

February 5, 2007

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 05000282/2006005 AND  
05000306/2006005

Dear Mr. Palmisano:

On December 31, 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 January 9, 2007, 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 one finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. Additionally, a licensee-identified violation was determined to be of very low safety significance and is listed in this report. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations consistent with Section VI.A.1 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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

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 05000282/2006005 and 05000306/2006005  
w/Attachment: Supplemental Information

cc w/encl: C. Anderson, Senior Vice President, Group Operations  
M. Sellman, President and Chief Executive 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

Docket Nos: 50-282; 50-306

License Nos: DPR-42; DPR-60

Report No: 05000282/2006005; 05000306/2006005

Licensee: Nuclear Management Company, LLC

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

Location: 1717 Wakonade Drive East  
Welch, MN 55089

Dates: October 1 through December 31, 2006

Inspectors: J. Adams, Senior Resident Inspector  
D. Karjala, Resident Inspector  
S. Thomas, Senior Resident Inspector, Monticello  
L. Haeg, Resident Inspector, Monticello  
M. Holmberg, Reactor Inspector  
J. Neurauter, Reactor Inspector  
T. Bilik, Reactor Inspector  
S. Ray, Senior Resident Inspector, Braidwood  
D. Smith, Project Engineer  
M. Mitchell, Radiation Specialist  
R. Jickling, Emergency Preparedness Inspector  
J. Robbins, Reactor Engineer

Approved by: R. Skokowski, Chief  
Branch 3  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000282/2006005, 05000306/2006005; 10/01/06 - 12/31/06; Prairie Island Nuclear Generating Plant, Units 1 and 2; Inservice Inspection Activities.

This report covers a 3-month period of baseline resident inspection and announced baseline inspection on radiation protection, inservice inspections, and emergency preparedness. The inspections were conducted by the resident inspectors and inspectors from the Region III office. The emergency preparedness portion of this inspection is being tracked using Inspection Report 05000282/2006014; 05000306/2006014. One finding was identified which was a Non-Cited Violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the Significance Determination Process 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: Initiating Events**

- Green. The inspectors identified a Non-Cited Violation of 10 CFR 50.55(a)(g)(4) for failure to perform a Magnetic Particle examination (MT) of the full required exam surface on a steam generator feedwater nozzle weld (N-1) in accordance with the American Society of Mechanical Engineers (ASME) Section XI Code. The licensee subsequently reperformed the MT in accordance with the ASME Code and entered this issue into their corrective action program.

This finding is greater than minor significance because it is associated with the initiating events cornerstone attribute of equipment performance, and affected the cornerstone objective to limit those events which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the full Code-required exam of weld N-1 for an indefinite period of service, which would have placed the reactor coolant pressure boundary at increased risk for unanalyzed cracking, leakage, or component failure. This finding is of very low safety significance because a qualified examination was subsequently performed with no relevant indications detected. In particular, it did not result in the loss of function of the mitigating system. (Section 1R08)

### B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective actions 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 approximately 90 percent from October 6, 2006, until October 8, 2006, for repairs to the 12 steam generator (SG) feedwater regulating valve (CV-31128).

Unit 2 entered the period with power reduced to approximately 64 percent for condenser cleaning and repairs. On October 1, 2006, Unit 2 was returned to full power where it operated until the unit was shut down for a refueling outage on November 15, 2006. Unit 2 was made critical on December 14, 2006, and the generator was placed on-line on December 15, 2006. The unit was returned to full power on December 17, 2006, and operated at or near full power for the remainder of the inspection period.

### 1. REACTOR SAFETY

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

#### 1R01 Adverse Weather Protection (71111.01)

##### a. Inspection Scope

On November 8, 2006, the inspectors performed an adverse weather inspection completing three annual system-related adverse weather inspection samples. The inspectors assessed the licensee's preparation of risk-significant plant systems for the seasonal onset of cold weather. The inspectors selected the Unit 1 and Unit 2 condensate storage tank freeze protection systems, cooling water system components located outside the turbine and auxiliary buildings, and the Unit 2 diesel generator jacket water cooling systems. The inspectors completed in-plant system walkdowns, conducted in-office reviews of applicable procedures and associated records, and interviewed plant operators and chemists to verify that the risk-significant systems were adequately protected against impending cold weather.

The inspectors used the licensee checklists and procedures to verify that the systems were aligned as required. In addition, the inspectors reviewed the corrective action program action requests (CAPs) and work orders (WOs) to verify that the licensee had entered problems identified with cold weather operations into the corrective action system and were taking the appropriate corrective and compensatory actions. The documents reviewed by the inspectors are listed in the Attachment.

##### b. Findings

No findings of significance were identified.

1R04 Partial System Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed four 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 corrective action program in accordance with the licensee's corrective action 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 WOs and 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:

- 121 cooling water pump with the 22 diesel-driven cooling water pump unavailable for planned maintenance on October 10, 2006;
- 12 residual heat removal pump during the unavailability of the 11 residual heat removal pump for planned maintenance on October 26, 2006;
- 22 component cooling water heat exchanger while the 21 component cooling water heat exchanger was isolated for maintenance on October 31, 2006; and
- D1 diesel generator while the D2 diesel generator was unavailable during testing on November 13, 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.



1R05 Quarterly Fire Protection Area Walkdowns (71111.05)

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 operational or security events. 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 3, Unit 1 water chiller room on October 11, 2006;
- Fire Area 13, control room on October 11, 2006;
- Fire Area 26, diesel generator D2 room on October 11, 2006;
- Fire Area 33, battery room 11 on October 11, 2006;
- Fire Area 35, battery room 21 on October 11, 2006;
- Fire Area 92, Unit 2 water chiller room on October 11, 2006;
- Fire Area 127, 480 volt 211/212 bus room on October 11, 2006;
- Fire Area 71, Unit 2 containment, during the refueling outage on November 28, 2006; and
- Fire Area 72, Unit 2 shield building annulus, during the refueling outage on November 30, 2006.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On October 17, 2006, the inspectors performed an in-plant walkdown of the Unit 1 and 2 auxiliary feedwater pump rooms completing one internal flood protection inspection sample. These areas of Unit 1 and 2 contain safety-related and risk significant equipment including both trains of the auxiliary feedwater pumps, instrument air compressors, and the hot shutdown panels. The inspectors reviewed the applicable sections of the USAR, Individual Plant Examination, and plant procedures associated with internal flooding of the auxiliary feedwater pump rooms and adjacent areas. The inspectors verified by physical inspection that the licensee maintained the material

condition of piping systems in these areas. The inspectors also verified that drain paths from these areas had been maintained and that there was no accumulation of loose materials that could plug drain paths.

The inspectors reviewed applicable CAPs to verify that problems associated with plant equipment relied upon to prevent or minimize flooding were identified at an appropriate threshold, and that corrective actions commensurate with the significance of the issue were identified and implemented. The documents reviewed by the inspectors are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection (ISI) Activities (71111.08)

.1 Piping systems ISI

a. Inspection Scope

From November 20, 2006, through December 1, 2006, the inspectors conducted a review of the implementation of the licensee's ISI program for monitoring degradation of the reactor coolant system (RCS) boundary and the risk significant piping system boundaries. The inspectors selected the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI required examinations and Code components in order of risk priority as identified in Section 71111.08-03 of NRC Inspection Procedure 71111.08, "ISI Activities," based upon the ISI activities available for review during the onsite inspection period.

The following nondestructive examination (NDE) activities were observed by the inspectors to evaluate compliance with the ASME Code Section XI and Section V requirements, and to verify that indications and defects (if present) were dispositioned in accordance with the ASME Code Section XI requirements. Specifically, the inspector observed the following examinations:

- Magnetic Particle Examination (MT) of 22 SG feedwater nozzle N-1;
- Dye Penetrant Examination (PT) of an RCS integral attachment (restraint and support) H-4/IA; and
- Visual Examination (VT) of RCS restraint and support H-4.

The inspectors reviewed examinations completed during the previous outage with relevant/recordable conditions/indications that were accepted for continued service to observe that the licensee's acceptances were in accordance with Section XI of the ASME Code. Specifically, the inspectors reviewed the following records:

- Visual Examination of a 22 SG vault spring can H-5. Several recordable indications were evaluated against ASME Section XI, 1998 Edition, 2000 Addenda, IWF-3410 (b)(4) and were found to be acceptable; and

- Visual Examination of 21 accumulator to RCS loop A cold leg check valve 2SI-6-3. Several recordable indications were evaluated against ASME B31.1, paragraph 108.5.1, and were found to be acceptable.

