

May 14, 2007

Mr. Thomas 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 05000282/2007002 AND
05000306/2007002

Dear Mr. Palmisano:

On March 31, 2007, 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 April 4, 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, one NRC identified finding of very low safety significance was identified. This finding was determined to involve a violation of NRC requirements. However, because of its very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest any finding or the subject/severity of any Non-Cited Violation in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector Office at the Prairie Island facility.

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

Sincerely,

/RA/

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 05000282/2007002 and 05000306/2007002
w/Attachment: Supplemental Information

cc w/encl: D. Cooper, Senior Vice President and Chief
Nuclear Officer
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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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
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Letter to Thomas Palmisano from Richard A. Skokowski dated May 14, 2007

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2
NRC INTEGRATED INSPECTION REPORT 05000282/2007002 AND
05000306/2007002

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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: 05000282/2007002; 05000306/2007002

Licensee: Nuclear Management Company, LLC

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

Location: Welch, MN 55089

Dates: January 1 through March 31, 2007

Inspectors: J. Adams, Senior Resident Inspector
D. Karjala, Resident Inspector
D. McNeil, Senior Operations Engineer
M. Phalen, Health Physicist

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

Enclosure

SUMMARY OF FINDINGS

IR 05000282/2007002, 05000306/2007002; 01/01/07 - 03/31/07; Prairie Island Nuclear Generating Plant, Units 1 and 2; Occupational Radiation Safety.

This report covers a 3-month period of baseline resident inspection and announced baseline inspection of the operator requalification program and occupational radiation protection. The inspection was conducted by the resident inspectors and inspectors from the Region III office. The inspectors identified one finding and associated Non-Cited Violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Occupational Radiation Safety

Green. A finding of very low safety significance and associated Non-Cited Violation was inspector-identified during review of an issue where a station operator entered into a Locked High Radiation Area (LHRA) without authorization while a high integrity container was being moved to the radioactive waste barrel yard. The licensee has entered this finding into the corrective action program.

The finding was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety cornerstone, and potentially affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation. The finding was determined to be of very low safety significance because the finding did not involve As-Low-As-Reasonably-Achievable planning, collective dose was not a factor, it did not involve an overexposure, and the individual involved received very low dose. Additionally, there was not a substantial potential for a worker overexposure, and the licensee's ability to assess worker dose was not compromised.

The initial licensee evaluation of this issue was inadequate because it failed to address this event in relationship to previous similar events concerning the performance and effectiveness of LHRA guards. Specifically, Prairie Island had a similar event involving the performance of LHRA guards controlling access to radiologically significant areas during its April 2006 refueling outage. Had the previous event been properly identified, entered into the licensee's corrective action program, and evaluated adequately and in a timely manner, this December 2006 event may not have occurred. Consequently, this finding also related to the cross-cutting area of problem identification and resolution dealing with the corrective action program component to ensure issues are promptly identified and fully evaluated to allow timely corrective actions. (Section 2OS1)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at or near full power throughout the inspection period.

Unit 2 operated at or near full power until January 4, 2007, when power was reduced to about 98 percent to perform maintenance on the feed water control system. Full power was restored on January 5, 2007. The unit remained at full power until February 28, 2007, when the unit was shut down for a maintenance outage (2F2401) to repair the 22 main steam isolation valve. The reactor was restarted and the generator placed on-line on March 8, 2007. Unit 2 achieved full power on March 13, 2007, and operated at or near full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04Q and S)

.1 Partial Walkdowns

a. Inspection Scope

The inspectors performed three partial system equipment alignment inspection samples comprised of in-plant walkdowns of accessible portions of trains of risk-significant equipment associated with the mitigating systems cornerstone. 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 work orders (WOs) and corrective action program documents (CAPs) associated with the operable trains to verify that those documents did not reveal issues that could affect the completion of the available train's safety functions. The inspectors used the information in the appropriate sections of the Technical Specifications (TS) and the Update Safety Analysis Report (USAR) to determine the functional requirements of the systems.

The inspectors verified the alignment of the following trains:

- diesel generator D2 while D1 was out of service for planned maintenance on January 23, 2007;
- 12 component cooling pump while the 11 component cooling pump was out of service for planned maintenance on January 31, 2007; and
- diesel generator D6 while D5 was out of service for planned maintenance on February 21, 2007.

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

b. Findings

No findings of significance were identified.

.2 Complete System Alignment Walkdown of Unit 2 Safety Injection System

a. Inspection Scope

During the week of March 5, 2007, the inspectors performed a detailed in-plant walkdown of the alignment and condition of the Unit 2 safety injection system. The safety injection system is a risk-significant and safety-related mitigating system that provides water inventory to the reactor coolant system during off-normal and accident conditions. The inspectors also reviewed CAPs associated with equipment alignment issues to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with the licensee's corrective action procedures.

The inspectors used applicable alignment checklists and plant drawings to verify that system components were properly positioned to support the completion of system safety functions and to verify that the as-found system configuration matched the configuration specified in the system alignment checklists and plant drawings. The inspectors examined the material condition of the components, such as pumps, supports and snubbers, motors, valves, instrumentation, controls, bus relays, and electrical panels. Where applicable, the inspectors examined outstanding design issues, temporary modifications, and operator workarounds. Where applicable, the inspectors verified that tagging clearances were appropriate and attached to the specified equipment. The inspectors reviewed outstanding WOs, Work Requests, and CAPs associated with the trains to determine if any degraded conditions existed that could affect the accomplishment of the system's safety functions. The inspectors referred to the TS, USAR, and other design basis documents to determine the functional requirements of the systems and verified those functions could be performed if needed. Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this inspection report.

This inspection effort constituted one complete system alignment inspection sample for a system associated with the mitigating systems cornerstone.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Protection Area Walkdowns

a. Inspection Scope

The inspectors conducted in-office and in-plant reviews of portions of the licensee's Fire Hazards Analysis and Fire Strategies to verify consistency between those 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 (IPEEE), potential to impact equipment which could initiate a plant transient, or impact on the plant's ability to respond to a security event. The inspectors assessed the control of transient combustibles and ignition sources, the material and operational condition of fire protection systems and equipment, and the status of fire barriers. In addition, the inspectors reviewed CAPs associated with fire protection issues to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with the 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 25, diesel generator D1 room on January 16, 2007;
- Fire Area 31, east auxiliary feedwater pump room on January 16, 2007;
- Fire Area 32, west auxiliary feedwater pump room on January 16, 2007;
- Fire Area 81, bus 16 switchgear room on January 17, 2007;
- Fire Area 113, diesel generator D5 day tank room on January 17, 2007;
- Fire Area 115, diesel generator D5 lubricating oil make-up tank room on January 17, 2007;
- Fire Area 117, bus 25 switchgear room on January 17, 2007;
- Fire Area 41A, plant screenhouse 670-foot elevation on January 18, 2007; and
- Fire Area 41B, cooling water pump and safeguard traveling screen rooms on January 18, 2007.

