, the team questioned some instances where the AR severity level assigned may have been incorrect and non-conservative. Based on the finding discussed below, the station was vulnerable from an extent of condition standpoint where the appropriate level of evaluation may not have been performed and/or the appropriate preventative measures may not have been taken.

The station recently performed a CAP "deep dive" assessment that identified several "gaps" related to ongoing issues with CAP initiation delays and thresholds, management reinforcement of CAP standards, and poor documentation of actions. Although the team noted several examples during their review that aligned with the deep dive assessment gaps, the team did not assess the adequacy of current plans for improvement due to their ongoing or in-progress status. Refer to Section 4OA2.1(2)a below for additional information.

The inspectors performed a five year extensive review of the EDG and electrical switchgear systems. As part of this review, the inspectors interviewed the system engineer, reviewed a sample of system CAP ARs, OE, and causal evaluations. The inspectors reviewed the CAP procedures that provided trending guidance and walked down various portions of the systems to visually inspect equipment condition. The inspectors concluded that system-related concerns were identified and entered into the CAP at a low threshold.

b. Findings

Failure to Document Conditions Adverse to Quality in the Corrective Action Program

Introduction: The inspectors identified a Green finding and NCV of Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to properly implement FP-PA-ARP-01, "CAP Action Request Process." Specifically, the inspectors identified three recent instances where additional questioning by NRC inspectors was required prior to CAP ARs being generated for conditions adverse to quality. As a result, conditions that rendered the 23 FCU and 13 FCU inlet Motor Operated Valve (MOV) inoperable, and identification of additional boric acid deposits on the 21 RCP support structure, were not evaluated in a timely and effective manner.

Description: On three separate occasions, the inspectors identified instances where the licensee failed to generate ARs in accordance with FP-PA-ARP-01, each requiring subsequent evaluation:

- On April 17, 2014, while observing a post-maintenance test pre-job brief on the 13 FCU inlet MOV, the inspectors noted that the reactor operator self-identified that the Unit 1 operations crew should have entered Technical Specification (TS) 3.6.3 upon energizing the MOV actuator which had occurred prior to the pre-job brief. Consequently, Unit 1 had been in an unplanned TS Limiting Condition for Operation (LCO) for approximately 90 minutes. Per shift manager review, a TS LCO entry was made to coincide with the time electrical power had been restored to the MOV. The following day during control room log review, the inspectors noted that the log entry had not been entered as a late entry and the unplanned LCO time had not been documented. As a result, no CAP AR was generated to document the occurrence. The following week, during shift turnover, the inspectors observed the shift manager brief the new oncoming shift crew that "the operations department had not experienced an unplanned LCO unknowingly for a couple of years." The inspectors then presented the previous week's observation to the shift manager and AR 01428226 was generated regarding this concern on April 24, 2014.
- On May 18, 2014, following a planned Unit 2 shutdown to Mode 3 to correct improper drainage on a section of piping between the 21 RCP number 3 seal and the reactor coolant drain tank; the inspectors observed water on the floor near the 23 FCU's northeast face during a containment walk down. The inspectors reported the water to outage control center (OCC) personnel at approximately 9:30 p.m. The OCC logged the inspector's observation but did not initiate an AR. On May 19, 2014, during the 6:00 a.m. shift turnover briefing, the inspectors again inquired if any actions had been taken to evaluate the water on the floor in containment. The OCC informed the inspectors that the water was evaluated to be condensation and stated a chemistry sample was not needed. Additionally, the OCC was unable to provide an evaluation and did not initiate an AR. At approximately 10:30 a.m., while performing an additional containment walk down, the inspectors challenged the system engineer as to why a chemistry sample had not been performed. The system engineer then communicated the inspector's observation to the OCC and a chemistry sample was performed at 11:04 a.m. without generating an AR. At 12:25 p.m., chemistry technicians confirmed the contents of the water sample as cooling water (river water) and operations then declared the 23 FCU and the Unit 2

containment inoperable at 12:36 p.m. due to the cooling water leakage. The licensee generated AR 01431287 on May 19, 2014.

- On May 18, 2014, the inspectors observed a discussion between a system engineer and OCC personnel regarding the possible presence of boric acid underneath insulation for a 21 RCP tie rod. Following this observation, the inspectors believed that the insulation would be removed and an inspection would be performed to verify that the boric acid had not adversely impacted the tie rod's structural integrity. On May 19, 2014, the inspectors requested a copy of the boric acid inspection and evaluation. The inspectors determined that the boric acid evaluation was generically written and failed to mention specific tie rod inspection results. Subsequent discussions with operations revealed that the operations department was unaware of the tie rod issue because an AR had not been issued. The licensee subsequently removed the insulation, performed the inspection, and documented the specific inspection results in AR 01431342.

The inspectors noted that all three instances listed above were issues that the licensee failed to enter into the CAP until questioned by the inspectors. Consequently, the inspectors were concerned with the threshold for entering conditions adverse to quality into the CAP. The licensee generated AR 01436424, "2014 PI&R Untimely CAP creation," to address the potential programmatic issue. For corrective actions to address this issue, the licensee was planning to perform an RCE to determine the necessary actions to ensure identified conditions adverse to quality are entered into the CAP to ensure issues are promptly evaluated and corrected as appropriate.

Analysis: The inspectors determined that the failure to properly implement FP-PA-ARP-01, which requires that identified conditions adverse to quality be entered into the CAP in a timely and effective manner, was a performance deficiency. The inspectors determined that the performance deficiency was more than minor because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, failing to implement CAP procedures could result in subsequent failure to address and resolve more significant conditions adverse to quality. Because all three instances discussed above qualitatively impacted the containment system, the finding is associated with the Barrier Integrity cornerstone.

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 the three instances discussed above did not rise 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 associated with an Identification cross-cutting aspect in the PI&R cross-cutting area. Specifically, workers did not implement the CAP at an appropriate threshold for identifying issues to ensure that conditions adverse to quality were addressed in a timely manner. [P.1]

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures.

Contrary to the above, prior to May 19, 2014, the licensee failed on three occasions to accomplish procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 37. Specifically, Step 5.3.1 of FP-PA-ARP-01 stated, in part that "The Corrective Action Program Action Request Process SHALL be used to document and track all problems, issues and concerns, including all conditions adverse to quality." Each instance required NRC inspector questioning of potential degraded or non-conforming conditions affecting plant equipment prior to CAP ARs being generated to evaluate the conditions. Because this violation was of very low safety significance and was entered into the licensee's CAP as ARs 01436424 and 01431729, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000282/2014007-01; 05000306/2014007-01, Failure to Implement the CAP Action Request Process Procedure)

Inadequate Procedure for Identification of Significant Conditions Adverse to Quality

Introduction: The inspectors identified a Green finding and NCV of Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," for the licensee's failure to prescribe a procedure appropriate to the circumstances with respect to the identification of a SCAQ. Specifically, FP-PA-ARP-01, "CAP Action Request Process," provided an overly restrictive definition of what constituted a SCAQ. Consequently, the licensee staff did not identify a failed Residual Heat Removal (RHR) pump shaft as a SCAQ.

Description: On June 26, 2014, the inspectors identified that licensee procedure FP-PA-ARP-01, "CAP Action Request Process," provided an overly restrictive definition of SCAQ as compared to the definition identified in ASME NQA-1, "Quality Assurance Requirements for Nuclear Facility Applications." Subsequently, the inspectors identified an example where the licensee staff failed to identify an April 22, 2012, RHR pump shaft failure as a SCAQ. The inspectors were concerned that failure to provide a procedure, appropriate to the circumstances with respect to identification of a SCAQ could result in the failure to implement corrective actions that preclude repetitive failures of safety-related components.

In the licensee's QATR, Section B.13 "Corrective Action," the licensee committed to compliance with the 1994 Edition of NQA-1, "Quality Assurance Requirements for Nuclear Facility Applications," in establishing provisions for corrective actions and control of non-conforming items. In NQA-1, a SCAQ was defined as "one which, if uncorrected, could have a serious effect on safety or operability." However, in Step 4.33 of FP-PA-ARP-01, the licensee defined a SCAQ as "a condition adverse to quality that represents a significant potential or actual threat to the radiological safety of plant workers (radiation protection) or the public (nuclear safety)." The inspectors noted that the FP-PA-ARP-01 SCAQ definition added key words such as "significant potential" and "actual threat" and dropped the key words "if uncorrected," "serious," and "operability." With these changes, the inspectors concluded that the licensee had created an overly restrictive definition of what constituted a SCAQ at the station.