The inspectors reviewed pressure boundary welds for Class 1 and 2 systems which were completed since the beginning of the previous refueling outage to determine if the welding acceptance and preservice examinations (e.g., VT, PT, and weld procedure qualification tensile tests) were performed in accordance with ASME Code Sections III, V, IX, and XI requirements. Specifically, the inspectors reviewed welds associated with the following work activity:

- Replace (WCR No.046803-01; welds 1-2) ISI Class 1, pressurizer power operated relief valve (PORV), valve MV-32197 for the RC system; and
- Replace (WCR No.0406633-01; welds 1-3) ISI Class 1, reactor vessel level indication system piping.

The reviews as discussed above counted as one inspection sample.

b. Findings

Failure to Perform an MT on the Full Exam Surface

Introduction: The inspectors identified a green finding and associated Non-Cited Violation (NCV) of 10 CFR 50.55(a)(g)(4) for failure to perform an MT of the full exam surface on 22 SG feedwater nozzle weld N-1 in accordance with ASME Code Section XI.

Description: On November 22, 2006, the inspectors identified through direct observation that a licensee contract NDE examiner was not performing an MT of the full required surface area of weld N-1. Specifically, the required MT exam surface of the 22 SG feedwater nozzle to shell weld (N-1, Code class 2) should have included the area from the toe of the weld to the tangent of the adjacent radius, but was instead limited to the surface area ½-inch adjacent to either side of the weld toe.

A review of the Code drawing provided to the examiner by the NDE Level III during the pre-job brief indicated that the exam surface to be examined extended from the toe of the weld to the tangent of the radius, a distance and resulting area several times that which was being examined. The requirement to address an exam area different than the “standard” ½-inch due to the associated radius was also discussed with the examiner by the NDE Level III during the pre-job briefing. The Code required examination surface was subsequently examined as a part of the licensee’s corrective actions. The licensee documented this concern in CAP 01064041.

Analysis: The inspector determined that the failure to perform the MT of the full exam surface was a performance deficiency warranting a significance determination evaluation. The inspector reviewed this finding against the guidance contained in Appendix B, "Issue Dispositioning Screening," of Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports." In particular, the inspector compared this finding to the findings identified in Appendix E, "Examples of Minor Issues," of IMC 0612 to determine whether the finding was minor and concluded that none of the examples listed in Appendix E accurately represented this example. As a result, the inspector compared this performance deficiency to the minor questions contained in Section 3, "Minor Questions," to Appendix B of IMC 0612. The inspector concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," because the finding was associated with the initiating events cornerstone attribute of equipment performance, and affected the cornerstone objective to limit those events, which upset plant safety and challenge safety systems. Absent NRC intervention, the licensee would not have performed the Code-required examination of weld N-1 for an indefinite period of service which would have increased risk for undetected cracking, leakage, or component failure and it would have become a more significant safety concern. The inspector was concerned that the failure to perform an examination of the complete examination surface could have allowed undetected cracks to remain in service.

Because the inspectors answered "No" to each of the phase 1 screening questions for "Determining the Significance of Reactor Inspection Findings for At-Power Situations" and specifically because a qualified re-examination was subsequently performed with no relevant indications detected, this finding was of very low safety significance. Specifically, there was no evidence of actual flaws.

Enforcement: Title 10 CFR 50.55a(g)4 requires, in part, that throughout the service life of a pressurized water-cooled nuclear power facility, components must meet the requirements set forth in the ASME Code Section XI. ASME Code Section XI, Table IWC-2500-1, "Examination Categories," requires that surface examinations for Item No. C2.21, "Nozzle-to-Shell Weld," be examined in accordance with Figure IWC-2500-4(a).

Figure IWC-2500-4(a) indicates an exam surface "A - B," which extends around the circumference/weld from a point on the tangent of the radius beyond the toe of the weld (point "A") to a point ½-inch from the toe of the weld on the other side of the weld (point "B").

Contrary to the above, on November 22, 2006, while performing an MT using procedure SWI NDE-MT-1, Dry Powder MT, Revision 1, on 22 SG feedwater nozzle N-1, the licensee examiner failed to perform the MT of the full Code required surface in accordance with ASME Code Section XI, Figure IWC-2500-4(a), in violation of 10 CFR 50.55(a)(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 01064041), it is being treated as an NCV consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000306/2006005-01).

.2 Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

The inspectors did not perform Section 02.02, "Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities," of IP 71111.08 because the licensee replaced the Unit 2 vessel head during the previous outage and therefore no vessel head penetration examinations were required or conducted by the licensee this outage.

The inspectors concluded that this did not count as an inspection sample.

b. Findings

No findings of significance were identified.

.3 Boric Acid Corrosion Control (BACC) ISI

a. Inspection Scope

Following shutdown, the inspectors reviewed a sample of BACC walkdown visual examination activities through direct observation. This walkdown was completed with Unit 2 in Mode 3 and included all levels of containment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks can cause degradation of safety significant components.

The inspectors reviewed a number of boric acid leak corrective actions to confirm that they were consistent with the requirements of the ASME Code and 10 CFR Part 50, Appendix B, Criterion XVI. The inspectors also reviewed the engineering evaluations performed for the following three corrective action documents:

- Corrective Action Program 042105; "ASME Relevant Boric Acid Leak on 2SM-17-1";
- Corrective Action Program 043805; "Results of Surveillance Procedure (SP) 2201D, Three New Relevant Boric Acid Leaks"; and
- Corrective Action Program 042103; "ASME Relevant Boric Acid Leak on 2FE-459 (Unit 2 RTD Bypass Flow Orifice Flange)."

The evaluations were verified, as applicable, to ensure that ASME Code wall thickness requirements were maintained. The balance of the documents reviewed during this inspection are listed in the Attachment to this report.

The reviews as discussed above counted as one inspection sample.

b. Findings

No findings of significance were identified.

.4 Steam Generator Tube ISI

a. Inspection Scope

From November 20, 2006, through November 30, 2006, the inspectors performed an on-site review of SG tube examination activities conducted pursuant to Technical Specifications (TS) and the ASME Code Section XI requirements. The NRC inspectors observed acquisition of eddy current (ET) data, interviewed ET data analysts, and reviewed documents related to the SG ISI program to determine if:

- in-situ SG tube pressure testing screening criteria and the methodologies used to derive these criteria were consistent with the Electric Power Research Institute (EPRI) TR-107620, "SG In-Situ Pressure Test Guidelines;"
- the numbers and sizes of SG tube flaws/degradation identified were bound by the licensee's previous outage Operational Assessment predictions;
- the SG tube ET examination scope and expansion criteria were sufficient to identify tube degradation based on site and industry operating experience by confirming that the ET scope completed was consistent with the licensee's procedures, plant TS requirements and EPRI 1003138, "Pressurized Water Reactor SG Examination Guidelines," Revision 6;
- the SG tube ET examination scope included tube areas which represent ET challenges such as the tubesheet regions, expansion transitions, and support plates;
- the licensee identified new tube degradation mechanisms;
- the licensee implemented repair methods which were consistent with the repair processes allowed in the plant TS requirements;
- the licensee primary-to-secondary leakage (e.g., SG tube leakage) was below the detection threshold during the previous operating cycle;
- the ET probes and equipment configurations used to acquire data from the SG tubes were qualified to detect the known/expected types of SG tube degradation in accordance with Appendix H, "Performance Demonstration for Eddy Current Examination," of EPRI 1003138, "Pressurized Water Reactor SG Examination Guidelines," Revision 6; and
- the licensee identified deviations from ET data acquisition or analysis procedures.

The inspectors performed a review of SG ISI related problems that were identified by the licensee and entered into the corrective action program, conducted interviews with licensee staff, and reviewed licensee corrective action records to determine if:

- the licensee had described the scope of the SG related problems;
- the licensee had established an appropriate threshold for identifying issues;
- the licensee had evaluated industry generic issues related to SG tube integrity; and
- the licensee implemented appropriate corrective actions.

The inspectors performed these reviews to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

The reviews as discussed above counted as one inspection sample.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI related problems that were identified by the licensee and entered into the corrective action program, conducted interviews with licensee staff and reviewed licensee corrective action records to determine if:

- the licensee had described the scope of the ISI related problems;
- the licensee had established an appropriate threshold for identifying issues;
- the licensee had evaluated industry generic issues related to ISI and pressure boundary integrity; and
- the licensee implemented appropriate corrective actions.

