

October 16, 2003

Mr. Joseph Solymossy  
Site Vice-President  
Prairie Island Nuclear Generating Plant  
Nuclear Management Company, LLC  
1717 Wakonade Drive East  
Welch, MN 55089

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2  
NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT  
NO. 05000282/2003007(DRP); 05000306/2003007(DRP)

Dear Mr. Solymossy:

On September 18, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed a team inspection at the Prairie Island Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on September 18, 2003, with you and other members of your staff during an exit meeting.

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

The team concluded that, in general, problems were properly identified, evaluated and corrected. There was one Green finding identified during this inspection associated with ineffective corrective actions taken to address critical drain path blockages. This finding was determined to be a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this finding as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Prairie Island Nuclear Generating Plant.

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Sincerely,

**/RA by James Cameron Acting for/**

Patrick Loudon, Chief  
Branch 5  
Division of Reactor Projects

Docket Nos. 50-282; 50-306  
License Nos. DPR-42; DPR-60

Enclosure: Inspection Report 05000282/2003007(DRP); 05000306/2003007(DRP)  
w/Attachment: Supplemental Information

cc w/encl: Plant Manager, Prairie Island  
R. Anderson, Executive Vice President  
Mano K. Nazar, Senior Vice President  
John Paul Cowan, Chief Nuclear Officer  
Manager, Regulatory Affairs  
Jonathan Rogoff, Esquire General Counsel  
Nuclear Asset Manager  
Commissioner, Minnesota  
Department of Health  
State Liaison Officer, State of Wisconsin  
Tribal Council, Prairie Island Indian Community  
Administrator, Goodhue County Courthouse  
Commissioner, Minnesota Department  
of Commerce

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282; 50-306  
License Nos: DPR-42; DPR-60

Report No: 05000282/2003007(DRP); 05000306/2003007(DRP)

Licensee: Nuclear Management Company, LLC

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Drive East  
Welch, MN 55089

Dates: August 25 through September 18, 2003

Inspectors: R. Skokowski, Senior Resident Inspector - Byron,  
Team Leader  
D. Jones, Reactor Inspector  
D. Karjala, Resident Inspector - Prairie Island

Approved by: Patrick Loudon, Chief  
Branch 5  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000282/2003007(DRP), 05000306/2003007(DRP); 08/25/2003 - 09/18/2003; Prairie Island Nuclear Generating Plant, Units 1 & 2; Identification and Resolution of Problems.

The inspection was conducted by a senior resident inspector, a resident inspector, and a region based inspector. One Green finding which also was associated with a Non-Cited Violation was identified. 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 3, dated July 2000.

### Identification and Resolution of Problems

The team concluded that the licensee adequately identified, evaluated, and resolved problems within the requirements of the corrective action program (CAP). In general, the threshold for entering issues into the CAP was appropriate. The licensee's effectiveness at problem identification was demonstrated through the relatively few externally identified deficiencies throughout the review period. The team did note however, that although the station's coding and trending guidance manual was detailed, the coding of CAP data was inconsistent among station departments, raising a question to the usefulness of the trend data.

The inspectors determined that a large percentage of the apparent cause evaluations (ACEs) reviewed during the inspection did not contain some of the information specified in the Action Request (AR) guidance procedure. For example, some apparent causes were not well founded and extent of condition assessments were sometimes narrow in scope. Although the licensee was aware of some of these programmatic shortcomings, continued emphasis to improve in this area appeared warranted.

Corrective actions were generally effective and timely; however, the inspectors noted a few examples of corrective actions not being closed in accordance with the licensee's process. Licensee audits and assessments were found to be effective and highlighted issues similar to those observed by the team. On the basis of interviews conducted and observations completed during the inspection, workers at the site felt free to input safety findings into the licensee's CAP.

**A. Inspector-Identified and Self-Revealed Findings**

**Cornerstone: Initiating Events**

- Green. The inspectors identified a finding of very low safety significance for inadequate corrective actions to preclude repetition. Specifically, licensee actions taken in October and November 2002 to address inadvertent blocking of critical drainage paths associated with safety-related cooling water (CL) pumps were ineffective. This was evident when the inspectors identified, during the inspection, plastic caution signs on the floor of the 121 CL pump room with no measures to secure them from blocking critical drainage paths. Once identified, the licensee removed the material to ensure that the critical drain path could not be blocked. This finding also affected the cross-cutting area of Problem Identification and Resolution because the corrective actions for a significant condition adverse to quality were inadequate to preclude repetition.

This issue was more than minor because the design control and human performance attributes of initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations were affected. The materials identified in the 121 CL pump room changed the physical conditions assumed in the internal flooding analysis. The finding was of very low safety significance because the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available, and did not increase the likelihood of a fire or internal/external flood. The issue was a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," for failing to take actions to preclude repetition of a significant condition adverse to quality. (Section 3)

**B. Licensee-Identified Violations**

No findings of significance were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA2 Identification and Resolution of Problems (71152)

##### .1 Effectiveness of Problem Identification

###### a. Inspection Scope

The inspectors reviewed items selected across the seven cornerstones of safety to determine if the licensee was effectively identifying, characterizing and dispositioning plant problems via the corrective action program (CAP). Specifically, the inspectors reviewed selected plant procedures and program manuals, interviewed selected plant personnel, and attended various station meetings to understand the station's process for implementing the CAP and related activities.

