November 9, 2006

Mr. T. Palmisano
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 INTEGRATED INSPECTION REPORT 05000282/2006004; 05000306/2006004

Dear Mr. Palmisano:

On September 30, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on October 13, 2006, with you and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and to compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified three findings of very low safety significance (Green). However, because of the very low safety significance and because the findings associated with the violations were entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations (NCV) consistent with Section VI.A of the NRC 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, D.C. 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the Resident Inspector Office at the Prairie Island Nuclear Generating Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

***/RA by Christine A. Lipa for/***

Richard A. Skokowski, Chief
Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000282/2006004; 05000306/2006004
w/Attachment: Supplemental Information

cc w/encl: C. Anderson, Senior Vice President, Group Operations
M. Sellman, Chief Executive Officer and Chief Nuclear Officer
Regulatory Affairs Manager
J. Rogoff, Vice President, Counsel & Secretary
Nuclear Asset Manager
State Liaison Officer, Minnesota Department of Health
Tribal Council, Prairie Island Indian Community
Administrator, Goodhue County Courthouse
Commissioner, Minnesota Department
of Commerce
Manager, Environmental Protection Division
Office of the Attorney General of Minnesota

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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|---|---|
| Docket Nos: | 50-282; 50-306 |
| License Nos: | DPR-42; DPR-60 |
| Report No: | 05000282/2006004; 05000306/2006004 |
| Licensee: | Nuclear Management Company, LLC |
| Facility: | Prairie Island Nuclear Generating Plant, Units 1 and 2 |
| Location: | Welch, MN 55089 |
| Dates: | July 1 through September 30, 2006 |
| Inspectors: | J. Adams, Senior Resident Inspector<br>D. Karjala, Resident Inspector<br>M. Miller, Senior Resident Inspector (acting)<br>A. Garmoe, Reactor Engineer<br>R. Winter, Reactor Engineer<br>M. Holmberg, Reactor Inspector<br>M. Mitchell, Radiation Specialist |
| Approved by: | R. Skokowski, Chief<br>Branch 3<br>Division of Reactor Projects |

Enclosure

## SUMMARY OF FINDINGS

IR 05000282/2006004, 05000306/2006004; 07/01/06 - 09/30/06; Prairie Island Nuclear Generating Plant, Units 1 and 2; Inservice Inspection, Operability Evaluations, ALARA Planning and Controls.

This report covers a 3-month period of baseline resident inspection and announced baseline inspection on radiation protection, inservice inspection, and emergency preparedness. The inspection was conducted by the resident inspectors and inspectors from the Region III office. Three findings were 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.

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

**Cornerstone: Barrier Integrity**

- Green. The inspectors identified a Non-Cited Violation of 10 CFR 50.55a(g)4 for failure to complete a code qualified volumetric examination of the 22 steam generator inlet nozzle weld W-5. As a corrective action, the licensee entered this issue into the corrective action program and performed an operability evaluation to accept this non-conforming weld for continued service.

  This finding was of more than minor significance because it was associated with the Barrier Integrity cornerstone attribute of “Reactor Coolant System Equipment and Barrier Performance,” and affected the cornerstone objective to provide reasonable assurance that physical design barriers (reactor coolant system) protect the public from radionuclide releases caused by accidents or events. Absent NRC intervention, the licensee would have relied on a limited unqualified ultrasonic examination of weld W-5, for an indefinite period of service which would have placed this reactor coolant pressure boundary weld at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because the licensee performed an operability evaluation to accept the unqualified limited ultrasonic examination results (e.g., no indications). The finding is not suitable for a significance determination process evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety significance. The inspectors also determined that the cause of this finding was related to the work control aspect in the Human Performance cross-cutting area because the preventative maintenance work activity for the examination of weld W-5 was not effectively completed. (Section 1R08)

**Cornerstone: Mitigating Systems**

- Green. The inspectors identified a Non-Cited Violation of 10 CFR 50, Appendix B, Criterion V for failing to provide written instructions for the compensatory action for a degraded but operable Unit 1 Train A Reactor Vessel Level Instrument System. The licensee took corrective action by issuing Operating Information 06-70 and entered the issue into the corrective action program.

  The finding is more than minor because it involved the attribute of procedure quality and could have affected the Mitigating Systems cornerstone of operability, availability and function of a train in a mitigating system. The finding is of very low safety significance because there was not an actual loss of system safety function. The cause of the finding is related to the cross-cutting aspect of human performance. (Section 1R15)

**Cornerstone: Occupational Radiation Safety**

- Green. A self-revealed finding of very low safety significance and an associated violation of NRC requirements were identified for the failure to perform adequate evaluation of concentrations or quantities of radioactive material and the potential radiological hazards. Specifically, the licensee failed to adequately assess the radiological hazards and the potential for creating an airborne work area as required in 10 CFR 20.1501, which resulted in unplanned intakes of radioactive material.

  The finding was more than minor because it was associated with the Occupational Radiation Safety cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The occurrence involved the program and process attribute of the objective because procedures were not adequately used to control exposure due to radioactive contamination. A Non-Cited Violation of 10 CFR 20.1501 was identified for the failure to cause surveys to be made that are reasonable under the circumstances to evaluate concentrations of radioactive material and the potential radiological hazards. Corrective actions taken by the licensee for this finding include: 1) developing an Apparent Cause Evaluation (ACE); 2) completing a department "human performance clock" reset to elevate awareness of the safety consequences of the human performance problems; and 3) developing a fleet team to evaluate the way Radiation Work Permits are written to determine if the process can be improved to prevent future similar failures. The fleet team evaluation was still in process during the inspection.

**B. <u>Licensee-Identified Violations</u>**

Two violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

# REPORT DETAILS

## Summary of Plant Status

Unit 1 operated at or near full power throughout the inspection period except that power was reduced to about 44 percent on July 29, 2006, to comply with the thermal limitations of the National Pollution Discharge Elimination System permit and the limiting downstream river temperatures. Unit 1 was returned to 100 percent power on July 30, 2006, where it operated for the remainder of the inspection period.

Unit 2 operated at or near full power throughout the inspection period except that power was reduced to about 44 percent on July 29, 2006, to comply with the thermal limitations of the National Pollution Discharge Elimination System permit and the limiting downstream river temperatures. Unit 2 was returned to 100 percent power on July 30, 2006. Unit 2 was reduced to about 40 percent power on September 29, 2006, for maintenance on the condenser tube cleaning system. Unit 2 operated at about 40 percent power for the remainder of the inspection period.

## 1. REACTOR SAFETY

**Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness**

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdowns

a. Inspection Scope

The inspectors performed three partial system equipment alignment inspection samples comprised of in-plant walkdowns of accessible portions of trains of risk-significant equipment associated with the Mitigating Systems and Barrier Integrity cornerstones. The inspectors conducted the inspections during times when the trains were of increased importance due to the redundant trains or other related equipment being unavailable. The inspectors also reviewed documents entering deficient conditions associated with equipment alignment issues into the corrective action program verifying that the licensee was identifying issues at an appropriate threshold and entering those issues into their program in accordance with the applicable procedures.

The inspectors utilized the valve and electric breaker checklists, where applicable, to verify that the components were properly positioned and that support systems were lined up as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious performance deficiencies. The inspectors reviewed outstanding work orders (WOs) and corrective action program documents (CAPs) associated with the operable trains to verify that those documents did not reveal issues that could affect the completion of the available train's safety functions. The inspectors used the information in the appropriate sections of the Updated Safety Analysis Report (USAR) to determine the functional requirements of the systems.

The inspectors verified the alignment of the following trains:

- 21 containment spray pump prior to inoperability of the 22 containment spray pump due to surveillance testing on August 10, 2006;
- D1 diesel generator while D2 diesel generator was out of service for testing on August 14, 2006; and
- D2 diesel generator while D1 diesel generator was out of service for testing on August 28, 2006.

Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Complete Walkdowns

a. Inspection Scope

During the week of August 14, 2006, the inspectors performed a detailed in-plant walkdown of the alignment and condition of the Unit 2 auxiliary feedwater system. The auxiliary feedwater system is a risk-significant and safety-related mitigating system that provides a heat sink to remove decay heat from the reactor coolant system during off-normal and accident conditions. This inspection effort constituted one complete system alignment inspection sample. In addition, the inspectors reviewed CAPs associated with equipment alignment issues to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with licensee's corrective action procedures.

The inspectors conducted in-plant walkdowns using the applicable alignment checklists and plant drawings to verify that system components were properly positioned to support the completion of system safety functions and to verify that the as-found system configuration matched the configuration specified in the system alignment checklist and plant drawings. The inspectors examined the material condition of the components, such as pumps, motors, valves, instrumentation, controls, bus relay settings, and electrical panels. The inspectors observed operating parameters of equipment to verify that there were no obvious performance deficiencies and examined all applicable outstanding design issues, temporary modifications, and operator workarounds. The inspectors verified that tagging clearances were appropriate and attached to the specified equipment where applicable. The inspectors reviewed outstanding WOs and CAPs associated with the trains to determine if any degraded conditions existed that could affect the accomplishment of the system's safety functions. The inspectors referred to the Technical Specifications (TS), USAR, and other design basis documents to determine the functional requirements of the systems and verified those functions could be performed if needed. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this inspection report.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Protection Area Walkdowns

a. Inspection Scope

The inspectors conducted in-office and in-plant reviews of portions of the licensee's Fire Hazards Analysis and Fire Strategies to verify consistency between these documents and the as-found configuration of the installed fire protection equipment and features in the fire protection areas listed below. The inspectors selected fire areas for inspection based on their overall contribution to internal fire risk as documented in the Individual Plant Examination of External Events, their potential to impact equipment which could initiate a plant transient, or their impact on the plant's ability to respond to a security event. The inspectors assessed the control of transient combustibles and ignition sources, the material and operational condition of fire protection systems and equipment, and the status of fire barriers. In addition, the inspectors reviewed CAPs associated with fire protection issues to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with licensee's corrective action procedures.