The inspectors performed these reviews to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

In addition, the inspectors verified that the licensee correctly assessed operating experience for applicability to the ISI group.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification (71111.11)

a. Inspection Scope

On October 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 performance, 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 TSs, simulator fidelity, and licensee critique of performance.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

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:

- cooling water system loop A header pinhole leak on October 16, 2006;
- diesel generators D5 and D6 ventilation dampers on December 20, 2006; and
- 22 diesel-driven cooling water pump unavailability on December 20, 2006.

The inspectors conducted in-office 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 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 five inspection samples by reviewing the following activities:

- the planned unavailability of the 121 instrument air compressor, 12 diesel-driven cooling water pump, 121 motor-driven cooling water pump to the A cooling water header, 122 intake bypass gate, and the 121 control room chiller on October 25, 2006;
- the planned unavailability of 21 motor-driven auxiliary feedwater pump, 480 volt breakers 211F and 211M, 4160 volt bus 25, 27 instrument alternating current inverter, and the 121 control room chiller on Unit 1 on-line risk on November 22, 2006;
- the planned unavailability of the 121 instrument air compressor, 21 motor-driven auxiliary feedwater pump, bus 25, and other miscellaneous equipment on Unit 1 on-line risk on November 27, 2006;
- the planned unavailability of the A cooling water header, D6 recirculation air damper, 121 control room chiller, and 11 and 13 containment fan cooling units on Unit 1 on-line risk on December 6, 2006; and

- the planned unavailability of the 22 turbine-driven auxiliary feedwater (TDAFW) pump, the 21 and 22 safety injection accumulators, and the 122 instrument air compressor on December 12, 2006;

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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

The inspectors compared degraded or nonconforming conditions of risk-significant structures, systems, and components 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) 01050685 that documented the operability of the cooling water line 24-CL-12 with a through-wall pinhole leak on October 3, 2006. The licensee performed ultrasonic examinations and identified four areas in this 24-inch diameter header which were below the B31.1 American National Standards Institute Code allowable minimum wall thickness. The licensee subsequently completed a flaw and operability evaluations and returned this cooling water pipe to service. The inspectors evaluated the licensee's assumptions, flaw evaluations, and compensatory measures for consistency with Appendix C of the NRC Inspection Manual Part 9900 Technical Guidance, "Operability Determinations and Functionality Assessments of Degraded or Non-Conforming Conditions Adverse to Quality or Safety," 10 CFR 50.55(a), and the ASME Code Case N-513-2, "Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping Section XI, Division 1;"
- prompt and historical operability determinations for the adverse conditions contained in CAP 01053532 associated with motor valve (MV)-32209 which was found with the thrust greater than allowed;
- Operability Recommendation 01058136 that documented the operability of the Unit 1 and 2 RCS pressure boundary with only one isolation valve between the nitrogen supply connection and the RCS, and the isolation between pressurizer safety loop seals and the pressurizer relief tank;

- Operability Recommendation 01059373 that documented a non-conforming condition associated with the Unit 1 containment recirculation sump screen. The licensee determined that Grade 8, Class 1 fasteners were installed on the system during a recent modification instead of the Grade 8, Class 2 fasteners specified in the design calculations; and
- Operability Recommendation 01061592 that documented the licensee's evaluation after discovering that residual heat removal pump motor thrust bearings were replaced with new bearings that differed in physical characteristics from the original bearings.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors assessed eight post-maintenance testing activities completing eight 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 personnel performing the tests. The inspectors observed and assessed the post-maintenance testing activities for the following maintenance activities:

- 121 cooling water pump and check valve following check valve inspection on October 6, 2006;
- Feedwater regulating valve to 12 SG control valve following replacement of the positioner on October 8, 2006;
- 22 diesel-driven cooling water pump following completion of preventative maintenance on October 12, 2006;
- 121 control room chiller following annual maintenance on October 24, 2006;
- safety injection check valve 2SI-7-1 following repair on November 30, 2006;
- CV-39422, 22/24 containment fan cooling unit chilled water return valve following repair of a body to bonnet leak on December 12, 2006;
- replacement of the 22 residual heat removal pump seal on December 18, 2006; and
- inspection and repair of the Unit 2 B feedwater regulating valve CV-31136.

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.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors observed the licensee's performance during the 24<sup>th</sup> Unit 2 refueling outage (2R24) conducted between November 15, 2006, and December 15, 2006. These inspection activities represent one refueling outage inspection sample.

This inspection consisted of an in-office review of the licensee's outage schedule, safe shutdown plan and procedures governing the outage. Specifically, the inspectors assessed whether the licensee planned to effectively manage elements of shutdown risk pertaining to reactivity control, decay heat removal, inventory control, electrical power availability, and containment integrity. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this report.

The inspectors conducted in-plant observations of the following outage activities daily:

- attended outage management turnover meetings to verify that the current shutdown risk status was accurate, well understood, and adequately communicated;
- performed walkdowns of the main control room to observe the alignment of systems important to shutdown risk;
- observed the operability of RCS instrumentation and compared channels and trains against one another;
- observed reduced inventory operations; and
- performed walkdowns to observe ongoing work activities and foreign material exclusion control.

The inspectors performed in-plant observations of the following specific activities:

- Unit 2 shutdown and initial cooldown;
- alignment of the residual heat removal system for shutdown cooling and control of RCS cooldown;
- reactor vessel head leakage examination per Inspection Procedure (IP) 71111.08, paragraph 02.03.b and SP 2407;
- Reactor Coolant System BACC inspection per IP 71111.08, paragraph 02.03.a and SP 2405;
- control room staff draining reactor level to the top of the hot legs;
- assessment of shutdown risk;
- reactor vessel head lift;
- core off load, reload, and verification;

- inspected risk significant areas not accessible during at-power operation (volume control tank room) to verify operable condition of equipment;
- Reactor Coolant System heatup;
- reactor startup, initial criticality, physics testing; and
- generator online and power ascension.

Additionally, the inspectors reviewed the licensee's problem identification and resolution program to assess the adequacy of the licensee's ability to identify and document problems and to implement timely and appropriate corrective actions. In particular, the inspectors reviewed the circumstances surrounding resolution of several discrepancies identified on Unit 1 feedwater pipe supports during the previous Unit 1 refueling outage and the licensee's extent of condition review of the equivalent Unit 2 pipe supports.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

During this inspection period, the inspectors completed four surveillance inspection samples. Observation of SP 2072.29A completed the quarterly inspection procedure requirement to observe testing of a risk significant pump or valve inservice test, and the requirement to observe a leak rate surveillance test of a containment isolation valve each refueling cycle. SP 2072.29A demonstrated that the applicable Inservice Testing Program acceptance criteria was met for valves 2CS-26-1, 2CS-26-3, CS-42, and MV-32114. SP 2405 completed IP 71111.08, Section 02.03.a and 02.03.b inspection requirements, and completed one RCS leakage inspection requirement. The inspectors selected the following surveillance testing activities as samples:

- Surveillance Procedure 2405, Unit 2 Mid-Cycle and Refueling Outage Boric Acid Corrosion Examination Inside Containment, on November 17, 2006 (this activity was accomplished by the inspectors conducting an independent walkdown and comparing their results to the licensee's);
- Surveillance Procedure 2083, Unit 2 Integrated Safety Injection Test with a Simulated Loss of Offsite Power, on November 18, 2006;
- Surveillance Procedure 2072.29A, Local Leakage Rate Test of Penetration (29A) Containment Spray, on November 30, 2006; and
- Surveillance Procedure 2177, Core Inventory Verification, on November 30, 2006 (this activity was accomplished by reviewing a video of the licensee's core verification).

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 was clearly stated, demonstrated operational readiness, and was 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 in-service testing activities, testing was performed in accordance with the applicable version of Section XI, ASME Code, 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 installation of supplemental air supply for the Unit 2 pressurizer power operated relief valves (PORVs) and an in-office review of documentation associated with temporary modification 04T175 completing one temporary modification inspection sample on November 16, 2006. The back up air bottles are required for the completion of the low temperature-overpressure protection function of the PORVs.

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 PORVs to verify that the licensee was identifying issues at an appropriate threshold and entering them into their 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.