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

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an in-office review of the most recently completed surveillance procedure (SP) for the inspection of plant flooding barriers and the abnormal operating procedure for flooding. The contents of these documents were compared to the plant flood protection design sections in the USAR and the assumption contained in the IPEEE associated with an external flooding event. This inspection effort completed the annual external flood protection inspection sample under the initiating events cornerstone.

The inspectors performed an in-plant inspection of flood protection barriers in the auxiliary building, turbine building, D5/D6 diesel generator building, and the old greenhouse comparing the as-found conditions of the flood protection panels against the acceptance criteria in the SP. The inspectors also verified that the actions specified in the abnormal operating procedure for flooding could be performed in a timely manner (three days), if required, and the necessary hardware and consumable materials were available and still within the usable shelf life.

The inspectors reviewed several CAPs and Work Requests to verify that minor deficiencies identified during this inspection were entered into the licensee's corrective action program; 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. As part of this inspection, the inspectors reviewed the documents listed in the Attachment.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On February 26, 2007, the inspectors observed the licensee's inspection of the following safety-related heat exchangers:

- 12 diesel-driven cooling water pump (DDCLP) jacket water heat exchanger (HX);
and
- 12 DDCLP right angle gear drive lubricating oil cooler.

These heat exchangers were selected for review because the cooling water system was ranked high in the plant specific risk assessment and functions to support the proper operation of nearly all safety-related mitigating systems and provided the plant's connection to the ultimate heat sink. This inspection effort completed one heat sink inspection procedure sample under the mitigating systems cornerstone.

The inspectors performed an independent as-found inspection of the HXs associated with the 12 DDCLP immediately after their opening and discussed the as-found condition of the HXs with the system engineer and the Generic Letter 89-13 program engineer. The inspectors reviewed the completed work package for the inspection and cleaning of the 12 DDCLP jacket water and right angle gear drive lubricating oil HXs comparing the as-found condition to the applicable tube plugging calculation acceptance criteria. The inspectors reviewed Procedure H21, "Generic Letter 89-13 Implementing Program," Revision 10, governing Generic Letter 89-13 heat exchanger inspections in order to verify that the licensee was properly implementing their program.

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.

1R11 Licensed Operator Requalification (71111.11)

.1 Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the comprehensive annual job performance measure operating tests and the annual simulator operating tests (required to be given per 10 CFR 55.59(a)(2)). The operating tests were administered by the licensee from August 2006 through October 2006. The overall results were compared with the Significance Determination Process (SDP) in accordance with NRC Inspection Manual Chapter (IMC) 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process." Key documents used by the inspectors in conducting this inspection are listed in the Attachment to this inspection report.

b. Findings

No findings of significance were identified.

.2 Quarterly Review of Licensed Operators' Requalification Training

a. Inspection Scope

On January 22, 2007, the inspectors performed a quarterly review of licensed operator requalification training in the simulator, which constituted 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's 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 TS, simulator fidelity, and licensee critique of performance.

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

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Maintenance Effectiveness

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 two issue/problem-oriented maintenance effectiveness samples under the mitigating systems and barrier integrity cornerstones. The inspectors assessed the licensee's maintenance effectiveness associated with problems on:

- nuclear fuel cladding failures; and
- 11 turbine-driven auxiliary feedwater pump turbine bearing failure and overspeed trip throttle latch mechanism engagement on March 8, 2007.

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

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

The inspectors completed seven samples under the initiating events and mitigating systems cornerstones by reviewing the following activities:

- the emergent failure of bus 26 load sequencer with the planned unavailability of the 121 instrument air compressor, the 12 condensate pump, 13 charging pump, and D1 diesel generator on January 9, 2007;
- the planned unavailability of diesel generator D1, 21 component cooling pump, and the 121 instrument air compressor on January 25, 2007;
- the planned unavailability of the 121 intake bypass gate, the 121 safeguards traveling screen, and the 11 component cooling pump on January 31, 2007;
- the planned unavailability of volume control tank level transmitter LT-112, 122 intake bypass gate, and the 21 charging pump on February 7, 2007;
- the planned unavailability of the 122 intake bypass gate, D2 diesel generator, 121 motor-driven cooling water pump, bus 27, and the Red Rock 2 transmission line;

- the planned unavailability of the 122 intake bypass gate, the Red Rock 2 transmission line, and breaker 2RSY on February 13, 2007; and
- the planned unavailability of the 122 instrument air compressor, the 13 charging pump, the 12 component cooling pump, the Byron transmission line, and the Red Rock 2 transmission line on March 14, 2007.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of six operability evaluations completing six operability evaluation inspection samples associated with equipment performance under the initiating events, mitigating systems, and barrier integrity cornerstones. 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) 01070125 that documented the operability of the reactor coolant pumps with impellers that had different serial numbers than those used in the safety analysis for core design, loss of coolant accident, loss of reactor coolant system flow, steam line break, and fuel assembly hold down;
- OPR 01070049 that documented the operability of emergency diesel generator D6 with generator axial vibration greater than the manufacturer's recommendation;
- OPR 01070752-01 that documented the operability of the bus 26 load sequencer following receipt of an unexpected error code during testing;
- OPR 01073261 that documented the operability of emergency diesel generator D2 with a standby jacket coolant pump impeller that was a different size than was used for seismic qualification;
- CAP 01069591 prompt operability determination for the abnormal noise and vibration exhibited by the 22 main steam isolation valve; and
- OPR 01076278 that documented the operability of emergency diesel generator D6 with generator bearing vibration exceeding vendor limits on February 12, 2007.

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

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (Annual) (71111.17)

a. Inspection Scope

The inspectors evaluated Design Change EC 652, "Cooling Water In-Service Test Modification." The modification added flow meters/transmitters in the piping that supplies cooling water to the diesel-driven cooling water pump diesel jacket and pressure transmitters on the pump discharge piping. These instruments were added to address a concern regarding unmonitored flow paths which did not comply with American Society of Mechanical Engineers (ASME) Code requirements for in-service testing. The inspectors' effort completed one permanent plant modification inspection sample.

The inspectors reviewed the modification installed in March 2007 to verify that the design basis, licensing basis, and performance capability of risk-significant systems were not degraded by the installation of the modification. The inspectors considered the design adequacy of the modification by performing a review of the modification's impact on licensing basis (10 CFR 50.59), flow paths, plant electrical requirements, equipment protection, operation, failure modes, and other related process requirements. The inspectors conducted this inspection by review of documents and in-plant walkdowns of associated plant equipment.