The inspectors selected several action requests (ARs) generated since the last Problem Identification and Resolution (PI&R) Inspection. The inspectors also selected areas that exhibited potential trends and assessed whether the licensee had appropriately identified and captured these trends within the CAP.

To assess trending, maintenance rule implementation, and to identify items that the licensee failed to enter into the CAP, the inspectors reviewed the past performance of three risk significant systems which had a high importance to safety ranking. The systems selected were the auxiliary feedwater, emergency alternating current (which included emergency diesel generators and distribution), and feedwater and condensate. As part of this assessment, the inspectors interviewed system engineers, reviewed associate action requests and work orders, and completed partial system walkdowns.

The inspectors also evaluated the licensee's operator work around (OWA) process. The evaluation included a review of the governing procedure and the licensee's list of identified OWAs. In order to assess the licensee's performance with respect to identifying OWAs, the inspectors evaluated issues described in various licensee CAP documents to determine whether issues that met the threshold to be considered an OWA were appropriately dispositioned.

###### b. Issues

The team determined that the licensee was effective in identifying and properly characterizing problems. During this inspection, one issue was identified by the inspectors, that involved inappropriate material being left in the safeguards cooling water pump rooms such that this material could have potentially blocked the room's critical drain paths. Even though the licensee had taken actions to prevent recurrence, these actions were ineffective, as evidenced by the recent identification of the uncontrolled material. Moreover, this was the fourth time since October 28, 2002, that the inspectors had identified this issue. Further discussion regarding this issue is provided in Section 3, Effectiveness of Corrective Actions.



In addition, the team identified two situations in which the licensee identified issues, but failed to recognize the need to take formal corrective actions. Specifically:

- During the licensee's Performance Assessment organization's review of a Root Cause Evaluation (RCE) associated with recurring configuration control events, it was determined that the RCE was unacceptable; however, no actions were taken as a result of this review to improve the RCE.
- A Corrective Actions Review Board's quality review of past Apparent Cause Evaluations (ACEs) determined that approximately 50 percent of the ACEs were unacceptable; however, no CAP item was initiated to determine the cause and correct the condition until after the inspectors raised the issue with the licensee.

Further assessment of RCE and ACE quality is provided in Section 2b of this report.

The team determined that the licensee's trending of issues was adequate. Station personnel identified individual specific deficiencies and entered those deficiencies into the CAP database, which allows the information to be used for tracking and trending purposes. Two methods of trending were used; table-top reviews and coding. Table-top reviews of CAP items and Work Orders were used by most departments and was effective in identifying some emerging trends. The licensee's Performance Assessment staff performed table-top reviews to identify site-wide trends and was effective in identifying some emerging trends. Although the station's coding and trending manual provided detailed guidance, the inspectors found instances where the coding of CAP data was inconsistent. Some departments were not entering trend codes, and some incorrect trend codes were entered. The inspectors noted that the licensee was aware of this issue and a CAP AR was initiated to review the issue.

The team determined that the licensee's audits and self-assessments of the corrective action program were of appropriate depth and scope. Also, the associated findings and recommendations were appropriately captured. The licensee's audits and self-assessments were consistent with the team's inspection results.

No findings of significance were identified.

## .2 Prioritization and Evaluation of Issues

### a. Inspection Scope

The team reviewed previous inspection reports and corrective action documents generated since July 2001. In particular, the team reviewed selected RCEs, ACEs, operability determinations, and common cause analyses to verify that identified issues were appropriately prioritized and evaluated when entered into the CAP. The team focused on the technical adequacy of the cause determinations, extent of condition reviews, including evaluations of potential common causes or generic concerns, and the appropriateness of the corrective actions. In addition, the team focused on the operability and reportability determinations.

The team selected several items to ensure proper implementation of the Maintenance Rule. This included verifying that the functional failures and unavailability time were properly counted and tracked.

The team attended management meetings to observe the assignment of CAP AR categories for current issues, including the initial operability and reportability evaluations. The team also evaluated the licensee's process for reviewing industry operating experience.

A listing of the specific documents reviewed is attached to the report.

b. Issues

The team determined that, in general, identified issues were appropriately categorized and prioritized. The team noted that RCEs quality improved significantly after the completion of a self-assessment, which was part of the corrective actions to a Non-Cited Violation (NCV) in 2001. The inspectors determined that a large percentage of ACEs reviewed did not contain some of the information specified in CAP procedures.