**Cornerstone: Emergency Preparedness**

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

The inspectors completed a screening review of Revisions 34 and 35 of the Prairie Island Emergency Plan to determine whether changes identified in these revisions may have reduced the effectiveness of the licensee's emergency planning. The screening review of Revisions 34 and 35 does not constitute approval of the changes and, as such, the changes are subject to future NRC inspection to ensure that the emergency plan continues to meet NRC regulations. These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the licensee perform an emergency preparedness drill on October 18, 2006. This inspection effort completed one emergency planning drill evaluation sample.

The inspectors observed activities in the Technical Support Center and Operations Support Center and attended the post-drill critique on October 19, 2006. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the drill performance and ensure that the licensee evaluators noted the same weaknesses and deficiencies and entered them into the corrective action program. The inspectors placed emphasis on observations regarding event classification, notifications, protective action recommendations, and site evacuation and accountability activities. 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**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators (PI) for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone PIs to determine whether or not the conditions surrounding the PIs had been evaluated, and identified problems had been entered into the corrective action program for resolution. This review represented one inspection sample.

b. Findings

No findings of significance were identified.



.2 Plant Walk-downs and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed licensee controls and surveys in the following two radiologically significant work areas within radiation areas, high radiation areas, and airborne radioactivity areas in the plant, and reviewed work packages, which included associated licensee controls and surveys of these areas, to determine if radiological controls including surveys, postings, and barricades were acceptable:

- steam generator eddy current testing; and
- in-service inspection and radiography.

This review represented one inspection sample.

The inspectors reviewed the radiation work permit (RWPs) and work packages used to access these two areas, and other high radiation work areas, to identify the work control instructions and control barriers that had been specified. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. Workers were interviewed to verify that they were aware of the actions required when their electronic dosimeters noticeably malfunctioned or alarmed. This review represented one inspection sample.

The inspectors walked down and surveyed (using an NRC survey meter) these two areas, and others to verify that the prescribed RWP, procedure, and engineering controls were in place, that licensee surveys and postings were complete and accurate, and that air samplers were properly located. This review represented one inspection sample.

The inspectors also reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within spent fuel or other storage pools. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, Licensee Event Reports (LERs), and Special Reports related to the access control program to verify that identified problems were entered into the corrective action program for resolution. This review represented one inspection sample.

The inspectors evaluated the licensee's process for problem identification, characterization, prioritization, and verified that problems were entered into the corrective action program and resolved. For repetitive deficiencies and/or significant

individual deficiencies in problem identification and resolution, the inspectors verified that the licensee's self-assessment activities were capable of identifying and addressing these deficiencies. This review represented one inspection sample.

The inspectors reviewed licensee documentation packages for all PI events occurring since the last inspection to determine if any of these PI events involved dose rates >25 R/hr at 30 centimeters or >500 R/hr at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. Unintended exposures >100 millirem total effective dose equivalent (or >5 rem shallow dose equivalent or >1.5 rem lens dose equivalent), were evaluated to determine if there were any regulatory overexposures or if there was a substantial potential for an overexposure. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

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

.1 Radiation Work Permit 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 during resin sluicing operations, radiologically significant work (high radiation 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., high efficiency particulate air 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

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors evaluated the licensee's list of work activities ranked by estimated exposure that were in progress and reviewed the following two work activities of highest exposure significance:

- steam generator eddy current testing; and
- in-service inspection and radiography.

This review represented one inspection sample.

For these two activities, the inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements in order to verify that the licensee had established procedures, and engineering and work controls that were based on sound radiation protection principles in order to achieve occupational exposures that were ALARA. This evaluation also involved determining that the licensee had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances. This review represented one inspection sample.

The inspectors compared the results achieved including dose rate reductions and person-rem used with the intended dose established in the licensee's ALARA planning for these two work activities. Reasons for inconsistencies between intended and actual work activity doses were reviewed. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Source-Term Reduction and Control

a. Inspection Scope

The inspectors reviewed licensee records to determine the historical trends and current status of tracked plant source terms and determined that the licensee was making allowances and had developed contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Declared Pregnant Workers

a. Inspection Scope

The inspectors reviewed dose records of declared pregnant workers for the current assessment period to verify that the exposure results and monitoring controls employed by the licensee complied with the requirements of 10 CFR Part 20. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.5 Problem Identification and Resolutions

- a. The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the ALARA program since the last inspection to determine if the licensee's overall audit program's scope and frequency for all applicable areas under the occupational radiation safety cornerstone met the requirements of 10 CFR 20.1101(c). This review represented one inspection sample.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

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 the licensee's ability to identify at an appropriate threshold and document problems in the corrective action program, identify and address adverse trends, and to implement timely and appropriate corrective actions. This review does not count as an annual sample.

b. Findings

No findings of significance were identified.

.2 Semiannual Problem Identification and Resolution Trend Review

The inspectors performed a semiannual review of the licensee corrective action program to identify trends that could indicate the existence of a more significant safety issue as required by IP 71152, "Identification and Resolution of Problems." This inspection effort completed the required semiannual trending inspection and one inspection sample. The effectiveness of the licensee corrective action program was assessed by comparing trends identified by the licensee with those issues identified by the NRC during the conduct of routine plant status and baseline inspections. Inspectors reviewed CAPs that were initiated from June 1, 2006, through December 10, 2006.

The inspectors performed the inspection by in-office review of licensee corrective action program and other reports, including the following:

- trend reports;
- PIs;
- equipment problem lists;
- rework reports;

- system health reports;
- program health reports; and
- maintenance rule reports.

b. Findings and Observations

No findings of significance were identified. The inspectors observed one potential emerging trend. During the period from June 1, 2006, through December 10, 2006, there were 16 CAPs initiated for fire protection procedure and documentation issues. This potential trend was not identified by the licensee in the corrective action program. Appropriate corrective actions were initiated for each of the CAPs, and the licensee initiated trend CAP 01073291 when questioned by the inspectors. No violations of NRC-requirements were identified.

4OA3 Event Followup (71153)

.1 (Closed) LER 05000282/2006-002-00: Unit 1 Mode Change with the TDAFW Pump Inoperable.

On June 6, 2006, the licensee entered Mode 1 following the completion of a refueling outage. The licensee performed a 11 TDAFW pump flow test in accordance with TS surveillance requirements. The licensee shut down the 11 TDAFW pump during performance of the test due to turbine outboard bearing temperature exceeding the limit in the surveillance procedure. The pump was declared inoperable and the turbine bearing disassembled. The inboard bearing was damaged and the outboard bearing was worn. The licensee root cause evaluation report attributed the failure to a preventive maintenance procedure that did not include sufficient instructions which was used during the refueling outage. Corrective actions included replacement of the bearings, post-maintenance testing, and revision to the preventive maintenance and surveillance procedures. Entering Modes 3, 2, and 1 with the pump inoperable due to inadequate maintenance was a performance deficiency and a violation of TS 3.7.5, and constituted a violation of very low safety significance that is not subject to enforcement action in accordance with Section VI.A.1 of the NRC's Enforcement Policy. The issue was evaluated using NRC IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and answered "no" to the Mitigating Systems screening questions in the Phase 1 screening worksheet. Therefore, the issue was of very low safety significance (Green). The inspectors reviewed the LER and root cause evaluation report and determined that the violation of TS 3.7.5 met the criteria for consideration as a licensee-identified NCV. The licensee documented the failure in the corrective action program in CAP 01034270. This LER is closed to the licensee-identified NCV, and the enforcement aspects are described in Section 4OA7 of this report.

.2 (Closed) LER 05000282/2006-003-00; 05000306/2006-003-00: Unit 1 Event Monitoring Instrument Inoperable Longer Than Allowed by TS.

On May 5, 2006, during refueling outage 1R24, Neutron Flux Monitor (NFM) 1N51 and 1N52 displayed erratic indications. Troubleshooting and investigation involved purging moisture from the cables and performing a pressure test. The pressure test was not

successful for 1N51 and subsequent inspection of the cables revealed that a cable splice connection sleeve did not include a shim as required for the gap between the outside diameter of the cable and the inside diameter of the sleeve. The NFM is required by TS 3.3.3 in Modes 1 and 2 to monitor reactivity after an event. The NFM is required to be environmentally qualified for post accident conditions. The licensee's evaluation of the issue identified that connections were incorrectly installed during the early 1990's. The licensee declared the Unit 1 NFM inoperable. Corrective actions included repair of the cable splices, a revision to the NFM technical manual to include a requirement for the shim in the splice, and initiation of a work order to inspect the Unit 2 NFM. Although the unit was operated in Modes 1 and 2 with the NFM inoperable contrary to the requirements of TS 3.3.3, it constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section VI of the NRC's enforcement policy. The LER was reviewed by the inspectors and no findings of significance were identified. The issue was considered minor because none of the minor questions from Manual Chapter 0612, Appendix B, dated November 02, 2006, were answered in the affirmative. Specifically, the performance deficiency did not result in a loss of system safety function, and the inspectors failed to identify any earlier opportunities for identification of the problem by the licensee. The licensee documented the improperly installed splices in CAP 01030727.