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

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- D1 diesel generator 18-month inspection on January 25, 2007;

- 121 safeguard traveling screen following preventive maintenance on January 30, 2007;
- 121 motor-driven cooling water pump inspection on February 13, 2007;
- D5 diesel generator 18 month inspection on February 20, 2007;
- 12 diesel cooling water pump following preventive maintenance on February 28, 2007; and
- 22 main steam isolation valve packing replacement and actuator adjustment on March 8, 2007.

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 the 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

a. Inspection Scope

The inspectors observed the licensee's performance during a planned Unit 2 maintenance outage (2F2401) conducted between February 28, 2007, and March 8, 2007. The purpose of the outage was to repair the 22 main steam isolation valve. These inspection activities represent one 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; and
- performed walkdowns to observe ongoing work activities and foreign material exclusion control.

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

- shutdown safety assessment;
- plant cooldown;
- the implementation of foreign material exclusion controls at the containment airlock;
- containment walkdown; and
- plant start up and power ascension.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

During this inspection period, the inspectors completed six surveillance inspection samples. Observation of surveillance procedures SP 1089A and SP 2371 completed the quarterly inservice testing inspection sample requirement of a risk-significant pump or valve surveillance test. The observation of SP 2405 completed the requirement inspection sample to observe a reactor coolant system leakage integrity test sample. The inspectors selected the following surveillance testing activities as samples:

- SP 2307, D6 Diesel Generator 6-Month Fast Start Test on January 4, 2007;
- SP 1334; D1 Diesel Generator 18-Month 24-Hour Load Test on January 8, 2007;
- SP 1089A; Train A Residual Heat Removal (RHR) Pump and Suction Valve from Refueling Water Storage Tank Quarterly Test on February 1, 2007;
- SP 1106B; 22 Diesel Cooling Water Pump Monthly Test on February 15, 2007;
- SP 2405; Unit 2 Mid-Cycle and Refueling Outage Boric Acid Corrosion Examinations Inside Containment on February 28, 2007; and
- SP 2371; Cold Shutdown Test of RHR Pumps and Check Valves on March 4, 2007.

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

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

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors conducted in-plant observations of the physical changes to the equipment and an in-office review of documentation associated with one temporary modification. This constituted one temporary modification inspection sample. The inspectors reviewed Temporary Modification EC 9802, which was implemented to install a seal on the snubber for the feedwater control valve to the 21 steam generator, CV-31135, as a temporary repair for an oil leak.

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

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed the licensee perform an emergency preparedness drill on February 6, 2007. 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 February 6, 2007. 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.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

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

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone performance indicators (PIs) to determine whether or not the conditions surrounding the PIs had been evaluated and to determine if identified problems had been entered into the corrective action program for resolution.

This review represented one sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors identified radiologically significant work areas within radiation areas, high radiation areas (HRAs), locked high radiation areas (LHRAs), and airborne areas in the auxiliary and containment buildings. Selected work packages and radiation work permits (RWPs) were reviewed to determine if radiological controls, including surveys, postings, air sampling data and barricades, were acceptable. Work areas included, but were not limited to:

- Wooden Door with Metal Door at Spent Resin Tank Replacement;
- 2R24 Incore Drives;
- 2R24 Containment Inspections;
- 2R24 Insulation Removal; and
- Resin Liner No. 129 to the Shipping Cask Transfer.

This review represented one sample.

The inspectors reviewed selected RWPs and associated radiological controls used to access these and other radiologically significant areas and evaluated the work control instructions and control barriers that were specified in order to determine if the controls and requirements provided adequate worker protection. The Site Technical Specification requirements for HRAs and locked high radiation areas were used as standards for the necessary barriers. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy.

This review represented one 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, and condition reports related to the access control program to determine if identified problems were entered into the corrective action program for resolution.

This review represented one sample.

Corrective action reports related to access controls and high radiation area radiological incidents (non-performance indicator occurrences identified by the licensee in HRAs of less than 1Rem/hr) were reviewed. Selected staff members were interviewed and a selected sample of corrective action documents were reviewed to determine if follow-up

activities were conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;
- identification and implementation of effective corrective actions;
- resolution of Non-Cited Violations (NCV) tracked in the corrective action system; and
- implementation/consideration of risk significant operational experience feedback.

This review represented one sample.

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

This review represented one sample.

The inspectors discussed performance indicators with the radiation protection staff and reviewed data from the licensee's corrective action program to determine if there were any performance indicators for the occupational exposure cornerstone that had not been reviewed. There were none to evaluate.

This review represented one sample.

b. Findings

No findings of significance were identified.

.4 High Risk Significant, High Dose Rate High Radiation Area, and Very High Radiation Area Controls

a. Inspection Scope

The inspectors reviewed the licensee's performance indicators for high risk, high dose rate HRAs, and for very high radiation areas to determine if workers were adequately protected from radiological overexposure. Discussions were held with selected radiation protection management and technicians concerning high dose rate HRA and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection. This review was completed to determine if procedure modifications had substantially reduced the effectiveness and level of worker protection. This review represented one sample.

The inspectors interviewed radiation protection (RP) supervisors to determine if plant evolutions that could impact radiological conditions were communicated between the RP

group and other involved groups beforehand in order to allow corresponding timely actions to properly post and control the radiation hazards. This review represented one sample.

During plant walkdowns, the posting and locking of entrances to high dose rate HRAs, and very high radiation areas were reviewed for adequacy. This review represented one sample.

b. Findings

One finding of very low safety significance was identified.

Introduction: A Green finding and associated NCV was identified when an NRC inspector reviewed an issue where a station operator entered without authorization into an LHRA while personnel were moving a high integrity container (HIC) to the radioactive waste barrel yard.

Description: On December 4, 2006, Prairie Island station personnel were transferring HIC No. 129 containing radioactive resin from the back of a flat bed trailer into a HIC storage area in the radioactive waste barrel yard. The dose rates on the HIC were 18,000 millirem per hour (mRem/hr) at contact; 8,000 mRem/hr at a distance of one foot; and 3,000 mRem/hr at a distance of one meter. Given these radiological conditions, the HIC transfer work area was posted and controlled in accordance with station procedures and Technical Specification 5.7.2 as a locked high radiation area. Station procedures and 10 CFR 20.1903 permit certain exceptions to radiological posting requirements for short periods of time so long as specified alternate measures are in place. At Prairie Island the alternate actions for LHRA posting and access control was achieved through the use of LHRA guards at various access points. Locked high radiation area guards were personnel specifically assigned to control access to radiologically significant areas of the plant. At Prairie Island, the specific responsibilities of the LHRA guards were defined in station procedure PINGP 1470 and included the requirement that LHRA guards not allow unauthorized or inadvertent access into the LHRA.