An ACE was the licensee's second level tool for cause determination, one step below an RCE. The licensee's process allowed the use of ACEs to determine the basic causes of significance level A, B, and C issues. Many ACEs that the team reviewed contained neither a formal nor systematic approach in the cause determination. In many cases, instead of determining why the condition occurred and asking the "why" question twice, as described in the licensee's ACE desktop instructions, what was provided was the "most obvious cause."

The team reviewed approximately 50 ACEs and noted the following:

- a large percentage did not contain a logical approach to identify the cause;
- the causes were sometimes superficial or not clearly determined; and,
- extent of condition reviews were sometimes narrowly focused

An example of some of these observations was illustrated in CAP Item 23907, initiated on June 19, 2002. This AR was written to address incorrect O-ring material used for environmentally qualified motor-operated valves (MOVs) in containment. Apparent cause evaluation 8445 was written to evaluate the issue. The inspectors reviewed ACE 8445 and noted that no systematic method was used to determine the cause; the apparent cause of "attention to detail and following through with questioning attitude," did not determine why the condition occurred; the corrective actions of removing two sets of O-rings from storage, and counseling warehouse personnel to be more watchful of the future shipments from the O-ring vendor did not directly address the identified cause; and the extent of condition review only looked at the specific issues of O-rings and gaskets, and not at other situations where the cause could be applicable.

Approximately 2 months later, on August 27, 2002, CAP Item 24884 was written to address wrong O-rings issued for installation in another MOV. This CAP item referred to the ACE described above, and noted that the associated corrective actions were ineffective as evidenced by the incorrect O-rings again being issued from the

warehouse. Therefore, a second ACE, number 8551, was written to address ACE 8445 not effectively identify the extent of condition.

The team reviewed ACE 8551 and noted that no systematic method was used to determine the cause; and the apparent cause only stated what had happened with respect to previously completed O-ring inventory reviews and did not determine the cause. In addition, the team noted that the extent of condition review was not completed in accordance with the licensee's guidance. The review only addressed the technical issue and did not examine other areas where the cause may apply.

Further, the ACE discussed concerns that the individuals who completed ACE 8445 were unclear of the expectations regarding extent of condition reviews, and that the individuals were subsequently trained on the expectations for extent of condition reviews. The team noted that the licensee did not address in the ACE the possibility that other organizations and individuals were also unclear on the expectations for extent of condition reviews. This led the team to question the extent of site personnel's understanding of the CAP extent of condition guidance.

The issues associated with the O-rings were reviewed and determined not to be a violation of regulatory requirements. For the initial concern, the licensee was able to justify the operability of the MOVs with the incorrect O-rings installed. For the second concern, although the incorrect O-rings were issued from the warehouse, the questioning attitude of the technician prevented the installation of the O-rings.

Regarding the licensee's threshold for using ACEs in their corrective action program, the team noted that prior to 2003, the licensee was using ACEs to address many significance level C issues. This resulted in a higher than expected number of ACEs. Subsequently, the licensee made some adjustments to their threshold for writing ACEs such that ACEs are no longer used to routinely address significance level C issues.

The team had the following additional observations related to ACEs:

- Guidance on ACEs provided in the licensee's desktop instruction was thorough, but it did not appear to be routinely used and many individuals were unaware that the guidance existed.
- Training on ACEs was not provided across the site, and the training provided to the engineering department was limited and did not address management's expectations for quality.
- Supervisory reviews of ACEs lacked rigor as evidenced by the poor quality of ACEs.

The team reviewed a few ACEs of good quality. Most of those ACEs were written later in the assessment period; however, improvement was not consistent across all departments. Additionally, the team noted that issues involving ACE quality had been identified many times in the past by the licensee, through self-assessments, Nuclear Oversight audits, and CAP items, but the issues continue to be a challenge to the organization. The Corrective Actions Review Board's review of past ACEs quality found

about a 50 percent unacceptable rate; however, no CAP AR was initiated to determine that cause and correct the condition. After the team discussed the issue with the licensee, a CAP AR was generated.

No findings of significance were identified.

.3 Effectiveness of Corrective Actions

a. Inspection Scope

The team reviewed selected ARs and associated corrective actions to evaluate the effectiveness of corrective actions. The team reviewed ARs, operability determinations, ACEs, and RCEs to verify that corrective actions, commensurate with the safety significance of the issues, were identified and implemented in a timely manner, including corrective actions to address common cause or generic concerns. The team also verified the implementation of a sample of corrective actions. In addition, the team reviewed a sample of corrective action effectiveness reviews completed by the licensee. The samples were selected based on their importance in reducing operational risks and recurring problems. The team reviewed information recorded since July 2001.

A listing of the specific documents reviewed is attached to the report.

b. Issues and Findings

General Observations

For most issues reviewed by the team, the corrective actions were effective in addressing the identified problems. In addition, in cases where significant conditions adverse to quality existed, effective actions were taken to prevent recurrence, with one exception noted. Specifically, the licensee failed to prevent recurrence of a previously identified concern associated with the control of materials that could potentially block the cooling water (CL) pump room critical drains. This finding is described in detail in Section 3c below.

