



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

November 7, 2008

EA-08-273

Mr. Michael D. Wadley
Site Vice President
Prairie Island Nuclear Generating Plant
Northern States Power Company-Minnesota
1717 Wakonade Drive East
Welch, MN 55089

**SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 - NRC
INTEGRATED INSPECTION REPORT 05000282/2008004; 05000306/2008004
PRELIMINARY WHITE FINDING**

Dear Mr. Wadley:

On September 30, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2 (Prairie Island). The enclosed report documents the inspection findings, which were discussed on October 6, 2008, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and 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.

The enclosed inspection report discusses a finding that appears to have low to moderate safety significance. As documented in Section 4OA5 of this report, the inspectors identified that the 11 turbine-driven auxiliary feedwater (TDAFW) pump was inoperable from March 15 through March 24, 2008. The TDAFW pump inoperability was caused by the failure to properly reinstall the turbine insulation following maintenance activities conducted during Refueling Outage 1R25.

This finding was assessed based on the best available information, including influential assumptions, using the applicable Significance Determination Process (SDP) and was preliminarily determined to be of low to moderate safety significance (White). The safety significance of the finding was determined assuming that the 11 TDAFW was unable to perform its safety function when Unit 1 entered Mode 3 on March 15, 2008. This resulted in an exposure time of 10 days. The final resolution of this finding will convey the increment in the importance to safety by assigning the corresponding color i.e. (White), a finding with some increased importance to safety, which may require additional NRC inspection.

This finding was not an immediate safety concern because Prairie Island took immediate action to declare the TDAFW pump inoperable once the condition of the insulation was identified. You also entered the issue into your corrective action program and repaired the condition.

Based on the results of this inspection, one apparent violation was identified and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at www.nrc.gov; select **What We Do, Enforcement**, then **Enforcement Policy**.

In accordance with Inspection Manual Chapter (IMC) 0609, we intend to complete our evaluation using the best available information and issue our final determination of safety significance within 90 days of this letter. The significance determination process encourages an open dialogue between the staff and the licensee; however the dialogue should not impact the timeliness of the staff's final determination.

Before we make a final decision on this matter, we are providing you with an opportunity (1) to attend a Regulatory Conference where you can present to the NRC your perspective on the facts and assumptions the NRC used to arrive at the finding and assess its significance, or (2) submit your position on the finding to the NRC in writing. If you request a Regulatory Conference, it should be held within 30 days of the receipt of this letter and we encourage you to submit supporting documentation at least one week prior to the conference in an effort to make the conference more effective and efficient. If a Regulatory Conference is held, it will be open for public observation. The NRC will also issue a press release to announce the conference. If you decide to submit only a written response, such submittal should be sent to the NRC within 30 days of the receipt of this letter. If you decline to request a Regulatory Conference or submit a written response, you relinquish your right to appeal the final SDP determination, in that by not doing either, you fail to meet the appeal requirements stated in the Prerequisite and Limitation sections of Attachment 2 of IMC 0609.

Please contact Richard Skokowski at (630) 829-9620 within 10 days of the date of this letter to notify the NRC of your intended response. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision.

Since the NRC has not made a final determination in this matter, no Notice of Violation is being issued for this inspection finding at this time. Please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In addition, two NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Furthermore, two licensee identified violations were listed in Section 4OA7 of this report.

If you contest the subject or severity of these NCVs, 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 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 made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA by Gary L. Shear, Acting for/

Cynthia D. Pederson, Director
Division of Reactor Projects

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

Enclosure: Inspection Report 05000282/2008004; 05000306/2008004
w/Attachment: Supplemental Information

cc w/encl: D. Koehl, Chief Nuclear Officer
Regulatory Affairs Manager
P. Glass, Assistant General Counsel
Nuclear Asset Manager
J. Stine, 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
Emergency Preparedness Coordinator, Dakota
County Law Enforcement Center

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cc w/encl: D. Koehl, Chief Nuclear Officer
Regulatory Affairs Manager
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Letter to M. Wadley from C. Pederson dated November 7, 2008

SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2 - NRC
INTEGRATED INSPECTION REPORT 05000282/2008004; 05000306/2008004
PRELIMINARY WHITE FINDING

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000282/2008004 and 05000306/2008004

Licensee: Northern States Power - Minnesota

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

Location: Welch, Minnesota

Dates: July 1 through September 30, 2008

Inspectors: K. Stoedter, Senior Resident Inspector
P. Zurawski, Resident Inspector
L. Kozak, Senior Reactor Analyst
M. Munir, Engineering Inspector
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Observers: E. Dickson, Nuclear Safety Professional Development Program

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

Enclosure

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SUMMARY OF FINDINGS

IR 05000282/2008004, 05000306/2008004; 07/01/2008 – 09/30/2008; Prairie Island Nuclear Generating Plant, Units 1 & 2; Occupational Radiation Safety, Problem Identification and Resolution, and Other Activities.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. These findings were considered Non-Cited Violations (NCVs) of NRC regulations. In addition, one apparent violation with potential safety significance greater than green was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V for the failure to ensure that the surveillance procedures used to test the safety-related load sequencers included appropriate qualitative acceptance criteria. Specifically, the acceptance criteria specified in the procedure conflicted with vendor manual information and was less conservative. Corrective actions for this issue included revising the surveillance procedures to include the vendor manual information and implementing a comprehensive preventive maintenance program to improve the availability and reliability of the load sequencers.

This finding was more than minor because it was associated with the procedure quality and equipment performance attributes of the Mitigating Systems Cornerstone. In addition, the finding affected the cornerstone objective of ensuring the availability and reliability of equipment to respond to initiating events to prevent undesirable consequences. The inspectors determined that this finding was of very low safety significance because it was not a design issue resulting in loss of operability or functionality, it did not result in a loss of safety function, it did not result in loss of safety function for a single train for greater than the allowed outage time, and it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that this finding was cross-cutting in the Human Performance, Decision Making area because the licensee failed to use conservative assumptions during the February 2007 decision that led to making the load sequencer surveillance procedure non-conservative (H.1(b)). (Section 4OA2.3)

- AV. The inspectors identified an apparent violation (AV) of Technical Specification 5.4.1 for the failure to establish, implement and maintain procedures governing the installation of insulation on the 11 turbine-driven auxiliary feedwater (TDAFW) pump. The failure to establish and implement adequate instructions resulted in the 11 TDAFW pump being inoperable for 10 days due to improper insulation installation during the March 2008, Unit 1 refueling outage. This issue has the potential to have low to moderate safety significance; however, this may change pending the completion of the SDP. Corrective

actions for this issue included correctly installing the insulation, exploring the installation of a different insulation package that was easier to install, and performing an internal inspection to determine if mechanical clearances inside the turbine were contributing to the increased turbine bearing temperatures.

This finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 11 TDAFW pump would not have been able to perform its safety function during the worst case, post-accident conditions. This finding was not an immediate safety concern because the licensee took immediate action to declare the pump inoperable once the condition of the insulation was identified. The inspectors determined that this finding was cross-cutting with respect to the Decision Making aspect of the Human Performance area because the licensee failed to use conservative assumptions when determining the need to establish and implement instructions for installing the turbine insulation (H.1(b)). (Section 4OA5.3)

Cornerstone: Emergency Preparedness

- Green. The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50.54(q) for the failure to maintain staff respiratory qualifications, including personnel qualifications necessary for emergency response duties, as required by station procedures. Specifically, the inspectors identified multiple instances over the last several years where station personnel, including those required to maintain their respiratory readiness necessary for emergency response functions, failed to maintain their qualifications current. The most recent instances being a fire brigade member standing duty without the necessary respiratory fit test and a reactor operator standing duty without the necessary respiratory protection training. Planned corrective actions included periodic reviews to identify respiratory protection qualification issues prior to expiration to ensure that impacted departments maintained compliance with station procedures until the next scheduled periodic review.

The issue was more than minor because it was chronic in nature and associated with the facilities/equipment attribute of the Emergency Preparedness Cornerstone. The inspectors determined that the issue affected the cornerstone objective to ensure adequate protection of plant emergency workers (and consequently the health and safety of the public in the event of a radiological emergency) should the workers be called upon to use the equipment. Since the finding did not represent a functional failure of the Planning Standard, and the workers who were required to use respiratory protective equipment were not qualified and/or trained to use that equipment, the finding was determined to be of very low safety significance (Green). The inspectors determined that this finding was cross-cutting in the area of Problem Identification and Resolution because the licensee failed to take appropriate corrective actions once the issue was identified (P.1(d)). (Section 2OS3.4)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Operations personnel operated Unit 1 at or near full power until July 31, 2008, when the reactor automatically shut down due to the receipt of an overtemperature delta T (OTΔT) signal. Just prior to the reactor trip, one channel of the reactor protection system was out of service for testing, and this, coupled with the OTΔT signal from an instrument that failed unexpectedly, caused the reactor trip. All equipment operated as expected following the reactor trip with the exception of the 11 turbine-driven auxiliary feedwater (TDAFW) pump which tripped approximately 42 seconds after receiving an automatic start signal. During the forced shutdown, the licensee conducted activities to determine the cause of the failed instrument and the trip of the 11 TDAFW pump. These items are discussed in NRC Special Inspection Report 05000282/2008008; 05000306/2008008.