#### 4OA5 Other Activities

##### .1 Partial Completion of Temporary Instruction (TI) 2515/166 Pressurized Water Reactor Containment Sump Blockage

###### a. Inspection Scope

The inspectors completed a partial review of the installation of a plant modification committed to in the licensee's response to Generic Letter 2004-02. The inspectors compared the as-built configuration of the new Unit 2 sump B strainer to the design description and applicable drawings and reviewed changes to Unit 1 emergency operating procedures.

###### b. Findings

No findings of significance were identified.

##### .2 Mitigating Systems Performance Index (MSPI) Verification (TI 2515/169)

###### a. Inspection Scope

On June 12, 2006, the NRC issued Regulatory Issue Summary 2006-07, "Changes to the Safety System Unavailability PIs." The purpose of this Regulatory Issue Summary was to inform licensees that beginning on April 1, 2006, the agency replaced the Safety System Unavailability PI with the MSPI. The Regulatory Issue Summary and Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment PI Guideline," Revision 4, provided guidance for calculating and submitting MSPI data to the NRC. The NRC inspection program is implemented within the framework of the Reactor Oversight Program. The PIs and inspection findings provide the two major inputs into the

assessment of licensee performance under the Reactor Oversight Program. The MSPI monitors the unavailability and the unreliability of the same four safety systems that comprise the Safety System Unavailability. It also monitors the cooling water support systems for those four safety systems. For pressurized water reactors, these systems include:

- (1) emergency alternating current
- (2) high pressure injection
- (3) auxiliary feedwater
- (4) residual heat removal
- (5) cooling water support (cooling water and component cooling water)

The objective of TI 2515/169, "MSPI Verification," was to validate the unavailability and unreliability of input data and to verify accuracy of the first reporting results for the 2006 2nd quarter. During the 4th quarter of 2006, the inspectors reviewed the licensee's MSPI data and supporting documentation. The results of the inspectors' review included documenting observations and conclusions in response to the questions identified in TI 2515/169.

b. Observations

Summary: The inspectors did not identify any significant discrepancies based upon validation of the unavailability and unreliability input data, and verification of accuracy of the 2006 2nd quarter MSPI results.

Evaluation of Inspection Requirements: In accordance with the requirements of TI 2515/169, the inspectors evaluated and answered the following questions:

1. For the sample selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

Yes. The licensee accurately documented the baseline planned unavailability hours for the MSPI systems in accordance with the prescribed method outlined in NEI 99-02, Revision 4.

2. For the sample selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

Yes. The licensee accurately documented the actual unavailability hours for the MSPI systems in accordance with the prescribed method outlined in NEI 99-02, Revision 4.

3. For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

Yes. The licensee accurately documented the actual unreliability information for each MSPI monitored component in accordance with the guidance outlined in NEI 99-02, Revision 4.

4. Did the inspectors identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was submitted to the NRC.

No. The inspectors did not identify significant errors in the reported data that resulted in a change to the indicated index color.

5. Did the inspectors identify significant discrepancies in the basis document which resulted in: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color? Describe the actual condition and corrective actions taken by the licensee, including the date of when the bases document was revised.

No. The inspectors did not identify significant discrepancies in the basis document that resulted in either: (1) a change to the system boundary, (2) an addition of a monitored component, or (3) a change in the reported index color.

c. Findings

No findings of significance were identified.

4OA6 Meeting(s)

.1 Exit Meeting

On January 9, 2007, the resident inspectors presented the inspection results to Mr. T. Palmisano and other members of licensee management, 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:

- Inservice Inspection Activities inspection with Mr. P. Huffman and other members of licensee management on December 1, 2006. The inspectors returned proprietary information reviewed during the inspection and the licensee confirmed that none of the potential report input discussed was considered proprietary.
- Radiation Monitoring Instrumentation and Protective Equipment inspection with Mr. P. Huffman, Plant Manager, on December 1, 2006.
- Emergency Preparedness inspection with Mr. M. Johnson, Emergency Planning Coordinator, on December 28, 2006.



#### 4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600, for being dispositioned as NCVs.

##### **Cornerstone: Mitigating Systems**

Technical Specifications 3.7.5, "Auxiliary Feedwater System," requires that two auxiliary feedwater trains shall be operable in Modes 1, 2, and 3. Contrary to the above, on June 6, 2006, operators at Unit 1 entered Modes 3, 2, and 1 with less than two auxiliary feedwater trains operable because the 11 TDAFW was inoperable due to improperly installed pump bearings. The pump bearings were improperly installed during the just-completed refueling outage and were identified during the 11 TDAFW testing performed in Mode 1. The issue was evaluated using NRC IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," and answered "no" to the Mitigating Systems screening questions in the Phase 1 screening worksheet. Therefore, the issue was of very low safety significance (Green). Corrective actions included replacement of the bearings, post-maintenance testing, and revision to the preventive maintenance and surveillance procedures. The licensee documented the failure in the corrective action program with CAP 01034270. Additional description of this issue is provided in Section 4OA3.1 of this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

T. Palmisano, Site Vice President  
P. Huffman, Plant Manager  
J. Anderson, Radiation Protection Manager  
J. Callahan, Emergency Planning Manager  
M. Carlson, Engineering Director  
L. Clewett, Business Support Manager  
M. Davis, Regulatory Compliance Analyst  
F. Forrest, Operations Manager  
C. Goranowski, Employee Concerns Manager  
M. Johnson, Emergency Planning Coordinator  
J. Kivi, Senior Regulatory Compliance Engineer  
J. Lash, Training Manager  
G. Lofthus, Fleet NDE Engineer  
S. Mc Call, Engineering Program Manager  
D. Mims, Director of Site Operations  
S. Northard, Nuclear Safety Assurance Manager  
M. Runion, Engineering Plant and Systems Manager  
B. Stephens, Maintenance Rule Program Engineer  
T. Taylor, Maintenance Manager  
R. Womack, Production Planning Manager  
R. Zyduck, Design Engineering Manager

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

#### Opened

05000306/2006005-01	NCV	Failure to Perform a MT in Accordance with ASME Code Section XI (Section 1R08.1b)
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#### Closed

05000306/2006005-01	NCV	Failure to Perform a MT in Accordance with ASME Code Section XI (Section 1R08.1b)
05000282/2006-002-00	LER	Unit 1 Mode Change with the TDAF Pump Inoperable (Section 4OA3)
05000282/2006-003-00; 05000306/2006-003-00	LER	Unit 1 Event Monitoring Instrument Inoperable Longer Than Allowed by TS (Section 4OA3)

#### Discussed

None.

## LIST OF DOCUMENTS REVIEWED

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

### 1R01 Adverse Weather Protection

WO 270345-01; Test Procedure 1637 Annual Winter Plant Operation; completed November 7, 2006

C28.6; Condensate Storage Tank Freeze Protection System; Revision 13

C37.5; Screenhouse Normal Ventilation; Revision 7

### 1R04 Equipment Alignment

#### 121 Motor-Driven Cooling Water Pump Equipment Alignment Inspection

Operating Procedure C35; Cooling Water; Revision 62

Integrated Checklist C.1.1.35-3; Cooling Water System; Revision 27

CAP01019219; 2EG-22-16 D6 Backup Prelube Found Not in the Fully Open Position

#### 12 Residual Heat Removal Pump Equipment Alignment Inspection

Integrated Checklist C1.1.15-1; Unit 1 Residual Heat Removal; Revision 28

CAP 01058122; Incorrect Bundling of Residual Heat Removal Work on the Daily Work Schedule

#### 22 Component Cooling Water Heat Exchange Equipment Alignment Inspection

Integrated Checklist C1.1.14-2; Unit 2 Component Cooling System; Revision 28

#### D1 Diesel Generator Equipment Alignment Inspection

C1.1.20.7-1; D1 Diesel Generator Valve Status; Revision 20

C1.1.20.7-2; D1 Diesel Generator Auxiliaries and Room Cooling Local Panels; Revision 9