The team noted a few examples where CAP items were not closed in accordance with the licensee's process. For example:

- The licensee's process does not allow for the closure of significance level B items to other processes, such as the work request process. The team identified that Corrective Action (CA) 3260 (significance level B), associated with the discovered test rod installed on RH8-1 - 11/12 residual heat removal (RHR) pump suction relief, was improperly closed to an open work request.
- The licensee improperly closed a corrective action to prevent recurrence for CA 3791, associated with the recurring problems with power supply failures, to a non-CAP AR.

In addition to these, the licensee had identified similar examples of improperly closed CAs. Based on the team's review, these issues were minor in nature, and did not constitute a violation of NRC requirements.

The team reviewed corrective actions created to address NCVs. This review indicated that the licensee's proposed actions were completed in a timely manner and the actions were appropriate as evidenced by the lack of repeat problems. One exception was noted, in that the corrective actions to prevent recurrence associated with the control of material that could potentially block the cooling water pump room's critical drain paths as discussed below.

#### Failure to Maintain Critical Drain Paths Free of Blockage

Introduction: A Green finding and associated NCV was identified for inadequate corrective action to preclude repeated failures to control material that could potentially block critical drainage paths, as specified in site procedures.

Description: On September 4, 2003, the team identified plastic caution signs on the floor of the 121CL pump room with no measures to secure them from blocking critical drainage paths (floor drains and drain channels beneath doors). Administrative Work Instruction (AWI) 5AWI 8.9.0, Section 6.2.2, stated "materials that could plug drainage paths be prevented from doing so by tethering or anchoring the material when required equipment within the area is operable."

This issue was the subject of an NCV in NRC Integrated Inspection Report 2002-09. During that inspection, the team identified that on three occasions the existence of loose materials in the safety-related CL pump rooms that were specifically prohibited due to their potential adverse effect on required critical drainage paths: 1) on October 28, 2002, the team identified two oil absorbent pads in the 22 diesel-driven cooling water (DDCL) pump room; 2) on November 6, 2002, the team identified a temporary power cable routed through a critical drainage path in the 12 DDCL pump room; and 3) on November 13, 2002, the team identified a significant quantity of foreign material in the 121 motor-driven CL pump room while the pump was aligned as a safety-related pump.

In each case listed above, the licensee did not remove, properly control, or prevent the introduction of materials that could block critical drainage paths associated with operable safety-related CL pumps. The materials identified by the team on October 28 and on November 13 were not tethered or anchored, and in both cases the associated safety-related CL pumps were considered operable.

Corrective actions were implemented for the October and November 2002 occurrences. However, the previous corrective actions were inadequate to prevent recurrence as evidenced by the condition identified by the team on September 4, 2003. The team determined that the failure to establish effective corrective actions was a performance deficiency warranting a significance evaluation. The team determined that this finding was more than minor because it was associated with two of the cornerstone attributes listed in IMC 0612, Appendix B, Section C and affected the initiating events cornerstone objective. Specifically, the design control and human performance attributes of the

initiating events cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations was affected by the materials that were introduced into the safety-related CL pump rooms because the introduced materials changed the physical conditions assumed in the internal flooding analysis. Therefore, for the time that these conditions existed, the licensee could not demonstrate that the safety-related CL pumps would have remained available during an internal flood. The loss of a safety-related cooling water pump or pumps during an internal flood could upset plant stability. This finding also affected the cross-cutting area of Problem Identification and Resolution because the corrective actions for a significant condition adverse to quality were inadequate to preclude repetition.

Analysis: The team evaluated the finding in accordance with IMC 0609, "Significance Determination Process," because the finding was associated with an increase in the likelihood of an initiating event. Using the Phase 1 screening, the team determined that the finding did not contribute to the likelihood of a primary or secondary system loss of coolant accident, did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available, and did not increase the likelihood of a fire or internal/external flood. The team determined the finding to be of very low safety significance (Green).

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," states, in part, that in the case of significant conditions adverse to quality, the measure shall assure that the cause of the condition is determined and corrective actions taken to preclude repetition. Contrary to the above, on September 4, 2003, the corrective actions taken by the licensee in October and November 2002 for past failures to ensure that materials could not block critical drainage paths associated with operable safety-related CL pumps failed to preclude repetition as evidenced by the September 4, 2003, identification by the team of plastic caution signs on the floor of the 121 CL pump room with no measures to secure them from blocking critical drainage paths. Upon identifying the condition, the licensee removed the material to ensure the critical drain path could not be blocked. Because this violation was of very low safety significance, and the licensee entered the conditions identified by the team into their corrective action program with CAP Item 32208, this violation is being treated as an NCV in accordance with VI.A.1 of the NRC's Enforcement Policy (NCV 05000282/2003007-01; 05000306/2003007-01).

.4 Assessment of Safety Conscious Work Environment

a. Inspection Scope

The team interviewed plant staff to assess the establishment of a safety conscious work environment.