The Unit 1 reactor returned to criticality at 5:50 p.m. on August 2, 2008. Operations personnel synchronized the Unit 1 turbine generator with the electrical grid approximately eight hours later. At 3:52 a.m. on August 3, 2008, the licensee declared a Notice of Unusual Event (NOUE) in accordance with Emergency Action Level HU3.1 due to the detection of hydrazine on the 695-foot elevation of the Unit 1 turbine building that impacted normal plant operations. The licensee terminated the NOUE at 10:22 p.m. on August 3. The circumstances surrounding the NOUE, and the licensee's response, are also discussed in NRC Special Inspection Report 05000282/2008008; 05000306/2008008. Unit 1 was restored to full power operations on August 3, 2008. Unit 1 remained at full power for the rest of the inspection period.

Unit 2 operated at or near full power until September 15, 2008, when the licensee began reducing reactor power in preparation for Refueling Outage (RFO) 2R25. The RFO officially began on September 19, 2008. Unit 2 remained in the RFO at the completion of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Impending Adverse Weather Condition – Severe Thunderstorm Warning and Tornado Warning

a. Inspection Scope

On July 10, 2008, the inspectors observed the control room staff respond to changing plant conditions due to severe thunderstorms and tornadoes in the area. Upon entering the control room, the inspectors noted that one of the five offsite power lines was de-energized due to the storm. In addition, control room personnel responded to multiple control room alarms due to a significant number of lightning strikes near the plant. Each time an alarm was received, the inspectors verified that operations personnel utilized the appropriate annunciator response procedure to address the cause of the alarm. Following the de-energization of a second offsite power line, the inspectors verified that operations personnel contacted the transmission system operator to discuss why the transmission lines had de-energized and when the lines would be restored. The

inspectors also observed operations personnel reviewing procedures in case another offsite power line was lost. Documents reviewed during this inspection were listed in the Attachment.

This inspection constituted one readiness for impending adverse weather condition sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns (71111.04Q)

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- 12 diesel-driven cooling water while the 22 diesel-driven cooling water pump was out of service for maintenance; and
- 21 component cooling water while the 22 component cooling water pump was out of service for planned maintenance.

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the Updated Safety Analysis Report (USAR), Technical Specification (TS) requirements, outstanding work orders, corrective action program documents (CAPs), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems listed above incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of the equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Documents reviewed were listed in the Attachment.

These activities constituted two partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed complete system alignment inspections of the following systems during the inspection period:

- Direct Current Distribution and Batteries; and
- Unit 2 Auxiliary Feedwater System.

These systems were selected for review because they were safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down each system to review the following attributes: mechanical and electrical equipment configuration, electrical power availability, system pressure and temperature indications, component labelling, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding work orders, work requests, and temporary and permanent modifications was performed to determine whether any previously identified deficiency affected the system function. In addition, the inspectors reviewed the CAP database to ensure that equipment alignment problems were being identified and appropriately resolved. Documents reviewed were listed in the Attachment.

These activities constituted two complete system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Relay and Cable Spreading and Old Computer Rooms (Fire Zone 12);
- Relay and Cable Spreading and Old Computer Rooms (Fire Zone 14);
- Unit 2 695-foot Auxiliary Building and Auxiliary Building Elevator Area (Fire Zone 40);
- Unit 2 695-foot Auxiliary Building and Auxiliary Building Elevator Area (Fire Zone 108); and
- Unit 1 695-foot Auxiliary Building (Fire Zone 8).

The inspectors viewed the areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained

passive fire protection features in good material condition, and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the licensee's Individual Plant Examination of External Events (IPEEE) with later additional insights and their potential to impact equipment which could initiate or mitigate a plant transient. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. Documents reviewed were listed in the Attachment to this report.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flood Protection (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the USAR and abnormal operating procedures to identify licensee commitments. The inspectors also reviewed the maintenance work history for the items selected to verify that identified deficiencies were being corrected in a timely manner. The specific documents reviewed are listed in the Attachment to this report.

The inspectors performed a walkdown of the following plant areas to assess equipment functionality, the level of debris near sumps and drainage paths, and that the licensee complied with its commitments:

- auxiliary building and screenhouse critical drainage pathways; and
- turbine building sumps.

The inspectors also reviewed previously identified corrective action documents associated with internal flooding to verify that previous problems were corrected.

This inspection constituted two internal flooding samples as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On August 18, 2008, the inspectors observed a crew of licensed operators in the simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed were listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant system:

- Radiation Monitoring System.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;

- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting the risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for maintenance:

- 22 steam generator power-operated relief valve high tail pipe temperatures;
- Work Week 29 including planned maintenance or surveillance testing on the 11 charging pump, 123 instrument air compressor, 121 safeguards traveling screen, 121 and 122 bypass gates, 21 component cooling heat exchanger, and 21 residual heat removal heat exchanger; and
- Work Week 30 including planned maintenance on the 121 instrument air compressor, 11 component cooling water pump, and 124 instrument air compressor.

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a) (4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted three samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Emergency Intake Line 100 Percent Obstructed Post-Design Basis Earthquake; and
- Unit 1 695-foot Elevation of Auxiliary Building Greater Than 104 Degrees Near Motor Control Center 1K2.

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and USAR to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment to this report.

This operability inspection constituted two samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the post-maintenance activities listed below to verify that procedures and test activities were adequate to ensure system operability and functional capability of the equipment following the completion of maintenance activities:

- Cooling Water Valve CL-95-1;
- Steam Exclusion Damper CD-34188; and
- Fire Protection Carbon Dioxide Tank Outlet Control Valve 19419.

These activities were selected based upon the component's ability to impact risk or cause an initiating event. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and procedural and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed were listed in the Attachment to this report.

This inspection constituted three post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors reviewed the Outage Safety Plan (OSP) and contingency plans for the Unit 2 RFO that began on September 19, 2008. This review was conducted to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below:

- Licensee configuration management, including maintenance of defense-in-depth commensurate with the OSP for key safety functions and compliance with the applicable TS when taking equipment out-of-service;
- Implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;

- Controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities;
- Monitoring of decay heat removal processes, systems, and components;
- Controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- Reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- Controls over activities that could affect reactivity;
- Maintenance of secondary containment as required by TS;
- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage;
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the drywell (primary containment) to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing; and
- Licensee identification and resolution of problems related to RFO activities.

Documents reviewed during the inspection were listed in the Attachment to this report.

This inspection constituted one RFO sample as defined in IP 71111.20-05.

b. Findings

No findings of significance were identified.

.2 Other Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for a forced outage that began on July 31, 2008, following an automatic reactor trip. During the forced outage, the inspectors monitored outage operations and assessed the immediate actions taken to determine the cause of the trip. The inspectors also routinely monitored the operation of in-service equipment and attended outage related meetings to assess the licensee's progress in resolving outage issues.

This inspection constituted one other outage sample as defined in IP 71111.20-05.

b. Findings

No findings of significance were identified during the inspectors' review of the routine outage activities. Specific information regarding the cause of the reactor trip were documented in NRC Special Inspection Report 05000282/2008008; 05000306/2008008.

1R22 Surveillance Testing (71111.22)

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- SP 1305, D2 Diesel Generator Monthly Slow Start Test;
- SP 2089A, Train A Residual Heat Removal Pump and Suction Valve from the Refueling Water Storage Tank Quarterly Test;
- SP 1106B, 22 Diesel Cooling Water Pump Monthly Test;
- SP 2083, Unit 2 Integrated Safety Injection Test With a Simulated Loss of Offsite Power; and
- SP 2431, Main Steam Safety Valve Test (Power Operation).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; as left setpoints were within required ranges; the calibration frequency was in accordance with TS, the 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 frequencies met TS requirements to demonstrate operability and reliability; 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 and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of the safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Documents reviewed were listed in the Attachment to this report.

This inspection constituted five routine surveillance testing samples as defined in IP 71111.22-02 and -05.

b. Findings

No findings of significance were identified.

.2 Inservice Testing Surveillance

a. Inspection Scope

The inspectors reviewed the test results for the following activity to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- SP 2089A, Train A Residual Heat Removal Pump and Suction Valve from the Refueling Water Storage Tank Quarterly Test.

The inspectors observed activities and reviewed procedures and associated records to determine whether any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the 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 frequencies met TS requirements to demonstrate operability and reliability; 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 and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers 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 the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; 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 and dispositioned in the corrective action program. Documents reviewed were listed in the Attachment to this report.

This inspection constituted one inservice inspection sample as defined in IP 71111.22.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Training Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on July 22, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator, technical support center, and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. However, emphasis was placed on observing activities in the simulator to ensure that the Inspection Procedure requirements were met. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. Documents reviewed were listed in the Attachment to this report.

This emergency preparedness training observation constituted one sample as defined in IP 71114.06-05.

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 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's internal dose assessment process for internal exposures in excess of 50 millirem committed effective dose equivalent. There were no internal exposures greater than 50 millirem committed effective dose equivalent.

This inspection constituted one sample as defined in IP 71121.01-5.

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

This inspection constituted one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed licensee documentation packages for all performance indicator (PI) events occurring since the last inspection to determine if any of these PI events involved dose rates greater than 25 rem per hour at 30 centimeters or in excess of 500 rem per hour at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. Unintended exposures exceeding 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 inspection constituted one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 Inspection Planning and identification of Instrumentation

a. Inspection Scope

The inspectors reviewed the Prairie Island USAR to identify applicable radiation monitors associated with transient high and very high radiation areas, including those intended for remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of high radiation area work, including instruments for underwater surveys; portable and fixed area radiation monitors that were used to provide radiological information in various plant areas; and continuous air monitors that were used to access airborne radiological conditions and work area with the potential for workers to receive 50 millirem committed effective dose equivalent. Whole body counters that were used to monitor for internal exposure and those radiation detection instruments that were used to conduct surveys for the release of personnel from the radiologically controlled area, including contamination monitors and portal monitors, were also identified.