The following nine fire areas were inspected by in-plant walkdowns supporting the completion of nine fire protection zone walkdown samples:

- Fire Area 22, 480V safeguard bus 121 room on July 7, 2006;
- Fire Area 79, bus 112 and train A event monitoring room on July 10, 2006;
- Fire Area 73, auxiliary building Unit 2, 695 foot elevation on August 2, 2006;
- Fire Area 74, auxiliary building Unit 2, 715 foot elevation on August 2, 2006;
- Fire Area 75, auxiliary building Unit 2, 735 foot elevation on August 2, 2006;
- Fire Area 58, auxiliary building Unit 1, 695 foot elevation on August 4, 2006;
- Fire Area 59, auxiliary building Unit 1, 715 foot elevation on August 4, 2006;
- Fire Area 60, auxiliary building Unit 1, 735 foot elevation on August 4, 2006; and
- Fire Area 80, 480V safeguard switchgear room (bus 111), 715 foot elevation on August 8, 2006.

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Observation

a. Inspection Scope

On September 13, 2006, inspectors observed fire brigade training at a fire training academy. The inspectors observed three search-and-rescue scenarios, two fire suppression scenarios, and a fire brigade response scenario. This inspection effort completed the required annual fire drill observation sample.

The inspectors verified that the fire brigade donned the appropriate turnout gear and self-contained breathing apparatus; that plant personnel adequately controlled access to the affected area; that the fire brigade made a controlled approach to the fire; that the fire brigade responded with sufficient equipment of the appropriate type to extinguish the fire; that communications between the fire brigade and fire brigade leader were clear and concise; and that fire brigade members checked for victims and for fire propagation into other plant areas. The inspectors verified that the licensee was identifying fire protection issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

.1 Identification and Resolution of Problems

a. Inspection Scope

On March 8, 2006, during review of a licensee relief request (RR)-21 letter dated September 8, 2005, (reference ADAMS accession No. ML052560242), the Office of Nuclear Reactor Regulation staff notified Region III inspectors that the licensee may not have completed an examination of a Class 1 weld in accordance with NRC requirements. By letter dated June 6, 2006, the licensee responded to requests for additional information on RR-21, that included information on the examinations completed on the 22 steam generator (SG) inlet nozzle weld W-5.

The inspectors performed a review of RR-21, the June 6, 2006, licensee followup letter and CAP 01036208, and interviewed licensee staff on telephone calls held on June 21, 2006, and August 21, 2006, to determine if the licensee had completed an examination of weld W-5 on the 22 SG in accordance with the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI as implemented by 10 CFR 50.55(a).

b. Findings

Failure to Perform Code Volumetric Examination of the 22 SG Inlet Nozzle Weld

Introduction: The inspectors identified a Green Non-Cited Violation (NCV) of 10 CFR 50.55a(g)4 for failure to complete a code qualified volumetric examination of the 22 SG inlet nozzle weld W-5.

Description: On June 21, 2006, the inspectors determined that the licensee failed to complete a code qualified volumetric examination of the inlet nozzle weld W-5 by the end of the third code interval for Unit 2.

The licensee originally scheduled weld W-5 (inlet elbow-to-safe end) on the 22 SG to be ultrasonically examined (UT) during the Unit 2 fall 2003 refueling outage to meet ASME Code, Section XI, Category B-F requirements for the 3rd Code Interval. Because the licensee did not have a UT method qualified in accordance with the Appendix VIII of the Section XI ASME Code, the examination was deferred to the spring 2005 refueling outage. At this point, the licensee staff believed that the industry would develop a qualified UT method for the W-5 weld configuration before the spring 2005 outage. Shortly before the spring 2005 outage with no qualified UT technique available, the licensee scheduled a radiographic examination (RT) of weld W-5 from the inside diameter to meet code. Early in the outage, the licensee staff recognized that this RT examination could not be performed with fuel in the vessel because plant conditions required a reduced coolant inventory level (e.g., below the centerline of the hot leg) which would conflict with an NRC commitment to not place the plant in this more risk-significant configuration. Therefore, the licensee decided to perform a UT of weld W-5 using a method which was not qualified in accordance with Appendix VIII of the Section XI ASME Code (e.g., best effort UT in accordance with Appendix III of Section XI).

On September 8, 2005, the licensee requested relief (RR-21) to accept the limited amount of coverage (78.46 percent) obtained on weld W-5 with the non-Appendix VIII qualified UT method. The inspectors noted that the licensee had not asked for relief from the requirements to perform a volumetric examination (e.g., UT or RT) of weld W-5, in accordance with the code. Furthermore, the licensee had not requested NRC approval to deviate from the requirements of 10 CFR 50.55a(g)(6)(ii)(C)(1), which requires the use of a qualified UT method in accordance with Supplement 10 of Appendix VIII of Section XI. Instead, the licensee stated that, "As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to radiological constraints, the reactor vessel level would be required to be at reduced inventory below the center line of the hot leg, weld configuration, and the undue hardship imposed without offering any commensurate increase in safety." Although the licensee addressed/requested NRC approval for the limited UT coverage, the licensee failed to identify and request relief from code requirements for the use of an unqualified UT method (e.g. not qualified in accordance with Supplement 10 of Appendix VIII of Section XI). Therefore, the inspectors determined that the licensee had not completed a volumetric examination of weld W-5 in accordance with the ASME Code Section XI requirements. The failure to develop and implement a qualified UT technique or complete RT of weld W-5 appeared to be caused, in part, by ineffective licensee work controls (e.g., work planning and scheduling).

As a corrective action, the licensee entered this issue into the corrective action program (CAP 01036208) and performed an operability evaluation to accept this weld for continued service based upon the lack of indications identified in the limited non-code qualified UT completed in May 2005. On a conference call held on August 21, 2006, the licensee was informed by the Office of Nuclear Reactor Regulation staff that the portion of RR-21 associated with requesting NRC approval for the limited UT coverage obtained for weld W-5 using the non-Code UT was denied. The licensee stated that they intended to review the NRC basis for denial and resubmit a relief request or exemption request as appropriate to get approval for the non-code UT examination of weld W-5. The inspectors noted that absent granting of relief, the licensee would be expected to restore this code nonconformance at the next opportunity (e.g., RT of weld W-5 during the next Unit 2 refueling outage).

Analysis: The inspectors determined that the failure of the licensee to complete a volumetric examination of weld W-5 on the 22 SG was a performance deficiency that warranted a significance evaluation. This finding was of more than minor significance because it was associated with the Barrier Integrity cornerstone attribute of "Reactor Coolant System Equipment and Barrier Performance," and affected the cornerstone objective to provide reasonable assurance that physical design barriers (reactor coolant system) protect the public from radionuclide releases caused by accidents or events. Absent NRC intervention, the licensee would have relied on a limited unqualified UT of weld W-5, for an indefinite period of service which would have placed this reactor coolant pressure boundary weld at increased risk for undetected cracking, leakage, or component failure. This finding was of very low safety significance because the licensee performed an operability evaluation to accept the unqualified limited UT results (e.g., no indications). The inspectors determined that the finding could not be evaluated using the Significance Determination Process (SDP) in accordance with Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," because the SDP applied to degraded systems/components, not to the examination activities intended to detect degraded components. The finding is not suitable for a significance determination process evaluation, but has been reviewed by NRC Management and is determined to be a finding of very low safety significance. The inspectors also determined that the cause of this finding was related to the work control aspect in the Human Performance cross-cutting area because the preventative maintenance work activity (examination of weld W-5) was not effectively completed.

Enforcement: On June 21, 2006, the inspectors identified an NCV of 10 CFR 50.55a(g)4. It is required, in part, in 10 CFR 50.55a(g)4 that throughout the service life of a boiling or pressurized water reactor facility, components classified as ASME Code Class 1, 2, and 3 must meet requirements of Section XI.

The 1989 Edition of ASME Code Section XI, Article IWB-2500(a) required that components shall be examined and tested as specified in Table IWB-2500-1.

Table IWB-2500-1, Examination Category B-F required, in part, volumetric (e.g., radiographic or ultrasonic examination) and surface examinations for all dissimilar metal welds within the code interval.

The 1989 Edition of ASME Code Section XI, Article IWA-2231 required, in part, that radiography be performed in accordance with a procedure as specified by Article 2 of Section V.

It is required, in part, in 10 CFR 50.55a(g)(6)(ii)(C)(1) that a UT be performed in accordance with Appendix VIII and the supplements to Appendix VIII to Section XI, Division 1, 1995 Edition, with the 1996 Addenda, with the following schedule: Supplement 10, “Qualification Requirements for Dissimilar Metal Piping Welds,” dated November 22, 2002.

The third Code Interval for Prairie Island Unit 2 ended on December 20, 2005.

Contrary to the above, as of December 20, 2005, the licensee failed to perform a volumetric examination of dissimilar metal butt weld W-5 on the 22 SG (examination category B-F). Specifically, for weld W-5, the licensee failed to perform an appropriately qualified UT in accordance with Supplement 10 of Appendix VIII of Section XI or an RT in accordance with Article 2 of Section V. Failure to perform the volumetric examination of weld W-5 is a violation of 10 CFR 50.55a(g)4. Because of the very low safety significance of this finding and because the issue was entered into the licensee’s corrective action program (CAP 01036208), it is being treated as an NCV, consistent with Section VI.A.1 of the Enforcement Policy (NCV 05000306/2006004-01).