The inspectors performed a sampling review of past equipment failures of safety-related equipment and identified an example where the licensee had failed to identify the equipment failure as a SCAQ. On April 22, 2012, the 21 RHR pump experienced a total loss of developed head caused by a pump shaft that cracked and failed with Unit 2 in Mode 6 and the RHR system providing shutdown cooling for the core. This issue was

identified as a condition adverse to quality and entered into the CAP (e.g., severity level “B” ARs 01334924 and 01334933 - 21 RHR Pump Shaft Failure). However, the cracked pump shaft, if uncorrected would have a serious effect on system operability and the safe operation of the plant because at the time of failure, the RHR system was relied on to remove core decay heat and the 21 RHR pump shaft failure disabled the ‘A’ train of RHR. Therefore, the inspectors determined that this issue met the NQA–1 definition of a SCAQ that the licensee had not identified as such.

In May of 2012, the licensee completed an extent of condition review (AR 01334924) for the 21 RHR pump shaft failure and documented this review in engineering change (EC) 20015, “Immediate Action Extent of Condition Review for 21 RHR Pump Failure.” The scope of the licensee’s review included the operating, testing, and maintenance history for each RHR pump. Based upon this review, the licensee concluded that the other RHR pumps showed no signs of pump degradation similar to the failed 21 RHR pump. Specifically, for the 21 RHR pump, a step change in vibration was recorded during full flow tests and a step change (decrease) in total developed head occurred after pump bushing and motor bearing replacement in November of 2006. These conditions were not evident on any of the other RHR pumps; therefore the licensee concluded that no immediate extent of condition concern existed for the other RHR pumps.

In July of 2012, the licensee completed an equipment cause evaluation (AR 01334924) that documented the investigation into the cause of the 21 RHR pump shaft failure which experienced a complete severance of the shaft underneath the shaft sleeve in the stuffing box region, corresponding to the location of an O-ring groove. The licensee concluded

“Clear evidence exists that the 21 RHR pump was subject to gross misalignment for a period of time between the motor bearing and pump bushing work that occurred in 2R24 and the Chesterton seal installation done in 2R25. There is no evidence that any of the other pumps were subjected to a similar stressor. However, it is reasonable to believe that all the other pump shafts may have similar degrees of cold work in the material exposed to the pumped fluid, since they were all purchased on the same order. Similarly, it is reasonable that similarly aggressive chemical environments may exist in the crevice under the shaft sleeve and O-ring of the other pumps and that there may be sulfate contamination from a historical ion exchange resin intrusion event. Therefore, the necessary conditions for stress corrosion cracking exist for all the pumps, and such cracking, in conjunction with the natural stress riser created by the O-ring groove, may possibly result in fatigue crack propagation even in the absence of the increased stress magnitude that affected the 21 RHR pump as a result of the misalignment. Therefore, it is prudent to inspect the other pump shafts for incipient cracking using dye penetrant or other suitable surface examination method over the course of the next several refueling outages. Work orders have been initiated to perform the inspections as noted in the corrective actions section.”

The licensee had deferred a planned inspection of the B train RHR pump shafts during the 2013 Unit 2 refueling outage and at the conclusion of this inspection, had not performed inspections for any of the other RHR pump shafts. Therefore, the inspectors could not determine if the licensee’s RHR pump shaft inspection schedule would be sufficiently timely to preclude recurrence of another RHR pump shaft failure.

In response to this finding, the licensee entered this concern into the CAP as AR 01436342, and initiated actions to establish compensatory measures for screening ARs until this issue was corrected.

Analysis: The inspectors determined that the licensee's failure to prescribe a procedure appropriate to the circumstances with respect to identification of a SCAQ was a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to provide an adequate definition of a SCAQ did result in a failure to identify a SCAQ and could result in a failure to implement corrective actions that preclude repetitive failures of safety-related equipment. Although, this issue could potentially affect each of the Reactor Safety Cornerstones, the inspectors elected to evaluate this issue under the Mitigating Systems Cornerstone because of the actual SCAQ example identified associated with the failed 21 RHR pump shaft.

The inspectors completed a Phase 1 significance determination of this issue using 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." The inspectors answered "No" to each of the questions in Exhibit 2, Section A, "Mitigating Systems Screening Questions," therefore the finding screened as very low safety significance (Green). Specifically, the inspectors did not identify an example where the failure to provide a procedure appropriate to the circumstances with respect to identification of a SCAQ had resulted in repetitive failures of safety-related equipment.

The finding was determined to have a cross-cutting aspect in the area of problem identification and resolution, self-assessment component, because the licensee failed to perform sufficiently self-critical assessments of the CAP process. Specifically, the failure to identify the overly restrictive definition of a SCAQ during previous audits of the CAP was caused by an insufficiently self-critical audit focus. [P.6]

Enforcement: Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances.

Contrary to this requirement, prior to June 26, 2014, the licensee had not prescribed a procedure appropriate to the circumstances for identification of a SCAQ. Specifically, the procedure FP-PA-ARP-01, "CAP Action Request Process," definition of a SCAQ was not appropriate for the circumstances. Because this violation is of very low safety significance and was entered into the corrective action program as AR 01436342, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000282/2014007-02; NCV 05000306/2014007-02, Inadequate Procedure for Identification of Significant Conditions Adverse to Quality)

(2) Effectiveness of Prioritization and Evaluation of Issues

Based on the results of the inspection, the inspectors concluded that, overall, the licensee was effective in prioritizing and evaluating issues commensurate with the safety

significance of the identified issue, including an appropriate consideration of risk. The inspectors determined, in general, that issues were being appropriately screened and issues identified of higher significance were assigned root or apparent cause evaluations. Notably, the inspectors concluded that the licensee's prioritization and evaluation of issues had shown signs of improvement since the 2012 biennial PI&R inspection considering the documented observational concerns in this area. In particular, the team noted improvements in RCE documentation with respect to clarity of the causes, contributors, and line of sight to the corrective actions and effectiveness reviews. The station credited "behavior changes" that led to these improvements and an ongoing effort to modify CAP procedures. Since this effort was still underway, the team could not comment on the efficacy of planned changes.

The team did identify some examples that were not captured through procedure or process changes. For example:

- the permitted use of sub-assignments for corrective actions to prevent recurrence (CAPRs) made it difficult to verify that the sub-assignments truly captured the parent CAPR assignment;
- in several cases it was difficult to determine how effectiveness review (EFR) assignments captured multiple CAPR assignments (examples of RCEs with multiple CAPRs but only one or two EFRs). The licensee captured this observation in AR 01434274;
- the team recognized a requirement within FP-PA-ARP-01 that "All assignments SHALL be written to the SMARTS (specific, measurable, accountable, reasonable, timely, and sustainable) criteria," however, many of the CAP sub-procedures allowed adherence to the SMARTS model as optional. Based on the level of documentation for many assignments, it was practically impossible to verify how each assignment followed or even considered the SMARTS model in developing assignments. Without an accountability mechanism for this requirement, or guidance as to when the SMARTS model is truly required for particular assignments, the station was vulnerable to not meeting the requirements/expectations. The licensee captured this observation in AR 01434473; and
- the team noted instances where the RCE document template/form "guidance" did not, in all cases, align with CAP procedure requirements. The licensee captured this observation in AR 01434638.

Overall, it remained difficult to identify where perceived behavioral improvements were reflected in procedure changes to ensure sustainability of the behaviors.

Based on the ongoing efforts by the station regarding the aforementioned CAP "deep dive" assessment and resulting actions, the team could not make an assessment on whether these efforts would be successful and sustainable. Most significantly, RCE 01349769, "Ineffective Corrective Action Program Implementation," Revision 0 was performed and completed in December 2012 following the results of the August 2012 biennial PI&R inspection. This RCE was subsequently revised in April 2013, and all CAPRs were considered completed by July 2013. In February and March of 2014, in preparation for the 2014 biennial PI&R inspection, the licensee performed an inspection readiness self-assessment (SAR) under SAR 01407344. The SAR identified several

areas for improvement related to prior actions to address CAP implementation issues, but not all review objectives were performed due to resource issues. In April 2014, the Prairie Island nuclear oversight (NOS) department performed Observation Report 2014-01-040 to review the SAR results. This NOS report highlighted the improper readiness for the 2014 biennial PI&R inspection based on the ineffectiveness of prior corrective actions to address CAP implementation issues. The report generated a NOS Escalation Level 1 finding—requiring station management response. Among other actions planned, the decision was made to re-open and once again revise RCE 01349769 in May 2014. Due to the significance of the RCE 01349769 revision and large number of actions remaining in-progress during this 2014 biennial PI&R inspection, the inspectors could not review the adequacy, sustainability, or effectiveness of any planned actions in order to provide a current overall assessment of Prairie Island’s CAP.

