



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

May 14, 2009

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 05000282/2009002; 05000306/2009002**

Dear Mr. Wadley:

On March 31, 2009, the U. S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Prairie Island Nuclear Generating Plant, Units 1 and 2. The enclosed report documents the inspection findings, which were discussed on April 8, 2009, 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.

This report documents one self-revealed and four NRC-identified findings of very low safety significance. Three of these findings were determined to involve violations of NRC requirements. Additionally, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. However, because of the very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating these findings as Non-Cited Violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest any NCV, 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 copies to the Regional Administrator, Region III; 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 addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector Office at the Prairie Island Nuclear Generating Plant. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

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Sincerely,

/RA/

John B. Giessner, Chief
Branch 4
Division of Reactor Projects

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

Enclosure: Inspection Report 05000282/2009002; 05000306/2009002
w/Attachment: Supplemental Information

cc w/encl: D. Koehl, Chief Nuclear Officer
J. Anderson, 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

M. Wadley

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Enclosure: Inspection Report 05000282/2008005; 05000306/2008005
w/Attachment: Supplemental Information

cc w/encl: D. Koehl, Chief Nuclear Officer
J. Anderson, 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
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SUBJECT: PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2, NRC
INTEGRATED INSPECTION REPORT 05000282/2008005; 05000306/2008005

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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: 05000282/2009002; 05000306/2009002

Licensee: Northern States Power Company, Minnesota

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

Location: Welch, MN

Dates: January 1 through March 31, 2009

Inspectors: K. Stoedter, Senior Resident Inspector
P. Zurawski, Resident Inspector
D. Betancourt, Reactor Engineer
N. Feliz, Reactor Inspector

Approved by: J. Giessner, Chief
Branch 4
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000282/2009002, 05000306/2009002; 01/01/2009 – 03/31/2009; Prairie Island Nuclear Generating Plant, Units 1 and 2; Adverse Weather Protection, Operability Evaluations, Post-Maintenance Testing, Surveillance Testing, and Other Activities.

This report covers a 3-month period of inspection by resident and regional inspectors. One self revealed and four inspector-identified Green findings were identified. Three findings were considered Non-Cited Violations of NRC regulations. 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: Initiating Events

- Green. The inspectors identified a finding of very low safety significance and a Non Cited Violation of Technical Specification 5.4.1 due to operations personnel failing to implement abnormal operating procedures following an unexpected control rod insertion on November 6, 2008. Corrective actions for this issue included revising licensed operator training and providing guidance to operations personnel on the need to enter abnormal operating procedures following the receipt of an entry condition.

The inspectors determined that this finding was more than minor because the failure to enter abnormal operating procedures to respond to unexpected conditions could result in incorrect actions being taken following a plant event (a more significant safety issue). The inspectors concluded that this issue was of very low safety significance because the finding was not a loss of coolant accident initiator, was not an external events initiator, and would not have resulted in both the likelihood of a reactor trip and that mitigating systems equipment would not have been available. The inspectors determined that this finding was cross-cutting in the Human Performance, Work Practices area because the licensee had not effectively communicated expectations regarding procedural compliance following the receipt of an abnormal operating procedure entry condition (H.4(b)). (Section 4OA5.1)

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance on January 13, 2009, due to the fire protection system pumps being unable to auto start, as designed, in response to a low fire header pressure condition. Corrective actions for this issue included unthawing the sensing line, verifying the screenhouse ventilation system's configuration, revising the normal screenhouse ventilation procedure to ensure that it provided guidance on shutting down the exhaust fans, and repairing several normal screenhouse ventilation system equipment deficiencies.

This finding was more than minor because if left uncorrected, the failure to protect mitigating systems equipment from the effects of extreme cold temperatures could

result in the system failing to function when needed. The inspectors determined that this finding was of very low safety significance because it was assigned a low fire degradation rating as specified in the Fire Protection Significance Determination Process. This finding was determined to be cross-cutting in the Human Performance, Resources area because the licensee failed to have a complete and accurate normal screenhouse ventilation procedure to ensure that operation of the system would not result in the freezing of mitigating systems equipment during extreme cold weather conditions (H.2(c)). No violations of NRC requirements occurred because the fire pumps could have been started manually if needed and because the normal screenhouse ventilation system was nonsafety-related. (Section 1R01.1)

- Green. The inspectors identified a finding of very low safety significance and a Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to adequately implement Procedure FP-OP OL-01, "Operability Determination", to assess the capability of the 122 Control Room Chilled Water Pump to meet its mission time following the discovery of increased pump vibrations. Corrective actions for this issue included revising the operability recommendation and repairing the degraded pump.

This finding was more than minor because, if left uncorrected, failure to adequately implement the operability procedure could result in safety-related components been incorrectly declared operable rather than inoperable or operable, but non-conforming (a more significant safety concern). This finding was of very low safety significance because the finding did not represent an actual loss of safety function of a single train for longer than its Technical Specification allowed outage time. The inspectors concluded that this finding was cross-cutting in the Human Performance, Decision Making area because the licensee failed to validate the underlying assumptions made when determining the continued operability of a safety-related component (H.1(b)). (Section 1R15.1)

- Green. The inspectors identified a finding of very low safety significance on February 25, 2009, due to operations and maintenance personnel failing to identify a turbocharger coolant vent line fretting condition during a D5 emergency diesel generator post-maintenance test or during previous D5 operations. The lack of identification resulted in D5 operating with degraded conditions prior to the fretting issue being evaluated in the corrective action program. Corrective actions for this issue included performing an ultrasonic examination of the fretted area in support of an evaluation to determine whether the pipe needed to be replaced prior to declaring the diesel generator operable. The licensee also documented the untimely identification of the issue within its corrective action program.

This finding was more than minor because if left uncorrected, the failure to identify, evaluate, and correct equipment issues could result in returning safety-related equipment to service with deficiencies that impact the ability of the equipment to perform its safety function (a more significant safety concern). The inspectors determined that the finding was of very low safety significance because it was not associated with an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors considered the finding to be cross-cutting in the Problem Identification and Resolution, Corrective Action Program area because operations and maintenance personnel failed to identify this issue in a timely manner commensurate with its safety significance (P.1(a)). No

violations of NRC requirements occurred because D5 was not operable at the time this issue was identified and corrective actions were taken before it became operable. (Section 1R19.1)

Cornerstone: Barrier Integrity

- Green. A self-revealed finding and Non-Cited Violation of Prairie Island Nuclear Generating Plant Operating License DPR-42, Section C.1, was identified on January 2, 2009, due to the failure to maintain Unit 1 reactor power below the thermal power limitations stated in the facility operating license. Corrective actions for this issue included revising all associated operating procedures to ensure that operations personnel take action to lower reactor power if power levels exceed the licensed thermal power limitations.