This inspection constituted two samples as defined in IP 71121.03-5.

.2 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed radiological instrumentation to determine if it had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm setpoints for selected instruments to determine whether they were established consistent with the USAR or TSs, as applicable, and with industry practices and regulatory guidance. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records for the following radiation monitoring instrumentation and calibration equipment:

- Containment High Range Radiation Monitor;
- Fast Scan Whole Body Counter;
- RO-7 High Range Radiation Monitor; and
- RADECO Air Samplers.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors determined whether the licensee's actions would include a determination of the instrument's previous uses and the possible consequences of that use since the prior successful calibration. The inspectors also reviewed the results of the licensee's most recent 10 CFR Part 61 source term (radionuclide mix) evaluations to determine if the radiation sources that were used for instrument calibration and for instrument checks were representative of the plant source term.

The inspectors observed the licensee's use of the portable survey instrument calibration units, discussed calibrator output validation methods, and compared calibrator exposed readings with calculated/expected values. The inspectors evaluated compliance with licensee procedures while radiation protection (RP) personnel demonstrated the methods for performing source checks of portable survey instruments and source checks of personnel contamination and portal monitors.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed licensee corrective action program documents and any Licensee Event Reports (LERs) or special reports that involved personnel contamination monitor alarms due to personnel internal exposures to determine whether identified problems were entered into the corrective action program for resolution.

While no internal exposure with a committed effective dose equivalent greater than 50 millirem occurred since the last inspection in this area, the inspectors reviewed the licensee's methods for internal dose assessment to determine if affected personnel would be properly monitored using calibrated equipment and if the data would be analyzed and exposures properly assessed.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed corrective action program reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area, as applicable. Members of the RP staff were interviewed and corrective action documents were reviewed to determine whether follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of Non-Cited Violations (NCVs) tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This inspection constituted one sample as defined in IP 71121.03-5.

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

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.4 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors verified that calibrations for those survey instruments used to perform job coverage surveys and for those currently designated for use had not lapsed. The inspectors determined if response checks of portable survey instruments and checks of instruments used for unconditional release of materials and workers from the radiologically controlled area were completed prior to instrument use, as required by the licensee's procedure. The inspectors also discussed instrument calibration methods and source response check practices with RP staff and observed staff demonstrate instrument source checks.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.5 Self-Contained Breathing Apparatus Maintenance and User Training

a. Inspection Scope

The inspectors reviewed the status and surveillance records of self-contained breathing apparatus (SCBA) that were staged in the plant and ready-for-use and evaluated the licensee's capabilities for refilling and transporting SCBA air bottles to-and-from the control room and operations support center during emergency conditions. The inspectors determined if control room staff and other emergency response and

RP personnel were trained, respirator fit tested, and medically certified to use SCBA, including personal bottle change-out. Additionally, the inspectors reviewed SCBA qualification records for numerous members of the licensee's radiological emergency teams to determine if a sufficient number of staff were qualified to fulfill emergency response positions, consistent with the licensee's emergency plan and the requirements of 10 CFR 50.47.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed the qualification documentation for at least 50 percent of the onsite, or as applicable, offsite contract personnel that performed maintenance on manufacturer designated vital SCBA components. The inspectors also reviewed vital component maintenance records for several SCBA units that were designated as ready-for-use. The inspectors also evaluated, through record review and observations, if the required air cylinder hydrostatic testing was documented and current and if the Department of Transportation required retest air cylinder markings were in place for several randomly selected SCBA units and spare air bottles. The inspectors reviewed the onsite maintenance procedures governing vital component work, as applicable, including those for the low-pressure alarm and pressure-demand air regulator. The inspectors reviewed the licensee's maintenance procedures and the SCBA manufacturer's recommended practices to determine if there were any inconsistencies between them.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

Introduction: An inspector-identified finding of very low safety significance (Green) and an associated NCV of NRC requirements were identified for multiple failures to maintain staff respiratory qualifications including personnel qualifications necessary for emergency response duties as required by station procedures.

Description: During an August 2008 review of the licensee's staff respiratory protection program, the inspectors identified multiple instances over the last several years where station personnel, including those required to maintain their respiratory readiness necessary for emergency response functions, failed to maintain their qualifications current. The most recent instances were a fire brigade member standing duty without the necessary respiratory fit test and a reactor operator standing duty without the necessary respiratory protection training, in May and June of this year, respectively.

Although the issue of respiratory protection program non-compliance had been identified by the licensee in their corrective action program, the licensee's evaluation and corrective actions associated with this condition were inadequate, as evidenced by the continuing and reoccurring nature of non-compliances of this issue. Specifically, the corrective actions developed and implemented by the licensee included a review of the respiratory protection qualifications by each affected department every three months and then documenting any identified deficiencies that may have occurred over the previous three months, as opposed to identifying any potential non-compliances for the upcoming three months and then initiating actions to ensure that the licensee maintained compliance with the respiratory protection program. Consequently, the inspectors

identified that the licensee's corrective actions were effective in identifying non-compliances, but were not effective in correcting the issue or preventing reoccurrence.

Analysis: The failure to comply with the respiratory protection qualification program in accordance with station procedures SWI-O-43, "Operator Qualification Program," and 5AWI 10.1.2, "Respirator Qualification Program," represents a performance deficiency as defined in Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening."

The inspectors determined that the issue was more than minor because it was not isolated and was associated with the facilities/equipment attribute of the Emergency Preparedness Cornerstone. Consequently, the issue represented a finding which was evaluated using the Significance Determination Process (SDP). Specifically, the inspectors determined that the issue affected the cornerstone objective to ensure adequate protection of plant emergency workers (and consequently the health and safety of the public in the event of a radiological emergency) should the workers be called upon to use the equipment.

Since respiratory equipment is utilized to support the licensee's emergency response activities to protect emergency response workers from radiological and industrial hazards, the inspectors utilized IMC 0609, Appendix B, "Emergency Preparedness SDP," to assess the significance of the finding. The inspectors determined that the finding resulted in a failure to comply with multiple station procedures and was associated with one of the Planning Standards in 10 CFR 50.47(b). Further, the finding represented a degradation of the emergency worker protection portion of the Planning Standard provided in 10 CFR 50.47(b)(10). Since the finding did not represent a functional failure of the Planning Standard, in that a limited population of workers who were required to use respiratory protective equipment were not qualified and/or trained to use that equipment. Consequently, the finding was determined to be of very low safety significance (Green). The inspectors also determined that the finding was cross-cutting in the area of Problem Identification and Resolution (P.1(d)), in that the licensee did not take appropriate corrective actions once the issue was identified.

Enforcement: Title 10 CFR 50.54(q) requires, in part, that the licensee follow and maintain an Emergency Plan which meets the standards in 10 CFR 50.47(b). 10 CFR 50.47(b)(10) requires that the emergency response plan include a range of and means to provide protective actions for emergency workers. The Prairie Island Emergency Plan Section 2 states, in part, that implementation of the Emergency Plan is dependent upon various plant operating, abnormal operating, emergency operating, plant safety, radiological control and security procedures. Plant procedures implement the station's respiratory protection program and provide for the use of respiratory protection equipment for onsite emergency response personnel, as required by the Emergency Plan. Specifically, Procedure SWI-O-43, "Operator Qualification Program," Step 6.9.1 states, in part, that all control room personnel shall maintain SCBA qualifications, and Procedure 5AWI 10.1.2, "Respirator Qualification Program," Step 6.1.1 states, in part, that fire brigade members shall be continuously respirator qualified.

Contrary to the above, in May and June 2008, the licensee failed to maintain an Emergency Plan that met the requirements of 10 CFR 50.47(b). Specifically, respirator qualifications had lapsed for a fire brigade member (non-licensed operator) and a control

room reactor operator. Personnel in these positions were required to maintain respirator qualifications as defined in station procedures SWI-O-43 and 5AWI-10.1.2. However, because this violation is of very low safety significance and was entered into the corrective action program as CAP 1152183, it was treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy (**NCV 05000282/2008004-01; 05000306/2008004-01**). Planned corrective actions included periodic reviews to identify respiratory protection qualification issues prior to expiration to ensure that impacted departments maintain compliance with station procedures until the next scheduled periodic review.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification (71151)

.1 Mitigating Systems Performance Index (MSPI)- Emergency Alternating Current Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Emergency Alternating Current Power System PI for Units 1 and 2 for the period from the third quarter of 2007 through the second quarter of 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, CAPs, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed were listed in the Attachment to this report.

This inspection constituted two MSPI emergency alternating current power system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index (MSPI) - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems PI for Units 1 and 2 for the period from the third quarter of 2007 through the second quarter of 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, CAPs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this

indicator and none were identified. Documents reviewed were listed in the Attachment to this report.

This inspection constituted two MSPI high pressure injection system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Mitigating Systems Performance Index (MSPI) - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for Units 1 and 2 for the period from the third quarter of 2007 through the second quarter of 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, CAPs, MSPI derivation reports, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed were listed in the Attachment to this report.