There were no items identified in the operations, engineering, or maintenance backlogs that were risk-significant, individually or collectively. The inspection team did not identify any significant issues during the review of the operational decision making (ODMI) process.

Findings

Failure to Evaluate Past Operability and Reportability of the Cooling Water System

Introduction: The inspectors identified a Green finding and NCV of Title 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to accomplish FP-PA-ARP-01, “CAP Action Request Process,” to notify the shift manager of an operability/reportability concern and initiate an AR for past periods of plant operation with a cooling water (CL) system strainer isolated. Specifically, with a CL header strainer isolated, a seismic event could lead to operation of the remaining CL strainer with excessive flow (e.g., outside analyzed limits) and adversely affect safety-related components cooled by the CL system.

Description: In September 2013, the NRC identified a finding for the licensee’s failure to review the suitability of the CL strainers under post-seismic flow conditions. Specifically, the post-seismic system flow rate could exceed the design maximum flow rate of the CL system strainer if one CL header strainer was out for maintenance. Subsequently, the licensee failed to notify the shift manager and perform an operability/reportability assessment for periods of past plant operation with CL strainers isolated. The inspectors were concerned that failure to investigate and evaluate periods of past plant operation with isolated CL strainers may have resulted in operation of the plant in an unanalyzed condition. Specifically, operation of the CL system at flow rates above the design maximum for the strainer could result in a strainer failure that would release debris and adversely affect cooling of the downstream safety-related components.

On April 19, 2013, the NRC identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to review the suitability of the CL strainers under post-seismic flow conditions. Specifically, post-seismic hydraulic parameters were greater than the vendor design values for the strainers. The NRC documented this finding as NCV 05000282/2013007-02; 05000306/2013007-02, “Failure to Review the Suitability of the CL Strainers under Post-Seismic Flow Conditions,” and the issue was recorded in the licensee’s CAP as AR 01378695. The licensee’s immediate action was to initiate a

standing order for operations to be aware that the operability of a CL header would be questionable with one strainer isolated. In addition, a historical review determined the total duration of one strainer isolation for the last year was 337.25 hours. This duration was used by the SRA in determining the significance of this finding. The licensee's corrective actions at the time of this inspection were to evaluate the condition and initiate further actions as necessary.

On June 25, 2014, the inspectors identified that the licensee corrective actions for NRC finding NCV 05000282/2013007-02; 05000306/2013007-02 did not include a review of past operating configurations to evaluate operability and reportability. The licensee implemented changes to the site operating instructions to require entry into the TS 3.7.8 LCO if a strainer was removed from service and proposed design changes that included replacement of the affected strainers. However, the licensee did not notify the shift manager or initiate a new CAP AR to investigate or evaluate past periods of operability with CL strainers isolated which was not in accordance with the required actions in procedure FP-PA-ARP-01 "CAP Action Request Process."

In response to this finding, the licensee entered this issue into the CAP as AR 01436231 and initiated actions to evaluate past periods of operation with isolated CL strainers.

Analysis: The inspectors determined that the licensee's failure to accomplish procedure FP-PA-ARP-01, "CAP Action Request Process," to notify the shift manager for operability/reportability concerns and initiate a CAP for past plant operation with the CL system strainer isolated was a performance deficiency. This performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected the performance deficiency would have the potential to become a more significant safety concern. Specifically, the failure to accomplish procedure FP-PA-ARP-01 potentially resulted in a failure to notify the NRC of an unanalyzed operating condition which would impede or impact the regulatory process. Additionally, the performance deficiency was also determined to be more than minor because it was associated with the Mitigating Systems Cornerstone attribute of design control and adversely affected the Cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events. Specifically, flow rates higher than design values may cause failure of the strainer that would release debris and adversely affect cooling of the downstream safety-related components.

The inspectors completed a Phase 1 significance determination of this issue using 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." The inspectors answered "Yes" to Question 2 of Section A of Exhibit 2, "Mitigating Systems Screening Questions." Specifically, the CL system may not have been able to perform its design cooling functions during past periods of operation with one CL header strainer isolated. Therefore, the finding required a detailed risk evaluation which had been previously completed by an SRA for the original finding (NCV 05000282/2013007-02; 05000306/2013007-02). Specifically, the SRA had previously determined that the bounding core damage frequency for this issue was $1.9E-7$ /yr. and concluded the total risk increase to the plant due to this finding was of very low risk significance (Green).

The finding was determined to have a cross-cutting aspect in the area of human performance, consistent process, because the licensee failed to use a consistent, systematic approach to make decisions. Specifically, the licensee failed to use the CAP process in evaluation of the past operability and reportability of the CL system with the CL system strainers isolated. [H.13]

Enforcement: Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances, and shall be accomplished in accordance with these procedures.

Contrary to the above, from October 23, 2013, through June 25, 2014, (reference AR 01378695), the licensee failed to accomplish procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 37, Step 5.9.1 which stated, in part, "IF new operability/reportability/functionality concerns are identified, THEN notify the shift manager immediately," and, "IF a new problem or condition adverse to quality is identified, THEN initiate a CAP." Specifically, when the licensee identified/confirmed a CL system operating configuration that was a new operability, reportability or functionality concern, this new condition adverse to quality was not captured within a CAP AR to notify the shift manager a past operability (reportability) concern. Because this violation is of very low safety significance and was entered into the corrective action program as AR 01436231, this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000282/2014007-03; NCV 05000306/2014007-03, Failure to Evaluate Past Operability and Reportability of the Cooling Water System)

Failure to Update the Updated Final Safety Analysis Report—Pressure Isolation Valves

Introduction: The inspectors identified a Severity Level IV NCV of Title 10 CFR 50.71(e), "Periodic Update of the Final Safety Analysis Report," and an associated Green finding for the licensee's failure to update the Updated Final Safety Analysis Report (UFSAR) with a complete list of pressure isolation valves (PIVs) and periodic acceptance test requirements that had been reported to the Commission. Specifically, the licensee did not update Prairie Island Updated Safety Analysis (USAR), Section 4.6.1.2.1, "Pressure Isolation Valves," to include all PIVs and their associated test requirements.

Discussion: In June 1987, the licensee submitted a list of valves to the NRC in response to Generic Letter (GL) 87-06, "Periodic Verification of Leak Tight Integrity of PIVs," and identified the test methods used to confirm the leak tight integrity of these PIVs. The licensee did not incorporate this information into the USAR. The licensee subsequently identified a group of the PIVs reported to the NRC in their response to GL 87-06 which had not been periodically tested, and identified a contributing cause for this error as a failure to adequately update the In-service Test (IST) Program basis documents. However, the licensee's corrective actions to resolve this issue did not include updating the USAR with a complete list of PIVs. The inspectors were concerned that failure to update the USAR with a complete list of PIVs and their associated test requirements could again result in a failure to complete periodic PIV leak testing.

In March 1987, the NRC issued GL 87-06 to verify the test methods that confirmed the leak-tight integrity of PIVs. PIVs were defined by the NRC as any two valves in series within the reactor coolant pressure boundary that separated the high pressure reactor

coolant system from attached low pressure systems. Further, the NRC identified that periodic testing of PIVs was necessary to assure the integrity of the reactor coolant pressure boundary. In June 1987, the licensee responded to GL 87-06 and identified a list of PIVs including the type of acceptance tests applied for each PIV. However, the licensee did not update the USAR to reflect this information. In June 1993 and May 1996, the licensee changed the testing category of 14 PIVs in the IST Program that resulted in deletion of the periodic leak acceptance tests for these PIVs. In September 1997, the licensee issued a USAR change to revise their original GL 87-06 commitment and reduce the number of PIVs to those identified in the TS (reference basis section for TS 3.4.15). Subsequently, the licensee determined that the decision to remove these PIVs from the IST Program was not correct and in November 2013, issued EC-23049, "Acceptance of True North's Pressure Isolation Valve Evaluation for Prairie Island," to record the complete scope of PIVs with leakage acceptance testing. However, the licensee failed to notify the Commission of this commitment change and to update the USAR to reflect this information.