C1.1.20.7-3; Diesel Generator D1 Main Control Room Switch and Indicating Light Status; Revision 15

C1.1.20.7-4; D1 Diesel Generator Circuit Breakers and Panel Switches; Revision 12

### 1R05 Fire Protection

Plant Safety Procedure F5; Fire Hazard Analysis; Revision 20

Plant Safety Procedure F5 Appendix A; Fire Strategies for Fire Areas 3, 13, 26, 33, 35, 71, 72, 92, and 127; Revision 23

Plant Safety Procedure F5, Appendix F; Fire Hazard Analysis for Fire Areas 3, 13, 26, 33, 35, 71, 72, 92, and 127

CAP 01056025; Fire Loading in Basketball Court

CAP 01056212; Untreated Combustibles Stored in Unit 695' Elevation of Auxiliary Building

### 1R06 Flood Protection Measures

Administrative Work Instruction 5AWI 8.9.0; Internal Flooding Drainage Control; Revision 3  
H36; Plant Flooding; Revision 1

CAP 01046791; Work That Could Affect Critical Drainage Area

CAP01055308; Temporary Turbine Building Sump Hose May Cause Flood in Auxiliary Feedwater Pump Room

#### 1R08 Inservice Inspection Activities

##### NDE Procedures

SWI NDE-MT-1; Dry Powder MT; Revision 1  
SWI NDE-PT-1; Solvent Removable Dye Penetrant Examination; Revision 1  
SWI NDE-VT-2.0; Visual Examination of Components and Their Supports; Revision 1  
SWI NDE-FE-1; ISI Flaws Evaluation and Disposition; Revision 2  
2H25.1; Unit 2 Assessment of SG Degradation Mechanisms; Revision 2  
2H25.2; Unit 2 SG Condition Monitoring; Revision 1  
2H25.3; Unit 2 SG Tube Repair Criteria; Revision 0  
D27.21; SG Tube Repair; Revision 25  
D27.3; AWD Additional Roll Expansion of SG Tubes; Revision 8  
D27.31; AWD Elevated Roll Expansion of SG Tubes; Revision 6

##### NDE Exam Documents

Report No. 2006M007; MT of 22 SG FW Nozzle; dated November 28, 2006  
Report No. 2006V006; Visual Examination of RC Restraint and Support; dated November 29, 2006  
Report No. 2006P017; Liquid Penetrant Examination of Integral Attachment (Restraint and Support); dated November 29, 2006  
Drawing Number X-HIAW-1001-61; SG (Vertical), General Assembly and Final Fab; Revision A  
Drawing Number 2-ISI-49; Feedwater Loop B; Revision 4

##### Work Orders

WO 0406803; Replace Pressurizer PORV, MV-32197; dated March 30, 2005  
WO 0406633; Replace Reactor Vessel Level Indication System Piping; dated April 7, 2005  
WR A76640; 21 Accumulator to RCS Loop A Cold Leg-Closure Nuts (9 of 16) Have Inadequate Thread Engagement. Remove Affected Bolting and Replace; dated May 9, 2005

##### Corrective Action Documents

CAP 00847057; Re-Roll Brushes Stuck in 22 SG HL Tube Sheet  
CAP 01028585; SG 12 Secondary MW Poolside Stud and Nut Damaged  
CAP 042107; ASME Section XI Relevant Boric Acid Leak on 2SM-14-1  
CAP 042895; Evaluate or Repair Boric Acid Leak Affecting CS-41; dated April 19, 2005  
CAP 01064448; Inconsistencies Between D63 and Calc ENG-CS-080  
CAP 01031439; Indications of Peeling Paint Found During IWE Inspections  
CAP 01032370; Components Not Scheduled for Inspection per IWE Program

##### Corrective Action Documents as a Result of NRC Inspection

CAP 01064379; PSI Required by IWF-2220(b) not scheduled as required  
CAP 01064448; Inconsistencies Between D63 and ENG-CS-080  
CAP 01064041; Surface Exam Area for Category C2.21 Figure IWC-2500-4(a) Point A is Unclear  
CAP 01063500; Linear Indication on Hanger RHRRH-16

### Other Documents

D63; Installation Guidelines for Threaded Fasteners (Studs or Bolts); Revision 16  
H2; Boric Acid Corrosion Control Program; Revision 8  
SP 2392; Unit 2 RCS Bolting Inspection; Revision 3  
SP 1407 (2407); Leakage Examination of Pressure Retaining Components on the Reactor Vessel Head; Revision 1

### 1R11 Licensed Operator Regualification Program

Simulator Evaluation Guide P9160S-002; ATT EVAL 41; Revision 4  
Administrative Work Instruction 5AWI 3.15.0; Plant Operation; Revision 18

### 1R12 Maintenance Effectiveness

Maintenance Rule System Specific Basis Document; Cooling Water; Revision 11  
CAP 01050685; 24-CL-12, Cooling Water System Line for 121 CLP Discharge Leak  
CAP 01048552; 22 Cooling Water Pump is at 50% of its Unavailability Performance Criteria  
CAP 0101005-30; Evaluate Trend of Failures on EDG Ventilation  
CAP 01060037; MD-32428 Safety-Related Component for D6 Safeguards Diesel  
CAP 01061244; Safety-Related MD-32428 Failed Closed  
CAP 01068627; Response to NRC Questions on D6 Recirculation Ventilation Damper  
CAP 01048552; 22 Cooling Water Pump is at 59% of its Unavailability Performance Criteria

### 1R13 Maintenance Risk Assessments and Emergent Work Control

H Procedure H24.1, Appendix A; Phase 1 Risk Assessment Preparation; Revision 2  
Unit 1 Configuration Risk Assessment for October 25, 2006  
Unit 1 Configuration Risk Assessment for November 22, 2006  
Unit 1 Configuration Risk Assessment for November 27, 2006  
Unit 1 Configuration Risk Assessment for December 6, 2006  
Unit 2 Configuration Risk Assessment for December 12, 2006  
Operator Logs for October 25, 2006  
Operator Logs for November 22, 2006  
Operator Logs for November 27, 2006  
Operator Logs for December 6, 2006  
Operator Logs for December 12, 2006  
CAP 01059019; 21 Condensate Filter Demineralizer Not listed on PRA 10/6 - 10/30  
CAP 01057841; 12 Diesel-Driven Cooling Water Pump Isolated and Work Not Performed

### 1R15 Operability Evaluations

#### OPR 01050685

CAP 01050685; 24-CL-12, Cooling Water System Line for 121 Circulating Water Pump Discharge to MV-32035 Leak  
Operating Instruction 06-102; Inspect Piping on 121 Cooling Water Pump Discharge  
Prairie Island Calculation ENG-ME-665; Flaw Evaluation in Service Water Piping Using Code Case -513-2  
Operability Evaluation 01050685-07; Cooling Water Line 24-CL-12 Has a Pin Hole Leak; Revision 0

CAP 01053532

CAP 01053532; MV-32209 Was Found Over the Allowed Limit

Calculation PI-996-05-P05; OTC 356 6" 300 lb.

CAP 00821664; A Thorough Review of GL 89-10 Calculations Revealed Some Motor Operated Valves Are Set Up to Yield Thrust

OPR 01058136

OPR 01058136; Non conformance of the Reactor Coolant Pressure Boundary Plant Drawing X-HIAW-1-7; RCS; Revision 76

CAP 01058136; Reactor Coolant Valves Do Not Meet Reactor Coolant Pressure Boundary Criteria

OPR 01059373

OPR 01059373; Class 1 vs. 2 Bolting Used in Unit 1 Sump B Screen Pipe Flange; Revision 0

OPR 01059373; Class 1 vs. 2 Bolting Used in Unit 1 Sump B Screen Pipe Flange; Revision 1

CAP 01059373; Class 1 vs. 2 Bolting Used in Unit 1 Sump B Screen Pipe Flange

WO 100108-03; Demo Existing/Install New Recirculation Sump Strainer

Calculation PCI-5343-S02; Evaluation of Sump Cover and Piping for the Containment Sump Strainers

CAP 01061144; OPR Revised Due to Inappropriate Nut Factor

CAP 01070091; Length of Bolts for Sump B Cover Did Not Match Drawing

OPR 01061592

CAP 01061592; Replaced Residual Heat Removal Pump Thrust Bearing Had Changes in Critical Characteristics from Original