This inspection constituted two MSPI heat removal system samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Specific Activity PI for Prairie Island Station Units 1 and 2 for the period from the second quarter 2007 through the second quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's reactor coolant system chemistry samples, TS requirements, CAPs, event reports and NRC Integrated Inspection Reports for the period of April 2007 through August 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two reactor coolant system specific activity samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.5 Occupational Exposure Control Effectiveness

Cornerstone: Occupational Radiation Safety

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences performance indicator for the period from the second quarter 2007 through the second quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses the inspectors discussed with radiation protection staff the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational radiological occurrences sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

.1 Routine Review of Items Entered Into the Corrective Action Program

a. Scope

As part of the various baseline inspection procedures 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 CAP at an appropriate threshold, that adequate attention was being given to timely corrective

actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Annual Sample: Review of Operator Workarounds

a. Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of operator workarounds. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator

challenges at an appropriate threshold, had entered them into their CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Selected Issue Follow-Up Inspection: Review of Load Sequencer Corrective Actions

a. Inspection Scope

In December 2007, operations personnel shut down Prairie Island Unit 1 due to the inoperability of the Bus 15 load sequencer (and the D1 emergency diesel generator) while the D2 emergency diesel generator was out of service for routine maintenance. Because the inoperability of the load sequencer resulted in a Unit 1 forced shut down, the inspectors selected this issue for an in-depth review of the corrective actions. As part of this inspection activity, the inspectors reviewed the root cause for the sequencer failure, the load sequencer surveillance procedures (SPs), and discussed the root cause information with engineering and operations personnel.

This review constituted one in-depth Problem Identification and Resolution sample as defined in IP 71152-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V for the failure to ensure that the load sequencer SPs included appropriate acceptance criteria for determining that the load sequencers remained operable. Specifically, the acceptance criteria specified in the licensee's procedures conflicted with information provided in the vendor manual and was less conservative.

Description: On December 21, 2007, the Bus 15 load sequencer failed during routine testing performed in accordance with SP 1094, "Bus 15 Load Sequencer Test." This test was performed in order to comply with Technical Specifications since the Bus 16 load sequencer and the D2 emergency diesel generator were out of service for routine maintenance. Following the test failure, operations personnel immediately entered TS 3.0.3. This TS required that Unit 1 be placed in a shut down condition due to both emergency diesel generators being inoperable. Further discussions regarding the Unit 1

shut down are contained in NRC Inspection Report 05000282/2007005; 05000306/2007005.

The inspectors reviewed the licensee's root cause evaluation report for this event. The evaluation team determined that the load sequencer had failed due to age related degradation of the input/output cards. The licensee also identified that a lack of comprehensive preventive maintenance for the load sequencers contributed to the failure.

During the inspectors' review of the root cause report, the inspectors noted that the licensee had identified inconsistencies between the SPs and the vendor manual regarding what needed to be done if a "103" Error Code was received during the initial load sequencer test. Specifically, the vendor manual stated that if a "103" Error Code was received during the initial test, the test should be repeated to ensure that the failure was valid and not due to spurious conditions. If the test passed the second time, the vendor manual instructed that the test be performed three additional times. If no other "103" Error Codes were received, then the initial "103" Error Code could be considered spurious and the load sequencer was operable. The licensee's procedure also instructed personnel to test the load sequencer three additional times if a "103" Error Code was received. However, the licensee's SPs only required that one of the three subsequent tests be performed without receiving a "103" Error Code. Upon finding this information, the inspectors questioned operations personnel to determine whether the load sequencers were operable based upon the more restrictive information contained in the vendor manual. Operations personnel reviewed the results of the most recent load sequencer test results and determined that the load sequencers were operable. The inspectors questioned engineering personnel to determine when the load sequencer test procedures would be revised to include the vendor manual information. Initially, the inspectors were informed that the procedures could not be revised because the corrective action to revise the procedures had not been approved by management personnel. The inspectors informed the operations, engineering and management staff that the lack of a firm date for revising the load sequencer test procedures was unacceptable because at least one sequencer was tested each week. In addition, the failure to revise the SPs would allow load sequencer testing with non-conservative acceptance criteria to continue until the procedures were revised. Following these discussions, the licensee immediately revised all of the load sequencer SPs to include the vendor manual information.

The inspectors reviewed additional load sequencer information and determined that the load sequencer surveillance test acceptance criteria were changed in February 2007. This change resulted in the acceptance criteria being less conservative than the information contained in the vendor manual. Although the licensee identified the non-conservative criteria as part of their 2008 root cause report, the licensee failed to revise the procedures to reinstate vendor manual criteria until challenged by the inspectors in June 2008.

Analysis: The inspectors determined that the failure to incorporate the vendor's instructions regarding the receipt and disposition of a "103" Error Code was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, Appendix B, "Issue Disposition Screening." This finding was more than minor because it was associated with the procedure quality and equipment performance attributes of the Mitigating Systems Cornerstone. In addition, the finding affected the

cornerstone objective of ensuring the availability and reliability of equipment to respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding in accordance with the SDP and determined that the finding was of very low safety significance because it was not a design issue resulting in loss of operability or functionality, it did not result in a loss of safety function, did not result in loss of safety function for a single train for greater than the allowed outage time, and it did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event.

The inspectors determined that this finding was cross-cutting in the Human Performance, Decision Making area because the licensee failed to use conservative assumptions during a February 2007 decision making process. This failure led to revising the load sequencer surveillance test procedures in a non-conservative manner (H.1 (b)).

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion V, "Procedures," required, in part, that activities affecting quality shall be accomplished in accordance with the procedures of a type appropriate to the circumstances and shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Contrary to the above, on June 4, 2008, SPs 1094, 1095, 2094, and 2095 failed to include appropriate quantitative or qualitative acceptance criteria for determining that the testing of the load sequencers had been satisfactorily accomplished. Specifically, the SPs failed to contain vendor manual information regarding the receipt and disposition of "103" Error Codes received during testing. As a result, the licensee could not ensure that the testing being performed satisfactorily demonstrated continued operability of the load sequencers. However, because this violation is of very low safety significance and was entered into the corrective action program as CAP 1140224, it was treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy (**NCV 05000282/2008004-02; 05000306/2008004-02**). Corrective actions for this issue included revising the SPs to include the vendor manual information and implementing a comprehensive preventive maintenance program to improve the availability and reliability of the load sequencers.

40A3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 Unit 1 Automatic Reactor Trip

a. Inspection Scope

The inspectors reviewed the licensee's response to a Unit 1 automatic reactor trip that occurred on July 31, 2008. Following the reactor trip, the inspectors immediately reported to the control room to monitor the status of the Unit 1 reactor, determine whether any complications had occurred, and to assess the operating crew's response to the reactor trip. These activities were completed by talking with operations personnel, direct observations of the operating crew, reviewing procedures, and conducting walkdowns of the control board panels. Documents reviewed during this inspection were listed in the Attachment.

This event follow-up review constituted one sample as defined in IP 71153-05.

b. Findings

This item was the subject of a Special Inspection. Further details are provided in NRC Special Inspection Report 05000282/2008008; 05000306/2008008.

.2 Unit 1 Notice of Unusual Event (NOUE)

a. Inspection Scope

On August 3, 2008, the inspectors reported to the plant following the licensee's declaration of a NOUE on Unit 1. The NOUE was declared due to the unexpected detection of hydrazine in the lower level of the Unit 1 turbine building during reactor startup activities. The inspectors observed the operating crew respond to the event, monitored the results of ongoing hydrazine sampling activities, and assessed the licensee's efforts to identify and eliminate the source of the increased hydrazine levels. The NOUE was terminated at approximately 10:20 p.m. on August 3, 2008.

This event follow-up review constituted one sample as defined in IP 71153-05.

b. Findings

This item was the subject of a Special Inspection. Further details are provided in NRC Special Inspection Report 05000282/2008008; 05000306/2008008.

.3 (Closed) LER 05000282/2007-004-01: Technical Specification Required Shutdown Due to Both Emergency Diesel Generators Being Inoperable

This issue was initially discussed in Inspection Report 05000282/2008002; 05000306/2008002, Section 4OA3.2. However, the licensee's root cause evaluation was not complete at the conclusion of that inspection. The purpose of this LER supplement was to inform the NRC of the results of the root cause evaluation. Further information regarding the root cause evaluation and the NRC's review of the evaluation was discussed in Section 4OA2.3 of this report. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

.4 (Closed) LER 05000282/2008-002-00: Inadvertent Reactor Trip Caused by Failed Controller During Reactor Protection System Testing

This issue was discussed in NRC Special Inspection Report 05000282/2008008; 05000306/2008008. The inspectors reviewed the LER and determined that no new information was provided that differed from the information gathered during the NRC Special Inspection. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

.5 (Closed) LER 05000282/2008-003-00: Loss of Auxiliary Feedwater Safety Function and Condition Prohibited by Technical Specifications Due to Mispositioned Valve

This issue was discussed in NRC Special Inspection Report 05000282/2008008; 05000306/2008008. The inspectors reviewed the LER and determined that no new

information was provided that differed from the information gathered during the NRC Special Inspection. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

4OA5 Other Activities

.1 World Association of Nuclear Operators Peer Review Report

a. Inspection Scope

The inspectors reviewed the final report for the World Association of Nuclear Operators peer review conducted in 2007. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings of significance were identified.