The inspectors determined that this issue was more than minor because if left uncorrected the operation of the reactor beyond the limits specified in the operating license could become a more significant safety concern. The inspectors determined that this issue was of very low safety significance because the finding was only associated with the fuel aspect of the Barrier Integrity Cornerstone and no core thermal limits were violated. The inspectors determined that this finding was cross-cutting in the Human Performance, Resources area because the licensee failed to have complete, accurate and up-to-date procedures regarding the maintenance of licensed thermal power levels (H.2(c)). (Section 1R22.1)

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 licensee's 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 February 27, 2009, when reactor power was reduced to 48 percent to perform turbine testing. Operations personnel returned the reactor to full power levels on February 28, 2009. Additional power reductions were performed during the inspection period to allow for routine testing of plant components.

Unit 2 began the inspection period operating at full power. Unit 2 remained at this power level through the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather Protection (71111.01)

.1 Adverse Weather Condition – Extreme Cold Conditions

a. Inspection Scope

In mid-January 2009, the area around the Prairie Island Nuclear Generating Plant experienced extreme cold temperatures. During this time, the licensee initiated corrective action program document (CAP) 1165338 due to discovering that the sensing line used to provide an automatic start signal to the fire pumps was frozen. The inspectors reviewed the CAP, control room logs, outstanding work orders on the greenhouse ventilation system, and the licensee's apparent cause report to determine if there was significant impact to mitigating systems and fire protection related equipment. The inspectors also reviewed the licensee's winter readiness and greenhouse normal ventilation procedures to determine how the ventilation system was prepared for cold weather conditions. Specific documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one actual adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

Introduction: The inspectors identified a Green finding due the fire protection system pumps being unable to auto start, as designed, in response to a low fire header pressure condition. This happened due to the freezing of a fire protection sensing line such that the fire pumps would not have automatically started following a fire.

Description: During a control room panel walkdown on January 13, 2009, a licensed operator identified that fire protection header pressure was 85 pounds and decreasing. At this pressure, the operator expected to find the jockey pump and all three fire pumps running. They were not. The operator checked the plant computer and found that the jockey pump had been cycling on and off as expected. However, the jockey pump had stopped cycling approximately 30 minutes prior to the operator discovering the low

header pressure condition. The operator informed the shift supervisor of the fire protection system status and actions were taken to manually start the screenwash pump to pressurize the fire header.

The licensee inspected the screenhouse for potential freezing issues following this event. No other issues were found. However, the 21 screenhouse exhaust fan was found running. The licensee believed that the 21 screenhouse exhaust fan was likely started during a warm winter day to maintain screenhouse temperatures. The fan was not shut down once the screenhouse temperatures decreased. The 11 screenhouse exhaust fan dampers were also partially open due to a previously identified equipment issue. These conditions led to the continuous introduction of cold outside air into the screenhouse to the point of freezing the sensing line. The 21 screenhouse exhaust fan was subsequently stopped. This allowed temperatures in the sensing line area to increase and thaw out the line.

The inspectors reviewed the licensee's apparent cause report for this event. The licensee concluded that the sensing line froze due to operations personnel failing to follow Administrative Work Instruction 5AWI 15.5.1, "Plant Equipment Control Process." Contributing causes were the inadequate guidance in Operating Procedure C37.5, "Screenhouse Normal Ventilation," and the failure to sufficiently question lower than expected screenhouse temperatures. The inspectors reviewed the procedures referenced in the apparent cause report and disagreed with the licensee's conclusions. Specifically, Section 6.6.22 of 5AWI 15.5.1 stated that the Equipment Status Control Log was required to be used if the position of a piece of equipment was changed by a process other than a procedure, checklist, work order or clearance order. The inspectors reviewed Operating Procedure C37.5 and found that the 21 screenhouse exhaust fan was operated per step 4.1 which stated, "on warm days when the traveling screen area exceeds 50 degrees, the 11 [21] screenhouse exhaust fans shall be run as necessary to prevent overheating of the pump area." As a result, the inspectors determined that the Equipment Status Control Log was not required to be used to document the starting of the 21 screenhouse exhaust fan.

The licensee also documented two equipment deficiencies within the apparent cause report's body. However, the licensee concluded that these deficiencies were not event contributors. The inspectors disagreed with this conclusion. As stated above, the 11 screenhouse exhaust fan dampers were found partially open due to a previously identified condition. The inspectors reviewed the licensee's computer database and found two May 2008 work orders to refurbish/rebuild various screenhouse ventilation exhaust dampers. In addition, the apparent cause report documented that the control room indication that would have been used to determine if the 21 screenhouse exhaust fan was running was non-functional. The inspectors searched the licensee's database again and found that this deficiency was first identified in April 2008. Although operations personnel had requested that the light be repaired by July 2008, no work had been done to correct this condition. The inspectors contacted the work control staff and requested the status of the work orders discussed above. The inspectors were informed that the 11 screenhouse exhaust fan work order had been rescheduled three times due to a lack of planning resources. This work order was scheduled for completion on May 4, 2009. The other ventilation work order had been rescheduled once due to parts issues. This work order was scheduled for completion on April 13, 2009. Lastly, the work order associated with the control room indicating light was scheduled for

completion on April 6, 2009. The inspectors planned to review the completion of these work orders as part of their hot weather readiness review.

Although the freezing of the sensing line was identified by a licensed operator during a control room panel walkdown, this finding is NRC identified because the inspectors found previously unknown weaknesses in the licensee's evaluation of this issue.

Analysis: The inspectors determined that the fire protection system pumps being unable to auto start, as designed, in response to a low fire header pressure condition was a performance deficiency and a finding that was required to be assessed using the Fire Protection Significance Determination Process (SDP). The inspectors determined that this finding was more than minor because if left uncorrected, the failure to protect mitigating systems equipment from the effects of extreme cold temperatures could result in the system failing to function when needed to respond to an event. This finding impacted the Mitigating Systems Cornerstone. The inspectors assigned a fixed fire protection systems finding category to this issue. This finding was also assigned a low degradation. The inspectors concluded that this finding was of very low safety significance (Green) per step 1.3.1 (assignment of a low degradation rating) of the Fire Protection SDP. This finding was determined to be cross-cutting in the Human Performance, Resources area because the licensee failed to have a complete and accurate normal screenhouse ventilation procedure to ensure that operation of the system would not result in the freezing of plant equipment during extreme cold weather conditions (H.2(c)) **(FIN 05000282/2009002-01; 05000306/2009002-01)**.