In April 2013, the licensee completed RCE 01365473, "Failure to Test Category "A" PIVs per the American Society of Mechanical Engineers Operation and Maintenance Code and GL 87-06." The licensee identified several PIVs that had not been properly tested and the licensee's RCE team concluded the root cause was a failure of site engineering management to recognize the importance of industry participation to ensure awareness, currency, and alignment to industry standards for regulatory required Engineering Programs. The licensee's RCE team also identified four contributing causes for this error that included the site IST Program not having an adequately documented basis that met current industry standards for individual component categorization, scope, and regulatory requirements. However, this conclusion did not prompt a corrective action to correct the incomplete list of PIVs and associated test requirements identified in USAR section 4.6.1.2.1 "Pressure Isolation Valves." Based upon review of the licensee's timeline of decisions and inappropriate actions identified in RCE 01365473, the inspectors concluded that failure to update the USAR with the complete list of PIVs was a potential contributor to the licensee's failure to properly test these valves. As of June 25, 2014, the licensee had not updated the USAR to reflect the complete list of PIVs identified in their current IST Program and EC-23049.

In response to this finding, the licensee entered this issue into the CAP as AR 01436039 and initiated actions to change the USAR to incorporate the complete list of PIVs as identified in EC-23049.

Analysis: The inspectors determined that the failure to update the USAR with a complete list of PIVs was contrary to 10 CFR 50.71(e) and was a performance deficiency that warranted a significance evaluation. This performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, failing to update the USAR with the complete list of PIVs and their associated test requirements could result in a failure to periodically test these valves. A lack of periodic PIV testing could result in leaving degraded PIVs in service which would increase the probability of an intersystem loss-of-coolant accident (LOCA) that bypasses the containment. Additionally, the failure to include PIVs in the USAR was more than minor because it was associated with the Initiating Event Cornerstone attribute of

Equipment Performance and adversely affected the Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions.

Violations of 10 CFR 50.71(e) are dispositioned using the traditional enforcement process because they are considered to be violations that potentially impede or impact the regulatory process. This violation was also associated with a finding that has been evaluated by the SDP and communicated with a SDP color reflective of the safety impact of the deficient licensee performance. The SDP, however, does not specifically consider regulatory process impact. Thus, although related to a common regulatory concern, it is necessary to address the violation and finding using different processes to correctly reflect both the regulatory importance of the violation and the safety significance of the associated finding.

The inspectors completed a Phase 1 significance determination of this issue using 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." The inspectors answered "No" to the LOCA Initiators questions in Exhibit 1, Section A, "Initiating Events Screening Questions," therefore the finding screened as very low safety significance (Green). Specifically, the inspectors concluded that the failure to update the USAR with the complete list of PIVs had not yet resulted in operation of the plant with unacceptable PIVs and thus had not increased the probability of an intersystem LOCA. The inspectors determined this finding to have a cross-cutting aspect in the area of human performance, documentation component, because the licensee failed to maintain complete, accurate, and up-to-date documentation of the PIVs in the USAR. [H.7]

In accordance with Section 6.1.d.3 of the NRC Enforcement Policy, this violation was also categorized as Severity Level IV because the licensee's failure to update the USAR as required by 10 CFR 50.71(e) had not yet resulted in any unacceptable change to the facility or procedures.

Enforcement: Title 10 CFR 50.71(e) requires in part, that licensees shall periodically update the UFSAR, originally submitted as part of the application for the operating license, to assure that the information included in the report contains the latest information developed. This submittal shall include the effects of all the changes necessary to reflect information and analysis submitted to the Commission by the licensee or prepared by the licensee pursuant to Commission requirement since the submittal of the original USAR, or as appropriate, the last update to the USAR under this section [USAR].

Contrary to the above, from 1987 until September 30, 1997, and from November of 2013, through June 25, 2014, the licensee did not update the USAR to reflect information submitted to the Commission. Specifically, the licensee failed to update the USAR with the complete list of PIVs including the applicable acceptance test requirements. In accordance with the Enforcement Policy, Section 6.1.d.3 the violation was classified as a Severity Level IV violation. Because this violation was of a very low safety significance, was not repetitive or willful, and was entered into the licensee's CAP as AR 01436039, this violation is being treated as a Severity Level IV NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000282/2014007-04; 05000306/2014007-04, Failure to Update the UFSAR for Pressure Isolation Valves)

(3) Effectiveness of Corrective Action

Based on the results of the inspection, the inspectors concluded that the majority of corrective actions reviewed were generally appropriate for the identified issues, with some examples to the contrary. The team acknowledged recent NOS observations related to the CAP, in particular the inappropriate closure or ineffectiveness of CAPRs to address long-standing CAP issues. The team also noted several examples where corrective actions addressing selected NRC documented violations were not timely and were potentially narrowly focused due to the lack of extent of condition reviews. The inspectors' review going back 5 years of the station's efforts to address issues with the EDG and safety-related switchgear systems did not identify any new concerns, but considering the approximately six NRC-identified findings related to these systems over the last 2 years, the team was concerned with the timeliness of corrective actions and the number of challenges in addressing long term issues.

The team noted several root cause evaluations that determined deficiencies in site-wide behaviors as the root cause(s). In order to generate CAPRs, there were several examples where the actions involved coaching/counseling, providing training, etc. These types of CAPRs proved not only very difficult to achieve, but also very difficult to verify effectiveness and sustainability. The inspectors were concerned that some actions taken to address long-standing issues were attributed, in part, to one-time actions to address behavioral issues—resulting in many RCEs having to be revised at later dates. Additionally, the inspectors noted several examples where contributing causes pointed to straightforward procedure or process changes that, had the procedure/process been adequate in the first place, could have prevented the issue altogether. Overall, there were several examples where corrective actions were made more complicated than they needed to be—resulting in confusion by plant staff as to what exactly needed to be addressed. There was a sense by the inspection team that root cause tools used could be driving corrective actions that were difficult to achieve versus the station first addressing what could be done to prevent recurrence through permanent procedure/process changes. These changes, in the end, could have proved themselves to be more measurable, sustainable, and likely more effective in the long term.

The inspectors acknowledged that Prairie Island's corrective action program processes were very sophisticated. However, the team found some processes convoluted, resource intensive, and confusing to use. Because of this, the team noted that several potential areas for error traps existed. For example, the team found instances where multiple cross-references and closures to processes outside the CAP led to assignments being inappropriately cancelled, lost, or difficult to locate (see finding discussed below); confusion related to irregular coding for assignments that lead to questions of what the assignments were truly addressing, and frustration in simply trying to determine how actions were ultimately resolved. Some of these observations were also evident in retrieving some responses by the station's inspection support team during the inspection (refer to AR 01435531).

The team noted an abnormally high number of 'B' level corrective actions going back as far as 2006 that have still not been closed. Although station CAP backlogs remained high, the licensee was making progress with burn-down curves moving in right direction.

The inspectors reviewed RCE 01378655, “Root Cause Analysis Recommended for P.1.c CAPs,” completed in May of 2013 to review an emerging cross-cutting theme in the area of PI&R. The RCE identified one root cause and determined that due to the root cause being similar to a root cause identified in RCE 01349769, “Ineffective CAP Implementation;” the licensee took some credit for a CAPR within that evaluation. However, the inspectors identified that two new additional corrective actions (CA 01378655–03 and–15) were also generated to address the root cause for RCE 01378655. The inspectors questioned why these corrective actions were not labeled as CAPRs in accordance with station procedures. The licensee acknowledged these errors and documented the issue in CAP 01435079. The inspectors considered the failure to properly document CAPRs for a new SCAQ as an NRC-identified performance deficiency for failing to follow procedure FP–PA–RCE–01, “Root Cause Evaluation Manual.” Specifically, Step 5.4.11 required, in part, that “CAPRs to address the Root Cause SHALL be developed.” The inspectors determined that the performance deficiency was of minor significance because the two corrective actions were completed appropriately, and had EFRs assigned and completed successfully—even though the CAs were not categorized as CAPRs (i.e., if left uncorrected, would not have led to a more significant safety concern). The licensee was in the process of revising the categorization of CA 01378655–03 and–15 within the CAP, and reviewing the basis for the assignment error in RCE 01378655.