On December 4, 2006, at approximately 10:30 a.m., a station operator, while responding to a high level tank alarm on the radioactive waste liquid processing panel in the radioactive waste facility, entered a LHRA that was controlled by a LHRA guard. The operator was not on an RWP that permitted access to locked high radiation areas and was not pre-briefed on the radiological conditions specific to the work area being entered nor the potential impact of the transient radiological conditions being created by the HIC transfer activities. The operator was advised by the LHRA guard not to enter the radioactive waste processing area, however, the operator was not specifically informed that the area was being controlled for radiological purposes as a locked high radiation area. Consequently, the operator entered the LHRA because the radiological status of the area was not clearly communicated by the LHRA guard.

Analysis: The inspectors determined that the LHRA guard allowed unauthorized entry into the area contrary to procedural requirements which represents a performance deficiency and a finding as described in IMC 0612, Appendix B, "Issue Screening." The

issue was more than minor because it was associated with the Program/Process attribute of the Occupational Radiation Safety cornerstone and potentially affected the cornerstone objective to ensure worker health and safety from exposure to radiation. The finding does not involve the application of traditional enforcement, because it did not result in actual safety consequences or the potential to impact the NRC's regulatory function, and was not the result of willful actions. The finding was evaluated using the SDP in accordance with IMC 0609, Appendix C, for the Occupational Radiation Safety cornerstone. The finding was determined to be of very low safety significance (Green) because it did not involve As-Low-As-Reasonably-Achievable (ALARA) planning, was not associated with an overexposure given the actual radiological conditions in the area, and there were other workers present in the general area of the HIC transfer that could have interceded to minimize any actual radiological exposure. Consequently, there was not a substantial potential for a worker overexposure and the licensee's ability to assess worker dose was not compromised.

However, this issue was not entered into the licensee's corrective action program in a timely manner and the evaluation of the issue was not comprehensive or thorough relative to regulatory impact on station technical specifications or 10 CFR Part 20 compliance. Additionally, the licensee's evaluation did not fully develop the cause of the event nor evaluate this event in relationship to previous events concerning the performance and effectiveness of LHRA guards. Specifically, Prairie Island had a similar event involving the performance of LHRA guards controlling access to radiologically significant areas during the Unit 1 April 2006 refueling outage. Had that previous event been properly identified, entered into the licensee's corrective action program, and evaluated adequately and in a timely manner, the December 2006 LHRA event may not have occurred.

On the night shift of April 28, 2006, a work crew was in the Unit 1 containment airlock (a posted locked high radiation area) without a RP specialist escort. This earlier event, although known to members of the licensee's staff was not entered into the corrective action program until it was brought to the licensee's attention by the NRC approximately nine months later (IR 01075188; dated February 01, 2007). Consequently, this finding also relates to the cross-cutting area of problem identification and resolution dealing with the corrective action program component intended to ensure issues are promptly identified and thoroughly evaluated to allow timely corrective actions.

Licensee corrective actions included revising the process for LHRA guards such that the guard obtains positive verification that all radiological requirements are met prior to authorizing entry to an area and training for Nuclear Plant Service Attendants on Technical Specification requirements, area guarding, and command and control techniques.

Enforcement: Technical Specification 5.4.1.a. requires the licensee to establish, implement, and maintain procedures recommended by Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Procedures specified in Regulatory Guide 1.33 include RP procedures for access control to radiological areas, which are provided by licensee procedure PINGP 1470, High Radiation Area/Locked High Radiation Area Entry and Control Briefing Sheet (Revision 5). That procedure states that if an LHRA

guard is assigned, then that person's only responsibilities are to not allow unauthorized or inadvertent entries into the LHRA.

Contrary to the above, on December 4, 2006, a station operator entered an LHRA that was being controlled by an LHRA guard and into the radioactive waste facility without proper authorization. Since the finding is of very low safety significance and had been entered into the corrective action system as CAP 1070811, the associated violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000282/2007002-01; 05000306/2007002-01).

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

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed plant collective outage exposure history, current exposure trends, and ongoing outage activities in order to assess current performance and exposure challenges. This review included determining the plant's current 3-year rolling average for collective exposure in order to help establish resource allocations and to provide a perspective of significance for any resulting inspection finding assessment.

The inspectors reviewed the outage work scheduled during the inspection period and associated work activity exposure and time/labor estimates for the following five-work activities which resulted in the highest personnel collective exposures or were otherwise activities that were conducted in radiologically significant areas:

- Wooden Door with Metal Door at Spent Resin Tank Replacement;
- 2R24 Incore Drives;
- 2R24 Containment Inspections;
- 2R24 Insulation Removal; and
- Resin Liner No. 129 to the Shipping Cask Transfer.

The inspectors determined site specific trends in collective exposures based on plant historical exposure and source term data. The inspectors reviewed procedures associated with maintaining occupational exposures ALARA and assessed those processes used to estimate and track work activity exposures.

These reviews represented three inspection samples.

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 completed during the outage and reviewed the following work activities of highest exposure significance:

- Wooden Door with Metal Door at Spent Resin Tank Replacement;
- 2R24 Incore Drives;
- 2R24 Containment Inspections;
- 2R24 Insulation Removal; and
- Resin Liner No. 129 to the Shipping Cask Transfer.

For the activities listed above, the inspectors reviewed the RWP packages, work orders, exposure estimates, and exposure mitigation requirements in order to verify that the licensee had established radiological engineering controls that were based on sound radiation protection principles in order to achieve occupational exposures that were ALARA. This review 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.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the licensee's assumptions and basis for its collective outage exposure estimate and evaluated the methodology and practices for projecting work activity specific exposures. This review included evaluating both dose rate and time/labor estimates for adequacy compared to historical station specific or industry data.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's 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 cornerstone met the requirements of 10 CFR 20.1101(c). The licensee's corrective action program was also reviewed to determine if repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution had been addressed.

These reviews represented two inspection samples.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Barrier Integrity

a. Inspection Scope

The inspectors reviewed the licensee's submittals for three performance indicators for Prairie Island Units 1 and 2, completing six PI verification inspection procedure samples. The inspectors used PI guidance and definitions contained in National Energy Institute Document 99-02, Revision 4, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The inspectors' review included conditions and data from logs, condition reports, and calculations for each PI specified. The inspectors also reviewed the CAPs listed in the Attachment to this report to verify that the licensee was identifying issues at an appropriate threshold and entering them into their corrective action program in accordance with corrective action procedures.

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

Unit 1

- Unplanned Scrams per 7000 Critical Hours for the 1st Quarter 2006 through the 4th Quarter 2006;
- Unplanned Scrams with the Loss of Normal Heat Removal 1st Quarter 2006 through the 4th Quarter 2006; and
- Unplanned Power Changes per 7000 Critical Hours for the 1st Quarter 2006 through the 4th Quarter 2006.