.2 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.3 (Closed) Unresolved Item 05000282/2008003-01: 11 Turbine-Driven Auxiliary Feedwater Pump Inoperable During Startup from Outage 1R25

Introduction: The inspectors identified an apparent violation of TS 5.4.1 for the licensee's failure to establish and implement written procedures to address the installation of insulation on the safety-related 11 TDAFW pump following maintenance. The lack of written procedures resulted in the insulation being improperly installed and the inoperability of the 11 TDAFW pump for 10 days. This issue has the potential to have low to moderate safety significance; however, this may change pending the completion of the SDP.

Description: On March 23, 2008, the licensee tested the auxiliary feedwater system using SP 1103, "11 Turbine-Driven Auxiliary Feedwater Pump Once Every Refueling Shutdown Flow Test." During the test, the 11 TDAFW pump was secured due to the

turbine outboard bearing temperature reaching 220 degrees Fahrenheit (°F). Operations personnel declared the 11 TDAFW pump inoperable. The licensee conducted troubleshooting efforts and determined that the high bearing temperature was due to improper installation of the turbine insulation following maintenance. The licensee properly re-installed the insulation and the pump was restored to an operable status on March 24, 2008.

The inspectors reviewed the Unit 1 operator logs and the results of multiple auxiliary feedwater system tests conducted between March 16 and March 23, 2008, to determine whether the licensee had a prior opportunity to identify the outboard bearing temperature issue. This review included an assessment of turbine outboard bearing temperature trends captured by the Emergency Response Computer System (ERCS) system. The inspectors ascertained that on March 16, 2008, operations personnel performed the following tests concurrently:

- SP 1102 – 11 Turbine-Driven Auxiliary Feedwater Pump Monthly Test;
- SP 1330 – 11 Turbine-Driven Auxiliary Feedwater Turbine/Pump Bearing Temperature Test; and
- SP 1376 – Auxiliary Feedwater Flow Path Verification Test After Each Cold Shutdown.

Operations personnel began the series of tests by performing SP 1102. This test was performed with the 11 TDAFW pump operating and supplying approximately 35 gallons per minute of water to the steam generators. Once this condition was established, the operators transitioned into SP 1376 which required that the 11 TDAFW pump supply 70 gallons per minute of water to the steam generators for approximately 20 minutes. The inspectors performed a detailed review of the turbine outboard bearing temperature data provided by ERCS and identified that the bearing temperature reached approximately 216°F and was continuing to increase when the 20 minutes had elapsed. Operations personnel considered the results of SP 1376 satisfactory even though the bearing temperature was within 4 degrees of the vendor specified limit. Operations personnel then reduced the 11 TDAFW pump flow rate to establish the conditions needed to perform SP 1330. The reduction in feedwater pump flow resulted in a corresponding reduction in bearing temperature.

The inspectors reviewed SP 1330 and found that the procedure could be considered satisfactory when three successive turbine outboard bearing temperature readings taken ten minutes apart varied by less than 3 degrees. The inspectors reviewed the ERCS data attached to SP 1330 and found that the operators concluded that the 11 TDAFW pump outboard bearing temperature was stabilized at 211°F. The inspectors questioned this conclusion because the outboard bearing temperature recorded during SP 1376 was approximately 5 degrees higher. The operators also initiated CAP 1131305 to document that the outboard bearing temperature exceeded the alert limit of 203°F. However, no further actions were taken to address or evaluate whether the 11 TDAFW pump outboard bearing temperature would remain less than 220°F during post-accident conditions. As a result, the licensee improperly declared the 11 TDAFW pump operable and continued changing Unit 1 operating modes until additional outboard bearing temperature issues were found on March 23, 2008.

The inspectors sampled the licensee's corrective action system to determine whether any previous bearing issues had occurred due to the improper installation of insulation

following maintenance. The inspectors found that the 11 TDAFW pump outboard turbine bearing failed during the performance of SP 1103 on June 6, 2006. The licensee determined that the bearing failed due to improper bearing installation during maintenance. However, improper insulation installation following maintenance contributed to the increased bearing temperatures. Corrective actions for this event consisted of replacing the bearing, installing the insulation correctly, and providing additional oversight of maintenance activities conducted on the 22 TDAFW pump in 2007. The inspectors questioned engineering and maintenance personnel to determine if written procedural guidance regarding the installation of the turbine insulation following maintenance had been provided to the insulators. The inspectors were informed that written procedural guidance was not provided because insulation installation was considered to be a skill of the craft activity. The inspectors determined that this conclusion was incorrect because the proper installation of the turbine insulation was critical to the long-term operability of the 11 TDAFW pump.

Analysis: The inspectors determined that the failure to properly install the turbine insulation following maintenance was a performance deficiency that warranted a significance determination. The inspectors determined that the finding was more than minor because it was associated with the equipment performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 11 TDAFW pump would not have been able to perform its safety function during the worst case, post-accident conditions.

The inspectors performed a Phase 1 SDP screening. As part of this screening, the inspectors assumed that the pump had been inoperable since the plant entered Mode 3 on March 15, 2008. This resulted in a 10 day exposure time. The inspectors also assumed that the pump could not be recovered. The inspectors determined that short term secondary heat removal was impacted because this finding was related to the auxiliary feedwater system. A Phase 2 SDP evaluation was required because the finding represented an actual loss of safety function of a single train for greater than the TS allowed outage time.

A Phase 2 SDP evaluation was performed assuming the 11 TDAFW pump was unavailable and unrecoverable for a 10 day exposure period. The increased outboard bearing temperature was assumed to result in catastrophic bearing failure that could not be recovered within the PRA mission time. The Phase 2 pre-solved worksheet for Prairie Island was used and the finding was determined to be yellow. A Region III senior reactor analyst (SRA) reviewed this result and determined that it was overly conservative and that a Phase 3 SDP was required.

The Prairie Island SPAR model, Revision 3.45, was used in a Phase 3 analysis. The assumptions for the Phase 3 analysis were the same as for the Phase 2 analysis. The result of the internal events Phase 3 analysis was a delta core damage frequency (CDF) of $3.2E-7$ /yr. The dominant cut-set was the loss of a direct current train, failure of the 11 TDAFW pump to run, followed by the failure of the operator to either re-establish main feedwater or cross-tie the motor-driven auxiliary feedwater pump from the other unit. For this scenario, the Unit 1 motor-driven auxiliary feedwater pump and feed and bleed capability are failed by the initiating event.

For the Phase 3 SDP analysis, the SRA also considered the risk contributions from internal flooding, external events, and large early release frequency. Only internal fire scenarios were determined to contribute to the risk significance of this finding. The 11 TDAFW pump was the only credited means of decay heat removal in the licensee's Appendix R safe shutdown analysis for 10 different fire areas. The licensee's IPEEE results and the NRC's Risk Assessment of Operational Events (RASP) Handbook for External Events were used as the best available information to estimate the fire risk contribution associated with the unavailability of the 11 TDAFW pump.

To estimate the risk contribution from internal fires the SRA used the licensee's IPEEE cut-sets that were provided with the Prairie Island IPEEE submittal. The top 100 fire cut-sets were reviewed to determine which cut-sets contained basic events involving the 11 TDAFW pump failure to run or involving the failure of manual shutdown outside the control room. The 11 TDAFW pump is the only credited decay heat removal method for control room evacuation scenarios. As a result, the failure of the pump represented the failure of manual shutdown outside the control room. The cut-sets were recalculated assuming those basic events were failed with a probability of 1.0. Using this approach, the delta CDF due to fire was estimated for the 10 day exposure period to be approximately $3E-6$ per year. This delta CDF represented a low to moderate safety significance (White) finding. The dominant sequences involved either a large fire in the control room or relay room, failure of suppression, and failure to perform shutdown outside the control room due to the failure of the 11 TDAFW pump.

The RASP external events handbook for internal fires was also used to evaluate the fire risk as a sensitivity analysis because of the uncertainty in the frequency of fires leading to control room evacuation scenarios. Since the dominant fire risk sequences from the licensee's IPEEE were fires involving control room evacuation, only those scenarios were addressed. These scenarios involve fires in the control room and relay room. Using the RASP handbook data on fire frequencies and non-suppression probabilities, the SRA confirmed that the change in core damage frequency from internal fires was above the $1.0E-6$ threshold for a low to moderate safety significance (white) finding.

The result of the Phase 3 SDP analysis is a delta CDF of $3.3E-6$ per year, considering both contributions from internal events and internal fire scenarios. The licensee performed a risk evaluation of the internal events contribution and the result was similar to the NRC's. The licensee had not yet completed an evaluation of the fire risk contribution.

The inspectors determined that this finding was cross-cutting with respect to the Decision Making aspect of the Human Performance component because the licensee failed to use conservative assumptions when determining the need to establish and implement instructions for installing the turbine insulation (H.1(b)).

Enforcement: TS 5.4.1 requires that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Section 9 of Regulatory Guide 1.33, Revision 2, Appendix A states, in part, that maintenance affecting the performance of safety-related equipment be performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstance.

Contrary to the above, from March 15 to 23, 2008, the licensee had not established or implemented written procedures covering applicable procedures recommended in Regulatory Guide 1.33. Specifically, the licensee had not established or implemented written procedures covering maintenance affecting the performance of safety-related equipment. The licensee performed the maintenance activity of installing insulation on the safety-related 11 TDAFW pump without establishing or implementing a written procedure to address the activity. The lack of written procedures resulted in the insulation being improperly installed and the inoperability of the 11 TDAFW pump for 10 days. This is an apparent violation (AV) of TS 5.4.1 pending the completion of the final significance determination (**AV 05000282/2008004-03**).