Findings

Failure to Follow Procedures for Cancelling Non-CAP Action Assignments

Introduction: The inspectors identified a Green finding and NCV of Title 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures and Drawings,” for the licensee’s failure to accomplish Attachment 14, “CAP to External Process Interface,” of procedure FP–PA–ARP–01, “CAP Action Request Process.” Specifically, the inspectors identified several examples where severity level “C” CAP AR actions were closed to processes outside the CAP, and then subsequently cancelled without appropriate justification or documentation.

Description: In April 2013, NRC inspectors identified during a triennial component design basis inspection (CDBI), two examples where severity level “C” ARs were closed to procedure change requests (PCRs), but were then subsequently cancelled without justification. The inspectors determined that both issues, on their own merit, represented minor performance deficiencies. The licensee documented the collective CDBI concerns within AR 01378248 and changed station procedures to help ensure that “C” level ARs closed to PCRs would not be inappropriately or unjustifiably canceled.

In preparation for the 2014 biennial PI&R inspection, the team received the information related to the CDBI issue discussed above for follow-up review due to the potential for extent of condition. The 2014 biennial PI&R inspectors requested a search for severity level “C” condition adverse to quality ARs of top ten risk significant systems, from November 2013 through June 2014 that were closed to non-CAP processes (PCRs, work requests, work orders, engineering changes and requests, etc.), and then subsequently cancelled. After compiling and reviewing the list, three notable examples

of severity level “C” ARs documenting conditions adverse to quality and fire protection were identified:

- CAP AR 01394131, “B&W AFCR N8–003 As-Found Conditions on New RSG 21,” associated with the as-found inspection of replacement steam generator 21 channel head area on the hot leg side containing a small visible indication during a non-destructive examination. The AR was closed to a work request, but then subsequently cancelled without documentation of resolution. This indication was not part of the reactor coolant system pressure boundary. After further investigation, the issue was forwarded to the station’s vendor that determined no additional action was required; however, the cancellation of the WR was not documented. The licensee documented this issue in ARs 01435428 and 01435438 to determine why the work request was cancelled and to document the final disposition;
- CAP AR 01164738, “FP System Walkdown Findings,” associated with a station engineer’s fire protection system walk down that identified, in part, the need to replace supply tubing for a fire protection system component. A work request and work order were both cancelled inappropriately (tubing was replaced, but work completion was not documented and different tubing materials were used). The licensee documented this issue in AR 01435954 to further investigate how the work was performed under a cancelled work order and also whether the change in tubing material resulted in an unevaluated modification to the system; and
- CAP AR 01427928, “D6 ENG 1 L/O PS 2PS–6185 Was Not Repeatable During Calibration,” associated with a lubricating oil system pressure switch calibration that was not repeatable as expected during a maintenance activity. Although the licensee determined that the non-repeatable pressure switch issue did not prevent declaring the D6 emergency diesel generator operable following the maintenance, the work request assigned to either replace or review the concern by engineering was inappropriately cancelled without any justification. The licensee documented this issue in AR 01435962 to further investigate the work request cancellation.

The inspectors were concerned that aside from prior corrective actions to address shortcomings in PCR cancellation from the 2013 CDBI issues, a more than minor programmatic issue existed with respect to non-CAP assignment cancellations. Specifically, the inspectors were concerned that sufficient automated CAP process barriers were not in place to ensure that Attachment 14, “CAP to External Process Interface,” of procedure FP–PA–ARP–01, “CAP Action Request Process,” was consistently followed and complied with. Attachment 14 General Guidance stated, in part, that “IF any action in an outside process terminates in a status that did not achieve the requested result (i.e., CANCELLED), THEN the CAP Owed-To must develop a suitable alternative solution and initiate actions to address the condition or cause OR provide adequate basis for non-performance of the action.” For PCRs and some other non-CAP assignments, the Prairie Island automated CAP process contained built-in software “flags” to ensure that proper cancellation actions were taken and documented. For other non-CAP assignments such as work orders and work requests, manual reviews by station personnel were required to ensure the FP–PA–ARP–01, Attachment

14 requirements were met. There was no such manual review process in place at the time of this inspection and the identification of inappropriate cancellations were left to CAP screening members or other individual contributors.

In response to the inspector's concern, the licensee entered this issue into the CAP as CAP 01436258 and initiated actions to develop more automated barriers within the CAP processes.

Analysis: The inspectors determined that the licensee's failure to accomplish Attachment 14 of procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 37 to develop a suitable alternative solution and initiate actions to address the condition or cause or provide adequate basis for non-performance of the action was a performance deficiency. This performance deficiency was determined to be more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," because, if left uncorrected it would have the potential to lead to a more significant safety concern. Specifically, the failure to ensure that severity level "C" conditions or causes of conditions adverse to quality were appropriately addressed, or non-performance of actions appropriately justified, had the potential to lead to a more significant safety concern.

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 the three instances discussed above did not rise 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 determined that the performance characteristic of the finding that was the most significant causal factor of the performance deficiency was associated with the cross-cutting aspect of Problem Identification and Resolution, and involving the organization taking effective corrective actions to address issues in a timely manner commensurate with their safety significance. Specifically, following the realization in April 2013 of potential flaws in the CAP processes to allow inappropriate cancellations of severity level "C" CAP ARs after being closed to the non-CAP PCR assignments, the station failed to correct the vulnerabilities that existed for other non-CAP assignments. [P.3]

Enforcement: Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," requires in part, that activities affecting quality shall be accomplished in accordance with written procedures.

Procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 37, Attachment 14, "CAP to External Process Interface," General Guidance, states, in part, "IF any action in an outside process terminates in a status that did not achieve the requested result (i.e., CANCELLED), THEN the CAP Owed-To must develop a suitable alternative solution and initiate actions to address the condition or cause OR provide adequate basis for non-performance of the action."

Contrary to the above, on June 25, 2014, the inspectors identified three examples of severity level "C" CAP ARs that had been closed to an outside process, but then subsequently cancelled without developing an alternative solution, initiating actions to address the conditions or causes, or providing adequate basis for non-performance of

the action. Because this violation is of very low safety significance and was entered into the CAP as AR 01436258, this violation is being treated as a NCV consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000282/2014007-05; NCV 05000306/2014007-05, Failure to Follow Procedures for Cancelling Non-CAP Action Assignments)

.2 Assessment of the Use of Operating Experience

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the facility's operating experience (OE) program. Specifically, the inspectors reviewed implementing OE program procedures, observed daily meetings for the use of OE information, and reviewed completed evaluations of OE issues and events. The intent was to determine if the licensee was effectively integrating OE experience into the performance of daily activities, whether evaluations of issues were proper and conducted by qualified personnel, whether the licensee's program was sufficient to prevent future occurrences of previous industry events, and whether the licensee effectively used the information in developing departmental assessments and facility audits. The inspectors also assessed if corrective actions, as a result of OE experience, were identified and implemented effectively and in a timely manner.

Assessment

Based on the results of the inspection, the inspectors concluded that, in general, OE was effectively utilized at the station. The inspectors observed that OE was discussed as part of the daily station and pre-job briefings. Industry OE was effectively disseminated across the various plant departments and no issues were identified during the inspectors' review of licensee OE evaluations. During interviews, several licensee personnel commented favorably on the use of OE in their daily activities.

b. Findings

No findings were identified.

.3 Assessment of Self-Assessments and Audits

a. Inspection Scope

The inspectors reviewed selected self-assessments and NOS observation reports. The inspectors evaluated whether these self-assessments and observations were effectively managed, adequately covered the subject areas, and properly captured identified issues in the CAP. In addition, the inspectors interviewed licensee personnel regarding the implementation of the self-assessment and NOS observation programs.

Assessment

Based on the results of the inspection, the inspectors concluded that self-assessments and NOS observations were typically accurate, thorough, and effective at identifying issues and enhancement opportunities at an appropriate threshold level. The self-assessments and observations were completed by personnel knowledgeable in the

subject area. In many cases, these self-assessments and observations had identified numerous issues that were not previously recognized by the licensee. These issues were entered into condition reports as required by CAP procedures.