Unit 2

- Unplanned Scrams per 7000 Critical Hours for the 1st Quarter 2006 through the 4th Quarter 2006;
- Unplanned Scrams with the Loss of Normal Heat Removal 1st Quarter 2006 through the 4th Quarter 2006; and
- Unplanned Power Changes per 7000 Critical Hours for the 1st Quarter 2006 through the 4th Quarter 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.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.2 Selected Issue Follow-up Inspection

a. Inspection Scope

The inspectors selected an issue associated with diesel generator D6 generator bearing vibration measurements exceeding the manufacturer's recommended limits for a more in-depth review in accordance with Inspection Procedure 71152, "Identification and Resolution of Problems." This effort completed one in-depth review of the Problem Identification and Resolution inspection sample to review the corrective action aspects associated with this event. The inspectors reviewed the evaluation and corrective actions. The key documents reviewed by the inspectors associated with this inspection are listed in the Attachment to this report.

b. Findings and Observations

No findings of significance were identified. The licensee evaluated the impact of the vibration on the operability of the diesel generator and concluded that D6 was fully

capable of performing its specified safety functions. The licensee has developed a corrective action plan to address the elevated vibration during the next scheduled maintenance period.

4OA3 Event Followup (71153)

(Closed) Licensee Event Report (LER) 05000306/2006-002-00: Unit 2 Event Monitoring Instrument Inoperable Longer Than Allowed by Technical Specifications.

On May 5, 2006, during a refueling outage on Unit 1, neutron flux monitor 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 that was required for the gap between the outside diameter of the cable and the inside diameter of the sleeve.

During the Unit 2 refueling outage, licensee's staff inspected the cables for the Unit 2 neutron flux monitor channels 2N51 and 2N52. The licensee's staff found that the respective cables for 2N51 and 2N52 did not have the required shim in the sleeves for the splice connections. The inspectors reviewed the LER, CAPs, evaluation, and corrective actions, and no findings of significance were identified. The issue was considered minor because none of the minor questions from IMC 0612, Appendix B, dated November 2, 2006, were answered in the affirmative. Specifically, the performance deficiency did not result in a loss of system safety function, and the inspectors did not identify any earlier opportunities for identification of the problem by the licensee. This LER is closed.

4OA5 Other Activities

.1 (Closed) Unresolved Item (URI) 050000282/2006002-02; 050000306/2006002-02: Licensee Continuing On-site Tritium Well Sample Results Assessment

The inspectors reviewed the licensee's progress in investigating the cause of the seasonally elevated tritium levels in the water in a singular on-site monitoring well (P-10). The licensee conducted additional analysis of their on-site water monitoring program including a self-assessment and a hydrological review. Although there was not sufficient data to confirm a link or definitively exclude other potential sources, the licensee determined that the most likely contributor to the fluctuating tritium levels in the (P-10) well samples was radionuclide migration of discharges from the turbine building sump. The turbine building sump was a monitored effluent discharge pathway that, by plant design, may contain small but measurable amounts of tritiated water. The contents of the turbine building sump were routinely analyzed, characterized, and the radiological impact of any discharge to the land lock was evaluated in accordance with the Off-Site Dose Calculation Manual. The licensee continued to monitor and evaluate the analytical results from its on-site well water program relative to their groundwater protection initiative program. Anomalous sample results were assessed for radiological impact and identified findings were reported in the Annual Effluent Report. Based on the licensee's evaluation, the continued onsite well monitoring program was in compliance with the Off-Site Dose Calculation Manual, this item is closed.

4OA6 Meeting(s)

.1 Exit Meeting

On April 4, 2007, the resident inspectors presented the inspection results to Mr. T. Palmisano and other members of his staff, who acknowledged the finding. 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:

- Biennial Operator Requalification Program inspection with Mr. J. Lash, Training Manager, on January 23, 2007; and
- Access control to radiologically significant areas and ALARA program inspection with Mr. P. Huffman, Plant Manager, on February 02, 2007, with a followup teleconference to discuss the final outcome of the inspection with Mr. J. Kivi, Compliance Engineer, on March 21, 2007.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Palmisano, Site Vice President
J. Sorensen, Site Director
P. Huffman, Plant Manager
M. Carlson, Engineering Director
J. Anderson, Radiation Protection Manager
F. Forrest, Operations Manager
J. Lash, Training Manager
S. Northard, Nuclear Safety Assurance Manager
R. Womack, Production Planning Manager
J. Kivi, Regulatory Compliance Engineer

Nuclear Regulatory Commission

R. Skokowski, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000282/2007002-01	NCV	Failure to Properly Control Access to a Locked High Radiation Area
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Closed

05000282/2007002-01	NCV	Failure to Properly Control Access to a Locked High Radiation Area
05000306/2006-002-00	LER	Unit 2 Event Monitoring Instrument Inoperable Longer Than Allowed by Technical Specifications
05000282/2006002-02 05000306/2006002-02	URI	Licensee Continuing On-site Tritium Well Sample Results Assessment

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.

1R04 Equipment Alignment

Diesel Generator D1

Integrated Checklist C1.1.20.7-5; D2 Diesel Generator Valve Status; Revision 20

Integrated Checklist C1.1.20.7-6; D2 Diesel Generator Auxiliaries and Room Cooling Local Panels; Revision 10

Integrated Checklist C1.1.20.7-7; Diesel Generator D2 Main Control Room Switch and Indicating Light Status; Revision 13

Integrated Checklist C1.1.20.7-8; D2 Diesel Generator Circuit Breakers and Panel Switches; Revision 16

12 Component Cooling Pump

Integrated Checklist C1.1.14-1; Unit 1 Component Cooling System; Revision 23

Diesel Generator D6

Integrated Checklist C1.1.20.7-13; D6 Diesel Generator Valve Status; Revision 14

Integrated Checklist C1.1.20.7-14; D6 Diesel Generator Auxiliaries and Local Panels and Switches; Revision 12

Integrated Checklist C1.1.20.7-15; D6 Diesel Generator Main Control Room Switch and Indicating Light Status; Revision 6

Integrated Checklist C1.1.20.7-16; D6 Diesel Generator Circuit Breakers and Panel Switches; Revision 8

Complete System Alignment of the Unit 2 Safety Injection System

Integrated Checklist C1.1.18-2; SI, CS, CA, and HC System Checklist Unit 2; Revision 40

Drawing X-HIAW-1001-6; Flow Diagram Safety Injection System Unit 2; Revision V

Drawing X-HIAW-1001-7; Flow Diagram Safety Injection System unit 2; Revision Z

Drawing X-HIAW-1001-8; Flow Diagram Residual Heat Removal System Unit 2; Revision P

Work Request Query; All Open Unit 2 Safety Injection Work Request

CAP 01081727; Leak Management Program Tags Do Not Appear to be Up to Date

CAP 01002547; Repair of Boric Acid Leaks Not in Accordance with Leak Management Program