This finding does not represent an immediate or current safety concern because the licensee declared the pump inoperable when the deficient condition was identified on March 23, 2008. The licensee repaired the insulation and returned the pump to an operable status on March 24, 2008. This issue was entered into the corrective action program as CAP 1132098. Other corrective actions included implementing actions to reduce the outboard bearing temperatures through the verification of mechanical clearances and to develop a turbine insulation package that was easier to install, provided protection to the bearing housing, and allowed heat to be dissipated to the atmosphere.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 6, 2008, the inspectors presented the inspection results to Mr. M. Wadley and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted:

- On August 22, 2008, the inspector presented the inspection results for the radiation monitoring instrumentation and protective equipment inspection to Mr. S. Northard and other members of the licensee staff; and
- On September 26, 2008, the inspector presented the inspection results for the access controls, ALARA planning, and occupational exposure control effectiveness inspection to Mr. Michael Wadley and other members of the licensee staff. The licensee acknowledged the issues presented.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

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 Policy, NUREG-1600, for being dispositioned as an NCV.

Cornerstone: Mitigating Systems

- Operating License Condition 2.C.(4) of Prairie Island Nuclear Generating Plant Unit 1 Operating License DPR-42 and Prairie Island Nuclear Generating Plant Unit 2 Operating License DPR-60 required that Nuclear Management Company implement and maintain in effect all provisions of the approved fire protection program as described and referenced in the USAR and as approved in Safety Evaluation Reports dated February 14, 1978; September 6, 1979; April 4, 1980; December 29, 1980; July 28, 1981; September 12, 1984; June 25, 1985; October 27, 1989; and October 6, 1995.

USAR Section 10.3.1.4, "Fire Protection System Inspection and Testing," states that the fire protection surveillance and test requirements are identified in Operations Manual F5, Appendix K, "Fire Protection Systems Operability Requirements."

Operations Manual F5, Appendix K, "Fire Protection Systems Operability Requirements," Section 8.8, required that each fire hose station be visually inspected each month and hydrostatically tested every three years.

Contrary to the above, on August 13, 2008, the licensee identified that they had failed to visually inspect the in-plant hose reels on a monthly basis. In addition, the hose reels had not been hydrostatically tested every three years as required by procedure. The inspectors assessed the significance of this finding using IMC 0609, Appendix F. The inspectors determined that this finding was related to fixed fire protection systems. The inspectors assigned a low degradation rating to this finding because alternate hose stations, which were properly tested, were available in the plant for use in fire fighting activities. Based upon the guidance provided by IMC 0609, Appendix F, this finding was of very low safety significance. The licensee initiated CAP 1147453 to document this issue. Corrective actions for this issue included replacing the hose reels and changing the preventive maintenance program to ensure that the hose reels were tested as required.

- Title 10 CFR Part 50, Appendix B, Criterion V, required that activities affecting quality be prescribed by documented instructions, procedures, and drawings appropriate to the circumstance. Fleet Procedure FP-OP-COO-01, "Conduct of Operations," Step 3.5, required operations personnel to control equipment configuration such that the status of plant equipment was known at all times. In addition, Operating Procedure C18.1, "Engineered Safeguards Equipment Support Systems," Section 5.25, required operations personnel to consult engineering if the temperatures on the 695-foot elevation of the auxiliary building approached 104 degrees. Contrary to the above, on July 2, 2008, operations personnel failed to control the plant configuration on the 695-foot elevation of the Unit 1 auxiliary building prior to the indicated temperature exceeding 104 degrees. As a result, engineering was not consulted as directed by Operating Procedure C18.1. This violation was of low safety significance because it did not result in the inoperability of any safety-related equipment. The licensee initiated CAP 1142946 to document this issue. Corrective actions for this issue included revising the operator rounds procedure to ensure that auxiliary building temperatures were trended on a periodic basis, improving the

instrumentation used to determine the auxiliary building temperatures, and improving the guidance provided in Operating Procedure C18.1.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Wadley, Site Vice President
 J. Sorensen, Director Site Operations
 S. Northard, Plant Manager
 T. Allen, Nuclear Safety Assurance Manager
 J. Anderson, Regulatory Affairs Manager
 L. Clewett, Operations Manager
 M. Davis, Compliance Engineer
 R. Hite, Radiation Protection and Chemistry Manager
 M. Kent, Radiation Protection Supervisor
 J. Muth, Nuclear Oversight Manager
 M. Schimmel, Engineering Director
 M. Schmidt, Maintenance Manager

Nuclear Regulatory Commission

R. Skokowski, Reactor Projects Branch 3 Chief
 T. Wengert, Office of Nuclear Reactor Regulation Project Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000282/2008004-01; 05000306/2008004-01	NCV	Failure to Maintain Staff Respiratory Qualifications Including Personnel Qualifications Necessary for Emergency Response Duties As Required By Station Procedures.
05000282/2008004-02; 05000306/2008004-02	NCV	Load Sequencer Test Procedure Conflicts With Vendor Manual Information (Section 4OA2.3)
05000282/2008004-03	AV	11 Turbine-Driven Auxiliary Feedwater Pump Inoperable Due to Improperly Installed Insulation (Section 4OA5.3)

Closed

05000282/2007-004-01	LER	Technical Specification Required Shutdown Due to Both Emergency Diesel Generators Being Inoperable (Section 4OA3.3)
05000282/2008-002-00	LER	Inadvertent Reactor Trip Caused by Failed Controller During Reactor Protection System Testing (Section 4OA3.4)
05000282/2008-003-00	LER	Loss of Auxiliary Feedwater Safety Function and Condition Prohibited by Technical Specifications Due to Mispositioned Valve (Section 4OA3.5)
05000282/2008003-01	URI	11 Turbine-Driven Auxiliary Feedwater Pump Inoperable During Startup from Outage 1R25 (Section 4OA5.3)
05000282/2008004-01; 05000306/2008004-01	NCV	Failure to Maintain Staff Respiratory Qualifications Including Personnel Qualifications Necessary for Emergency Response Duties As Required By Station Procedures.

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

- CAP 1143824; Loss of Byron and Blue Lake Lines During Storm; dated July 10, 2008
- CAP 1143825; 22 Reactor Coolant Pump Seal Leak-Off Dropped as Storm Passed Through; dated July 10, 2008
- CAP 1143826; Entered 2C3 AOP3 Failure of Reactor Coolant Pump Seal; dated July 10, 2008
- CAP 1143827; Equipment Stopped During Thunderstorm; dated July 10, 2008

1R04 Equipment Alignment

- C1.1.35-3; Cooling Water System; Revision 28
- Operations Logs for Cooling Water System Entries
- Procedure B20.9; Station Battery and Direct Current Distribution System; Revision 11
- Procedure 1C20.9; Station Battery and Direct Current Distribution System; Revision 27
- Procedure 1C20.9 AOP1; Loss of Unit 1 Train A Direct Current; Revision 6
- Procedure 1C20.9 AOP2; Loss of Unit 1 Train B Direct Current; Revision 5
- Procedure 1C20.9 AOP3; Failure of 11 Battery Charger; Revision 8
- Procedure 1C20.9 AOP4; Failure of 12 Battery Charger; Revision 9
- Procedure 1C20.9 AOP5; Failure of 11 Battery Fuse; Revision 4
- Procedure 1C20.9 AOP6; Failure of 12 Battery Fuse; Revision 4
- C1.1.14-2; Unit 2 Component Cooling Water System; Revision 29
- Operations Logs for 21 Component Cooling Water Entries
- CAP Entries for 21 Component Cooling Water Entries
- CAP Entries for Unit 2 Auxiliary Feedwater Equipment
- Procedure C28-7; Auxiliary Feedwater System Unit 2; Revision 49
- Procedure F5, Appendix D; Impact of Fire Outside Control/Relay Room; Revision 19
- Updated Safety Analysis Report; Section 11.9; Condensate, Feedwater and Auxiliary Feedwater Systems; Revision 28
- Procedure B28B; Auxiliary Feedwater System; Revision 8
- Procedure C28.1; Auxiliary Feedwater System Unit 2; Revision 16
- Technical Specification 3.7.5; Auxiliary Feedwater System; U2 Amendment 149
- CAP 459506; During 21 AFW Pump Run, 22 AFW Pump Discharge Pressure Went to 730 PSI
- CAP 527613; Unexpected Annunciator 47510-0402 AFW Valves in Local
- CAP 529255; 22 TDAFWP Starting Relay 83/31999 Pickup Voltage Exceeds Acceptance Criteria
- CAP 529646; 22 TDAFWP Overspeed Limit Switch 33/OST Mounted Incorrectly
- CAP 536027; Time Delay Appeared to be Excessive for AFWP Suction Pressure
- CAP 565382; 21 MD AFWP Suction Pressure Switch (17779) Appears to be Set Incorrectly
- CAP 729683; Multiple Starts Required to Complete 21 AFWP SP2100 Monthly
- CAP 798795; Part Found Not Installed on 21 AFWP
- CAP 848187; Investigate Cause of AFW Pump Start With Intended Flowpath Isolated
- Work Order 306023; AF-18-10; Large Deposits on Valve, Valve Leaks