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On July 17, 2006, the inspectors performed a quarterly review of licensed operator requalification training in the simulator, completing one licensed operator requalification inspection sample. The inspectors observed a crew during an evaluated exercise in the plant’s simulator facility. The inspectors compared crew performance to licensee management expectations. The inspectors verified that the crew completed all of the critical tasks for each exercise scenario. For any weaknesses identified, the inspectors observed that the licensee evaluators noted the weaknesses and discussed them in the critique at the end of the session.

The inspectors assessed the licensee’s effectiveness in evaluating the requalification program ensuring that licensed individuals would operate the facility safely and within the conditions of their licenses, and evaluated licensed operator mastery of high-risk operator actions. The inspection activities included, but were not limited to, a review of high-risk activities, emergency plan implementation, incorporation of lessons learned, clarity and formality of communications, task prioritization, timeliness of actions, alarm response actions, control board operations, procedural adequacy and implementation, supervisory oversight, group dynamics, interpretations of TS, simulator fidelity, and licensee critique of performance.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Periodic Evaluation (71111.12T)

a. Inspection Scope

The inspectors examined the maintenance rule periodic evaluation report completed for the period of January 2004 through December 2004. To evaluate the effectiveness of (a)(1) and (a)(2) activities, the inspectors examined a sample of (a)(1) action plans, performance criteria, functional failures, and action requests (ARs). These same documents were reviewed to verify that the threshold for identification of problems was at an appropriate level, and the associated corrective actions were appropriate. Also, the inspectors reviewed the maintenance rule procedures and processes. The inspectors focused the inspection on the following four systems (samples):

- spent fuel pool cooling;
- control room ventilation;
- chemical and volume control system; and
- auxiliary feedwater.

The inspectors verified that the periodic evaluation was completed within the time restraints defined in 10 CFR 50.65 (once per refueling cycle, not to exceed 24 months). The inspectors also ensured that the licensee reviewed its goals; monitored structures, systems, and components (SSCs) performance; reviewed industry operating experience; and made appropriate adjustments to the maintenance rule program as a result of the above activities.

The inspectors verified that:

- the licensee balanced reliability and unavailability during the previous cycle, including a review of high safety significant SSCs;
- (a)(1) goals were met, that corrective action was appropriate to correct the defective condition, including the use of industry operating experience, and that (a)(1) activities and related goals were adjusted as needed; and
- the licensee has established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, and reviewed any SSCs that have suffered repeated maintenance preventable functional failures including a verification that failed SSCs were considered for (a)(1).

In addition, the inspectors reviewed maintenance rule self-assessments and audit reports that addressed the maintenance rule program implementation.

b. Findings

No findings of significance were identified.

.2 Routine Maintenance Effectiveness (71111.12Q)

a. Inspection Scope

The inspectors reviewed repetitive maintenance activities to assess maintenance effectiveness, including maintenance rule (10 CFR 50.65) activities, work practices, and common cause issues.

The inspectors performed three issue/problem-oriented maintenance effectiveness samples. The inspectors assessed the licensee's maintenance effectiveness associated with problems on:

- the safeguards traveling screens differential pressure instrumentation;
- packing leaks on motor valve (MV)-32233; and
- auxiliary feedwater system.

The inspectors conducted reviews of the licensee's maintenance rule evaluations of equipment failures for maintenance preventable functional failures and equipment unavailability time calculations, comparing the licensee's evaluation conclusions to applicable Maintenance Rule (a)(1) performance criteria. Additionally, the inspectors reviewed scoping, goal-setting (where applicable), performance monitoring, short-term and long-term corrective actions, functional failure definitions, and current equipment performance status.

The inspectors reviewed CAPs for significant equipment failures associated with risk-significant and safety-related mitigating equipment to ensure that those failures were properly identified, classified, and corrected. The inspectors reviewed other CAPs to assess the licensee's problem identification threshold for degraded conditions, the appropriateness of specified corrective actions, and that the timeliness of the implementation of corrective actions were commensurate with the safety significance of the identified issues. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's management of plant risk during emergent maintenance activities or during activities where more than one significant system or train was unavailable. The activities were chosen based on their potential impact on increasing the probability of an initiating event or impacting the operation of safety-significant equipment. The inspections were conducted to determine whether evaluation, planning, control, and performance of the work were done in a manner to reduce the risk and minimize the duration where practical, and that contingency plans were in place where appropriate.

The licensee's daily configuration risk assessment records and observations of work in progress were used by the inspectors to verify that the equipment configurations were properly listed, protected equipment were identified and were being controlled where appropriate, work was being conducted properly, and significant aspects of plant risk were being communicated to the necessary personnel. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program.

In addition, the inspectors reviewed selected issues listed in the Attachment that the licensee encountered during the activities to determine whether problems were being entered into the corrective action program with the appropriate characterization and significance.

The inspectors completed seven samples by reviewing the following activities:

- the planned unavailability of the 21 residual heat removal (RHR) pump, the 22 charging pump, the 123 air compressor, and the 21 reactor makeup pump on July 20, 2006;
- the emergent unavailability of the 13 charging pump and emergent Orange grid condition on July 31, 2006;
- the replacement of volume control tank level transmitters and compensatory measures to maintain risk condition Yellow instead of risk condition Orange on August 23, 2006;
- the planned unavailability of the 22 component cooling pump coincident with the planned surveillance test of the D6 diesel generator on September 6, 2006;
- the planned unavailability of the 12 auxiliary feedwater pump coincident with the emergent unavailability of the 121 safeguards traveling screen on September 14, 2006;
- the planned unavailability of the D2 diesel generator on September 12, 2006; and
- emergent work-related activities in response to a packing leak on MV-32233, Unit 2 reactor coolant system loop B RHR system supply;

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of six operability evaluations completing six operability evaluation inspection samples. The inspectors conducted these inspections by review of associated documents and in-plant walkdowns of affected areas and plant equipment.

The inspectors compared degraded or nonconforming conditions of risk-significant SSCs associated with barrier and mitigating systems and against the functional requirements described in the TS, USAR, and other design basis documents; determined whether compensatory measures, if needed, were implemented; and determined whether the evaluation was consistent with the requirements of Administrative Work Instruction 5AWI 3.15.5, "Operability Determinations." The following operability evaluations were reviewed by inspectors:

- Operability Recommendation (OPR) 01039368 that documented the operability of the Unit 1 Train A Inadequate Core Cooling Monitor (ICCM) Reactor Vessel Level Indication System (RVLIS) with a data link failure on July 13, 2006;
- prompt and historical operability determinations contained in CAP 01041666 for the 11 turbine-driven auxiliary feedwater pump trip throttle latch when it was found not fully engaged on August 1, 2006;
- prompt and historical operability determinations contained in CAP 01038534 for the 22 turbine-driven auxiliary feedwater pump recirculation lubricating oil control valve CV-31419 on September 27, 2006;
- prompt and historical operability determinations contained in CAP 01046350 for the 22 diesel-driven cooling pump flow switch on August 24, 2006;
- prompt operability determination contained in CAP 01043933 for the D6 diesel generator high vibration on August 10, 2006; and
- evaluation of the D6 diesel generator overcurrent trip relay setting for motor control centers 2TA1 and 2TA2 on September 8, 2006.

b. Findings

Introduction: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," having very low safety significance (Green) for failing to provide written instructions for the compensatory action for a degraded but operable Unit 1 Train A RVLIS. The issue was considered to be NRC-identified because the licensee did not identify that written instructions were not provided to compensate for the degraded channel until questioned by the inspectors.

Description: On July 11, 2006, licensee operators discovered that the Unit 1 Train A RVLIS was unresponsive, declared it inoperable, and entered TS Limiting Condition for Operation (LCO) 3.3.3, Condition A, for Function 6. Instrument maintenance personnel performed troubleshooting and restored the RVLIS by resetting the channel. The channel was declared operable and the operators requested an Operability Recommendation (OPR).

OPR 01039368 provided justification that the channel was operable but degraded and was approved on July 12, 2006, with a compensatory action of resetting the system on a periodic basis by instrument maintenance personnel. Later that day, the RVLIS channel was found unresponsive again, and reset again by maintenance personnel. On July 13, 2006, inspectors reviewed OPR 01039368 and then interviewed the on-shift reactor and senior reactor operators assigned to Unit 1 about how to reset the channel if maintenance personnel were not available. The operators interviewed did not know the location of the reset switch. The shift manager was notified of the lack of written guidance. On July 14, 2006, Operating Information 06-70 was issued to provide guidance on how to perform a channel reset. It is required in 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," that activities affecting quality shall be prescribed by documented instructions. Licensee procedure 5AWI 3.15.5, "Operability Determinations," Revision 1, requires that if an Operability Determination of "operable but degraded" is made, then compensatory actions shall be implemented as necessary. Contrary to these requirements, OPR 01039368 failed to provide a compensatory action of written instructions to reset the RVLIS channel.

Analysis: The inspectors determined that failing to provide written instructions to reset the RVLIS channel was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issues Disposition Screening," issued on September 30, 2005. The finding involved the attribute of procedure quality and could have affected the Mitigating Systems cornerstone objective of operability, availability, and function of a train in a mitigating system because the licensee may not have been able to implement the compensatory action for an operable but degraded RVLIS channel when maintenance personnel were not available. The inspectors also determined that the preparation and approval of the OPR with insufficient written guidance was related to the human performance cross-cutting area.