Enforcement: No violations of NRC requirements were identified because the fire pumps could have been manually started if needed and because the normal screenhouse ventilation system was not safety-related.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- D2 Emergency Diesel Generator;
- 122 Control Room Chiller;
- 11 and 12 Auxiliary Feedwater Pumps; and
- 12 Diesel-Driven Cooling Water Pump.

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Safety Analysis Report (USAR), Technical Specification (TS) requirements, outstanding work orders, CAPs, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems 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 operable. The inspectors examined the material condition of the components and observed operating parameters of 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 are listed in the Attachment.

These activities constituted four partial 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 the availability, accessibility, and condition of firefighting equipment in the following risk-significant plant areas:

- 11 and 12 Battery Rooms (Zone 1);
- 21 and 22 Battery Rooms (Zone 35);
- 715-foot Auxiliary Building (Zone 46);
- Auxiliary Feedwater Room (Zone 2); and
- 715-foot Unit 1 Auxiliary Building and Hot Chemistry Laboratory (Zone19).

The inspectors reviewed 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 Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the licensee's ability to respond to a security event. Using the documents listed in the attachment, 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. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Documents reviewed are 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.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On March 31, 2009, the inspectors observed the fire brigade during a simulated fire in the turbine building water treatment area. Based on this observation, the inspectors evaluated the readiness of the licensee's fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined by IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed the licensee's inspection of the D1 emergency diesel generator heat exchangers to verify that the licensee identified potential heat exchanger deficiencies. The inspectors viewed the as-found pictures of each heat exchanger to assess the overall material condition of the equipment and to determine whether the material condition impacted the ability of the heat exchangers to perform their safety function. The inspectors reviewed the licensee's heat exchanger tube plugging calculations and compared the calculation results to the actual number of tubes plugged in each heat exchanger. The inspectors also reviewed heat exchanger issues entered into the licensee's corrective action program to ensure that issues were being resolved in a timely manner based upon the importance to safety.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07-05.

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 February 23, 2009, 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 annunciator 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 are 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 systems:

- 480 Volt Electrical System, and
- Normal Screenhouse Ventilation System.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of 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 corrective action program with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two 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 risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Work Week 0902 including planned maintenance on the cooling water and charging systems;
- Emergent work due to the inoperability of the 11 and 21 residual heat removal (RHR) systems;
- Emergent work due to the loss of the Blue Lake 345 kilovolt offsite power line while the D5 and D6 emergency diesel generators were inoperable;
- Work Week 0909 including planned maintenance on the 2R, 2RX, and 2RY transformers; and
- An emergent overpower ΔT instrument failure.

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 maintenance risk assessments and emergent work control activities constituted five 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:

- Unit 1 RHR Hot Leg Piping – Vent Air from the Common RHR Piping to the Reactor Coolant System Hot Legs;
- Unit 2 Safety Injection System Voids;
- 11 and 21 RHR Voids in Minimum Flow Lines;
- Charging Pump Oil Compatibility Issues;
- Missing Cotter Pins on D6 Emergency Diesel Generator;
- 122 Control Room Chilled Water Pump High Vibrations;
- 22 Turbine-Driven Auxiliary Water Pump High Vibrations;
- Breaker 222E-3 Voltage Outside of Acceptable Range;
- High Crankcase Vacuum on D2 Emergency Diesel Generator; and
- Potentially Missing Fire Damper between Control Room Chiller Area and Auxiliary Building.

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 ten samples as defined in IP 71111.15-05.

b. Findings

Introduction: The inspectors identified a Green finding and a Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to adequately implement Procedure FP-OP-OL-01, "Operability Determination", to adequately assess the capability of the 122 Control Room Chilled Water Pump to meet its mission time following the discovery of increased pump vibrations.

Description: In September 2008, the 122 Control Room Chilled Water Pump was placed on an increased test frequency due to the discovery of higher than expected outboard bearing vibrations. Specifically, vibration levels as high as 0.0256 inches per second were recorded. This value exceeded the alert level established by the Inservice Testing Program. In December 2008, the licensee performed routine testing of the 122 Control Room Chilled Water Pump using Surveillance Procedure (SP) 1161B, "Control Room Train B Chilled Water Pump Quarterly Test," and found that the outboard bearing vibration levels had increased to approximately 0.0317 inches per second. Due to the adverse vibration trend, operations personnel requested that an operability determination be performed to assess the continued and long-term operability of the 122 Control Room Chilled Water Pump.

The inspectors reviewed the licensee's operability recommendation and found that the licensee had concluded that the pump would continue to operate for its required mission time. However, the mission time was not specifically stated in the document as required by the operability determination Procedure FP-OP-OL-01, "Operability Determination." The inspectors asked several engineering individuals to provide the mission time for the 122 Control Room Chilled Water Pump. The inspectors needed this information to perform an independent evaluation of the pump's performance. The licensee initially told the inspectors that the increased vibrations had no impact on the chilled water pump's operability because the total increase in vibrations was small. The inspectors reviewed the actual vibration data and found that the licensee's statement had failed to consider that the increasing vibration trend had started in May 2008 rather than September 2008. Following this discussion, the inspectors again requested the 122 Control Room Chilled Water Pump's mission time. After approximately 1 week, the engineering staff informed the inspectors that the mission time was 30 days. Using this information, the inspectors agreed that the pump would have continued to perform its safety function. However, the inspectors concluded that the licensee's initial operability evaluation was inadequate because the licensee failed to specify the pump's required mission time and justify why the pump would have continued to operate. The licensee revised the operability evaluation following discussions with the inspectors. Maintenance personnel replaced the 122 Control Room Chilled Water Pump outboard bearings on February 7, 2009.