1R19 Post-Maintenance Testing

121 Cooling Water Pump and Check Valve

WO 00109384; 121 Cooling Water Pump Discharge Check Valve Inspection; Revision 1  
Preventive Maintenance Procedure PM 3107-3-3; 121 Cooling Water Pump Check Valve Inspection (CL-43-3); Revision 1

SP 1106C; 121 Cooling Water Pump Quarterly Test; Revision 28

CV-31128

WO 00293801; CV-31128, B Main Feed Regulating Valve Causing Flow Oscillations, Revision 2  
Maintenance Procedure D100; Air Operated Valve Diagnostic Testing Procedure; Revision 9

121 Control Room Chiller

Test Procedure TP 1687; 121 Control Room Chiller Inspection; Revision 9

Safety Injection Check Valve 2SI-7-1

WO 00097761; Check Valve 2SI-7-1 Repair

SP 2092B; Safety Injection Check Valve Test; Revision 17

22 Diesel-Driven Cooling Water Pump

SP 1106B; 22 Diesel Cooling Water Pump Monthly Test; Revision 66

Preventive Maintenance Procedure PM 3002-2-22; 22 Diesel Cooling Water Pump Inspection; Revision 27  
CAP 01055209; Near Miss Fuel Oil Release to River  
CAP 01055186; Relief Valve SA-56-7 Leaked After Setpoint Testing  
CAP 01055676; 22 Diesel-Driven Cooling Water Pump Air Compressor Does Not Meet Acceptance Criteria

#### CV-39422

WO 00099284-01; Mechanical Overhaul CV-39422 Valve and Actuator  
WO 00099284-10; Replace Valve Bonnet Gasket  
WO 00099284-13; Replace Body to Bonnet Gasket  
CAP 01066552; Body to Bonnet Leak on CV-39422

#### 22 Residual Heat Removal (RHR) Pump Seal Replacement

WO 00307074-01; Remove and Replace 22 RHR Pump Mechanical Seal  
CAP 01066971; 22 RHR Pump Seal Leaked During Restoration  
CAP 01066907; Need Clarification of Material Requirements for Mechanical Seal Plates

#### Feedwater Regulating Valve CV-31136 Inspection

WO 00154794-01; PM 3531-5-2B; Unit 2 Loop B Feedwater Regulating Valve Refueling Inspection

#### 1R20 Refueling and Other Outage Activities

Operating Procedure D30; Post Refueling Startup Testing; Revision 44  
Operating Procedure 2C1.4; Unit 2 Power Operation; Revision 38  
Operating Procedure 2C1.3; Unit 2 Shutdown; 58  
Operating Procedure 2C1.2; Unit 2 Startup: Revision 36  
Special Operating Procedure 2D2; RCS Reduced Inventory Operations; Revision 20  
Maintenance Procedure 2D3; Unit 2 Reactor Vessel Head Removal; Revision 0  
V.SPA.06.014, Attachment 1; Unit 2 Mode Change Risk Assessment Containment Fan Coil Units - Train B  
SP 2750; Post-Outage Containment Inspection; Revision 30  
CAP 01066476; Step in Work Order 285279-03 Not Completed  
Maintenance Procedure D58.2.9; Unit 2 Reactor Vessel Head Removal; Revision 12  
CAP 01031409; Unit 1 Feedwater and Main Steam Support Discrepancies  
CAP 01033009; Discrepancies in FW Support 1-FW-35, Restraints 2 and 10  
CAP 01043217; Drawings Not Updated as Required After 1996 ISI Inspection  
CAP 01033016; Unit 1 Feedwater Support Discrepancies  
CAP 01021612; RWST to RHR May Be Susceptible to Pressure Lock in Mode 4  
CAP 01045052; ECR Created But Not Routed.  
CAP 01045052; ECR Created But Not Routed  
CAP 01021612; RWST to RHR May Be Susceptible to Pressure Lock in Mode 4  
CAP 01033016; Unit 1 Feedwater Support Discrepancies  
CAP 01031409; Unit 1 Feedwater and Main Steam Support Discrepancies  
CAP 01033009; Discrepancies in FW Support 1-FW-35, Restraints 2 and 10  
CAP 01043217; Drawings Not Updated as Required after 1996 ISI Inspection  
Engineering Change 8280; FW Force Restraint #3 Bearing Plate; Revision 0  
AES Letter; Evaluation of Unit 1 SG 11 FW Line Force Restraints #2 and As-Found Conditions; dated May 30, 2006

AES Letter; Evaluation of Unit 1 SG 11 FW Line Support FWH-35 and Force Restraints #10 and for As-Found Conditions; dated May 30, 2006  
AES Letter; Evaluation of Unit 1 SG 12 FW Line Force Restraints #3 for As-Found Conditions; dated June 1, 2006  
AES Letter; Initial Assessment of the Past Operability and Use-As-Is Evaluations of Unit 1 FW Line Pipe Supports; dated June 16, 2006  
AES Letter; Evaluation of Unit 1 SG 11 FW Line Support 1-FWH-62 for As-Found Conditions; dated June 1, 2006  
AES Letter; Evaluation of Unit 1 SG 12 FW Line Force Restraints #3 for As-Found Conditions; dated June 1, 2006  
Prairie Island Calculation ENG-ME-124; FWH-42 Force Restraint Evaluation; Revision 0  
Calculation PI-996-18-P01; Past Operability of Feed Water Piping System Outside Containment - U1; Revision 0  
Calculation PI-996-18-S01; Past Operability Evaluation of FWH-60, MSH-55, MSH-56, and FW Force Restraint #3; Revision 0  
Drawing XH-106-7455 FWH-41; dated December 6, 1974  
Drawing XH-106-7454 FWH-42; dated December 6, 1974  
Drawing XH-106-7514 FWH-62; Revision 1  
Drawing XH-106-7515 FWH-63; Revision 2  
Engineering Change 789; CAP 01021612 Has Evaluated the RHR to RWST MOVs are Susceptible to Pressure Locking During a Mode 4 LOCA; dated April 27, 2006

#### 1R22 Surveillance Testing

##### Boric Acid Leakage Inspection

SP 2405; Unit 2 Mid-Cycle and Refueling Outage Boric Acid Corrosion Examinations Inside Containment; Revision 1  
CAP 01062008; Unit 2 MV-32173 Boric Acid in Contact with ASME Boundary

##### Integrated Safety Injection Test

SP 2083; Integrated Safety Injection Test with a Simulated Loss of Offsite Power; Revision 29  
CAP 01062669; MV-32150 Failed to Operate During SP 2083

##### Core Inventory Verification

SP 2177; Core Inventory Verification; Revision 13; completed November 29, 2006

##### Local Leakage Rate Test of Containment Spray Penetration

SP 2072.29A; Local Leakage Rate Test of Penetration (29A) Containment Spray; Revision 23  
Procedure H10.1; ASME Inservice Testing Program ; Revision 19; Pages 117, 119, 123, and 132

#### 1R23 Temporary Modifications

Maintenance Procedure 1D108; Pressurizer PORV Air Accumulator Supplementation; Revision 2  
Prairie Island Calculation ENG-CS-283; Seismic Qualification of T-Mod 04T175; Revision 0  
Prairie Island Calculation ENG-ME-592; Determine the Minimum Amount of Air Pressure to Fully Stroke Pressurizer PORV; Revision 0  
Prairie Island Calculation ENG-ME-584; Sizing of Supplemental Air for Pressurizer PORV Air Accumulators; Revision 0



Prairie Island Calculation NSP-04-189; Data on Pressurizer PORV Cycling During Cold Overpressure Mitigation System Transients - New Analysis  
CAP 01062236; Pressurizer Power Operated Relief Valve Air Supplement Not Installed Per D108  
Unit 2 Operating Logs for November 15 through November 17, 2006

1EP4 Emergency Action Level and Emergency Plan Changes

Prairie Island Nuclear Generating Plant Emergency Plan; Revisions 34 and 35

1EP6 Drill Evaluation

Master Objectives Checklist; October 18 Emergency Preparedness Drill Demonstration Objectives and Criteria; Revision 0  
CAP 01056372; Conference Call Communications Issue During Drill  
CAP 01057350; EOF Did Not Demonstrate 24-Hour Staffing  
CAP 01057353; TSC Took Longer Than 30 Minutes to Activate  
CAP 01057405; TSC Declared Operational Prior to Starting the Ventilation System  
CAP 01057360; TSC Failed Objective K05