The inspectors completed a significance determination of this issue using IMC 0609, "Significance Determination Process," dated November 11, 2005, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," dated November 22, 2005. The inspectors determined that the finding did not represent a loss of system safety function nor an actual loss of safety function of a single train for more than its TS allowed outage time. Therefore, this finding was considered to be of very low safety significance (Green). The finding was assigned to the Mitigating Systems cornerstone for Unit 1.

Enforcement: It is required in 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," that activities affecting quality shall be prescribed by documented instructions. However, on July 12, 2006, the licensee approved and implemented OPR 01039368 without written guidance on resetting the Unit 1 Train A RVLIS when it became unresponsive. The written guidance was implemented on July 14, 2006. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CAP 01054066, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000282/2006004-02).

1R17 Permanent Plant Modifications (Annual) (71111.17)

a. Inspection Scope

The inspectors evaluated Design Change 03CS02, containment spray full flow test line installation on the 21 and 22 containment spray pumps. The inspectors' effort completed one permanent plant modification inspection sample.

The inspectors reviewed the modification installed in May/June 2005 to verify that the design basis, licensing basis, and performance capability of risk-significant systems were not degraded by the installation of the modification. The inspectors considered the design adequacy of the modification by performing a review of the modification's impact on licensing basis (10 CFR 50.59), flow paths, plant electrical requirements, equipment protection, operation, failure modes, and other related process requirements. The inspectors conducted this inspection by review of documents and in-plant walkdowns of associated plant equipment.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors assessed post-maintenance testing completing six post-maintenance test inspection samples. The inspectors selected post-maintenance tests associated with important mitigating and barrier integrity systems to ensure that the testing was performed adequately, demonstrated that the maintenance was successful, and that operability of associated equipment and/or systems was restored. The inspectors conducted these inspections by in-office review of documents, in-plant walkdowns of associated plant equipment, and interviews with responsible personnel. The inspectors observed and assessed the post-maintenance testing activities for the following maintenance activities:

- CV 31620, containment sump A pump discharge containment isolation valve following air regulator maintenance on August 9, 2006;
- Unit 1 inadequate core cooling monitor reactor vessel level instrument system following replacement of circuit cards on August 21, 2006;
- MV- 32233, Unit 2 reactor coolant system loop B RHR supply following re-torque of the packing while on line on August 23, 2006;
- 21 RHR pump 18-month inspection including oil change on July 20, 2006;
- replacement of fittings and tubing on 22 RHR mini-flow pressure indicator; and
- change setpoint for component cooling low flow alarm.

The inspectors reviewed the appropriate sections of the TS, USAR, and maintenance documents to determine the systems' safety functions and the scope of the maintenance. The inspectors also reviewed CAPs to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with licensee's corrective action procedures. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

During this inspection period, the inspectors completed five surveillance inspection samples. Observation of surveillance procedure (SP) 1089A completed the quarterly inservice testing inspection requirement of a risk-significant pump or valve. The observation of Radiation Protection Implementing Procedure (RPIP) 3612, 3613, and 3332 completed the requirement to observe the sampling and chemical analysis of the reactor coolant per IMC 71151. The inspectors selected the following surveillance testing activities as samples:

- SP 2032B, "Safeguards Logic Test At Power - Train B," and SP 2035B, "Reactor Protection Logic Test At Power - Train B," on July 6;
- SP 1093, "D1 Diesel Generator Monthly Slow Start Test," on July 24;
- SP 1089A, "Train A RHR Pump and Suction Valve from RWST Quarterly Test," on July 27;
- SP 2305, "D6 Diesel Generator Monthly Slow Start Test," on August 7; and
- RPIPs 3612, 3613, "Unit 1/Unit 2 Mixed Bed Inlet Sample Through Cross-Connect to Loop B Sample Line," and RPIP 3332, "Dose Equivalent Iodine-131," on September 14.

During completion of the inspection samples, the inspectors observed in-plant activities and reviewed procedures and associated records to verify that:

- preconditioning did not occur;
- effects of the testing had been adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis;
- plant equipment calibration was correct, accurate, properly documented, and the calibration frequency was in accordance with TS, USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy;
- applicable prerequisites described in the test procedures were satisfied;
- test frequency met TS requirements to demonstrate operability and reliability;
- the tests were performed in accordance with the test procedures and other applicable procedures;
- jumpers and lifted leads were controlled and restored where used;

- test data/results were accurate, complete, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of ASME Code, Section XI, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data have been accurately incorporated in the test procedure;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented in the corrective action program.

Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors conducted in-plant observations of the physical changes to the equipment and an in-office review of documentation associated with one temporary modification completing one temporary modification inspection sample. The inspectors reviewed the information associated with CAP 01023551 which documented temporary cooling equipment for the Operations Support Center (OSC) and Secondary Alarm Station (SAS) on August 14, 2006. The OSC, an emergency preparedness response facility, and SAS are located adjacent to the main control room.

The inspection activities included a review of design documents, safety screening documents, and the USAR to determine that the temporary modification was consistent with modification documents, drawings, and procedures. The inspectors also reviewed the post-installation test results to confirm that tests were satisfactory and the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified. Additionally, the inspectors reviewed the corrective action documentation associated with an identified problem with the air supply to the power operated relief valves to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action. The key documents reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed a licensed shift operating crew perform an exercise on the simulator on September 25, 2006, completing one emergency planning simulator exercise sample. The inspectors observed activities in the control room simulator that include event classification and notification as well as the post-exercise critique. The inspectors evaluated the drill performance and verified that licensee evaluators' observations were consistent with those of the inspectors, and that deficiencies were entered into the corrective action program. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS2 As-Low-As-Reasonably-Achievable (ALARA) Planning and Controls (71121.02)

.1 Radiation Work Permit (RWP) Reviews

a. Inspection Scope

The inspectors reviewed dose significant corrective action program documents, including a review of licensee controls and surveys for work activity performed in the spent resin tank (SRT) room, a radiologically significant work area (high radiation area and airborne radioactivity area). The inspectors evaluated work packages, which included associated licensee controls and surveys of these areas to determine if radiological controls including surveys, postings and barricades were acceptable. The inspectors also reviewed RWPs for the work to verify barrier integrity and engineering controls performance (e.g., HEPA ventilation system operation) and to determine if there was a potential for individual worker internal exposures of >50 millirem committed effective dose equivalent. The inspectors reviewed the RWPs and work packages used to access the area to identify the work control instructions and control barriers that had been specified.

This review represented one inspection sample.

b. Findings

Introduction: A self-revealed finding of very low safety significance and an associated violation of NRC requirements was identified for the failure to perform an evaluation of survey data, in conjunction with a performance assessment of a previous entry into the SRT room, that resulted in a small intake of radioactive material, as required by NRC regulations.

Description: The inspectors conducted a review of recorded intakes by station personnel since the last inspection and associated records in the licensee's corrective action program. On May 18, 2006, four individuals were internally contaminated when they entered the SRT room to perform assigned decontamination duties. The intakes resulted in doses from 12 to 50 millirem per individual and were identified after the workers alarmed exit portal monitors. The decontamination work was conducted under the WO written to cover visual inspection of the SRT room. The RWP used was sufficient in its description of external dose hazards. However, using the existing RWP and WO was not sufficient to conduct decontamination activities. Additionally, a Total Effective Dose Equivalent As-Low-As-Reasonably-Achievable review was not completed to evaluate the anticipated dose from potential internal contamination and compare that with total dose estimates associated with the use of respiratory protection. The intake of radioactive materials by the decontamination workers revealed that the improper use of existing procedures for work planning and execution were used in limited fashion.

Analysis: The failure to evaluate the survey information for the decontamination work that was planned as required by NRC regulations is a performance deficiency as defined in IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening." The inspectors determined that the finding was more than minor because it was associated with the Occupational Radiation Safety cornerstone objective to ensure the adequate protection of the worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. The occurrence involved the program and process attribute of the objective because procedures were not adequately used to control exposure due to radioactive contamination.

The finding involved a problem with the licensee's evaluation of survey data through proper use of the plant's work planning processes (i.e., work orders, radiation work permits). The finding, did not involve ALARA planning and work controls in a defined manner, did not involve an overexposure to radiation, did not present a substantial potential for overexposure, and did not involve a compromised ability to assess the dose to workers; therefore, the significance of the inspection finding is Green. No cross-cutting aspects associated with the finding were identified by the inspectors.

Enforcement: It is required by 10 CFR 20.1501 that each licensee shall make, or cause to be made, surveys that are reasonable under the circumstances to evaluate concentrations or quantities of radioactive material and the potential radiological hazards. Survey means an evaluation of the radiological conditions and potential hazards incident to the presence of radioactive material. Contrary to these requirements, on May 18, 2006, the licensee staff planned and executed decontamination activities in the SRT room without fully evaluating concentrations or quantities of radioactive material and the potential radiological hazards, including intake doses, by using plant work planning procedures. Specifically, the licensee failed to adequately evaluate the potential for internal exposure based on the levels of loose radioactive contamination in the area and the activities that were planned for the work group (i.e., physical agitation of the accessible surfaces).