Analysis: The inspectors determined that the failure to adequately implement Procedure FP-OP-OL-01, "Operability Determination" to justify the continued operability of the 122 Control Room Chilled Water Pump was a performance deficiency that required evaluation using the SDP. The inspectors determined that the finding was more than minor because, if left uncorrected, failure to adequately implement the operability procedure could result in safety-related components been incorrectly declared operable

rather than inoperable or operable, but non-conforming (a more significant safety concern). This finding affected the Mitigating System Cornerstone. The inspectors concluded that this finding was of very low safety significance (Green), because the finding did not represent an actual loss of safety function of a single train for longer than its TS allowed outage time. Additionally, the inspectors determined that this finding was cross-cutting in the Human Performance, Decision Making area because the licensee failed to verify the validity of underlying assumptions used in operability decisions (H.1(b)).

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality be prescribed and accomplished by procedures appropriate for the circumstances. The licensee implemented the operability determination process (an activity affecting quality) using Procedure FP-OP-OL-01, "Operability Determination." FP-OP-OL-01 required, in part, that the licensee assess the capability of a system to meet its mission time as part of the operability process. Contrary to the above, on December 26, 2008, the licensee failed to adequately assess the continued operability of the 122 Control Room Chilled Water Pump due to the failure to include the specific mission time and adequately justify why the pump would continue to run for this time period. Because this finding was of very low safety significance, and because it was entered into the corrective action program as CAP 1162312, this violation is being treated as an NCV consistent with Section VI.A of the Enforcement Policy (**NCV 05000282/2009002-02;05000306/2009002-02**). Corrective actions for this issue included revising the operability determination with additional information to justify the continued pump operability for the required mission time and replacement of the outboard bearings.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modification:

- Alternate Power Source to Closed Circuit Television Camera.

The inspectors compared the temporary configuration change and associated 10 CFR 50.59 screening and evaluation information against the design basis, the USAR, the TS, and other documents as applicable, to verify that the modification did not affect the operability or availability of the affected system and was adequate for the intended purpose. The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modification was installed as directed; the modification operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modification did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with licensee personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall performance.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

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 following post-maintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- D1 Emergency Diesel Generator 24-Month Inspection;
- Unit 2 Overpower ΔT Summing Amplifier Replacement;
- 21 Cooling Water Strainer Agastat Relay Replacement;
- D5 Emergency Diesel Generator Overhaul; and
- D1 Emergency Diesel Generator Lube Oil Heat Exchanger Replacement.

These activities were selected based upon the structure, system, or component's ability to impact risk. 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 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 corrective action program and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

(1) Failure to Identify D5 Coolant Vent Line Fretting in a Timely Manner

Introduction: The inspectors identified a Green finding for the failure to identify and evaluate a fretted D5 turbocharger coolant vent line in a timely manner.

Description: During the early afternoon of February 25, 2009, the inspectors performed an observation of ongoing D5 emergency diesel generator overhaul activities. During this observation, the inspectors identified that the turbocharger coolant vent line had a potentially significant fretted condition adjacent to a retaining U-bolt. At the time of this observation, the D5 emergency diesel generator was out of service and undergoing its 12-hour post-maintenance test. In addition, the licensee was nearing the 11th day of a 14-day limiting condition for operation (LCO) period. The inspectors observed the fretted condition approximately 15 minutes into the post-maintenance test (PMT).

Once observed, the inspectors discussed the fretted condition with a maintenance supervisor and an operator involved with the PMT. At the time, the inspectors understood that the supervisor or operator would formally identify and communicate the fretting issue to the outage control center and through the corrective action process. The morning of February 26, 2009, the inspectors discovered that licensee personnel had not documented the fretting issue in the corrective action system until the 12-hour PMT was complete. In addition, there was very little communication between the individuals the inspectors spoke with and the outage control center. The inspectors concluded that the lack of communications resulted in incurring additional maintenance rule unavailability time and extending the LCO by approximately 18 hours.

The licensee subsequently performed an ultrasonic examination of the fretted area to determine whether the piping needed to be replaced. The ultrasonic examination showed that the vent pipe was sufficient for continued operation because the pipe's wall thickness was greater than the minimum allowable. The licensee also obtained correspondence from the vendor that stated that the pipe could be kept in service. The licensee planned to replace the vent line during the next D5 overhaul using Work Request 43216. The licensee also reinforced the need for timely communication of issues to ensure that additional unavailability was not incurred unnecessarily.

Analysis: The inspectors determined that the failure to identify, communicate, and evaluate discrepant conditions in a timely manner during this post maintenance test or during previous D5 operation was a performance deficiency that required evaluation using the SDP. The inspectors determined that the finding was more than minor because if left uncorrected, the failure to identify, communicate, and evaluate issues in a timely manner could result in unexpected equipment performance or improperly returning equipment to service following maintenance (a more significant safety issue). The inspectors concluded that this finding was of very low safety significance because the finding did not result in an actual loss of safety function and did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. Additionally, the inspectors considered the finding to be cross-cutting in the Problem Identification and Resolution, Corrective Action Program area because operations and maintenance personnel failed to identify this issue in a timely manner commensurate with its safety significance (P.1(a)) **(FIN 05000306/2009002-03)**.

Enforcement: No violations of NRC requirements were identified because the D5 emergency diesel generator was inoperable when this condition was found. Corrective actions for this issues included performing an ultrasonic examination to determine whether the pipe needed to be replaced prior to declaring the diesel generator operable and reinforcing the need for timely communication of equipment issues during TS LCO conditions.

1R22 Surveillance Testing (71111.22)

.1 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:

- Bus 16 Load Sequencer Test (Routine);
- Unit 1 Control Rod Quarterly Exercise (Routine);
- Bus 26 Load Sequencer Test (Routine);
- 12 Containment Spray Pump Quarterly Test (IST);
- 12 Motor-Driven Auxiliary Feedwater Pump Quarterly Flow and Valve Test (IST);
- D2 Emergency Diesel Generator 24-Hour Endurance Run (Routine);
- D5 Emergency Diesel Generator Monthly Surveillance (Routine); and
- Unit 1 Turbine-Driven Auxiliary Feedwater Pump Monthly Test (Routine).

The inspectors observed in plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated;
- plant equipment calibration was correct, accurate, and properly documented;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy, and 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 are listed in the Attachment to this report.

This inspection constituted six routine surveillance testing samples and two inservice testing samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction: A green self-revealed finding and an NCV of Prairie Island Nuclear Generating Plant Operating License DPR-42, Section C.1, was identified due to the failure to maintain Unit 1 reactor power below the thermal power limitations stated in the facility operating license.