With respect to the 2012 biennial PI&R inspection assessment in this area that considered NOS observations generally more intrusive, critical, of higher quality, and in-line with NRC inspection conclusions as compared to similar self-assessment reports, the 2014 biennial PI&R inspectors continued to agree with this assessment. For example, as discussed above, the station performed an inspection readiness self-assessment for the 2014 biennial PI&R inspection; however, following an NOS observation of the self-assessment, many significant issues were noted as not being captured by the readiness self-assessment. The NOS observation also drove more significant and timely resolution of any areas that needed to be addressed with respect to the longstanding CAP implementation concerns. The inspectors also noted approximately six NOS Observation Reports associated with the Prairie Island CAP over the prior 2 years that, in many cases, identified several significant issues with the CAP that should have/could have been identified through self-assessments.

b. Findings

No findings were identified.

.4 Assessment of Safety-Conscious Work Environment

a. Inspection Scope

The inspectors interviewed selected Prairie Island personnel to determine if there were any indications that individuals were reluctant to raise safety concerns to their management, supervision, the Employee Concerns Program (ECP), or the NRC due to the fear of retaliation. The inspectors reviewed selected ECP activities to identify any emergent issues or potential trends. The inspectors also assessed the safety-conscious work environment (SCWE) through a review of ECP implementing procedures, discussions with the ECP representative, interviews with personnel from various departments, and reviews of ARs. The licensee's programs to publicize the CAP and ECP were also reviewed. The inspectors reviewed licensee self-assessments and assessments by external organizations of safety culture to determine if there were any organizational issues or trends that could impact the licensee's safety performance.

Assessment

The inspectors did not identify any issues that suggested conditions were not conducive to the establishment and existence of a SCWE. Licensee personnel were aware of and generally familiar with the CAP and other processes, including the ECP, through which concerns could be raised. In addition, a review of the types of issues in the ECP database indicated that personnel were appropriately using the CAP and ECP to identify issues. The staff also indicated that management had been supportive of the CAP by providing time and resources for employees to generate their own condition reports.

The staff also expressed a willingness to challenge actions or decisions that they believed were unsafe. All employees interviewed noted that any safety issue could be freely communicated to supervision and safety significant issues were being corrected.

Some employees indicated a number of low level items were not being corrected in a timely manner. The inspectors determined that the timeliness of the planned corrective actions for the examples given were commensurate with their safety significance.

Various safety culture assessments had been performed by contractors, the licensee's staff, and a nuclear plant owner/operators organization. The results indicated that there were no impediments to the identification of nuclear safety issues.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On June 27, 2014, the inspectors presented the inspection results to Mr. K. Davison, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. O'Connor, Chief Nuclear Officer, Xcel Energy
K. Davison, Site Vice President
S. Sharp, Director of Site Operations
C. Younie, Plant Manager
C. Calia, Business Support Manager
T. Allen, Assistant Plant Manager
G. Johnson, Senior Manager, Site Engineering
J. Hallenbeck, Site Engineering Director
J. Ruttar, Operations Director
J. Anderson, Regulatory Affairs Manager
H. Butterworth, Nuclear Oversight Manager
J. Boesch, Maintenance Manager
B. Rogers, Performance Assessment Manager
J. Kivi, Employee Concerns Manager
J. Corwin, Security Manager
B. Boyer, Radiation Protection Manager
P. Oleson, Regulatory Affairs Analyst
M. Markley, Performance Assessment
A. Capristo, Nuclear Vice President, Licensing
A. Khanifar, Nuclear Vice President, Engineering

Nuclear Regulatory Commission

G. Shear, Director, Division of Reactor Safety
K. Riemer, Chief, Branch 2, Division of Reactor Projects
K. Stoedter, Senior Resident Inspector, Prairie Island Nuclear Generating Plant

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened/Closed

05000282/2014007-01; 05000306/2014007-01	NCV	Failure to Implement the CAP Action Request Process Procedure (Section 4OA2.1b.(1))
05000282/2014007-02; 05000306/2014007-02	NCV	Inadequate Procedure for Identification of Significant Conditions Adverse to Quality (Section 4OA2.1b.(1))
05000282/2014007-03; 05000306/2014007-03	NCV	Failure to Evaluate Past Operability and Reportability of the Cooling Water System (Section 4OA2.1b.(2))
05000282/2014007-04; 05000306/2014007-04	NCV	Failure to Update the UFSAR for Pressure Isolation Valves (Section 4OA2.1b.(2))
05000282/2014007-05; 05000306/2014007-05	NCV	Failure to Follow Procedures for Cancelling Non-CAP Action Assignments (Section 4OA2.1b.(3))

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

Procedures

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
CD 5.26	Program Engineering	6
OI 13-06	Interim Tagging Expectations and Actions	2
FP-PA-ACE-01	Apparent Cause Evaluation Manual	1
FP-PA-ARP-01	CAP Action Request Process	37
FP-T-SAT-73	Licensed Operator Requalification Program Examinations	10
1C1.4	Unit 1 Power Operation	57
2C1.4	Unit 2 Power Operation	53
FP-PA-ACE-01	Apparent Cause Evaluation Manual	0
5AWI 8.9.0	Internal Flooding Drainage Control	13
FP-E-SE-04	Conduct of System Engineering	16
TP 1605	Turbine-Generator Operating Parameter Biweekly Record	22
H32.1	Vibration Monitoring and Analysis Program	5
FP-WM-SR-01	Seasonal Readiness Program,	2
ENG-ME-756	Inputs to Turbine Building GOTHIC Model for Room Heat-up Analysis	0
D80	Scaffolding, Ladders and Cable Trays Platforms	28
FP-PA-EFR-01	Effectiveness Review Manual	0
FP-OP-COO-15	Conservative Decision Making	2
FP-OP-OL-01	Operability/ Functionality Determination	13
SP 2324	22 Battery Monthly Inspection	17
1M-CL-3002-2-12	Isolation and Restoration of 12 Diesel Cooling Water Pump for PM 3002-2-12	6
FP-PA-RCE-01	Root Cause Evaluation Manual	1
FP-PA-EFR-01	Effectiveness Review Manual	0
FP-PA-OE-01	Operating Experience Program	19
FP-G-DOC-04	Procedure Processing	20
FG-G-PCR-02	Procedure Change Request (PCR) Screening	10
FP-PA-SA-01	Focused Self-Assessment Planning, Conduct and Reporting	15
FP-WM-WOI-01	Work Identification, Screening, Validation and Cancellation	18

Action Requests

<u>Number</u>	<u>Description or Title</u>
01084894	Evaluate Potential PIVs Not Included per GL 87-06
01408485	NSR Valve Stem Strain Sensors Installed on SR MOVs
01414982	Non-Conforming Disc Pin Installed on AL-599
01414939	Non-Conforming Disc Pin Installed on AL-598
01410203	Safety Classification Mismatch of Various Parts for D2 EDG
01409860	Safety Classification Mismatch of Various Parts for D1 EDG
01409644	Safety Classification Mismatch of O-rings on 12 DDCLP
01425399	Adverse Trend in NOS Internal Procedure Use and Adherence
01420930	SGBD Anchorage Failure to Meet Design
01420929	SGR Failure to Meet AISC for OLS
01397558	Failure to Review CL Strainer Post-Seismic Flow
01397558	Failure to Review CL Strainers Under Post-Seismic Flow Conditions
01397557	Failure to Model Strainers and Valves in CL System
01420250	Failure to correct DE EDG LO Cooler Leak Prior to Inoperability
01407438	Non-Safety Related Parts Installed into SR Applications
01408202	Failure to Have Instructions Appropriate to Circumstances Rad Monitor Maintenance
01390609	Programmatic Failures in the Maintenance Rule
01365473	Failure to Leak Test Cat A PIVs per ASME Code and GL 87-06
01348310	Unit 1 SD Common Cause D1/D2 Failures
01347636	D5/D6 Air Start Receiver Capacity
01353350	D5/D6 Air Start Receiver Capacity
01347349	MRE for Degraded Rad Monitors
01356385	AFW MS Supply Valve Too Slow
01354187	Increase in Actuator Pressure Affected IST Times
01400129	Unanalyzed Condition- Inadequate Replenishment Fuel Oil
01378695	Seismic Post-Seismic Flow Rates
01376876	Lack of Documentation for CL Strainer Analysis Inputs
01338673	Doors Worked Without Traceable Parts
01359101	Inadequate Disposition of Snubber Low Level
01366210	NRC Green for ISI Snubber Evaluation
01356287	NRC Green for MRE URI on Rad Monitors
01347349	Response to Q99 PI&R MRE Cancelled
01371088	AB-4 Enhancements
01325986	U2 Manual Reactor Trip Due to Hi Hi Feedwater Heater Levels
01338483	2C1.4 Revision 48
01351737	1C1.4 Revision 52
01371103	EFR 1345525-13 Not Effective
01385522	Generator Fiber Optic Vibration Hi on Channel 7 & 8
01433923	Operations Log Entries May Need CAPs Written
01343545	Gen Fiber Optic Vibration Sensor #7 Reads High