During the conduct of interviews, document reviews and observations of activities, the team looked for evidence that suggested plant employees may be reluctant to raise safety concerns. Most of the individuals interviewed were asked questions similar to those listed in Appendix 1 to NRC Inspection Procedure 71152, "Suggested Questions for Use in Discussions with Licensee Individuals Concerning PI&R Issues." The team also reviewed the station's procedures related to the "Employee Concerns Program,"

and discussed the implementation of this program with the station's program coordinator.

b. Issues

During the interviews, the team noted no indications of unwillingness to raise safety issues. However, during some of the interviews, workers suggested that upon resolution of an issue, feedback should be provided to the CAP AR initiator to ensure the issue was addressed.

4OA6 Meeting(s)

.1 Exit Meeting

The team presented the inspection results to Mr. J. Solymossy and other members of licensee management in an exit meeting on September 18, 2003. Licensee management acknowledged the findings presented and indicated that no proprietary information was provided to the team.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

J. Solymossy, Site Vice President  
M. Werner, Plant Manager  
T. Allen, Production Planning Manager  
W. Bodin, Operations Support Manager  
S. Cook, Nuclear Oversight Manager  
G. Eckholt, Regulatory Affairs Manager  
D. Fricke, Performance Assessment Engineer  
C. Goranowski, Employee's Concerns Program Manager  
P. Huffman, System Engineering Manager  
A. Johnson, Radiation Protection Manager  
J. Kivi, Licensing Engineer  
M. Klee, Performance Assessment Engineer  
M. Ladd, General Superintendent Plant Maintenance  
S. Northard, Engineering Director  
A. Qualantone, Security Manager  
T. Silverberg, Performance Assessment Manager

#### Nuclear Regulatory Commission

J. Adams, Senior Resident Inspector, Prairie Island  
P. Hiland, Acting Deputy Division Director, Division of Reactor Projects  
P. Loudon, Chief Reactor Projects Branch 5

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

05000282/2003007-01	NCV	Inadequate Corrective Actions to Prevent Recurrence for
05000306/2003007-01		the Control of Material That Could Potentially Block Critical
		Drain Paths

#### Discussed

None



## **LIST OF INFORMATION REQUESTED**

1. A copy of administrative procedure(s) for the corrective action process, trending program, quality assurance audit program, self-assessment program, corrective action effectiveness review program, and industry experience review program.
2. A copy of Quality Assurance audits and/or self-assessments of the corrective action program completed since July 2001.
3. A copy of the Quality Assurance manual.
4. A copy of the Employee Concerns Program/Ombudsman administrative procedure.
5. A list of Quality Assurance audits completed since July 2001 with brief description of areas where findings were identified.
6. A list of self-assessments completed since July 2001.
7. A list of root cause evaluations completed since July 2001.
8. A list of test failures (In-Service Testing or Technical Specification surveillances) since July 2001, with a brief description of component/system which failed.
9. A list of all open condition reports sorted by significance level. Include a description of the issue and the significance category.
10. A list of condition reports closed since July 2001 including a description, significance category, date initiated, date closed, and whether there is an associated operability evaluation.
11. A list of condition reports initiated since July 2001 that involve inadequate or ineffective corrective actions. Include a brief description, status, and significance category of the issue.
12. A list of condition reports initiated since July 2001 that identify trends of conditions adverse to quality. Include a brief description, status, and significance category for each item.
13. A copy of any performance indicator reports used to track the corrective action program effectiveness.
14. A list of condition reports issued during the past three refueling outages sorted by system and component, including a brief description, status, and significant category for each item.
15. A list of the top 10 risk significance systems and components.
16. Copies of the latest outage critiques for each unit.

17. Copy of the site organization chart.
18. List of times and locations of meetings, particularly those associated with the corrective action process.
19. List of rework items and repeat equipment failures since July 2001.
20. Copies of any condition reports generated as a result of any self-assessments conducted of the corrective action program in preparation for this inspection.