Description: On January 2, 2009, operations personnel tested the 11 turbine-driven auxiliary feedwater (TDAFW) pump using SP 1102, "11 TDAFW Pump Monthly Test." While performing this test, the control room received an alarm and identified that Unit 1 thermal power had momentarily spiked above 100 percent. Step 4 of Annunciator Response Procedure (ARP) 47013-0303 stated that the control room operators were only required to take action to reduce thermal power if the last five minute thermal power average exceeded 100 percent. Control room personnel checked the latest five minute average and determined that the average was not greater than 100 percent. As a result, no actions were taken to reduce Unit 1 reactor power.

Unit 1 thermal power continued to momentarily spike above 100 percent approximately eight additional times during the TDAFW test, which was conducted over a 1 hour period. Operations personnel documented this condition in CAP 1164293. The inspectors reviewed the CAP and learned that the prior performances of SP 1102 were conducted with the main turbine operating in the valve position control mode. This mode of turbine operation allowed the position of the turbine control valves to remain relatively unchanged even though a portion of the steam flowing to the turbine was diverted to operate the 11 TDAFW pump. On January 2, 2009, operations personnel performed SP 1102 with the main turbine operating in first stage pressure mode. This mode of turbine operation allowed the control valves to move to maintain turbine first stage pressure constant while diverting steam to the 11 TDAFW pump. This resulted in an increase in reactor thermal power. The highest reactor power level achieved was 100.1 percent.

The inspectors reviewed ARP 47013-0303, Operating Procedure 1C1.4, "Unit 1 Power Operation," Section Work Instruction (SWI) O-50, "Reactivity Management," NRC Regulatory Issue Summary (RIS) 2007-21, "Adherence of Licensed Power Limits," and RIS 2007-21, Revision 1. The inspectors determined that the licensee had revised the ARP, Operating Procedure 1C1.4, and SWI O-50 to more clearly define the term "steady state" following the NRC's August 23, 2007, issuance of RIS 2007-21. The inspectors determined that the document changes were non-conservative because they allowed operations personnel to intentionally operate the reactor above the licensed thermal power level for short periods of time.

The inspectors also reviewed the meeting minutes from a June 12, 2008, meeting between the NRC and the Nuclear Energy Institute (NEI). During this meeting, the NRC was concerned about how a proposed NEI position statement on maintenance of licensed power limits would address a situation similar to the one that occurred at Prairie Island on January 2, 2009. Individuals from NEI stated that situations such as the one discussed above would be addressed by step 4.2.1 of the NEI Position Statement. The NEI individuals also stated that if operations personnel found that core thermal power was above the licensed limitation, action would be taken to reduce power below the licensed limit in a timely manner even though the 2-hour average may still be below the limit.

The inspectors reviewed the NEI "Position Statement on the Licensed Power Limit" dated June 23, 2008. Step 4.2.1 of the Position Statement reads as follows:

"No actions are allowed that would intentionally raise core thermal power above the licensed power limit for any period of time. Small, short-term fluctuations in power that are not under the direct control of a licensed operator are not considered intentional."

In addition, Section 4.4 of the NEI Position Statement documented that the following actions constituted performance deficiencies:

- Intentional raising of reactor power above the licensed power limit, and
- Failure to take prudent action prior to a pre-planned evolution that could cause a power increase to exceed the licensed power level.

Based upon discussions with licensee personnel, a review of plant data and procedures, and the information provided above, the inspectors determined the performance of SP 1102 was an activity that was under the direct control of the licensed operators. In addition, the licensee failed to take prudent action to lower reactor power prior to performing SP 1102 even though there was a potential that the performance of this test could cause reactor power to exceed the licensed power level. Lastly, the inspectors concluded that once operations personnel identified that Unit 1 was operating above the licensed power limit, no action was taken to reduce Unit 1 power levels. The failure to take action to reduce Unit 1 reactor power constituted intentional operation above the licensed thermal power limit.

Analysis: The inspectors determined that the failure to operate the Unit 1 reactor in accordance with Prairie Island Nuclear Generating Plant Facility Operating License DPR-42, Section C.(1), Maximum Power Level, was a performance deficiency that required an evaluation using the SDP. The inspectors determined that this issue was more than minor because if left uncorrected the operation of the reactor beyond the limits specified in the operating license could become a more significant safety concern and was the direct result of intentional operation above the limit specified in the operating license. The finding affected the Barrier Integrity Cornerstone for the fuel barrier and the instances where the licensed thermal power limit was exceeded were of short duration and low peak values (i.e., 100.1 percent). The inspectors determined that this issue was of very low safety significance (Green) because it only impacted the fuel aspect of the Barrier Integrity Cornerstone and no core thermal limits were violated. The inspectors determined that this finding was cross-cutting in the Human Performance,

Resources area because the licensee failed to have complete, accurate, and up-to-date procedures regarding the maintenance of licensed thermal power levels (H.2(c)).

Enforcement: Section C.1 of Prairie Island Nuclear Generating Plant, Unit 1, Facility Operating License DPR-42 states that the licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 1650 megawatts thermal. Contrary to the above, on January 2, 2009, operations personnel operated the facility at steady state reactor core power levels in excess of 1650 megawatts thermal. Specifically, reactor core power levels momentarily spiked above 1650 megawatts thermal nine times during the performance of SP 1102, "11 TDAFW Pump Monthly Test." However, because this violation is of very low safety significance and was entered into your corrective action program as CAP 1164293, it was treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy (**NCV 05000282/2009002-04**). Corrective actions for this issue included issuing operations guidance to ensure that actions were taken to lower reactor power if power levels exceeded the limit specified in the operating license, revising SWI O-50 to reflect that reactor power should be lowered prior to performing tests that could cause unacceptable increases in reactor power, and revising SP 1102 to provide guidance regarding potential impacts on reactor power during the performance of this test.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

.1 Training Observation

a. Inspection Scope

The inspector observed simulator training evolutions for licensed operators on January 14 and February 5, 2009, which required emergency plan implementation by an operations crew. This evolution was planned to be evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment to this report.

This training inspection constituted two samples as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours performance indicator (PI) for Units 1 and 2 for the period from the first quarter of 2008 through the first quarter of 2009. To determine the accuracy of the PI data reported during those periods, guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, corrective action program reports, event reports and applicable NRC Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned scrams per 7000 critical hours samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for Units 1 and 2 for the period from the first quarter of 2008 through the first quarter of 2009. To determine the accuracy of the PI data reported during those periods, guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, corrective action program reports, event reports and applicable NRC Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned scrams with complications samples as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours PI for Units 1 and 2 for the period from the first quarter of 2008 through the first quarter of 2009. To determine the accuracy of the PI data reported during those periods, guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, corrective action program reports, event reports and applicable NRC Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted two unplanned transients per 7000 critical hours samples 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 corrective action program 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 corrective action program 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 corrective action program. This review was accomplished through inspection of the station's daily corrective action document 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.