01385974	Unit 2 Power Reduced for Main Generator Problem
01337392	TP 1605 Performed by Control Room Operators
01347962	TP 2605 Discrepancies
01403050	CAP 1337392 Closed with No PCR Written
01334924	21 RHR Pump Failed During Troubleshooting
01327157	Potential Non-conservative Heat-up Analysis for D1/D2
01368845	Barrels Improperly Tethered to 695' U2 Turbine Truck Aisle
01347397	RCE Effectiveness Review Lacks Documentation
01347676	2012 PI&R: Passport CAP Documentation Issues
01266075	Potential LER Issue on DEC 121 MDCLP Autostart
01273436	Confirmation of a Reportable Condition
01375245	Unplanned TS Due to Wrong Fuse Pulled
01400082	Follow-up actions to address HU deficiencies re OPR 1392583
01394184	NRC question regarding OPR 1392583 D6 Fan MOLR's
01358291	PINGP 1102 was not properly updated for U1 Reactor Head Lift
01358390	PINGP 1102 Rev 32 (HOT) 1R28
01365129	ACE: Acceptance criteria for 22 Batt SP 2324 missed for 58 cells
01389231	Potential Past Preconditioning, SP 1449 Air in Leakage Test
01392548	Unacceptable Preconditioning Used to Meet TS.5.5.16
01339216	Source Range 2N32 Failed
01349390	Unit 1 Shutdown Complicated by Electrical System Conditions
01051610	Potential Negative Trend - TSC Emergency Ventilation
01090396	Inadequate EDG Surveillance Test Procedures
01095896	CDBI07- Unclear Basis For Change In Heater Size
01145953	Red Channel Setpoint Failed Low Causing Reactor Trip
01174370	No Tornado Protection of CC Piping for 122 SFP-HX
01192136	Non-conservative Tech Specs for 3.8.1
01195002	Revision 3 of ENG-ME-020 Supports Need For Tech Spec Change
01209214	Unit 1 MS Elbow Not Modeled In Stress Analysis As Built
01222649	FME Inside D1 Lube Oil Sump
01239912	11 RHR Sump B Suction Pipe Penetration
01264760	21 SBV MD-32222 Failed In Open Position
01284787	Unit 2 Reactor Trip from Generator Lockout
01308154	CDBR: RHR Pit Sump Pump Function for Mitigating Pit Flooding
01337126	ERV-1/D5 Contacts Need To Be Cleaned
01345525	Unit 2 HELB Flooding Barrier Removed With Unit 2 At Power
01347687	Boot Seals in RHR Pits May Be Missing Inspection
01348310	Unplanned Unit 1 Shutdown Due To Common Cause D1/D2 failures
01354197	Deficiencies In Passport Equipment Database For Fire Barriers
01354592	12UHS: NRC-ID Green NCV For Violation Of 10CFR 50 App B III
01361849	Rubber Hose Replacements Not Performed Per Tech Man Req
01378228	Thread Sealant Found in SV-337744 Body
01397553	2013 CDBI Green NCV for Test Control - Fuel Oil Flow Path

01408309	NCV GREEN – D6 Radiator Fan MOLR Sizing
01408310	NCV GREEN - D2 "Fretting"
01378248	2013 CDBI – Weakness in PCR Process Interface with CAP
01376889	Top 10 Issue AR Actions Cancelled – AR Closed
01375826	2013 CDBI: PCRs Cancelled Resulted in Closed AR Without CA
01394131	B&W AFGR N8-003 As-Found Conditions on New RSG 21
01164738	FP System Walkdown Findings
01427928	D6 ENG 1 L/O PS 2PS-6185 Was Not Repeatable During Calibration
01433503	Potential Trend – PI and Monticello Closing CAPs to Cancelled WRs
01429342	NOS Escalation – Level 1 – RCE to Correct CAP Ineffective

Root Cause Reports

<u>Number</u>	<u>Description or Title</u>
01407438	Adverse Assessment Finding for Installation of Non-Safety Related Soft Parts
01365473	Failure to Test Cat A PIVs per ASME OM Code and GL 87-06
01351261	Level 1 Tagging Event-Significant Tagging Errors
01390609	Maintenance Rule Green NOV
01369056	Emergency AC Power MSPI Indicator is White
01365445	Site Application of ISTC 5223 for SI 6-4 Testing
01345525	Unit 2 HELB Flooding Barrier Removed with U2 at Power Root Cause Evaluation
01271750	Unplanned entry into T.S. LCO 3.6.10 Condition A
01343669	D1 And D2 Emergency Diesel Generators (EDG) Declared Inoperable Due To Outside Air Temperature Greater Than 97 Degrees.
01345525	Internal Flood Barrier Removed, Impacting The D5/D6 EDG's
01349769	Ineffective Corrective Action Program Implementation
01378655	Root Cause Analysis Recommended for P.1.c CAPs
01363173	1R 50 finding potential greater than green NRC finding
01369064	NRC Performance Indicator Data Submitted without MSPI Failure
01397532	NOS AAF - Prairie Island Flood Preparation Inadequate
01416664	RCS Spec Activity - Misreporting of Performance Indicator for 2013

Apparent Cause Evaluations

<u>Number</u>	<u>Description or Title</u>
01362132	Inadequate Evaluation of Operating Crew During Annual Requal Exam Apparent Cause Evaluation
01374550	Barrels Improperly Tethered in Critical Drainage Area
01386519	Unplanned LCO D1 Fan Pitch pos. Did Not Operate
01421984	Failure to Follow Scaffold Procedure
01366155	Tech Spec LCO Action Statement Not Entered

01378228	FME in D2 Air Start Assembly
01408310	NCV GREEN - D2 "Fretting"

Self-Assessments and Observation Reports

<u>Number</u>	<u>Description or Title</u>
2012-03-009	NOS Observation Report - Maintenance
2013-01-017	NOS Observation Report - Maintenance
2013-03-013	NOS Observation Report - RP
01407778	Snapshot Report – Nuclear Oversight- Project Oversight
01411684	Pre-NIEP Focused Self-Assessment
01311405	Maintenance Self-Assessment Snap Shot Report- Contractor Control
01411687	Radiation Protection Self-Assessment – Radioactive Shipments
01396643	Radiation Protection Self-Assessment – Radioactive Hazard Assessment and Exposure Controls
01393501	Radiation Protection Self-Assessment – In-Plant Airborne Radioactivity Control and Mitigation, Occupational Dose Assessment
NA	USA Alliance Chemistry Team Assessment Prairie Island
01387170	Chemistry Self-Assessment- How-To for Boric Acid Program
01387170	Chemistry Self-Assessment- Crud Burst How To
01387170	Chemistry Self-Assessment- Instrument Air System Failures
01425451	DRUM Report Department: Maintenance
2014-01-025	NOS Observation Report- Maintenance
01425451	DRUM Report Department: Radiation Protection
2012-03-020	Prairie Island NEIP
	DRUM Report Department: Chemistry
01207493	Maintenance Self-Assessment Snap Shot Report- FME
SAR 1365893	2013 Prairie Island Operations Training Comprehensive Self-Assessment, August 8, 2013
2013-04-029	Operations NOS Observation Report December 2013, January 13, 2014
2012-03-022	Operations NOS Observation Report August – September 2012, September 18, 2012
2012-04-019	NOS Assessment of Systems Engineering
2013-04-004	NOS Assessment of Systems Engineering
2013-02-012	NOS Assessment of Systems Engineering
2013-04-016	NOS Assessment of Engineering/ Operations Interface
2014-01-035	NOS Assessment of Engineering – Programs, Modifications and 10CFR 50.59, and Q-List
01310796	SnapShot Assessment of License Renewal Implementation Program
01407344	2014 Prairie Island Pre – PI&R Inspection Self-Assessment
2014-01-040	NOS Observation Report – PI&R Readiness Review
01205470	2010 Operating Experience Program
2012-03-019	NOS Observation Report – Security
2012-03-024	NOS Observation Report – Corrective Action Program – Prairie Island
2012-04-014	NOS Observation Report – Corrective Action Program
2012-04-022	NOS Observation Report – Operating Experience & Self-Assessment
2013-01-011	NOS Observation Report – Corrective Action Program