## 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 team 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.

### Apparent Cause Evaluations

- ACE000025; Level in D5 Turbocharger Lowered Without Proper Documentation or Work Control; April 2, 2002
- ACE000134; Perform a Common Cause Analysis of the Prairie Island 2001 Level 1 Condition Reports; March 23, 2002
- ACE003054; Due to Expanded Scope/Findings to the Extent of Condition Review, Reassess the Root Cause Performed per CR [Condition Report] 20004776; March 28, 2002
- ACE007824; 2CD-113-10 (22 Feedwater Pump Suction Low Pressure Switch Root Isolation) Has Been Leaking Since 6/19/2001-- See Document Handler; April 2, 2002
- ACE007897; MCC [Motor Control Center] Control Circuit Voltage Drop Calculation Indicates 4 Marginal Breaker Control Circuits; April 2, 2002
- ACE008019; Arc Strike on Unit 2 SI [Safety Injection] Line. Arc Strike Found Downstream of MV-32188; April 2, 2002
- ACE008046; Rust Found in Pressurizer Spray Valve CV-31228 During Prefab; April 2, 2002
- ACE008183; 21 FW [Feedwater] Pump Has Scrape on Stator Windings. Appears to be from Removal of Rotor. Requires Repair - Retape - Insulate; April 2, 2002
- ACE008232; During Prep for SP [Surveillance Procedure] 2083 Breaker 26-9 22 CS [Containment Spray] Pump Failed to Close from Relay 2CS-20X and from CS-46561; April 2, 2002
- ACE008252; Feedwater Control Malfunction on Unit 1; April 8, 2002
- ACE008289; Unit 2 "A" Pressurizer Spray CV-31228 Hand Controller 2HC-431C Output Spiking Periodically; April 18, 2002
- ACE008364; 21 MFWP [Main Feedwater Pump] Recirculation Valve Failed Open on Loss of Solenoid; May 6, 2002
- ACE008370; E-Plan Siren P-19 Falsely Activated on 5/8/02; May 13, 2002
- ACE008380; Standard Quality Part Used Where Safety Related Parts Are Required; May 17, 2002
- ACE008398; 60 Meter "B" Direction Indication Locked; May 29, 2002
- ACE008445; Incorrect O-Ring Material Was Used for EQ [Environmental Qualification] MOV's [Motor-Operated Valves] in Containment; June 21, 2002

ACE008454; 5 MW Change in Power on Unit 1 Due to Efficiency Loss in 13 AFW [Auxiliary Feedwater] Heater; June 25, 2002

ACE008514; Appendix R Equipment List Evaluations Should Be Canceled; August 10, 2002

ACE008515; Appendix R Commitment Closed Prematurely; August 10, 2002

ACE008520; FW Trouble Alarm Received Twice on Unit 2 for Unknown Reasons; August 13, 2002

ACE008544; Had a High Number of Human Performance Clock Resets; August 23, 2002

ACE008551; ACE 8445 Did Not Effectively Identify Extent of Condition; August 28, 2002

ACE008560; 2SI-16-5 Leak Not Communicated and Evaluated in a Timely Manner; September 6, 2002

ACE008587; 47513-0609 BOP [Balance of Plant] Annunciator System Power Failure Alarm Received at 1645 10-12-02; October 15, 2002

ACE008590; Prairie Island Site Human Performance Clock Reset; October 25, 2002

ACE008601; RHR Flow Rate in LBLOCA [Large Break Loss of Coolant Accident] Discrepancy; November 13, 2002

ACE008608; Unit 1 Manual Rx [Reactor] Trip from 12% Power Due to 13 AFW Heater Level Problems; November 17, 2002

ACE008618; Not All Members of Draindown Team Had a Prejob Brief for This Evolution; November 29, 2002

ACE008620; Near Miss on Steam Generator Fill; December 1, 2002

ACE008621; Refueling Inventory Control Not Assured Due to Check Valve Internals Removal; December 5, 2002

ACE008635; Steps Were NA'd in D6 Five Year PM [Preventative Maintenance] per TCN [Temporary Change Notice] Without Appropriate Follow Up Action; January 12, 2003

ACE008679; Operability Determinations and Operability Screenings Weaknesses; March 31, 2003

ACE008696; Oil Leak on 1 GT Transformer; April 15, 2003

ACE008700; Conduct ACE into Classification of Pressure Indicators PI-628 & 629; April 29, 2003

ACE008703; RHR Flow Control Valve Instrument Loop Qlist Down Grade per SE [Safety Evaluation] 311 Not Correct; May 6, 2003

ACE008714; Holes in Cavitrol Cage on CV-39450 (11 Chiller Inlet CV [Control Valve]) Are Too Small; May 30, 2003

ACE008724; Cooling Water and Fire Protection System Condition, Corrosion, Erosion, MIC [Microbiological Induced Corrosion] and Silting Issues; June 5, 2003

ACE008734; Programmatic Deficiencies with M&TE [Measuring and Test Equipment] Program Administration and Implementation; July 2, 2003

ACE008736; Radioactive Source Not Found During Annual Source Inventory; July 7, 2003

ACE008737; 1LT-463 Drift; July 8, 2003

ACE008744; Loss of WG [Waste Gas] Inventory Through Leak in Gas Analyzer Pumps; July 11, 2003

ACE008746; License Amendment 158/149 NRC SER [Safety Evaluation Report] Requirements Not Met; July 18, 2003

#### Corrective Actions

CA003260; Discovered Test Rod Installed on RH-8-1, 11/12 RHR Pumps Suction Relief; November 29, 2002

CA003721; Missed Forced Cascade During 22 DDCL Pump Outage; December 31, 2002

CA003791; Annunciator System (AC) Exceeded Maintenance Rule Performance Criteria; January 10, 2003

CA003843; Feed Flow Oscillations Are Worsening; January 15, 2003

CA004321; Excessive Packing Leakage - Unit 1 Main Feed Reg Valve; February 18, 2003