40A5 Other Activities

.1 (Closed) Unresolved Item 05000282/2008005-06; 05000306/2008005-06: Abnormal Operating Procedure Entry Conditions

Introduction: The inspectors identified a Green finding and an NCV of TS 5.4.1 due to the failure to implement Procedure FP-G-DOC-03, "Procedure Use and Adherence." The failure to implement FP-G-DOC-3 resulted in the failure to implement the appropriate abnormal operating procedure following the uncontrolled insertion of control rods on November 6, 2008.

Description: In NRC Inspection Report 2008005, the inspectors documented a concern due to operations personnel not entering an abnormal operating procedure following unexpected control rod movement into the reactor core. The inspectors reviewed procedures and interviewed operations and training personnel and determined that the operators had received training that fostered a philosophy that abnormal operating procedures were not required to be entered if the cause of the abnormal operating condition was known.

The inspectors reviewed Procedure FP-G-DOC-03 and found that step 4.1 defined activities affecting quality as follows:

"Activities that affect or reasonably could affect the safety-related function of nuclear plant structures, systems, components, and parts. Activities included are designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling and modifying."

In addition, step 5.1.1 of Procedure FP-G-DOC-03 required that all personnel shall perform activities affecting quality using working copies of continuous or reference use procedures.

The inspectors determined that the operation of the reactor following the uncontrolled control rod insertion was an activity affecting quality. In addition, 2C5 AOP 2, "Uncontrolled Insertion of a Rod Control Cluster Assembly," was designated as a continuous use procedure. Based upon the information discussed above, the inspectors determined that the operators were procedurally required to have entered 2C5 AOP 2 following the unexpected control rod insertion.

Analysis: The inspectors concluded that the failure to follow Procedure FP-G-DOC-03 and enter 2C5 AOP 2 following the unexpected insertion of multiple control rods was a performance deficiency that required an evaluation using the SDP. The inspectors determined that this finding was more than minor because the failure to enter procedures to respond to unexpected plant conditions could result in incorrect actions being taken following a plant event (a more significant safety issue). This finding affected the Initiating Events Cornerstone. The inspectors determined that this issue was of very low safety significance because the finding was not a loss of coolant accident initiator, was not an external events initiator, and would not have resulted in both the likelihood of a reactor trip and that mitigating systems equipment would not have been available. The inspectors determined that this finding was cross-cutting in the Human Performance, Work Practices area because the licensee had not effectively communicated expectations regarding procedural compliance following equipment issues where the cause of the issue was known (H.4(b)).

Enforcement: Technical Specification 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 1.d of Regulatory Guide 1.33, Revision 2, Appendix A requires that written procedures be established, implemented and maintained regarding procedural adherence.

Step 5.1.1 of Procedure FP-G-DOC-03, "Procedure Use and Adherence," required that all personnel shall perform activities affecting quality using working copies of continuous or reference use procedures.

2C5 AOP 2, "Uncontrolled Insertion of a Rod Control Cluster Assembly," was designated as a continuous use procedure.

Contrary to the above, on November 6, 2008, operations personnel failed to operate the Unit 2 reactor (an activity affecting quality) using Abnormal Operating Procedure 2C5 AOP 2 following the uncontrolled insertion of multiple control rods. However, because this violation is of very low safety significance (Green) and was entered into your corrective action program as CAPs 1158505 and 1159133, it was treated as an NCV consistent with Section VI.A.1 of the Enforcement Policy (**NCV 05000282/2009002-05;05000306/2009002-05**). Corrective actions for this issue included providing guidance to all operations personnel regarding the need to enter abnormal operating procedures regardless of whether the cause of a condition is known and revisions to licensed operator training.

.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.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 8, 2009, the inspectors presented the inspection results 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

Cornerstone: Mitigating Systems

10 CFR Part 50, Appendix B, Criterion V, requires in part, that activities affecting quality shall be accomplished in accordance with procedures appropriate to the circumstance. Contrary to the above, on February 12, 2009, licensee personnel failed to perform surveillance testing on the 12 Containment Spray Pump in accordance with the surveillance procedure. Specifically, operations personnel failed to adhere to procedural requirements regarding a 30 minute full flow time restriction for the 12 Containment Spray Pump. In addition, operations personnel did not obtain vibration readings at the specified reference points. These procedure compliance failures resulted in the surveillance exceeding the 30 minute restriction by approximately 1.5 minutes. Additionally, horizontal and axial vibration readings were taken in an alternate location due to accessibility issues resulting from a scaffold. Corrective actions for this issue included a procedure change and an evaluation of the vibration data. The licensee entered this issue into the corrective action program as CAP 1169248.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Wadley, Site Vice President
J. Sorensen, Director Site Operations
K. Ryan, Plant Manager
T. Allen, Business Support Manager
J. Anderson, Regulatory Affairs Manager
L. Clewett, Operations Manager
B. Flynn, Safety and Human Performance Manager
R. Hite, Radiation Protection and Chemistry Manager
D. Kettering, Site Engineering Director
R. Madjerich, Production Planning Manager
J. Muth, Nuclear Oversight Manager
S. Northard, Performance Improvement Manager
M. Schmidt, Maintenance Manager
J. Sternisha, Training Manager

Nuclear Regulatory Commission

J. Giessner, Reactor Projects Branch 4 Chief
T. Wengert, Office of Nuclear Reactor Regulation Project Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000282/2009002-01; 05000306/2009002-01	FIN	Failure to Protect Fire Protection Equipment from Effects of Extreme Cold Temperatures (Section 1R01.1)
05000282/2009002-02; 05000306/2009002-02	NCV	Failure to Follow Procedures During Performance of Operability Evaluations (Section 1R15.1)
05000306/2009002-03	FIN	Failure to Follow Procedure During D5 Post-Maintenance Testing (Section 1R19.1)
05000282/2009002-04	NCV	Failure to Adhere to Licensed Power Level Specified in Operating License (Section 1R22.1)
05000282/2009002-05; 05000306/2009002-05	NCV	Failure to Follow Procedure Use and Adherence Procedure Following Receipt of Abnormal Operating Procedure Entry Condition (Section 4OA5.1)