CAP 01028606; WO 87305 Not On Outage Schedule

CAP 01056608; Boric Acid Program Went from Green to Yellow

CAP 01080095; 2SI-20-54 Has a Reoccurring Packing Leak

CAP 01080102; 2SI-20-57 Has a Reoccurring Packing Leak

1R05 Fire Protection

Plant Safety Procedure F5, Appendix A; Fire Strategies for Fire Areas 25, 31, 32, 41A, 41B, 81, 113, 115, and 117

Plant Safety Procedure F5, Appendix F, Revision 20; Fire Hazard Analysis for Fire Areas 25, 31, 32, 41A, 41B, 81, 113, 115, and 117

IPEEE NSPLMI-96001, Appendix B; Internal Fires Analysis; Revision 2

1R06 External Flood Protection

Work Order Package 00294373-01; SP 1293, Annual Inspection of Flood Control Measures

Product Data Sheet No. 785; Deck-O-Seal Gun Grade Sealant

CAP 01082159; Door 73 Missing Handle Potential Flood Concern

CAP 01083312; Performance of SP 1293

Work Request 21860; Door 420 Has a Loose Seal

Work Request 21864; Doors MK 7, 4, and 5 Needs New Velcro

Abnormal Operating Procedure AB-4; Flood, Revision 28

1R07 Annual Heat Sink Inspection

Engineering Calculation ENG-ME-604; Tube Plugging Limits for the 12 and 22 Diesel-Driven Cooling Water Pump Right Angle Drive Gear Oil Cooler; Revision 1

Engineering Calculation ENG-ME-573; Tube Plugging Limits for the 12 and 22 Diesel-Driven Cooling Water Pump Jacket Water Heat Exchangers; Revision 0

Work Order 297312; PM 3002-2-12; Revision 27

Prairie Island Nuclear Generating Plant Form 1066; Revision 7 for the 12 Diesel-Driven Cooling Water Pump Right Angle Drive Gear Oil Cooler

Prairie Island Nuclear Generating Plant Form 1066; Revision 7 for the 12 Diesel-Driven Cooling Water Pump Jacket Water Heat Exchanger

CAP 01072185; 22 Diesel-Driven Cooling Water Pump Gear Oil Cooler Debris Noted During Annual Preventive Maintenance

1R11 Licensed Operator Requalification Program

Operating Test Results

Prairie Island Nuclear Generating Plant Licensed Operator Requalification Program Results

Quarterly Review of Licensed Operators' Requalification Training

Simulator Evaluation Guide P9160S-001, ATT SQ-55, Revision 0

5AWI 3.15.0; Plant Operation; Revision 20

1R12 Maintenance Effectiveness

Nuclear Fuel Cladding Failures

Maintenance Rule Basis Document; Nuclear Fuel; Revision 11

CAP 01043990; Possible Identification of a Second Fuel Leak on Unit 2

CAP 01046466; Align Fuel Failure Investigations With Best Industry Practice

CAP 01023855; Unit 1 Fuel Leak

CAP 00884592; Unit 2 Fuel Leakage

CAP 00865512; Elevated Xenon 133 in the Unit 2 Primary
CAP 00826697; Unit 2 Fuel Defect Identified
CAP 00041564; Unit 2 Fuel Defect Identified
Maintenance Rule Evaluation 01023855-09; Unit 1 Fuel Leak
Maintenance Rule Evaluation 000434; Unit 2 Fuel Defect Identified
Maintenance Rule Expert Panel Meeting Minutes 2006-09; September 21, 2006
Unit 1 Cycle 23 Xenon 133 Activity
Unit 1 Cycle 23 Iodine Activity
Unit 2 Cycle 22 and 23 Xenon 133 Activity
Unit 1 Cycle 22 and 23 Iodine Activity

11 Turbine-Driven Auxiliary Feedwater Pump

Root Cause Evaluation Report RCE 01034270-09; 11 TDAFWP [Turbine-Driven Auxiliary Feedwater Pump] Turbine Bearing Failure
CAP 01035021; 11 TDAFWP Trip Throttle Valve Marginally Latched
CAP 01041666; 11 TDAFWP Trip Throttle Latch Not Fully Engaged
CAP 01048078; 11 TDAFWP Overspeed Trip Latching Device
CAP 01079878; 11 AFW Pump Trip Throttle Valve Latch Engagement Issues

1R13 Maintenance Risk Assessments and Emergent Work Control

Procedure H24.1, Appendix A; Phase 1 Risk Assessment Preparation; Revision 2
Unit 2 Configuration Risk Assessment for January 9, 2007
Unit 1 Configuration Risk Assessment for January 25, 2007
Unit 1 Configuration Risk Assessment for January 31, 2007
Unit 2 Configuration Risk Assessment for February 7, 2007
Unit 1 Configuration Risk Assessment for February 12, 2007
Unit 2 Configuration Risk Assessment for February 13, 2007
Unit 1 Configuration Risk Assessment for March 14, 2007
Operator Logs for January 9, 2007
Operator Logs for January 25, 2007
Operator Logs for January 31, 2007
Operator Logs for February 7, 2007
Operator logs for February 12, 2007
Operator Logs for February 13, 2007
Operator Logs for March 14, 2007
CAP 01070563; 121 Instrument Air Compressor Not Supported 24/7 When Maintenance Rule Red
CAP 01070752; Bus 26 Load Sequencer Failed Surveillance SP 2095
CAP 01076491; System Condition (Grid) Orange Not Evaluated in PRA

1R15 Operability Evaluations

OPR 01070125

CAP 01070125; RCP Impeller Serial Numbers Don't Match Those in Safety Analysis

OPR 01070049

CAP 01070049; D6 Vibration Amplitudes Exceeding Manufacturer's Limits

OPR 01070752-01

OPR01070752-01; Bus 26 Load Sequencer Operability Evaluation
CAP 01070752; Bus 26 Failed Load Sequencer Surveillance SP 2095
SP 2095; Bus 26 Load Sequencer Test; Revision 17

OPR 01073261

CAP 01073261; D2 Magnetic Drive Pump Seismic Test Different Than Installed Pump
CAP 01073726; NRC Information Request on D2 Standby Jacket Pump

CAP 01069591

CAP 01069591; Abnormal Noise and Vibration Internally of 22 Main Steam Isolation Valve

Operational Decision-Making Issue Evaluation Document 1069591; 22 Main Steam Isolation Valve is Exhibiting Sounds of Metal Impacts from the Interior of the Valve

OPR 01076278

CAP 01076278; D6 Generator Axial Vibration Exceeding Vendor Limits

1R17 Permanent Plant Modifications

EC 652; Cooling Water In-Service Test Modification; Revision 0
50.59 Screening No. 2670; EC 652; Revision 1

