

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-282, 50-306
License Nos: DPR-42, DPR-60

Report No: 50-282/99017(DRP); 50-306/99017(DRP)

Licensee: Northern States Power Company

Facility: Prairie Island Nuclear Generating Plant

Location: 1717 Wakonade Drive East
Welch, MN 55089

Dates: November 24, 1999, through January 5, 2000

Inspectors: S. Ray, Senior Resident Inspector
S. Thomas, Resident Inspector

Approved by: Roger D. Lanksbury, Chief
Reactor Projects Branch 5
Division of Reactor Projects

SUMMARY OF FINDINGS

Prairie Island Nuclear Generating Plant, Units 1 & 2
NRC Inspection Report 50-282/99017(DRP); 50-306/99017(DRP)

The report covers a 6-week period of resident inspection.

No findings were identified in any cornerstones.

Report Details

During this inspection period, both units operated at or near full power except that power was reduced to about 40 percent on Unit 2 on December 4-5, 1999, and was reduced on Unit 1 on December 11-12, 1999. Both power reductions were for condenser cleaning and turbine valve testing.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather

a. Inspection Scope

The inspectors walked down selected risk-significant systems, reviewed TP [Periodic Test Procedure] 1637, "Winter Plant Operations," Revision 24, and reviewed the following procedures to verify that adequate measures were in place for protection against the effects of cold weather:

- Suction supplies to the auxiliary feedwater (AFW) pumps from the condensate storage tanks (CSTs) in accordance with Operating Procedure C28.6, "Condensate Storage Tank Freeze Protection System," Revision 7; System Prestart Checklist C 28-11, "CST Winter Operation," Revision 8; Form PINGP [Prairie Island Nuclear Generating Plant] 26, "Boric Acid & Unit 1 Condensate & Caustic Heat Trace Log," Revision 9; and Form PINGP 1138, "Unit II Condensate Heat Trace Log," Revision 1; and
- Cooling water supplies to the instrument air compressors in accordance with Operating Procedure C34, "Station Air System," Revision 15, Section 5.12, "Aligning Air Compressor Cooling Water Supply for Winter Operation."

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R03 Emergent Work

a. Inspection Scope

The inspectors reviewed and observed the emergent work activity for repair of valve CV-31329 [11 regenerative heat exchanger auxiliary spray to 11 pressurizer]. This at-power repair consisted of injecting sealing material into the stud cavity area of the valve, the examination and evaluation of three body-to-bonnet studs, and the replacement of three body-to-bonnet stud nuts.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors walked down the 12 motor-driven AFW pump while the 11 turbine-driven AFW pump was out-of-service for the performance of testing in accordance with SP [Surveillance Test Procedure] 1102, "Turbine-Driven AFW Pump Monthly Testing," Revision 68.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R05 Fire Protection

a. Inspection Scope

The inspectors walked down fire area 41/fire detection zone 75 [Screenhouse 695' level] looking for any fire protection issues related to the control of transient combustibles, ignition sources, fire detection equipment, manual and automatic suppression capabilities, and barriers to fire propagation.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R09 Inservice Testing

a. Inspection Scope

The inspectors reviewed and observed the following inservice tests:

- Quarterly testing of the 11 and 12 containment spray pumps and suction check valves in accordance with SP 1090, "Containment Spray Pump and Spray Additive Valve Quarterly Test," Revision 51;
- Monthly testing of motor-operated valves, control valves, and check valves exercised during the performance of SP 1102, "Turbine-Driven AFW Pump Monthly Test," Revision 68; and
- Monthly testing of the Unit 2 steam generator power-operated relief valves in accordance with SP 2111, "Monthly Main Steam Power Operated Relief Valve Test," Revision 32.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements, including a review of scoping, goal setting, and performance monitoring, short-term and long-term corrective actions, and current equipment performance status, for the following components and systems:

- chemical and volume control system;
- fire protection system;
- component cooling pump out-of-service times; and
- charging pump out-of-service times.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R13 Maintenance Work Prioritization

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk and equipment configuration associated with the performance of outlet temperature control valve calibrations on the 11, 12, 21, and 22 component cooling heat exchangers. The work activity which calibrated the 12 and 22 heat exchanger temperature control valves significantly impacted the Unit 1 and Unit 2 risk profiles and required considerable scheduling efforts to minimize that impact.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R14 Nonroutine Events

a. Inspection Scope

The inspectors observed licensee performance during the following nonroutine conditions:

- Unit 1 control room operators placing excess letdown in service, securing charging, securing normal letdown, and operating on excess letdown for an extended period of time while CV-31329 maintenance activities were being performed; and
- Operations of both units during the rollover period from December 31, 1999, to January 1, 2000.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following operability evaluations:

- General Issue 19992989, "SACM [Societe Alsacienne de Constructions Mecaniques] Diesel Low Load Issue";
- Safety Evaluation 550, "Temporary Repair of Body-to-Bonnet Leak on CV-31329, 11 Regenerative Heat Exchanger Auxiliary Spray to 11 Pressurizer," Revision 0;
- General Issue 19993163, "During SP 1035A, Step 8.2.3, Relay 1-27A/B12-XA [Bus 12 Undervoltage Trip Relay] Did Not Pickup Completely When Energized"; and
- General Issue 19993383, "CV-31384 [22 Component Cooling Heat Exchanger Outlet Temperature Control Valve] Found Out of Calibration Range During Normal Instrument and Controls Preventive Maintenance."