Closed

05000282/2009002-01; 05000306/2009002-01	FIN	Failure to Protect Fire Protection Equipment from Effects of Extreme Cold Temperatures (Section 1R01.1)
05000282/2009002-02; 05000306/2009002-02	NCV	Failure to Follow Procedures During Performance of Operability Evaluations (Section 1R15.1)

05000306/2009002-03	FIN	Failure to Follow Procedure During D5 Post-Maintenance Testing (Section 1R19.1)
05000282/2009002-04	NCV	Failure to Adhere to Licensed Power Level Specified in Operating License (Section 1R22.1)
05000282/2009002-05 05000306/2009002-05	NCV	Failure to Follow Procedure Use and Adherence Procedure Following Receipt of Abnormal Operating Procedure Entry Condition (Section 4OA5.1)
05000282/2008005-06; 05000306/2008005-06	URI	Abnormal Operating Procedure Entry Conditions (Section 4OA5.1)

Discussed

None		
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LIST OF DOCUMENTS REVIEWED

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

1R01 Adverse Weather

- Department Clock Reset Yellow Sheet; no date
- Human Performance Investigation Report; no date
- Operating Procedure C37.5; Screenhouse Normal Ventilation; Revision 7
- Test Procedure 1637; Winter Plant Operations; Revision 39
- CAP 1167617; Inappropriate Guidance Given to Verify Winter Preparedness; January 31, 2009
- Operating Instruction 09-06; no date
- Administrative Work Instruction 5AWI 15.5.1; Plant Equipment Control Process; Revision 27
- CAP 1135065; 21 Non-Safeguards Screenhouse Vent Trouble Light Lit During Operation; April 21, 2008

1R04 Equipment Alignment

- C37.11; Chilled Water Safeguard System Operation; Revision 21
- C37.11.1 Chilled Water Safeguards System; Revision 18
- Integrated Checklist C1.1.20.7-5; D2 Diesel Generator Valve Status; Revision 20
- Integrated Checklist C1.1.20.7-6; D2 Diesel Generator Auxiliaries and Room Cooling Local Panels; Revision 10
- Integrated Checklist C1.1.20.7-7; Diesel Generator D2 Main Control Room Switch and Indicating Light Status; Revision 13
- Integrated Checklist C1.1.20.7-8; D2 Diesel Generator Circuit Breakers and Panel Switches; Revision 16
- C28.2; Auxiliary Feedwater System – Unit 1; Revision 44
- C1.1.35-3; Cooling Water System; Revision 28

1R05 Fire Protection

- Safe Shutdown Analysis
- Fire Hazards Analysis
- Procedure F5, Appendix A; Fire Plan Maps; Various Revisions

1R07 Heat Sinks

- CAP 1166096; D1 Lube Oil Heat Exchanger Inspection Results; January 20, 2009
- PINGP 1066; Cooling Water/Fire Protection or Cooling Water Heat Exchanger Inspection Reports; January 19, 2009
- Calculation ENG-ME-479; Tube Plugging Criteria for Unit 1 Diesel Generator Heat Exchangers; Revision 1
- D1 Heat Exchanger Eddy Current Test Results; January 2007

- Electric Power Research Institute Document NP-7552; Heat Exchanger Performance Monitoring Guidelines; December 1991

1R11 Licensed Operator Requalification

- P9160S-001 Attachment SQ-61; Simulator Cycle Quiz #61; Revision 0

1R12 Maintenance Effectiveness

- QF-0739; Response to NRC Questions on Screenhouse Ventilation System; March 12, 2009
- QF-0739; Response to NRC Questions regarding Maintenance Rule Scoping for Screenhouse Ventilation System; March 9, 2009

1R13 Maintenance Risk Assessment and Emergent Work

- Operating Procedure 1C20.5; Unit 1 – 4.16Kv System; Revision 15
- SP 2118; Verifying Paths from the Grid to the Unit 2 Buses; Revision 27

1R15 Operability Evaluations

- WO 376103; Contingency for Venting Gas from Piping
- WO 376103-01; Work Plan to Vent Air from the Common RHR Piping from the RCS Hot Legs
- CAP 1165976; Gas Void Found at Location 1RH-04; January 19, 2009
- CAP 52302; RHR Hot Leg Suction Piping Water Hammer Event; January 9, 1999
- CAP 1166196; Mobilgear 629 Oil Inadvertently Added to Charging Pump; January 21, 2009
- Mobil SHC 600 Series Product Specification (#629 Synthetic Lubricant)
- Mobil 600 Series Product Specification (#629 Lubricant)
- CAP 1164489; 22 TDAFW Pump Vibration Increasing; January 6, 2009
- CAP 1162312; 122 Control Room Chilled Water Pump Has Pump Outboard Bearing High Vibes; December 12, 2008
- SP 1161B; Control Room Train B Chilled Water Pump Quarterly Test ; Revision 11
- CAP 1165083 As Found Voltage Outside of Acceptable Range During Performance of MCC PE-G7 for Breaker 222E-3; January 9, 2009
- PE MCC-G7; MCC Electrical Preventive Maintenance for GE7700 Line MCCS; Revision 26
- CAP 1169673; D5 Engine 2 Cylinder 5B Cotter Pin Missing; February 17, 2009
- CAP 1169761; D5 Engine 1 Cylinders 4B and 5B Cotter Pins Missing; February 17, 2009
- CAP 1169673/1169761 Past Operability Review
- WO 351271; Replace Specific D5 Pistons and Cylinders
- CAP 1169673/1169761; FME Recovery Plan
- CAP 1166196; Mobilgear 629 Oil Inadvertently Added to Charging Pump; January 21, 2009
- Mobil SHC 600 Series Product Data Sheet
- Mobil 600 Series Product Data Sheet

1R19 Post-maintenance Testing

- PM 3001-2-D1; D1 Diesel Generator Inspection (034-011); Revision 25
- CAP 1166428; Loose Bolting Found on D1 After Step Signed Off as Complete; January 22, 2009
- WO 327265-10; Verify Torque on D1 Components; January 22, 2009
- PINGP 1631; Safety Issues Stop Work Form (Sign-off of D1 PM Without Work Being Completed); January 22, 2009