1R19 Post-Maintenance Testing

D1 18-Month Inspection

WO Package 00109388-01; PM 3001-2-D1; Diesel Generator 24-Month Inspection
WO Package 00294653-01; SP 1295; D1 Diesel Generator 6-Month Fast Start
SP 1334; Diesel Generator 18-Month 24-Hour Load Test
CAP 01074008; NRC Questioned Leak from D1 Inlet Air Check Valve Dashpot
CAP 01074005; D1 Diesel Generator Standby Lube Oil System Trouble Alarm
CAP 01074002; D1 Standby Jacket Coolant Pump Seal Leak
CAP 01073995; D1 Opposite Side Jacket Coolant Leak
CAP 01073453; Fuel Injector Timing Reading Different Than Last Year

121 Safeguard Traveling Screen

WO 00286922; PM 3108-1-121, 121 Safeguard Traveling Screen Annual Inspection
SP 1151A; Train A Cooling Water System Quarterly Test; Revision 8

121 Cooling Water pump Inspection

Preventive Maintenance Procedure PM-3107-2; 121 Cooling water Pump Inspection;
Revision 25
SP 1106C 121 Cooling Water Pump Quarterly Test; Revision 28
CAP 01077118; 121 Motor-Driven Cooling Water Pump Performance in Action Range
During SP 1106C

D5 18-Month Inspection

WO Package 00284064-01; PM-3001-2; D5 Diesel Generator 18-Month Inspection (Mechanical)

WO Package 00284064-07; SP 2295; D5 Diesel Generator 6-Month Fast Start Test
CAP 01078617; Fuel Injection Pump on D5 Engine 2 is Leaking
CAP 01078575; D5 Engine 2 Fuel Rack Indicator Found Out-of-Tolerance
CAP 01078231; Step Signed Off in D5 Inspection Prior to Completion

12 Diesel Cooling Water Pump

WO 00297312; PM 3002-2-12, 12 Diesel Cooling Water Pump Inspection
SP 1106A; 12 Diesel Cooling Water Pump Monthly Test; Revision 69

22 Main Steam Isolation Valve

WO Package 00311170-04; Linkage Adjustment and Repack Post Maintenance Test
SP 2099; Main Steam Isolation Valve Logic Test; Revision 18
SP 2406 Main Steam Isolation Valve Inservice Test; Revision 1

1R20 Refueling and Other Outage Activities

Operating Procedure 2C1.2; Unit 1 Startup Procedure; Revision 37
Operating Procedure 2C1.3; Unit 1 Shutdown; Revision 58
Unit 2 Shutdown Safety Assessment
Maintenance Procedure D107; Containment Foreign Material Exclusion Control;
Revision 2
Maintenance Procedure 2D108; Pressurizer Power Operated Relief Valve Air
Accumulator Supplementation; Revision 2

1R22 Surveillance Testing

SP 2307

SP 2307; D6 Diesel Generator 6-Month Fast Start Test; Revision 26
CAP 01070040; 4160 Bus Running Volts Reading Less Than Zero
CAP 01070047; 4160 Bus Incoming Volts Reading Less Than Zero
CAP 01070049; D6 Vibration Amplitudes Exceeding Manufacturers Limits

SP 1334

SP 1334; D1 Diesel Generator 18-Month 24-Hour Load Test; Revision 7
CAP 01070822; Evaluate D1 EDG Cylinder Exhaust Temperatures
CAP 01070827; D1 Diesel Generator Jacket Coolant Pump Began to Leak Following 24
Hour Run
CAP 01070830; D1 EDG Standby Lube Oil System Trouble Alarm

SP 1089A

SP 1089A; Train A RHR Pump and Suction Valve from Refueling Water Storage Tank
Quarterly Test; Revision 10
CAP 01076783; Steps in SP 1106 Marked as NA Incorrectly
CAP 01079787; Quarterly Requirements of SP 1102 Not Performed
CAP 01080814; Missed Surveillance and Near Misses
Apparent Cause Evaluation 01080814-04; Missed Surveillance and Near Misses

SP 1106B

SP 1106B; 22 Diesel Cooling Water Pump Monthly Test; Revision 66
CAP 01077480; 22 DDCLP Starting Time Was Outside the Expected Range

SP 2405

SP 2405; Unit 2 Mid-Cycle and Refueling Outage Boric Acid Corrosion Examination
Inside Containment; Revision1
CAP 01062028; Section XI Relevant Leak on MV-32233
CAP 01079969; Boric Acid Leak on 2RC-1-17
CAP 01080001; 2RC-195-14 Boric Acid Packing Leak
CAP 01080022; 2RC-195-11 Has Packing Leak
CAP 01080059; MV-32169 Boddy to Bonnet Leak
CAP 01080061; Boric Acid Work Request Inappropriately Closed
CAP 01080076; Packing Leak on MV-32173
CAP 01080086; ASME Section XI, Relevant Boric Acid Leak on 2FT-415
CAP 01080087; CV-31462 Has a Reoccurring Packing Leak
CAP 01080095; 2SI-20-54 Has a Reoccurring Packing Leak
CAP 01080102; 2SI-20-57 Has a Reoccurring Packing Leak
CAP 01080104; Packing Leak on MV-32170
CAP 01080116; ASME Section XI, Relevant Boric Acid Leak on 2FT-428
CAP 01080117; ASME Section XI, Relevant Boric Acid Leak on 2FT-427
CAP 01080119; ASME Section XI, Relevant Boric Acid Leak on 2FT-426

SP 2371

WO 315425; SP 2371 Cold Shutdown Test of Residual Heat Removal Pumps and
Check Valves
Engineering Calculation ENG-ME-546; Westinghouse Calculation Note CCN-SEE-02-
90, Residual Heat Removal and Safety Injection Flow Rates for Loss of Coolant
Accident Mass and Energy Release and Containment Analysis; Revision 0
Procedure H10.1; ASME Inservice Testing Program; Revision 20
CAP 01080132; Residual Heat Removal Pump Outside Inservice Test Action Range

1R23 Temporary Modifications

EC 9802; Install Seal on the Snubber for CV-31135, Feedwater to 21 Steam Generator
WO 00309614; U2, CV-31135, Actuator Has Oil Leak
CAP 01068662; Feedwater to 21 Steam Generator CV Has Oil Leak on Damper
CAP 01070449; O-Ring Came Out of T-MOD on CV-31135

1EP6 Drill Evaluation

Emergency Plan Exercise Manual; Revision 0
Prairie Island Nuclear Generating Plant February 6, 2007, EP Drill Critique Report
CAP 01075781; ERO Drill Did Not Correctly Activate the TSC
CAP 01075820; E-Plan Response vehicles Difficult to Enter
CAP 01075844; EAL Gum Label SS1.1 Has 10 Minutes Instead of 15 Minutes
CAP 01076073; E-Plan Field Team Vehicles Pre-staged
CAP 01076121; Conduct of Drill Issues Identified During 2/6/07 Drill