Corrective actions planned by the licensee included conducting an Apparent Cause Evaluation (ACE) and recommending a site “human performance clock” reset. The licensee also completed a department clock reset to elevate awareness of the safety consequences of the human performance problems. The ACE documented the event history to allow easy access of plant operating experience for use in future planning, and a fleet team was formed to evaluate the way Radiation Work Permits were written to determine if the process could be improved to prevent future similar failures. At the time of the inspection, that activity was started but not completed. Additionally, the radiation protection staffing organization chart was revised to have Senior Radiation Protection Technicians in the field to cover high risk work. Since the licensee documented this issue in its corrective action program (CAP 01035307, CAP 01031048) and because the violation is of very low safety significance, it is being treated as a Non-Cited Violation (NCV 05000282/2006004-03; 05000306/2006004-03).

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the Prairie Island Nuclear Generating Plant USAR to identify applicable radiation monitors associated with measuring transient high and very high radiation areas including those used in remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of high radiation area work, including fixed area radiation monitors used to provide radiological information in various plant areas and continuous air monitors used to assess airborne radiological conditions and work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent. Contamination monitors, whole body counters, and those radiation detection instruments utilized for the release of personnel and equipment from the radiologically controlled area were also identified.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Identification and Walkdowns of Additional Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors conducted walkdowns of selected area radiation monitors in the Unit 1 and 2 auxiliary buildings to verify that they were located as described in the USAR and were adequately positioned relative to the potential source(s) of radiation they were intended to monitor. Walkdowns were also conducted of those areas where portable survey instruments were calibrated/repaired and maintained for radiation protection staff use to determine if those instruments designated "ready for use" were sufficient in number to support the radiation protection program, had current calibration stickers, were operable, and were in adequate physical condition. Additionally, the inspectors observed the licensee's instrument calibration units and the radiation sources used for instrument checks to assess their material condition and discussed their use with radiation protection staff to determine if they were used appropriately. Licensee personnel demonstrated the methods for performing source checks of portable survey instruments.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors selectively reviewed calibration data for radiological instrumentation associated with monitoring transient high and/or very high radiation areas, instruments used for remote emergency assessment, and radiation monitors used to identify personnel contamination and for assessment of internal exposures to verify that the instruments had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm setpoints for selected area radiation monitors to verify that they were established consistent with the USAR or TS, as applicable, and were consistent with industry practices and regulatory guidance. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records and/or source output verification documents for the following radiation monitoring instrumentation and instrument calibration equipment:

- containment high range radiation monitors (two monitors each for Units 1 and 2);
- new fuel receipt area rate meter;
- containment building continuous air (particulate) monitor (Trains A and B);
- calibrator used to calibrate portable survey instruments and the associated instruments used to measure calibrator output; and
- whole body counter.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors verified that the licensee's actions would include a determination of the instrument's previous usages and the possible consequences of that use since the prior calibration. The inspectors also discussed with radiation protection staff the plant's 10 CFR Part 61 source term (radionuclide mix) to determine if the calibration sources used were representative of the plant source term and to verify that difficult to detect nuclides were scaled into whole body count dose determinations.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's CAPs and any special reports that involved personnel contamination monitor alarms due to personnel internal exposures to verify that identified problems were entered into the corrective action program for resolution. Licensee self-assessments, audits, and associated CAP records were also reviewed to verify that problems with radiological instrumentation or self-contained breathing apparatus were identified, characterized, prioritized, and resolved effectively using the corrective action program.

The inspectors reviewed CAP reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area; none were identified. Members of the radiation protection staff were interviewed and corrective action documents were reviewed to verify that follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes; and
- identification and implementation of effective corrective actions.

The inspectors determined if the licensee's self-assessment and audit activities completed for the 2-year period that preceded the inspection were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution, as applicable.

This review represented three inspection samples.

b. Findings

No findings of significance were identified.

.5 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors selectively verified that calibrations for those radiation survey instruments recently used by the licensee and for those currently designated for use had not lapsed. The inspectors also discussed instrument calibration methods and source response check practices with radiation protection staff and observed staff compete instrument source checks prior to use.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.6 Self-Contained Breathing Apparatus Maintenance/Inspection and User Training

a. Inspection Scope

The inspectors reviewed aspects of the licensee's respiratory protection program for compliance with the requirements of Subpart H of 10 CFR Part 20 and to determine if self-contained breathing apparatus (SCBA) were properly maintained and ready for emergency use. The inspectors reviewed records of inspection and functional tests for all SCBAs staged in the plant that were required by the licensee's emergency plan. The inspectors verified the licensee's capabilities for refilling and transporting SCBA air bottles to and from the control room during emergency conditions. The inspectors verified that selected control room staff designated for the active on-shift duty roster from each shift including those individuals on the station's fire brigade were trained, respirator fit tested, and medically certified to use SCBAs. Additionally, the inspectors reviewed SCBA qualification records for members of the licensee's radiological emergency teams including the radiation protection, chemistry, and maintenance staffs to determine if a sufficient number of staff were qualified to fulfill emergency response positions consistent with the licensee's emergency plan and the requirements of 10 CFR 50.47. The inspectors conducted interviews of selected operators to verify that personal SCBA air bottle change-out was adequately covered as part the annual retraining plan.

The inspectors walked down spare SCBA air bottle stations located outside the main control room and inspected SCBA equipment maintained in the control room and staged for emergency use in various other areas of the plant. During the walkdowns, the inspectors examined several SCBA units to assess their material condition, to verify that air bottle hydrostatic tests were current, and to verify that bottles were pressurized to meet procedural requirements. The inspectors reviewed records of SCBA equipment inspection and testing and observed a member of the licensee's staff demonstrate the methods used to conduct the inspections and functional tests to determine if these activities were performed consistent with procedure and the equipment manufacturer's recommendations.  The inspectors also ensured through record reviews that the required air cylinder hydrostatic testing was documented and current, that the Department of Transportation required retest air cylinder markings were in place for three randomly selected SCBA units and spare air bottles, and that the air quality for the compressor used to fill SCBA air bottles was routinely tested to verify Grade-D quality. Additionally, the inspectors verified that licensee staff do not perform repairs of SCBA pressure regulators and maintenance on components vital to equipment function, therefore no manufacturer qualification was required.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

.1 Onsite Inspection

a. Inspection Scope

The inspectors reviewed the records of abnormal releases or releases made with inoperable effluent radiation monitors and reviewed the licensee's actions for these releases to ensure an adequate defense-in-depth was maintained against an unmonitored, unanticipated release of radioactive material to the environment. Specifically, the inspectors reviewed a 168 gallon, unmonitored release of radioactive liquids that resulted from the drainage of the heating boiler system to the ground outside of the Turbine Building on August 5, 2006.  The inspectors reviewed the licensee's evaluation of the release, which included licensee sampling results that were verified by NRC confirmatory measurements, to ensure that the licensee had met regulatory requirements contained in 10 CFR Part 20 and the licensee's procedures.  The licensee measured 19,100 picoCuries per liter of tritium in the condensate, which was in agreement with the NRC's measurement results of 22,520 picoCuries per liter.  The inspectors also reviewed the licensee's corrective actions, including the recovery of standing water and the licensee plans to include the release in the annual effluent report and to perform an assessment of all secondary and auxiliary system that have the potential for unmonitored releases.

This review represented one sample.

b. Findings

No findings of significance were identified.

## 4. OTHER ACTIVITIES

### 4OA1 Performance Indicator Verification (71151)

**Cornerstone: Barrier Integrity**

.1 Reactor Coolant System Activity and Leakage

a. Inspection Scope

The inspectors reviewed the licensee submittals for two performance indicators (PIs) for Prairie Island Units 1 and 2, completing four PI verification inspection procedure samples. The inspectors used PI guidance and definitions contained in National Energy Institute (NEI) Document 99-02, Revision 3, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The inspectors' review included, but was not limited to, conditions and data from logs, Licensee Event Reports (LERs), condition reports, and calculations for each PI specified. The inspectors also reviewed the CAPs listed in the Attachment to this report to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with corrective action procedures.

The licensee's reporting of the following PIs were verified:

Unit 1
- reactor coolant system specific activity, and
- reactor coolant system leak rate.

Unit 2
- reactor coolant system specific activity, and
- reactor coolant system leak rate.

Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

**Cornerstone: Occupational Radiation Safety**

.2 Radiation Safety Strategic Area

a. Inspection Scope

The inspectors reviewed the licensee submittals for two PIs. The inspectors used PI guidance and definitions contained in NEI Document 99-02, Revision 4, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. As part of the inspection, the documents listed in Appendix 1 were utilized to evaluate the accuracy of PI data. The inspectors' review included, but was not limited to, conditions and data from logs, licensee event reports, condition reports, and calculations for each PI specified.

The following PIs were reviewed:

- Occupational Exposure Control Effectiveness, for August 2005 through August 2006;
- RETS/ODCM Radiological Effluent Occurrence, for the period of August 2005 through August 2006.

This review represented two samples.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was given to ensure timely corrective actions, and that adverse trends were identified and addressed. This does not count as an annual sample.

b. Findings

No findings of significance were identified.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors selected the following issue for a more in-depth review:

- On June 23, 2006, an operator performing SP 1210, "Safeguards Hold Card Verification," found manual valve CL-113-2, cooling water supply to 12 Auxiliary Feedwater (AFW) Pump, in the closed position. The valve is required to be in the open position for safeguards alignment of the cooling water supply to the 12 AFW pump. This condition was entered into the licensee's corrective action program with CAP 01036956 and an apparent cause evaluation was performed. The cause was determined to be an inappropriate closing of the valve sometime between June 14, 2006, and June 23, 2006. Corrective actions included opening the valve and changing the way that safeguards hold cards are attached to valves with chain operators.