- EC 12350; Install Permanent Equipment to Supply the Unit 1 Safeguards DC Systems from Service Building DC During Outages to Support Battery Maintenance and Testing; dated August 25, 2008
- List of Open Work Orders for DC System; dated August 7, 2008
- List of Open Work Requests for DC System; dated August 7, 2008
- List of Open Modifications for DC System; dated August 12, 2008
- List of Preventive Maintenance Activities for DC System; dated August 7, 2008
- SP 1187; Weekly Battery Inspection; Revision 22
- SP 1323; 11 Battery Monthly Inspection; Revision 9
- SP 1325; 11 Battery Quarterly Inspection; Revision 10
- PINGP Design Bases Document 20.09; DC Auxiliaries System; Revision 3

1R05 Fire Protection

- Plant Safety Procedure F5; Appendix A; Fire Strategies; Revision 24
- Plant Safety Procedure F5; Appendix F; Fire Hazard Analysis; Revision 21
- NSPLMI – 96001; Prairie Island Individual Plant Examination of External Events; Revision 1

1R06 Internal Flooding

- CAP 1146705; NRC Comments from Walkdown of Critical Drainage Paths; dated August 6, 2008
- Response to NRC Information Notice 2005-30; no date provided
- WO 106209; Functional Test of Turbine Building Sump Level Switches; dated August 4, 2008
- WO 107186; Test of Turbine Building Sump Level Switches; dated August 4, 2008
- Procedure H36; Plant Flooding; Revision 1

1R11 Licensed Operator Requalification

- Simulator Exercise Guide P9160S-001 ATT.SQ-60; Revision 0

1R12 Maintenance Effectiveness

- B11; Radiation Monitoring System; Revision 8
- Operating Procedure C11; Radiation Monitoring System; Revision 39
- Technical Specifications
- Maintenance Rule Evaluation for CAP 1146640; dated August 28, 2008

1R13 Maintenance Risk Assessment and Emergent Work

- CAP 1143288; U2 Steam Generator B PORV CV-31107 Leaking By
- H10.1; ASME Inservice Testing Program; Revision 23
- Unit 2 ERCS Trend; Main Steam B PORV Position & Steam Generator B PORV Leak Temperature
- 2MS-4-2; 22 Steam Generator PORV In-Service Testing Basis Valve Data Sheet
- CV-31107; 22 Steam Generator Main Steam Safety Relief Valve to Atmosphere In-Service Testing Basis Valve Data Sheet
- NF-39219; Flow Diagram Main Auxiliary Steam & Steam Dump – Unit 2; Revision 77

1R15 Operability Evaluations

- CAP 1144466; Intake Canal Water Volume Dropped Below 9,000,000 Gallon Action Limit; dated July 17, 2008
- CAP 1144431; Hydrographic Survey Results Inaccurate due to Vendor Error; dated July 17, 2008
- CAP 1144451; Flow Path to Cooling Water Emergency Intake Line via Approach Canal is 100 Percent Obstructed Post Design Basis Earthquake; dated July 17, 2008
- Apparent Cause Report 1140901-01; Review of Numerous Plugging/Fouling Problems; no date provided
- CAP 1143002; Designed Flow Path to Cooling Water Emergency Intake Line is 78 Percent Obstructed by a Sand Bar; dated July 2, 2008
- OPR 1144451; Flow Path to Cooling Water Emergency Intake Line via Approach Canal is 100 Percent Obstructed Post-Design Basis Earthquake; dated July 19, 2008
- Engineering Evaluation 12929; Evaluation of SP 1690 Results; dated July 17, 2008
- CAP 1144431; Hydrographic Survey Results Inaccurate Due to Vendor Error; dated July 17, 2008
- Procedure AB-3; Earthquakes; Revision 26
- SP 1690; Approach, Intake, and Discharge Canal Hydrographic Survey; Revision 0
- Technical Specification 3.7.9
- Operating Procedure C18.1; Engineered Safeguards Equipment Support Systems; Revision 25
- Engineering Change 12901; Install Temporary Cooling Outside of the 11 and 12 Charging Pump Rooms in the 695' Level of the Auxiliary Building; Revision 0
- Maintenance Procedure D106; Temporary Power; Revision 3
- Procedure H41; Control of Temporary Structures and Equipment; Revision 6
- Section Work Instruction SWI EE-3; Control of Temporary Power; Revision 3
- Procedure FP-WM-OVW-01; Work Management Process Overview; Revision 1
- Calculation ENG-EE-143; Review Elevated Temperature Effects for Auxiliary Building Motor Control Centers; dated September 23, 2002
- Calculation ENG-EE-166; Unit 1 480 Volt Alternating Current Safeguards Bus Temperature Limitations; Revision 0

1R18 Modifications

- Operating Procedure C18.1; Engineered Safeguards Equipment Support Systems; Revision 25
- Engineering Change 12901; Install Temporary Cooling Outside of the 11 and 12 Charging Pump Rooms in the 695' Level of the Auxiliary Building; Revision 0
- Maintenance Procedure D106; Temporary Power; Revision 3
- Procedure H41; Control of Temporary Structures and Equipment; Revision 6
- Section Work Instruction SWI EE-3; Control of Temporary Power; Revision 3
- Procedure FP-WM-OVW-01; Work Management Process Overview; Revision 1
- Procedure FP-E-MOD-03; Temporary Modifications; Revision 4
- Procedure FP-WM-WOE-01; Work Order Execution Process; Revision 3
- CAP 1142946; Area Temperatures Around Motor Control Center 1K2 at Greater Than 104 Degrees; dated July 2, 2008
- Calculation ENG-EE-143; Review Elevated Temperature Effects for Auxiliary Building Motor Control Centers; dated September 23, 2002
- Calculation ENG-EE-166; Unit 1 480 Volt Alternating Current Safeguards Bus Temperature Limitations; Revision 0

1R19 Post Maintenance Testing

- CAP 1149490; Near Miss During Post Maintenance Testing of Cardox System; dated September 2, 2008
- Prompt Investigation Report for CAP 1149490; dated September 4, 2008
- WO 366370; Solenoid EMPC/19419 Smoked During Testing; dated September 11, 2008
- SP 1194; Carbon Dioxide 18 Month System Test; Revision 16
- CAP 1147000; Delay in Returning CD-34188 to Service; dated August 11, 2008
- WO 352778; Failure of Steam Exclusion Damper CD-34188 to Operate; dated July 14, 2008
- SP 1112; Steam Exclusion Monthly Damper Test; Revision 51
- CAP 1141897; Solenoid 19419 on the Cardox System Burnt Up; dated June 24, 2008
- WO 365195; Disassemble and Repair Valve CL-95-1; dated July 23, 2008
- WO 37020; 2CL-95-1 Does Not Appear to be Operating Properly; dated July 25, 2008
- CAP 1118585; Short Term Actions to Improve Air Compressor Reliability; dated November 19, 2007
- TP 1461; Instrument Air Compressor Train A Cooling Water Supply Flush and Verification; Revision 0
- TP 2461; Instrument Air Compressor Train B Cooling Water Supply Flush and Verification; Revision 0

1R20 Refueling and Outage

- Operating Experience Smart Sample FY2007-03; Crane and Heavy Lift Inspection;" Revision 0
- Operating Procedure 2C1.4; Unit 2 Power Operation; Revision 40
- Operating Procedure 2C1.3; Unit 2 Shutdown; Revision 61
- Operating Procedure 2C1.2; Unit 2 Startup Procedure; Revision 41
- Operating Procedure C1B; Appendix – Reactor Startup; Revision 16
- Shutdown Safety Assessments; dated September 19 through September 30, 2008
- Outage Scope Addition and Deletion Sheets; dated September 19 through September 30, 2008

1R22 Surveillance Test

- SP 1305; D2 Diesel Generator Monthly Slow Start Test; Revision 36
- WO 346395-01; D2 Diesel Generator Monthly Slow Start Test
- CAP 1144119; D2 Loose Crankcase Cover Nut
- CAP 1144125; D2 – Loose Crankcase Cover Nut
- CAP 1144129; D2 – Minor Seepage of Fuel Oil At Fitting
- SP 2093; D5 Diesel Generator Monthly Slow Start Test; Revision 85
- WO 346967-01; D5 Diesel Generator Monthly Slow Start Test
- SP 2089A; Train A RHR Pump and Suction Valve from the RWST Quarterly Test; Revision 14
- WO 346980; Train A RHR Pump & Suction Valves from the RWST
- WO 346431; SP 2409 Six Month Boric Acid Corrosion Walkdown for 21 RHR Pit
- SP 2409; Boric Acid Corrosion Control Walkdown and Unit Cooler Inspection of the Residual Heat Removal System; Revision 2
- WO 353231; 21 RHR Heat Exchanger Flange Bolt Torque Check
- CAP 1145214; FME Discovered In 21 RHR Pit
- CAP 1145210; 21 RHR Pump Mini-Flow Recirculation Differential Pressure Less Than Expected Range

2OS1 Access Control to Radiologically Significant Areas

- 5AWI 5.3.0; Key and Seal Control; Revision 10
- CD 9.3; Radiological Posting; Revision 1
- FP-RP-RWP-01; Radiation Work Permit; Revision 6
- PING 1135; High radiation Area or Locked High Radiation Area Entry and Control Briefing Sheet; U2 C-Sump; dated September 23, 2008
- PING 1135; RWP Coverage; Revision 19
- RPIP 1008; Radiation Protection Key Control; Revision 11
- RPIP 1120; Posting of Restricted Areas; Revision 30
- RPIP 1207; Internal Dose Assessment; Revision 4