CAP 01076125; Failed Demonstration Criteria A01, Number 3 in TSC, OSC, and EOF
CAP 01076132; Drill Objective B3 Was Failed During the February 6, 2007, EP Drill
CAP 01076141; New Motorola Portable Radios Did Not Operate Properly
CAP 01076217; PITC PA System Inoperable Speakers
CAP 01076348; Lack of Attention to Detail in EP Drill Critique Reports
CAP 01076362; Failure to Follow Requirements - Completion of EP Staff Training
CAP 01076363; Incorrect Revision of Form Used for Documenting Objectives
CAP 01076365; Untimely Completion of EP Drill Critique Reports
CAP 01076366; Dose Assessment Not Designated as Key Demonstration Criteria
CAP 01076458; Negative Trend - ERO Performance in Command and Control

2OS2 ALARA Planning and Controls

CAP 1032220; Locked High Radiation Area Barrier to Spent Resin Tank Area Found Unsecured
CAP 1033802; Adverse Trend High Radiation Area Control (1R24)
CAP 1066716; Contamination in The Clean Area of The U1 CS Pump Room
CAP 1066929; HRA Identified at 123/124 ADT Filters; dated December 11, 2006
CAP 1071917; NOS Identified Issues with Monthly PI Data Validation Techniques
Door Transaction History (Doors 100 and 274)
Passport Dose Histories; Selected Individuals; dated December 4, 2006
Radiation Protection/Chemistry Lessons Learned 2R24 Feedback; draft
1R24 Post-Outage ALARA Report; undated
2R24 Post-Outage RWP/Work Order Dose Summary Reports; dated February 7, 2007
PINGP 438; Radioactive Waste Container Log Sheet; Revision 12
PINGP 1016; High Radiation Area or Locked HRA Key Issue; Revision 10
PINGP 1287; ALARA Planning Checklist; Revision 4
PINGP 1470; High Radiation Area/Locked High Radiation Area Entry and Control Briefing Sheet; Revision 3; August 4, 2004; Revision 4; October 4, 2006; and Revision 5; dated November 14, 2006
C21.1.3.1-1; Liquid Waste Disposal System; Revision 0
C21.1-6.1; Processing Chemical Drain Tank; Revision 3
C21.1-6.21A; Transferring Non-Aerated Drains Sump Tank to CVCS Holdup Tanks; Revision 6
C21.1-6.4; Processing Miscellaneous Drains; Revision 2
FP-PA-ARP-01; CAP Action Request Process; Revision 14
FP-RP-JPP-01; Radiation Protection Job Planning; Revisions 1 and 2
FP-RP-RWP-01; Radiation Work Permit; Revision 5
FP-RP-SD-01; Special Dosimetry; Revision 1
FP-WM-OVW-01; Work Management Process Overview; Revision 0
FP-WM-PLA-01; Work Order Planning Process; Revision 1
RPIP 1000; Radiation Protection Implementing Procedure Control; Revision 13
RPIP 1001; Radiation Protection Program; Revision 8
RPIP 1004; Radiation Protection ALARA Program; Revision 6
RPIP 1008; Radiation Protection Key Control; Revision 7
RPIP 1008; Radiation Protection Key Control; Revision 8
RPIP 1106; Access Control Procedures; Revision 15
RPIP 1110; Administrative Dose Controls; Revision 17
RPIP 1120; Posting of Restricted Areas; Revision 26

RPIP 1135; RWP Coverage; Revision 18
RPIP 1311; Resin Liner / PDV Control; Revision 12
RPIP 1318; Dewatering Filter Elements in High Integrity Containers; Revision 4
RPIP 1721; Resin Sluice; Revision 16
QF 1203; Radiological Work Assessment Form; WOs 303846, 303862,
303863/1,2,3,4,5,6,7; dated November 09, 2006
QF 1205; Radiological Work Assessment Form - Exposure Controls; WOs 303846,
303862, 303863/1,2,3,4,5,6,7; dated November 10, 2006
QF 1209; Radiological Pre-Job Briefing Form; WOs 303846, 303862,
303863/1,2,3,4,5,6,7; undated
WO 8836; Replace Wooden Door with Metal Door (IR 1032220); dated August 29, 2006
WO 155062; Incore Drives; Revision 1
WO 154846; Containment Inspections; Revision 01-05
WO 154920; Insulation Removal; Revision 1
Work Plan 303862; Transfer Resin Liner 129 to the Shipping Cask; undated
5AWI 3.1.0; Site Organization and General Responsibilities; Revision 17
5AWI 10.1.0; Radiation Protection Program; Revision 7
5AWI 10.1.3; Station ALARA Committee; Revision 5
5AWI 10.11.6; Pre-Job Brief; Revision 10
5AWI 10.11.7; Post-Job Critique; Revision 5

4OA1 Performance Indicator Verification

Scrams, Scrams With Loss of Normal Heat Removal, and Unplanned Power Changes
Prairie Island Nuclear Generating Plant Form 1318A; Performance Indicators-Initiating
Events; Revision 0 for 1st Quarter 2006, 2nd Quarter 2006, 3rd Quarter 2006,
4th Quarter 2006; Unit 1 and Unit 2.
Plant Procedure H33; Performance Indicator Reporting; Revision 6
Section Work Instruction O-53; Operations Performance Indicator Reporting; Revision 1
Unit 1 and 2 Operating Logs for January 1, 2006, through December 31, 2006
CAP01073196; 121 Cooling Water Line Segment Unavailability Not Calculated Correctly

4OA2 Identification and Resolution of Problems

CAP 01070049; D6 Vibration Amplitudes Exceeding Manufacturer's Limits
CAP 01076278; D6 EDG Generator Axial Vibration Exceeding Vendor Limits

4OA3 Event Followup

CAP 01063645; Unit 2 2N52 in Containment Cable Issues
CAP 01063965; 2N51 Raychem Found to be Inadequate

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program Action Request
CFR	Code of Federal Regulations
DDCLP	Diesel-Driven Cooling Water Pump
HIC	High Integrity Container
HRA	High Radiation Area
HX	Heat Exchanger
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
LER	Licensee Event Report
LHRA	Locked High Radiation Area
mRem/hr	millirem per hour
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
OPR	Operability Recommendation
PARS	Publicly Available Records
PI	Performance Indicator
RHR	Residual Heat Removal
RP	Radiation Protection
RWP	Radiation Work Permit
SDP	Significance Determination Process
SP	Surveillance Procedure
TS	Technical Specifications
URI	Unresolved Item
USAR	Updated Safety Analysis Report
WO	Work Order