#### Corrective Action Program

CAP022920; During Prep for SP 2083 Breaker 26-9 22 CS Pump Failed to Close from Relay 2CS-20X and from CS-46561; April 1, 2002

CAP023503; Standard Quality Part Used Where Safety Related Parts Are Required; May 15, 2002

CAP023907; Incorrect O-Ring Material Was Used for EQ MOV's in Containment; June 19, 2002

CAP024536; Appendix R Equipment List Evaluations Should Be Canceled; August 7, 2002

CAP024537; Appendix R Commitment Closed Prematurely; August 7, 2002

CAP024819; Several Occurrences of Unavailable or Wrong Spare Parts Impacting Work; August 23, 2002

CAP024884; Wrong O-Ring Material Issued for Work Order 0201910; August 27, 2002

CAP025346; Negative Trend in Power Supply Related Equipment Problems; September 20, 2002

CAP025730; 47513-0609 BOP Annunciator System Power Failure Alarm Received at 1645 10-12-02; October 12, 2002

CAP025986; Missed Forced Cascade During 22 DDCL Pump Outage; October 26, 2002

CAP026010; Loose Oil Absorbent Materials Were Found in 22 DDCL Pump Room;  
October 28, 2002

CAP026100; Seismic Equipment, Unable to Read Chart; November 3, 2002

CAP026101; Delay in Confirming Magnitude of Seismic Activity; November 3, 2002

CAP026158; Temporary Power Cables Routed Through Critical Drainage Path Without  
Evaluation; November 6, 2002

CAP026169; Annunciator System (AC) Exceeded Maintenance Rule Performance Criteria;  
November 7, 2002

CAP026291; Foreign Material in 121 CL Water Pump Room While Lined Up as Safeguards  
Pump; November 13, 2002

CAP026338; Unit 1 Manual Rx Trip from 12% Power Due to 13 AFW Heater Level Problems;  
November 16, 2002

CAP030525; Two CAPs Closed That Needed Evaluations; May 28, 2003

CAP030987; Procedure Needs to be Evaluated for Cancellation; June 20, 2003

CAP031170; Programmatic Deficiencies with M&TE Program Administration and  
Implementation; July 1, 2002

CAP031431; Coding of Corrective Action Program Data is Insufficient to Allow Meaningful  
Analysis; July 17, 2003

CAP032198; BOP Annunciator System Power Failure; September 3, 2003

CAP032208; Critical Drainage Path Not Maintained IAW [In Accordance With] Site Standards;  
September 4, 2003

#### Condition Evaluations (CE)

CE001025; Received Unexpected Annunciator, 47511-0405 FW Control System Trouble;  
September 17, 2002

CE001337; Investigate Potential Trend in Missed Surveillances; November 5, 2002

CE001532; Unit 1 Manual Rx Trip from 12% Power Due to 13 AFW Heater Level Problems;  
November 24, 2002

CE001578; Unit 1 Manual Rx Trip from 12% Power Due to 13 AFW Heater Level Problems;  
November 28, 2002

CE003055; 1LT-463 Drift; July 8, 2003

#### Condition Reports

CR20013515; Evaluate Organizational and Process Issues Leading to D6 Repair Time  
Exceeding the Allowed LCO [Limiting Condition of Operations] OOS [Out of Service] Time;  
August 8, 2001

CR20014150; Reassess the Response to the External Operating Experience Report Concerning the Incompatibility of the Fuel Oil with the Lube Oil for D5/D6; July 5, 2001

CR20014211; Corrective Actions for Mispositioning CR20004323 Not Effective in Preventing Repeat Occurrences; July 25, 2001

#### Effectiveness Reviews (EFR)

EFR003724; Missed Forced Cascade During 22 DDCL Pump Outage; December 31, 2002

#### Engineering Work Requests (EWR)

EWR022401; Evaluate Cause of Failure of Rosemount Level Transmitter 2LT-502; October 10, 2002

#### Maintenance Rule Evaluations (MRE)

MRE000062; Unit 1 Manual Rx Trip from 12% Power Due to 13 AFW Heater Level Problems; December 3, 2002

#### Root Cause Evaluations

RCE000051; Programmatic Breakdown of Quality Assurance Program in Chemistry Area: Insufficient Evidence of Quality Assurance Plan Implementation; June 24, 2002

RCE000052; Inadvertent Unit 2 Train B SI Occurred During Performance of SP 2378, Test of Reactor Trip and Bypass Breakers Auxiliary Contacts; April 26, 2002

RCE000159; Root Cause Investigation Report; March 13, 2002

RCE000169; Deficiencies in Respirator Protection Qualifications; Revision 0

RCE000174; Security Officer Inattentiveness; November 15, 2002

RCE000175; Missed Forced Tech Spec Cascade During 22 Diesel Driven Cooling Water Pump Outage; December 30, 2002

RCE000176; Section XI Repair/Replacement Program Deficiencies; December 19, 2002

RCE000181; Failure to Maintain Proper Control of Weapons and/or Ammunition; February 28, 2003