2OS1 Access Control to Radiologically Significant Areas

CAP 01054949; Radiologically Controlled Area Boundary at Access Control Dismantled  
CAP 01062775; Work in Locked High Radiation Area Without Work Order  
CAP 01063058; Two Individuals Entered a High Radiation Area on a Radiation Area Radiation Work Permit  
CAP 01063067; Two Workers Contaminated While Transferring Spent Resin  
CAP 01063527; Reactor Coolant Pump Worker Contaminated  
CAP 01063685; Westinghouse Worker Contaminated  
CD 9.2 Radiation Dose Guidelines; Revision 1  
Radiation Protection Implementing Procedure (RPIP) 1120; Posting of Restricted Areas; Revision 26  
RPIP 1131; Radiographing; Revision 8

2OS2 ALARA Planning and Controls

CAP 01055396; Passport Model Work Order Function Failure-ALARA Planning  
CAP 01056068; Dose Goal Set Too Low for Work Area; dated October 17, 2006  
CAP 01058347; 3rd Quarter Radiation Protection DRUM - Adverse trend in Dose Goals Inability to Track  
CAP 01062035; Deviation from Original Iodine Cleanup Plan  
CAP 01063002; Head Lift Work Order Did Not Have Adequate Dose Goals  
CAP 01063470; Work Order Does Not Have High Radiation Area Radiation Work Permit Attached  
FP-RP-JPP-01; Radiation Protection Job Planning; dated November 10, 2006  
FP-RP-RWP-01; Radiation Work Permit; dated November 10, 2006  
RPIP 1007; Fetal Protection Program; Revision 8  
RWP 571; SG Preparation and Closure; Revision 0  
RWP 572; Locked High Radiation Area; Revision 4  
RWP 609; Eddy Current Testing of Steam Generator Tubes; Revision 0  
RWP 610; SG Plug Installation; Revision 0  
RWP 611; SG Primary Nozzle Dam; Revision 0

QF 1203; Radiological Work Assessment Form; Work Order/Task Project Code M1 (Valve Repair); Revision 0  
QF 1203; Radiological Work Assessment Form; Work Order/Task In-Service Testing; Revision 0  
QF 1203; Radiological Work Assessment Form; Work Order/Task Project Code SG Primary Side work Activities; Revision 0  
SAR 01000875-03; Access Control to Radiologically Significant Areas and ALARA Planning and Controls; March, 2006  
P 1170; Special Nuclear Material Inventory; Revision 28  
Administrative Work Instruction 5AWI 10.1.3; Station ALARA Committee; Revision 5

#### 4OA3 Event Followup

##### LER 05000282-2006-002-00

CAP 01034270; 11 TDAFW Pump Turbine Has High Bearing Temperature  
Root Cause Evaluation Report 01034270-09; 11 TDAFW Pump Turbine Bearing Failure

##### LER 05000282-2006-003-00

CAP 01028381; 1N51 Erratic During Unit 1 Outage  
CAP 01029934; Pressure Integrity for 1N51 Not Achieved  
CAP 01030727; Neutron Flux Monitor Raychem Improperly Installed on 1N51/52

#### 4OA5 Other Activities

##### Partial Completion of TI 2515/166 on Unit 2

Design Description Form for Engineering Change 0378; Containment Sump B Screen Replacement; Revision 0  
Drawing SFS-PI-PA-7165; Strainer Cover; Revision 2  
Drawing SFS-PI-PA-7164; Strainer Piping A5 and B5; Revision 4  
Drawing SFS-PI-PA-7163; Strainer Piping A4 and B4; Revision 4  
Drawing SFS-PI-PA-7162; Strainer Piping A3 and B3; Revision 3  
Drawing SFS-PI-PA-7161; Strainer Piping A2 and B2; Revision 4  
Drawing SFS-PI-PA-7160; Strainer Piping A1 and B1; Revision 1  
Drawing SFS-PI-PA-7150; Mounting Track Assembly; Revision 1  
Drawing SFS-PI-PA-7105; Strainer Sleeves/Cover/Supports/Pins; Revision 3  
Drawing SFS-PI-PA-7104; Strainer Sections and Details; Revision 1  
Drawing SFS-PI-PA-7101; Strainer Master Core Tube Layouts; Revision 5  
Drawing SFS-PI-PA-7100; Strainer Module Assembly; Revision 4  
Drawing SFS-PI-GA-04; Strainer Cover and Pipe Layout; Revision 2  
Drawing SFS-PI-GA-03; B Strainer; Revision 2  
Drawing SFS-PI-GA-02; A Strainer; Revision 2  
Drawing SFS-PI-GA-01; General Notes; Revision 2  
Drawing SFS-PI-GA-00; Strainer Recirc Sump System; Revision 1  
Drawing SK-04RH04-01; Containment Standpipe Support; Revision 2  
Drawing SK-04RH04-02; Containment Standpipe Support; Revision 2  
Drawing SK-04RH04-03; Cable Tray Support System Demolition; Revision 2  
Drawing SK-04RH04-04; Cable Tray Support System Modification; Revision 4  
Drawing SK-04RH04-05; Cable Tray Support System Modification; Revision 0  
Drawing SK-04RH04-06; Cable Tray Support System Modification; Revision 0  
Drawing SK-04RH04-07; Cable Tray Support System Modification; Revision 0

CAP 01062776; Inspection of Painted Sump B Supports Not Acceptable Per D71  
CAP 01062792; Visual Rejections of Welds  
CAP 01062965; Unacceptable Rework on Welds for Sump B Brackets  
CAP 01063669; Anchor Bolt Holes for Sump B Not Acceptable  
CAP 01064203; Hole Depths for Sump B Anchor Bolts Not Per D56.3 Procedure  
CAP 01064279; Hole Depths for Sump B Anchor Bolts Not Acceptable  
CAP 01070091; Length of Bolts for Sump B Cover Did Not Match Drawing

MSPI Verification (TI 2515/169)

Unit 1 Reactor Oversight Program Data for 1st Quarter 2002 through 4th Quarter 2004  
Unit 2 Reactor Oversight Program Data for 1st Quarter 2002 through 4th Quarter 2004  
Prairie Island Nuclear Generating Plant Reactor Oversight Program MSPI Basis Document;  
Revision 1; July 2006  
MSPI Baseline Calculations Book  
MSPI Failures Book  
Unit 1 and 2 Operating Logs for the Period Covering 1st Quarter 2005 through 2nd Quarter 2006  
Unit 1 and 2 Limiting Condition for Operation Log for the Period Covering 1st Quarter 2005  
through 2nd Quarter 2006  
SP 1106B; 22 Diesel Cooling Water Pump Monthly Test; Revision 66  
SP 2093; D5 Diesel Generator Monthly Slow Start Test; Revision 79  
SP 1101; 12 Motor-Driven Auxiliary Feedwater Pump Quarterly Flow and Valve Test;  
Revision 45  
SP 2089A; Train A RHR Pump and Suction Valve from the Refueling Water Storage Tank  
Quarterly Test; Revision 11  
SP 2088A; Train A Safety Injection Quarterly Test; Revision 9  
Site Specific Frequently Ask Questions; dated November 24, 2006

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ALARA	As-Low-As Reasonably Achievable
ASME	American Society of Mechanical Engineers
BACC	Boric Acid Corrosion Control
CAP	Corrective Action Program/Corrective Action Program Action Request
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
EPRI	Electric Power Research Institute
ET	Eddy Current
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISI	Inservice Inspection
LER	Licensee Event Report
MSPI	Mitigating System Performance Index
MT	Magnetic Particle Examination
MV	Motor Valve
NCV	Non-Cited Violation
NDE	Nondestructive Examination
NEI	Nuclear Energy Institute
NFM	Neutron Flux Monitor
NRC	U.S. Nuclear Regulatory Commission
OPR	Operability Recommendation
PARS	Publicly Available Records
PI	Performance Indicator
PORV	Power Operated Relief Valve
PT	Dye Penetrant Examination
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RPIP	Radiation Protection Implementation Procedure
RWP	Radiation Work Permit
SG	Steam Generator
SP	Surveillance Procedure
SSU	Safety System Unavailability
SG	Steam Generator
TDAFW	Turbine-Driven Auxiliary Feedwater
TI	Temporary Instruction
TS	Technical Specifications
USAR	Updated Safety Analysis Report
VT	Visual Examination
WO	Work Order