2013-03-005	NOS Observation Report – Corrective Action Program
2013-04-003	NOS Observation Report – Operating Experience
2013-04-036	NOS Observation Report – CAP
2014-01-008	NOS Observation Report – Emergency Preparedness – Prairie Island
2014-01-017	NOS Observation Report – Corrective Action Program
2014-01-044	NOS Observation Report – NRC Performance Indicators and MSPI 95001

Condition Reports Generated During the Inspection

<u>Number</u>	<u>Description or Title</u>
01436039	2014 PI&R – USAR Update
01434017	Lights Out in 2DB1 Bus Room
01436231	2014 PI&R - Cooling Water Strainer Flow Analysis
01436141	2014 PI&R - Failure to Address CAP Behavior Issue
01435741	Incomplete Documentation for Downgrade of ACE
01434003	Safety Lights Out in Safeguard Equipment Rooms
01434018	Lights Out in D5/D6 Building Stairwell
01434080	2014 PI&R – EC 7869 Initiated But Not Used for Evaluation
01434091	2014 PI&R – Inspections Interview Missed
01434143	2014 PI&R – EC 13113 Tie to HELB Project Questionable
01434274	2014 PI&R Inspection Question on CAPR/EFR Process
01434308	Update Leakage Acceptance Criteria for PIV SPs Unit 1
01434359	2014 PI&R – OPR 01365473 Reference Revision Incorrect
01434360	PI&R 2014 Station Response to GL 87-06 and Current USAR
01434383	2014 PI&R: AR 01365473 Does Not Have OBN Assignment
01434473	2014 PI&R Inspection: SMARTS Criteria IAW Step 5.7.4
01434330	SAR and SSA Framework Not Consistently Used
01434638	PI&R 2014 – Comparison of CAP Reference Documents
01434483	Potential Ineffective RCE Actions
01334603	Potential Late CAP Initiation for Non-Safety Related Material Used in Safety-Related Application
01434936	Extent of Condition on USAR Updates – 2014 PI&R
01435026	2014 PI&R – Canceled CAP Related PCRs Not Well Documented
01435079	2014 PI&R RCE 01378655 has 2 CAs that should be CAPRs
01435167	2014 PI&R RCE Quality
01435180	2014 PI&R – Missing Document – PI Fire PRA Snapshot Evaluation
01435218	Conduit Identified as Potential Trip Hazard
01435428	Small Indication on RSG 21 Nozzle Dam Ring in Channel Head
01435438	2014 PI&R Inspection Process Issue of AR Closed to WR
01435531	2014 PI&R – Difficult to Obtain CAP to Non-CAP Data
01435607	2014 PI&R Inspection: RCE Final Document Not Updated in Sharepoint
01435923	PARB Minutes Did Not Document Approval of RCE – 2014 PI&R
01435954	2014 PI&R Identified Potential Non-Document Modification
01435962	2014 PI&R Team Identified AR 01427928 Closed to Cancelled WR

01435969	2014 PI&R – CAP 01240930 ACG Closed Without Documentation
01436064	2014 PI&R – Implementation of FO Flow Path Verification
01436140	2014 PI&R WR 87353 Resulting Documentation Not Uploaded to WR
01436258	2014 PI&R – Failure to Follow Attachment 14
01436280	2014 PI&R – Missed Opportunity to Re-Screen CL Strainer AR
01436424	2014 PI&R – Untimely CAP Creation
01436342	2014 PI&R – SCAQ Definition Not Aligned with ASME NQA-1

Miscellaneous

<u>Number</u>	<u>Description or Title</u>	<u>Date or Revision</u>
EC 20015	Immediate Action Extent of Condition Review for 21 RHR Pump Failure	05/02/2012
NSP Letter	Response to Generic Letter 87-06	06/11/1987
Sargent & Lundy, LLC Project No. 11158-004	Prairie Island Nuclear Generating Plant Inservice Testing Program Assessment	06/09/2003
Quarterly Program Health Report	Preventative Maintenance Program	2014- First Quarter
H10.1.B	Inservice Testing Program Component Basis Document	Revision 1
H10.1	ASME Inservice Testing Program	Revision 34
AB-4	Flood	Revision 44
EC 23049	Pressure Isolation Valve Evaluation by Outside Vendor and Acceptance	Revision 0
SWI IC-WP-1	I&C Section Maintenance Work Practice Standards and Procedures	Revision 21
MCOE-TR-12-6	Prairie Island Unit 2, 21 RHR Pump Shaft Failure Examination Materials Center of Excellence	June 2012
	D1 Diesel Generator System Health Report	4/30/2014
	D2 Diesel Generator System Health Report	4/30/2014
	D5 Diesel Generator System Health Report	4/29/2014
	D6 Diesel Generator System Health Report	6/11/2014
EC 22864	D5/D6 Radiator Fans Drawing Above Nameplate Amperage	
	Prairie Island Nuclear Generating Plant Emergency Diesel Generator System Performance Improvement Plan	11/22/2013
	480V Electrical System Health Report	6/24/2014
	4.16 KV Electrical System Health Report	4/7/2014
	D6 Maintenance Rule (a)(1) Action Plan	Revision 4
	Prairie Island Nuclear Generating Plant Recovery Plan	Revision 2
EC 18434	Update Passport For FU/112G-11 L21 to 3 Amps, not 30 Amps	6/30/2011

EC 13113	Revise SPC-EP-008 For New HELB Assumptions	8/21/2008
	Nuclear Safety Margin Improvement Plan	4/19/2013
EC 9349	Revise ENG-EE-135 Analysis of DC Ground Detection	10/27/2006
L-PI-14-037	License Amendment Request (LAR) to Revise Technical Specification (TS) 3.8.1, "AC Sources- Operating",	6/9/2014

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AR	Action Request
ASME	American Society of Mechanical Engineers
CDBI	Component Design Basis Inspection
CL	Cooling Water
CAP	Corrective Action Program
CAPR	Corrective Action to Prevent Recurrence
CFR	Code of Federal Regulations
EC	Engineering Change
ECP	Employee Concerns Program
EFR	Effectiveness Review
EDG	Emergency Diesel Generator
FCU	Fan Coil Unit
FSAR	Final Safety Analysis Report
GL	Generic Letter
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IST	In-Service Test
LCO	Limiting Condition for Operation
LOCA	Loss of Coolant Accident
MOV	Motor Operated Valve
NCV	Non-Cited Violation
NOS	Nuclear Oversight
NRC	U.S. Nuclear Regulatory Commission
OCC	Outage Control Center
ODMI	Operational Decision Making Issue
OE	Operating Experience
PARS	Publicly Available Records System
PCR	Procedure Change Request
PI&R	Problem Identification and Resolution
PIV	Pressure Isolation Valve
QATR	Quality Assurance Topical Report
RCE	Root Cause Evaluation
RCP	Reactor Coolant Pump
RHR	Residual Heat Removal
SAR	Self-Assessment
SCAQ	Significant Condition Adverse to Quality
SCWE	Safety-Conscious Work Environment
SDP	Significance Determination Process
SMARTS	Specific, Measurable, Accountable, Reasonable, Timely, and Sustainable
SRA	Senior Risk Analyst
TS	Technical Specification
USAR	Updated Final Safety Analysis Report

K. Davison

-2-

Based on the results of this inspection, five NRC-identified findings of very low safety significance (Green) were identified during this inspection. All findings were determined to involve violations of NRC requirements, and one finding was determined to be Severity Level IV under the traditional enforcement process. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or significance of the NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region III; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Prairie Island Nuclear Generating Plant.

If you disagree with any cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III; and the NRC Resident Inspector at the Prairie Island Nuclear Generating Plant.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-282, 50-306, and 72-010
License Nos. DPR-42, DPR-60, and SNM-2506

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Letter to Kevin Davison from Ken Riemer dated August 6, 2014.

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2;
NRC BIENNIAL PROBLEM IDENTIFICATION AND RESOLUTION
INSPECTION REPORT 05000282/2014007; 05000306/2014007

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