RCE000182; 21 RCP [Reactor Coolant Pump] Number 1 Seal Leak-Off Decreased to Less Than 1.5 gpm [gallons per minute]; April 17, 2003

RCE000183; 12 RHR HX [Heat Exchanger] Outlet Flow Control Valve Positioner Found with Broken Linkage; April 25, 2003

RCE000184; Inoperable Cooling Water Header Due to Pin Hole Leak in ASME Code Class 3 Pressure Boundary; April 16, 2003

#### Procedures

5AWI 1.10.6; Root Cause Evaluation; Revision 7

5AWI 16.0.0; Action Request Process; Revision 3

5AWI 1.10.5; Self-Assessment; Revision 6

5AWI 3.7.0; Operating Experience; Revision 9

5AWI 1.10.3; Site Trending Program and Trend Analysis; Revision 3

Employee Concerns Fleet Procedure FP-EC-ECP-01; Employee Concerns Program; Revision 0

Performance Assessment Fleet Procedure FP-PA-ARP-01; Action Request Process; Revision 1

#### Miscellaneous

Self-Assessment for Condition Report 200185537; Human Performance on Sensitivity and Identification of T ave [Average Temperature] Compensator Was Less Than Adequate; November 27, 2001

Prairie Island Apparent Cause Evaluation Desktop Guide; July 2003

Root Cause Evaluation Manual; Revision 1

Self-Assessment of the Root Cause Evaluation Process; OTH000375; June 10-14, 2002

Self-Assessment for SA 003720; Operations Effectiveness of Improved Technical Specification (ITS) Implementation; Revision 0

SnapShot Self-Assessment Report; Determine Effectiveness of Action Implemented; June 24, 2003

Root Cause Evaluation Scorecards for CR20014150; October 2, 2001

Root Cause Evaluation Scorecards for CR20014211; October 2, 2001

Summary of Scores and Comments for RCE000175; Missed Forced Tech Spec Cascade During 22 Diesel Driven Cooling Water Pump Outage

Scores and Comments from RCE Quality Index Score Sheets for RCE000169; RCE000169, Deficiencies in Respirator Protection Qualifications

Prairie Island Nuclear Generating Plant Operations Committee Meeting Minutes #2659; July 25, 2001

Corrective Action Review Board (CARB) Meeting Minutes; January 8, 2002

NMC Lesson Plan; Root Cause / Apparent Cause Evaluations, Revision 2

Prairie Island Nuclear Generating Plant CAP Self-Assessment Report; Corrective Action Program Picture of Excellence, July 25, 2003

Maintenance Rule a(1) Action; Annunciator System (AC); July 10, 2003

Charter for the Corrective Action Program Technical Review Panel; Revision 1; May 9, 2003

CARB Agenda; August 28, 2003

#### NRC Violations and Non-Cited Violations

NCV 2001-11-01 Failure to Correct Configuration Control Problems



- NCV 2001-14-01 Failure to Identify All of the Root Causes for and to Develop Corrective Actions to Preclude the White Finding Associated with the Inoperable Cooling Water Pump
- NCV 2002-04-01 SGI was not Adequately Protected
- NCV 2002-08-03 Failure to Correct Deficiencies Adverse to Quality Involving Potential Flow Diversion Paths
- NCV 2002-09-01 Failure to Follow Internal Flood Control Procedure
- NCV 2002-09-05 Missed Emergency Classification and Declaration
- NCV 2003-03-01 Failure to Correctly Translate/Maintain the RHR Discharge Overpressure Interlock Removal Modification's Design Basis
- NCV 2003-03-02 Failure to Consider All Credible Failures During the Change in Classification of the RHR Heat Exchanger Outlet Control Valve Components
- NCV 2003-03-03 Failure to Maintain the RHR Pit Covers' Design Basis Configuration

Inspection Reports

Prairie Island IR 50-282/02-09; 50-306/02-09

## LIST OF ACRONYMS USED

AC	Annunciator System
ACE	Apparent Cause Evaluation
ADAMS	Agencywide Documents Access and Management System
AFW	Auxiliary Feedwater
AR	Action Request
AWI	Administrative Work Instruction
BOP	Balance of Plant
CA	Corrective Action
CAP	Corrective Action Program
CARB	Corrective Action Review Board
CE	Condition Evaluation
CFR	Code of Federal Regulations
CL	Cooling Water
CR	Condition Report
CS	Containment Spray
DDCL	Diesel-Driven Cooling Water
EFR	Effectiveness Review
EQ	Environmental Qualification
FW	Feedwater
IMC	Inspection Manual Chapter
IR	Inspection Report
M&TE	Measuring and Test Equipment
MRE	Maintenance Rule Evaluation
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
OWA	Operator Work Around
PI&R	Problem Identification and Resolution
RCE	Root Cause Evaluation
RHR	Residual Heat Removal
Rx	Reactor
SDP	Significance Determination Process
SI	Safety Injection
SP	Surveillance Procedure