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

- 5AWI 10.1.2; Respirator Qualification Program; Revision 3
- CAP 01138849 NLO (Fire Brigade) Stood Watch w/ Respirator Fit Test Expired; dated May 2008
- CAP 01139677; One RO Stood the Duty with Respirator CBT Expired; dated June 2008
- CAP 01152183; Respirator Qualification Checks need to Be Strengthened; dated September 2008
- FastScan Whole Body Counter Calibration; dated May 20, 2008
- FP-RP-CRS-01; Control, Inventory and Leak Testing of Radioactive Sources; Revision 2
- H26; Respiratory Protection Program; Revision 6
- PING 709; Meter Calibration Data Sheets; RO-7 Ion Chamber; Various dates
- PING 716; Portal Monitor Calibration Data Sheets; Various dates
- PING 719; Meter Calibration Data Sheets; RADECO Air Samplers; Various dates
- PING 750; Daily and Weekly Portal Monitor Checks; Revision 23
- PING 1449; AMS-4 Calibration Data Sheets; Various dates
- PING 1572; SAM-11 Calibration Data Sheets; Various dates
- PING 1648; RADOS Calibration Data Sheets; Various dates
- RPIP 1226; Control Room Breathing Air System Testing; Revision 2
- RPIP 1501; Radiation Protection Instrumentation Control; Revision 12
- RPIP 1732; Radioactive Source Inventory, Leakage Testing, and Handling; Revision 6
- SP 1783.4A; High Range Radiation Monitor Electronic Calibration Train A; Revision 1
- SP 1783.4B; High Range Radiation Monitor Electronic Calibration Train B; Revision 1
- SP 1783.4A/B; High Range Radiation Monitor Electronic Calibration; Revision 0
- SWI 10.1.2; Operator Qualification Program; Revision 7
- USAR Section 7; Plant Radiation Monitoring System; Revision 29

4OA1 Performance Indicator Verification

- Control Room Operating Logs
- NRC Integrated Inspection Reports for 2007 and 2008
- Licensee Event Reports for 2007
- H33; Performance Indicator Reporting; Revision 9
- RPIP 1013; Occupational Radiation Safety Performance Indicators; Revision 4
- RPIP 3025; Chemistry Performance Indicator Reporting Instructions; Revision 2
- RPIP 3332; Dose Equivalent Iodine 131; Revision 9

4OA2 Identification and Resolution of Problems

- CAP 1143804; Individual Tailgated An Area Without the Proper Access Level
- CAP 1144426; Unable To Reach 2500Kw During D3 Monthly Run
- Status of R-11 and R-12 Modifications; dated September 9, 2008
- Top 10 Equipment Issues List; dated September 3, 2008
- Work Management Report 209 Focus Area Report on Operator Burdens; dated September 3, 2008
- 5AWI 3.10.8; Equipment Problem Resolution Process; Revision 12
- SP 1094; Bus 15 Load Sequencer Test; dated May 24, 2008
- SP 1095; Bus 16 Load Sequencer Test; dated May 12, 2008
- SP 2094; Bus 25 Load Sequencer Test; dated May 19, 2008
- CAP 1144659; Eplan Laundry Racks Missing at North Warehouse
- CAP 1145267; 2008 Exercise Controller Issues
- CAP 1146171; NRC Inspectors Training Missing in Passport
- CAP 1146238; Chilled Water Piping to 11 RHR Unit Cooler Dripping Water
- CAP 1146296; FME Found in 11 RHR Pit
- CAP 1146462; Cable 2CB-657 System Designator Change from "BL" to "D6"
- CAP 1146680; Staged Equipment for C28.1 AOP4
- CAP 1146820; Review PRA/Risk Significant Systems for Low Margin
- CAP 1146848; PT1755 Should Be Shown on XH-1001-8
- CAP 1146889; Current USAR AFW Time Critical Actions for MFW/MSL Break
- CAP 1147570; Environmental Report Not Submitted With TN40HT LAR
- CAP 1147573; RPIP 3005 Procedure Compliance Issue
- CAP 1148280; Respirator Qualification Reports on RP Homepage Not Current
- CAP 1148893; 8/3/08 NUE HU3.1 Potential Plant Equipment Impact
- CAP 1149182; NRC Observations From The Radiation Monitoring Instrumentation
- CAP 1150075; Site Has Not Fully Implemented Response to NRC GL-2007-01
- CAP 1150266; Evaluate Window Issue In a Certain Building
- CAP 1150339; Door 5 Will Not Close on Own Due To DP in Old Administration Building
- CAP 1152191; PA in Containment is Not Heard Clearly in Some Areas
- CAP 1152242; NDE Procedure Not Followed
- CAP 1152793; Weld Overlay QC and Step Sequencing
- SP 2095; Bus 26 Load Sequencer Test; dated June 2, 2008
- Work Order 00339764; SP 1094; Bus 15 Load Sequencer Test; Revision 22; dated May 27, 2008
- Work Order 00337613; SP 1095; Bus 16 Load Sequencer Test; Revision 22; dated May 13, 2008
- Work Order 00338333; SP 2094; Bus 25 Load Sequencer Test; Revision 25; dated May 20, 2008
- Work Order 00341628; SP 2095; Bus 26 Load Sequencer Test; Revision 21; dated June 3, 2008
- Vendor Manual XH-3713; Class 1E Qualified Safeguard Load Sequencer; Revision 3
- RCE 1121937; Root Cause Evaluation; dated December 21, 2007
- AR 01121937; Failure to Meet SR 3.3.4.2; dated December 21, 2007

4OA3 Followup of Events and Notices of Enforcement Discretion

- CAP 1146304; Notice of Unusual Event HU3.1 – Potential Plant Equipment Impact from Hydrazine; dated August 3, 2008

- SP 1234A; 11 Auxiliary Feedwater Pump Suction and Discharge Pressure Switches Calibration; Revision 6
- WO 283302; SP 1234A 11 Auxiliary Feedwater Pump Suction and Discharge Pressure Switch Calibration; dated February 21, 2008
- Checklist C1.6A.1-1; Unit 1 – Integrated Operations Checklist Prior to Heatup First Floor Turbine Building; Revision 10
- Troubleshooting Log for Work Order 365604; dated July 31, 2008
- SP 1102; 11 Turbine-Driven Auxiliary Feedwater Pump Monthly Test; dated March 26, April 30, May 28, June 25, and July 31, 2008
- PINGP 1125; Control Room Shift Manager/Shift Supervisor Emergency Director Checklist; Revision 32
- Control Room Operating Logs; dated July 31 and August 3, 2008
- Sequence of Events Recorder Log; dated July 31, 2008
- Drawing X-HIAW-1-543; Instrument Block Diagram Reactor Protection System; Revision F
- Drawing NF-40312-1; Interlock Logic Diagram Auxiliary Feedwater System – Unit 1; Revision 76
- Drawing X-HIAW-1-543; Instrument Block Diagram Reactor Protection System; Revision F

40A7 Licensee Identified Findings

- CAP 1147453; Hose on Hose Reel RN-2 Has Through-Wall Hole; dated August 13, 2008
- Procedure F5; Appendix K; Fire Protection Systems Operability Requirements; Revision 11
- Operating Information Package 08-50; dated August 14, 2008
- Operations Manual F5; Appendix K; Fire Protection Systems Operability Requirements; Revision 11
- Operating Procedure C18.1; Engineered Safeguards Equipment Support Systems; Revision 25
- Engineering Change 12901; Install Temporary Cooling Outside of the 11 and 12 Charging Pump Rooms in the 695' Level of the Auxiliary Building; Revision 0
- Maintenance Procedure D106; Temporary Power; Revision 3
- Procedure H41; Control of Temporary Structures and Equipment; Revision 6
- Section Work Instruction SWI EE-3; Control of Temporary Power; Revision 3
- Procedure FP-WM-OVW-01; Work Management Process Overview; Revision 1
- Calculation ENG-EE-143; Review Elevated Temperature Effects for Auxiliary Building Motor Control Centers; dated September 23, 2002
- Calculation ENG-EE-166; Unit 1 480 Volt Alternating Current Safeguards Bus Temperature Limitations; Revision 0

Other Documents Reviewed

- CAP 1143166; Adverse Trend-Failure To Promptly/Thoroughly Evaluate Issues
- CAP 1144481; Security NRC Force on Force Drills
- CAP 1144218; Electrical Penetration Pre-Activation System PA-6 Shutoff Will Not Stay Closed
- CAP 1144426; Unable To Reach 2500KW During D3 Monthly Run
- WO 79917-02; Perform TP 1745
- TP 1745; D3 Diesel Generator Operability Monthly Test; Revision 13
- C20.16; D3[D4] Nonsafeguard Diesel Generators; Revision 17

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
AV	Apparent Violation
CAP	Corrective Action Program Document
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
ERCS	Emergency Response Computer System
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination for External Events
IR	Inspection Report
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NOUE	Notice of Unusual Event
NRC	U.S. Nuclear Regulatory Commission
OSP	Outage Safety Plan
PARS	Publicly Available Records System
PI	Performance Indicator
RASP	Risk Assessment of Operational Events
RFO	Refueling Outage
RP	Radiation Protection
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SP	Surveillance Procedure
SRA	Senior Reactor Analyst
TDAFW	Turbine-Driven Auxiliary Feedwater
TS	Technical Specifications
USAR	Updated Safety Analysis Report