- CAP 1166428-02; Maintenance Rework Evaluation – D1 Vertical Drive Inspection Cover Loose Bolting; no date
- CAP 1166428; Department Clock Reset – Yellow Sheet; January 28, 2009
- WO 377710; Troubleshooting Log; January 25, 2009
- WO 377710; D1 Diesel Generator Tripped on High Crankcase Pressure
- CAP 1166680; D1 High Crankcase Pressure Trip During PMT Activities; January 25, 2009
- CAP 1164948; Fairbanks Morse Unable to Supply Technical Representative Services for D1; January 9, 2009
- CAP 1165574; D1 Work Removed from Work Window 0903 at T-1 Due to Organization Misalignment; January 15, 2009
- CAP 1166484; D1 Liner Replacement Complex Work Plan for Work Window 0916; January 23, 2009
- Administrative Work Instruction 5AWI 3.15.10; Emergency Diesel Generator Compensatory Measures; Revision 1
- SP 1118; Verifying Paths from the Grid to Unit 1 Buses; Revision 22
- SP 2118; Verifying Paths from the Grid to Unit 2 Buses; Revision 27
- CAP 1167727; Unexpected LCO Entry – Blue Channel OPDT Setpoint; February 2, 2009
- WO 378143; 2TM-403V Delta T SP2 Calculator Special Summing Amp
- WR 42509; 2TM-403V OPDT Summing Unit Failed at 50% with 2 Bistables
- Work Plan 378143-01; Replace Summing Amplifier 2TM-403V; Revision 000
- WO 97368; Perform PMT / RTS Testing for 21 Cooling Water Strainer
- CAP 1169378; 21 Cooling Water Strainer Time Delay Relay Tested Outside Range
- WR 42859; 21 Cooling Water Strainer Time Delay Relay Tested Outside Range
- OPR 1165620; 21 Cooling Water Strainer Backwash Valve Failed to Open in the Required Time
- NRC Information Notice 2008-05; Fires Involving Emergency Diesel Generator Exhaust Manifolds; April 12, 2008
- 1C20.7 AOP 1; Failure of D1 or D2 Lube Oil Keep Warm System; Revision 6
- FP-G-DOC-03; Procedure Use and Adherence; Revision 5
- FP-WM-WOE-01; Work Order Execution Process; Revision 3
- CAP 1170902; D5 Engine 1 Coolant Vent Line Has Fretting On Pipe; February 26, 2009
- FP-PA-ARP-01; CAP Action Request Process; Revision 21

1R22 Surveillance Test

- SP 1095; Bus 16 Load Sequencer Test; Revision 24
- WO 357241; SP 1095 Bus 16 Load Sequencer Test
- SP 1047; Control Rod Quarterly Exercise (Unit 2); Revision 36
- WO 357246; SP 1047 Control Rod Quarterly Exercise
- SP 2095; Bus 26 Load Sequencer Test; Revision 23
- WO 358531; SP 2095 Bus 26 Load Sequencer Monthly Test
- SP 1101; 12 Motor-Driven Auxiliary Feedwater Pump Quarterly Flow and Valve Test; Revision 49
- WO 371230; 12 Motor-Driven Auxiliary Feedwater Pump Quarterly Flow and Valve Test
- SP 1090B; 12 Containment Spray Pump Quarterly Test; Revision 15
- WO 358919; 12 Containment Spray Pump Quarterly Test
- CAP 1169248; SP 1090B Not Completed Due to Exceeding 30 Minute Time Limit; February 12, 2009
- CAP 1169333; Containment Spray Pump Surveillance Procedure 30 Minute Time Limit Places Undue Time Pressure on Operations.
- CAP 1169342; 12 CS Pump Discharge Pressure Gauge Root Valve; February 13, 2009

- CAP 1171730; Vibration On 12 CS Pump Showing Adverse Trend; March 04, 2009
- FP-G-DOC-03; Procedure Use and Adherence; Revision 5
- FP-G-DOC-04; Procedure Processing; Revision 8
- H10.1; ASME Inservice Testing Program; Revision 23
- WO 359161; SP 1335 D2 Diesel Generator 18-Month 24-Hour load Test
- SP 1335; D2 Diesel Generator 18-Month 24-Hour Load Test; Revision 9
- CAP 1168913; Load Transient While Performing SP 1335 D2 24-Hour Test; February 11, 2009
- Control Room Operating Logs; January 2, 2009
- NEI Letter from John C. Butler to Timothy J. Kobetz, NRC; NEI Position Statement on the Licensed Power Limit; dated June 23, 2008
- NRC Memorandum from Timothy Kolb to Timothy J. Kobetz; Summary of RIS 2007-21, "Adherence of Licensed Power Limits," Working Group Meeting with NEI to Discuss NEI Guidance Document, Draft Revision 6 and NRC Comments; July 2, 2008

1EP6 Emergency Preparedness Drills

- P9160S-001 DEP 1; Cycle 08G DEP Scenario; Revision 0

4OA2 Identification and Resolution of Problems

- CAP 1164401; OPR 01163835 Does Not Include All Uncertainties (GL-08-01); January 5, 2009
- CAP 1164691; NRC Concern on LER 2-08-01 (CC/HELB); January 7, 2009
- CAP 1164836; D5 and D6 Fuel Oil Drain Valves Leaking By; January 8, 2009
- CAP 1164893; Evaluate Potential for Insulation Issue Due to Ongoing Work; January 9, 2009
- CAP 1164930; Operator Response to Fire Scenario Did Not Match F5 Appendix B; January 9, 2009
- CAP 1165467; NRC License Renewal Walkdown Fuel Oil System Observation; January 14, 2009
- CAP 1165460; NRC license Renewal Walkdown Fuel Oil System 22 DDCLP; January 14,
- CAP 1165453; NRC license Renewal Walkdown Fuel Oil Minor Leakage D2 Day Tank; January 14, 2009
- CAP 1165424; NRC License Renewal Walkdown FO-2-4 Leakage; January 14, 2009
- CAP 1165352; NRC Question on Calculation GEN-PI-055 Timing; January 14, 2009

4OA7 Licensee-Identified Findings

- CAP 1169248; SP 1092B Not Completed Due to Exceeding 30 Minute Time Limit; February 12, 2009

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
ARP	Annunciator Response Procedure
CAP	Corrective Action Program Document
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
LCO	Limiting Condition for Operation
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Test
RHR	Residual Heat Removal
RIS	Regulatory Issue Summary
SDP	Significance Determination Process
SP	Surveillance Procedure
SWI	Section Work Instruction
TDAFW	Turbine-Driven Auxiliary Feedwater
TS	Technical Specifications
USAR	Updated Safety Analysis Report