The inspectors conducted one annual Problem Identification and Resolution inspection sample to review the corrective action aspects associated with this event. The inspectors reviewed the apparent cause evaluation and corrective actions.

The key documents reviewed by the inspectors associated with this inspection are listed in the Attachment to this report.

b. Findings and Observations

No findings of significance were identified.

The inspectors noted that the CAP was screened at a Level "B" and was determined not to be a Significant Condition Adverse to Quality. Procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 12; Attachment 1, "Corrective Action Program Severity Level Determination," Category 2, "Reduction in Defense in Depth," identified a degradation of decay heat removal capability in violation of plant TS to be a Level "A" issue. Technical Specification 3.7.5 requires two trains of AFW to be operable and USAR Section 11.9.2.2, "Auxiliary Feedwater System," stated that the AFW system is the most reliable system for decay heat removal. If the CAP had been screened as a Level "A", a root cause evaluation would have been performed which would have provided additional analysis methods to determine the causes and actions to prevent recurrence. The inspectors noted that corrective actions to prevent recurrence were implemented as required for a significant condition adverse to quality.

The inspectors also reviewed the maintenance rule system specific basis for the AFW system. Section 1.3, "Functional Failure," stated that any failure that would prevent the design flow of water getting from either the cooling water system (safety-related) or the condensate storage tank (non-safety related) to the steam generator was a functional failure. Valve CL-113-2 in the closed position would prevent flow from the cooling water system. The inspectors noted that the CAP screening assignments did not include a maintenance rule evaluation (MRE) until questioned by the inspectors. Subsequently, the licensee performed an MRE and concluded that the valve mispositioning was a maintenance rule functional failure.

.3 Selected Issue Follow-up Inspection - Operator Workarounds

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," the inspectors performed a review of the operator workarounds. This review verified that the licensee is identifying operator workaround problems at an appropriate threshold and entering them in the corrective action program, and has proposed or implemented appropriate corrective actions.

The issue selected was the operator activity to wipe up oil leaks during and after surveillance testing of the D1 and D2 diesel generators as described in CAP 01013577 that was originated on February 6, 2006. The inspectors observed a surveillance test of the diesel generators on September 11, 2006, and September 25, 2006.

The key documents reviewed by the inspectors associated with this inspection are listed in the Attachment to this report.

b. Findings and Observations

No findings of significance were identified.

CAP 01013577 was dispositioned as not being an operator workaround with the justification that diesel engines are expected to leak and cleaning diesel engines is included in the job description for operators.

Procedure 5AWI 3.10.8, “Equipment Problem Resolution Process,” defines an operator workaround as an activity that has the potential to complicate emergency response or contribute to the significance of plant transients. The inspectors noted that the resolution to the CAP did not address the impact of the oil leaks on emergency response or plant transients.

During observation of a D2 diesel generator surveillance test on September 11, 2006, and a D1 surveillance test on September 25, 2006, the inspectors noted that two operators devoted considerable time to wiping up oil from numerous leaks, indicating that the leakage had increased between the CAP origination date in February 2006 and the surveillances observed in September 2006. The inspectors questioned the potential impact of the leaks if operators were not available to wipe up the oil due to response to a plant transient or emergency. Subsequently, the licensee added the diesel engine oil leaks to the Operator Workaround List for corrective action.

4OA3 Event Followup (71153)

(Closed) LERs 05000282/2006-001-00 and 05000282/2006-001-01: Unit 1 Reactor Trip and Unit 1 Reactor Trip, Supplement 1.

On April 14, 2006, the 11 feedwater pump received a circuit breaker protective relay lockout and trip due to a trip of the 11 condensate pump. Operators responded to the alarms and manually tripped the reactor. The auxiliary feedwater pumps started automatically. The trip was uncomplicated and all systems operated as expected and operator response and recovery actions were as expected. The unit has three condensate pumps and requires two for full power operation. The unit was returned to power operation on April 16, 2006. The licensee performed a root cause investigation and determined that the condensate pump motor tripped due to aging and environmental conditions. The inspectors observed the operator trip recovery actions, reviewed the LER and supplement, root cause analysis report, and operator logs. No findings of significance were identified and no violations of NRC requirement occurred. These LERs are closed.

4OA4 Cross-Cutting Findings

.1 A finding described in Section 1R08 of this report had as its primary cause, a human performance deficiency. Work planning personnel chose to implement a UT of the 22 steam generator weld W-5 using a method which was not qualified in accordance with Appendix VIII of the Section XI ASME Code.

.2 A finding described in Section 1R15 of this report had, as its primary cause, human performance deficiency, in that, the OPR was prepared and approved without written guidance to implement compensatory action.

4OA5 Other Activities

(Open) Unresolved Item (URI) 05000282/2006002-02; 05000306/2006002-02: Licensee Continuing Onsite Tritium Well Sample Results Assessment

The inspectors reviewed the licensee's progress in investigating the cause for seasonally elevated levels of tritiated water in a singular onsite monitoring well. The licensee continues the review and expects to have the review completed in the first quarter of 2007. This URI remains open.

4OA6 Meeting(s)

.1 Exit Meeting

On October 13, 2006, the resident inspectors presented the inspection results to Mr. T. Palmisano and other members of his staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Maintenance Effectiveness Periodic Evaluation with Mr P. Huffman, Plant Manager, on April 7, 2006.
- Inspection Procedure 71111.08 with Mr. S. McCall, Engineering Programs Manager, and other members of licensee management at the conclusion of the inspection on August 24, 2006.
- Radiation Monitoring Instrumentation and Protective Equipment with Mr. T. Palmisano, Site Vice President, on September 15, 2006.

4OA7 Licensee-Identified Violations

The following violations of very low significance were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600, for being dispositioned as NCVs.

**Cornerstone: Mitigating Systems**

Condition 2.C (4) of the facility operating license requires that an approved fire protection program be implemented and maintained as described in the USAR. Section 10.3.1 of the USAR, “Plant Fire Protection Program,” describes that the fire hazards analysis and administrative controls for the fire protection program were incorporated into Operations Manual F5, “Fire Hazards Analysis.” Operations Manual F5, Appendix F, “Fire Hazard Analysis,” Section 2.3, “Doors, Hatches, and Openings,” states that fire doors in safeguard areas are Underwriters Laboratories, Inc. (UL) rated with a fire resistance rating of 3 hours. Contrary to this requirement, fire doors 92, 94, 95, 136, 162, and 163 were modified with plated openings between 6 square inches and 14 square inches without UL testing in the modified condition. This was identified in the licensee’s corrective action program as CAP 01020151 and CAP 01022720. This finding is of very low safety significance because there were no fires or failures that resulted in damage to safety-related equipment.

**Cornerstone: Barrier Integrity Cornerstone**

On May 16, 2006, control room operators identified a violation of Condition 2.C (1) of the Unit 2 operating license when they observed that Unit 2 was operating at a thermal power in excess of 1650 megawatts thermal. The operators detected a very small difference in the indicated feedwater flow rates between the two feedwater trains. Additional evaluation of the observed difference using trend information from the plant process computer revealed that the output signal for the flow transmitter for the 21 steam generator (2FT-495) had gradually degraded over a 4 month period. This resulted in a non-conservative input into the thermal power monitor that ultimately caused the licensee to exceed the licensed maximum core thermal power output. The licensee determined that the indicated peak power reached during this event was 101.25 percent. Considering instrument uncertainties, the maximum power reached could have been as high as 102.87 percent.

Immediate corrective actions were taken to reduce reactor power to less than 100 percent and adjust all four channels of nuclear instrumentation. The licensee entered the adverse conditions into the corrective action program with CAP 01030453. Subsequently, flow transmitter 2FT-495 was replaced and the failed transmitter was returned to the manufacturer for failure analysis. The licensee also revised the surveillance procedures to allow earlier detection of transmitter degradation.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

## KEY POINTS OF CONTACT

Licensee

T. Palmisano, Site Vice President
D. Mimms, Site Director
P. Huffman, Plant Manager
B. Stephens, Maintenance Rule Program Engineer
F. Forrest, Operations Manager
S. Northard, Nuclear Safety Assurance Manager
M. Carlson, Engineering Director
R. Womack, Production Planning Manager
J. Anderson, Radiation Protection Manager
J. Kivi, Regulatory Compliance Engineer

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

| | | |
|---|---|---|
| 05000306/2006004-01 | NCV | Failure to Perform Code Volumetric Examination of the 22 Steam Generator Inlet Nozzle Weld W-5 (Section 1R08) |
| 05000282/2006004-02 | NCV | Failure to Provide Written Instructions that Operators or Technicians Could Implement as the Compensatory Action for a Degraded but Operable Unit 1 Train A Reactor Vessel Level Instrument System. (Section 1R15) |
| 05000282/2006004-03; 05000306/2006004-03 | NCV | Failure to Evaluate Concentrations of Radioactive Material and the Potential Radiological Hazards (Section 2OS2.1) |

Closed

| | | |
|---|---|---|
| 05000306/2006004-01 | NCV | Failure to Perform Code Volumetric Examination of the 22 Steam Generator Inlet Nozzle Weld W-5 (Section 1R08) |
| 05000282/2006004-02 | NCV | Failure to Provide Written Instructions that Operators or Technicians Could Implement as the Compensatory Action for a Degraded but Operable Unit 1 Train A Reactor Vessel Level Instrument System. (Section 1R15) |
| 05000282/2006004-03; 05000306/2006004-03 | NCV | Failure to Evaluate Concentrations of Radioactive Material and the Potential Radiological Hazards (Section 2OS2.1) |
| 05000282/2006-001-00 | LER | Unit 1 Reactor Trip (Section 4OA3) |
| 05000282/2006-001-01 | LER | Unit 1 Reactor Trip, Supplement 1 (Section 4OA3) |

Discussed

| | | |
|---|---|---|
| 05000282/2006002-02; 05000306/2006002-02 | URI | Licensee Continuing Onsite Tritium Well Sample Results Assessment |

## 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 or 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.

1R04 Equipment Alignment

21 containment spray pump
USAR, Section 6.4, Containment Vessel Internal Spray System; Revision 27;
Integrated Checklist C1.1.18-2; SI, CS, CA and HC System Checklist Unit 2; Revision 39
Drawing NF-39237, Flow Diagram Containment Internal Spray System

Unit 2 auxiliary feedwater system
USAR, Section 11.9, Condensate, Feedwater, and Auxiliary Feedwater Systems; Revision 28
Drawing NF-39842, Main Auxiliary Steam and Steam Dump - Unit 2
NF-39223, Flow Diagram Feedwater System
Integrated Checklist C28-7, Auxiliary Feedwater System Unit 2
CAP 01006092; Potential Mispositioning of 12/21 AFWP Pressure Gage Valves
CAP 01017887; 11 AF Pump Air Accumulator Check Valve May Need More Contingencies
CAP 01043604; Insulation Upgrade Recommended on 22 Turbine-Driven AFW Pump
CAP 01038534; CV 31419 Stroked Outside Reference Range During SP 2102

Unit 1 diesel generators
1C20.7; D1/D2 Diesel Generators; Revision 23

1R05 Fire Protection

Plant Safety Procedure F5, Appendix A; Fire Strategies for Fire Areas 22, 58, 59, 60, 73, 74, 75, 79, and 80
Plant Safety Procedure F5, Appendix F; Fire Hazard Analysis for Fire Areas 22, 58, 59, 60, 73, 74, 75, 79, and 80
CAP 01043030; Combustible Material Staged Without CSUP
CAP 01020151; Evaluate Design of Fire Doors in the Auxiliary Building
Plant Safety Procedure F5, Appendix J; Fire Drills; Revision 11

1R08 Inservice Inspection Activities

CAP 01036208; Method of Requesting Relief for Relief Request 21 Questioned; dated June 21, 2006
OPR; Elbow to Safe-end Weld on 22 SG; dated June 21, 2006
NMC Letter to NRC; Request for Relief No. 21 for the Unit 2 3rd 10-year Interval Inservice Inspection Program; dated September 8, 2005

NMC Letter to NRC; Response for Additional Information on Relief No. 21 for the Unit 2 3rd 10-year Interval Inservice Inspection Program; dated June 6, 2006

1R11 Licensed Operator Requalification Program

Simulator Evaluation Guide P9160S-001, ATT 06-14; Revision 0
Administrative Work Instruction 5AWI 3.15.0; Plant Operation; Revision 18

1R12 Maintenance Effectiveness (71111.12)

Periodic Review
H24; Maintenance Rule Program; Revision 9
H24.1; Assessment and Management of Risk Associated with Maintenance Activities; Revision 9
H24.3; Structures Monitoring Program; Revision 3
Prairie Island Nuclear Generating Plant Equipment Performance Annual Report 2004; dated June 13, 2005
Maintenance Rule a(1) Action Plan Auxiliary Feedwater System; Revision 0
Maintenance Rule a(1) Action Plan Spent Fuel Cooling; Revision 0
Maintenance Rule a(1) Action Plan Unit 2 Chemical and Volume Control System; Revision 0
Maintenance Rule a(1) Action Plan Control Room Special Ventilation; Revision 0
MRE 436, Unit 2 Volume Control Tank Level Transmitters 2LT-141 and 2LT-112 Reached 4 Percent Deviation
Minutes of Prairie Island Nuclear Generating Plant Maintenance Rule Expert Panel Meeting 2005-13 Conducted; dated August 11, 2004
Table 5, Maintenance Rule Functional Failures in 2005
PI MR Snapshot Self-Assessment; dated March 1, 2006
AR 0838586; Could Failure of Auxiliary Feedwater Suction Flanged Gasket Affect Operability; dated April 27, 2005
AR 0764794; MV-32199 Failed the Post Maintenance LLRT; dated October 14, 2004
AR 0769608; DPO Resolution on CAP 027758 Control Room Chiller Testing; dated October 27, 2004

Routine Review
CAP 01050088; 121 Safeguards Traveling Screen DPS Indicates -0.5 Lbs.
Maintenance Rule System Specific Basis Document; Cooling Water; Revision 11
CAP 01014845; 121 Safeguards Traveling Screen D/P Gauge Pegged Low
CAP 032030; D/P Indication for 121 Safeguards Traveling Screen Reading Less Than Zero
CAP 031539; 122 Safeguards Traveling Screen D/P Gauge Reading Less Than Zero
CAP 021610; DPS Indicating a Negative Differential Pressure on 122 Safeguards Traveling Screen
CAP 01051475; Review MRE Conclusions for Safeguards Traveling Screen DPS Issues
RH System Risk Significant Equipment Performance Monitoring for MV-32233
USAR Table 5.2-1, Maintenance Rule Functions and Performance Monitoring
CAP 01046944; MV-32233 Packing Adjustment without PMT
Auxiliary Feedwater System Health and Status Report
Monthly Maintenance Rule Performance Report for July 2006

MRE 01034270-06; 11 TDAFWP Has A High Bearing Temperature
Operating Logs for June 9 through July 27, 2006
MRE 01032809-01; 11 TDAFWP Steam Admission Valve Accumulator Check Valve Test
CAP 01038407; 11 AFW Pump is at 95 Percent of its Maintenance Rule Unavailability Performance Criteria
CAP 01041666; 11 Turbine-Driven AFW Pump Trip Throttle Latch Not Fully Engaged
CAP 01048078; 11 Turbine-Driven AFW Pump Overspeed Trip Latching Device
NEI 99-02 Appendices F and G; Methodologies for Computing the Unavailability Index, the Unreliability Index, and Component Performance Limits
LER 2001-006-02; Unit 1 Mode Change with the Turbine-Driven Auxiliary Feedwater Pump Inoperable
WO 288333; Unit 1 11 Turbine-Driven AFW Pump Turbine Outboard Bearing High Temperature
SP 1102; 11 Turbine-Driven AFW Pump Monthly Test, Revision 87
SP 1330; 11 Turbine-Driven AFW Turbine/Pump Bearing Temperature Test

1R13 Maintenance Risk Assessments and Emergent Work Control

Procedure H24.1; Assessment and Management of Risk Associated with Maintenance Activities; Revision 9
Unit 1 Configuration Risk Assessment for July 31 and August 23, 2006
Operator Logs for July 31 and August 23, 2006
Unit 1 Configuration Risk Assessment for September 14, 2006
Operator Logs for September 14, 2006

1R15 Operability Evaluations

OPR 01039368
CAP 01039647; Resetting of 1LM-750 Using Cabinet Reset Switch
CAP 01040098; LM-750, Unit 1 Train A ICCM/RVLIS Found Not Updating
CAP 01040438; Unplanned LCO Entry Into Action for LCO 3.3.3
CAP 01054066; OPR for CAP 01039368 Not Sufficient
Operating Information 06-70; Unit 1 Train A ICCM
Operating Information 06-73; Unit 1 Train A ICCM

CAP 01041666
CE 003153; Repeat Problem - Partial Engagement of 11 AFW Trip Throttle Valve
CAP 01035021; 11 Turbine-Driven AFW Pump Trip Throttle Valve Marginally Latched
CAP 01041666; 11 Turbine-Driven AFW Pump Trip Throttle Latch Not Fully Engaged
CAP 01048078; 11 Turbine-Driven AFW Pump Overspeed Trip Latching Device

CAP 01038534
CE 01022503-01; CV-31419 Stroked Outside Its Reference Range
Procedure H10.1, Appendix C; Prairie Island Inservice Testing Basis Valve Datasheet; CV-31419; Revision 18

D6 Diesel Generator Overcurrent Relay Setpoint
CAP 01053788; Ineffective Organizational Response to Industry OE22643
CAP 01053785; Diesel Generator Protective Relay Settings
Calculation ENG-EE-018; Diesel Generator Sequence Loading for an SI Event Concurrent with Loss of Off-Site Power for D1, D2, D5, D6; dated May 13, 1994

1R17 Permanent Plant Modifications

Modification Package 03CS02; Containment Spray Pump Full Flow Test Line
10 CFR 50.59 Screening No. 1925
WO 0408936: Unit 2 CS Full Flow Mod Testing; completed June 4, 2005
D 90; ASME Section XI; System Pressure Test Procedure; May 19, 2005
C1.1.18-2; SI, CS, CA and HS System Checklist Unit 2; Revision 38

1R19 Post-Maintenance Testing

Containment Isolation Valve CV-36120
SP 2286, Sump A Pump Discharge Containment Isolation Valves Quarterly; Revision 19
Operating Logs from August 9, 2006

Unit 1 Reactor Vessel Level Instrument System
WO 00292269; 1LM-750; Troubleshoot/Repair Unit 1 Train A ICCM
SP 1271; RVLIS Channel Check (Monthly); Revision 23

Unit 2 Motor Valve 32233 Packing Retorque
WO 00283755 01; Mech MV-32233 Clean BA/Retorque Packing To As Left
Static Test Data Sheet for MV-32233 completed on May 18, 2005 during cold shutdown
SP 2273; Cycling of RHR Isolation Valves During Refueling Outage; Revision 15; completed on May 30, 2005
USAR 10.2.4.2; RHR Description
USAR Figure 10.2-12; Flow Diagram Residual Heat Removal System - Unit 2
H10.1; ASME Inservice Testing Program, Table 1; Valve Allowable Ranges of Test Parameters; Revision 19
H5; Motor Operated Valve Program; Revision 10
AR 01046944; WO 283755 Performed Packing Adjustment Without PMT; dated August 28, 2006
TS 3.6.3; Containment Isolation Valves
TS Table 5.2-1; Unit 2 Containment Vessel Penetrations

21 RHR Pump 18-Month Inspection
WO 00157828 01; PM 3124-1-21 21 RHR Pump 18-Month Inspection

Replace fittings and tubing on 22 RHR mini-flow pressure indicator
WO 00097522 01; Replace Fittings and Tubing on 22 RHR Mini-flow Pressure Indicator

Change setpoint for component cooling low flow alarm
WO 00087988 01; Change Setpoint for Component Cooling Low Flow Alarm

1R22 Surveillance Testing

SP 2032B/SP 2035B
SP 2032B, Safeguards Logic Test At Power - Train B
SP 2035B, Reactor Protection Logic Test At Power - Train B

SP 1093
SP 1093, D1 Diesel Generator Monthly Slow Start Test
WR 6921, D1 Cylinders 3 and 12 Exhaust Temps Reading Low
WR 11496, D1 Cylinders 3 and 12 Exhaust Temps Reading Low
CAP 1041244, Discussed D1 Exhaust Temperature Monitoring with NRC
WO 293820, D1 Cylinders 3 and 12 Exhaust Temps Reading Low

SP 1089A
SP 1089A, Train A RHR Pump and Suction Valve Room RWST Quarterly Test
CAP 1041601, RHR Pit Lighting Issues and Extra Dose
CAP 1041636, Valve RH-1-2 Missing 1 of 4 Bolts on Gear Box 11 RHR
CAP 1041649, 174-041 11 RHR Pump Unit Cooler Drain Line Brackets Are Missing
CAP 1041660, Terminal Box 1128 Has Bolts Missing
CAP 1041291, 11 RHR Sump Pump Run Time Increased 0.2 on July 25
WO 111773, RH-2-6, 11 RHR Heat Exchange Outlet Crosstie

SP 2305
SP 2305, D6 Diesel Generator Monthly Slow Start Test

1R23 Temporary Modifications

CAP 01023551, Temporary Cooling for SAS and OSC Not Under T-Mod
Fleet Procedure FP-E-MOD-03; Temporary Modifications; Revision 3
USAR Section 10.3.3; Control Room Ventilation System; Revision 28

1EP6 Drill Evaluation

Simulator Exercise Guide P9160S-001 ATT 04-25, Revision 0
CAP 01052059; Licensed Operator Requalification Simulator - Incorrect NEI EAL Classification

2OS2 As-Low-As-Reasonably-Achievable (ALARA) Planning And Controls

AR 01035307; Internal Dose in Spent Resin Tank Room; dated June 13, 2006
AR 01031048; Worker Contamination During SRT Room Decontamination; dated May 18, 2006
AR 01041918; Unposted Radiologically Controlled Area (Auxiliary Building Roof); dated July 28, 2006
WO 00100510/06; Inspect 121 Spent Resin Tank

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

FastScan Whole Body Counter Calibration; dated June 21, 2006
Snapshot Report - Radiation Detection Instruments; dated February 2, 2006
R7600W-0601; PPE/SCBA Exercise; dated August 16, 2006
AR 00839412; Radiation Monitor 2R-11 Failure; dated April 28, 2006
AR 00846946; R-25 Did Not Respond to Bug Source; dated May 18, 2005
AR 00867260; Radiation Monitoring System Top 10 Issue; dated July 16, 2005
AR 00872327; Radiation Monitor 2R-11 Failure; dated August 1, 2005
AR 00883684; Determine the Need for SCBA Donning Proficiency Training for Select Personnel; dated September 6, 2005
AR 010140082; Trend CAP for Radiation Monitor System Failures; dated July 17, 2006
AR 01014161; 1R-11 Radiation Monitor Continues Trend of Failure; dated February 9, 2006
AR 01016284; Setpoint Basis for R-11; dated February 24, 2006
AR 01009622; R-4 Failure; dated January 5, 2006
AR 01045987; Adverse Trend - Radiation Instrument Performance; dated August 23, 2006
USAR Section 7; Plant Radiation Monitoring System; Revision 28
RPIP 1210; Charging SCBA Air Cylinders; Revision 8
RPIP 1214; Respiratory Protection Equipment Testing; Revision 13
RPIP Calibration and Manager Menu Operations for the FastScan Whole Body Counter; Revision 4
RPIP 1226; Control Room Breathing Air System Testing; Revision 2
SP 1034; Emergency Plan Radiation Instrument Test; Revision 58
SP 1783.1; Westinghouse Radiation Monitor Electronic Calibration; Revision 6
SP 1783.2; NMC Radiation Monitor Electron Calibration; Revision 7
SP 1783.4; High Range Radiation Monitor Electronic Calibration; Revision 4

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring System

AR 01043156; Discovered Unmonitored Drainage to the Environment; dated August 8, 2006
AR 01044693; Fleet Tritium Task Force Actions; August 15, 2006

4OA1 Performance Indicator Verification

Procedure H33; Performance Indicator Reporting; Revision 5
Procedure H33.1; Performance Indicator Reporting Instructions; Revision 5
Unit 1 and 2 Operating Logs for October 1, 2004 through June 33, 2006
H33; Performance Indicator Reporting; Revision 5
RPIP 3025; Chemistry Performance Indicator Reporting Instructions; Revision 2
RPIP 1013; Occupational Radiation Safety Performance Indicators; Revision 3

4OA2 Identification and Resolution of Problems

CAP 01036956; Found CL-113-2 Out of Position
Apparent Cause Evaluation 01036956; Found CL-113-2 Out of Position
Fleet Procedure FP-PA-ARP-01; CAP Action Request Process; Revision 12

USAR Section 11.9.2.2; Auxiliary Feedwater System; Revision 28
Maintenance Rule System Specific Basis Document; Auxiliary Feedwater; Revision 11
CAP 01048066; Initial CAP Screening Failed to Address MRE
Maintenance Rule Evaluation 01036956-12; Found CL-113-2 Out of Position
CAP 01013577; Evaluate if Clean-up Activities During and After D1 and D2 Surveillance Runs are an Operator Workaround
CAP 01049415; D2 Diesel Generator Governor Side Turbo Charger has a Gasket Oil Leak
CAP 01049448; D2 Diesel Generator Turbo Charger Intake Controller has a Gasket Oil Leak
CAP 01049475; NRC Questioned D1 and D2 Oil Leaks

4OA3 Event Followup

LER 05000282/2006-001-00; Unit 1 Reactor Trip
CAP 01024213; Unit 1 Reactor Tripped After Losing 50 Percent Feedwater Flow
Root Cause Investigation Report RCE 1024213; 11 Condensate Pump Trip
LER 05000282/2006-001-01; Unit 1 Reactor Trip, Supplement 1
August 6, 2006 2:00 p.m. Operator Log Entry
CAP 01043179; Unit 1 Anticipated Positive Reactivity Addition

4OA5 Other Activities

RPIP 3683; Heating System, Heating Boiler and Deaerator Sampling; Revision 0
WO 00158712-01; Preventative Maintenance 3570-2PM 3570-2 Deaerator Annual Inspection
PM 3570; Deaerator Inspection Preventative Maintenance (021-011); Revision 14

4OA7 Licensee-Identified Violations

CAP 01020151; Evaluate Design of Fire Doors in the Auxiliary Building
CAP 01022720; Fire Doors Potentially Inoperable

## LIST OF ACRONYMS USED

| | |
|---|---|
| ACE | Apparent Cause Evaluation |
| ADAMS | Agencywide Documents Access and Management System |
| AFW | Auxiliary Feedwater |
| ALARA | As-Low-As-Reasonably-Achievable |
| AR | Action Request |
| ARM | Area Radiation Monitor |
| ASME | American Society of Mechanical Engineers |
| CAP | Corrective Action Program Document |
| CFR | Code of Federal Regulations |
| ICCM | Inadequate Core Cooling Monitor |
| IMC | Inspection Manual Chapter |
| IR | Inspection Report |
| LCO | Limiting Condition for Operation |
| LER | Licensee Event Report |
| MRE | Maintenance Rule Evaluation |
| NCV | Non-Cited Violation |
| NEI | National Energy Institute |
| NMC | Nuclear Management Corporation, LLC |
| NRC | U.S. Nuclear Regulatory Commission |
| OPR | Operability Recommendation |
| OSC | Operations Support Center |
| PARS | Publicly Available Records |
| PI | Performance Indicator |
| RPIP | Radiation Protection Implementing Procedure |
| RR | Relief Request |
| RT | Radiographic Examination |
| RVLIS | Reactor Vessel Level Indication System |
| RWP | Radiation Work Permit |
| SAS | Secondary Alarm Station |
| SCBA | Self-Contained Breathing Apparatus |
| SDP | Significance Determination Process |
| SG | Steam Generator |
| SP | Surveillance Procedure |
| SRT | Spent Resin Tank |
| SSC | Structures, Systems, and Components |
| TS | Technical Specifications |
| UL | Underwriters Laboratories, Inc. |
| URI | Unresolved Item |
| USAR | Updated Safety Analysis Report |
| UT | Ultrasonic Examination |
| WO | Work Order |