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the following operator workarounds (OWAs) to identify any potential effect on the function of mitigating systems:

- OWA 19950905, "Unit 1 and Unit 2 Individual Rod Position Indications Exceed Technical Specification Deviation Limits During Power Changes Resulting in Required Technical Specification Actions"; and
- OWA 19983389, "Control Room Outside Air Dampers are Isolated due to Design Concerns."

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the licensee's plans, safety evaluations, and schedule for on-line installation of modifications to the component cooling water supply to the spent fuel pool heat exchangers and replacement of one of the heat exchangers in accordance with Design Change Packages 99CC01, "Component Cooling Cross Leakage Modification," and 99SF02, "Replace 122 Spent Fuel Pool Heat Exchanger."

b. Observations and Findings

There were no findings identified and documented during this inspection. The inspectors intended to continue the inspection activities for these modifications until they are completed around March 2000.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed and observed the following post maintenance testing activities:

- Restoration and testing subsequent to the performance of PM [Preventive Maintenance Procedure] 3505-1-123, "123 Instrument Air Compressor 1000 Hour Inspection," Revision 9;
- Operation of the D2 diesel generator subsequent to troubleshooting and repair of an oil leak on the lube oil cooler; and
- Restoration and testing subsequent to the performance of a quarterly PM on the 12 charging pump.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed the performance of the following surveillance testing:

- SP 1090, "Containment Spray Pump and Spray Additive Quarterly Test," Revision 51;
- SP 1093, "D1 Diesel Generator Monthly Slow Start Test," Revision 68; and
- ICPM [Instrument and Controls Preventive Maintenance Procedure] 2-016, "21 & 22 Component Cooling Heat Exchanger Temperature Control Calibration," Revision 8.

b. Observations and Findings

There were no findings identified and documented during this inspection.

1R23 Temporary Modifications

a. Inspection Scope

The inspectors reviewed Temporary Modification 99T066, "Install Blade Clamp and Inject Furmanite Compound on SI-9-2, Safety Injection to Loop A Cold Leg Check Valve."

b. Observations and Findings

There were no findings identified and documented during this inspection.

4. **OTHER ACTIVITIES**

4OA3 Event Follow-up

Cornerstone: Barrier Integrity

a. Inspection Scope

The inspectors reviewed an event which was reported by the licensee on December 3, 1999, in which the auxiliary building special ventilation system was actuated by a high radiation signal (Event Notification 36487). The licensee retracted the notification on December 30, 1999, after determining that the actuation signal was invalid.

b. Observations and Findings

There were no findings identified and documented during this inspection. Although the NRC agreed that the event did not involve an increase in risk to the public because the actual amount of radiation released did not increase above normal, the NRC staff was still reviewing whether the actuation met the definition of being caused by an invalid signal.

4OA4 Other

Cornerstone: Mitigating Systems

(Closed) Licensee Event Report (LER) 50-282/99008; 50-306/99008 (1-99-08): Engineered Safety Features Actuation Following Bus Lockout Caused by an Accidental Actuation of a Lock Out Relay. This event was previously discussed in Inspection Report 50-282/99016(DRP); 50-306/99016(DRP), Section 4OA3. The LER had not been written at the time of that inspection. The inspectors reviewed the LER and verified that the issue had been entered into the licensee's corrective action program as General Issue 19993133.

4OA5 Meetings, Including Exit

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. D. Schuelke and other members of licensee management at the conclusion of the inspection on January 5, 2000. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

T. Amundson, General Superintendent Engineering
L. Ganser, Acting Manager Nuclear Performance Assessment
J. Goldsmith, General Superintendent Engineering, Nuclear Generation Services
A. Johnson, General Superintendent Radiation Protection and Chemistry
G. Lenertz, General Superintendent Plant Maintenance
D. Schuelke, Plant Manager
T. Silverberg, General Superintendent Plant Operations
M. Sleigh, Superintendent Security
J. Sorensen, Site General Manager

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

50-282/99008	LER	Engineered Safety Features Actuation Following Bus Lockout Caused by an Accidental Actuation of a Lock Out Relay
50-306/99008 (1-99-08)		

Discussed

None.

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
CFR	Code of Federal Regulations
CST	Condensate Storage Tank
DRP	Division of Reactor Projects
ICPM	Instrument and Controls Preventive Maintenance Procedure
LER	Licensee Event Report
NRC	Nuclear Regulatory Commission
OWA	Operator Workaround
PINGP	Prairie Island Nuclear Generating Plant
PM	Preventive Maintenance
SACM	Societe Alsacienne de Constructions Mecaniques
SP	Surveillance Procedure
TP	Periodic Test Procedure

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
<ul style="list-style-type: none">● Initiating Events● Mitigating Systems● Barrier Integrity● Emergency Preparedness	<ul style="list-style-type: none">● Occupational● Public	<ul style="list-style-type: none">● Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent little effect on safety. WHITE findings indicate issues with some increased importance to safety, which may require additional NRC inspections. YELLOW findings are more serious issues with an even higher potential to effect safety and would require the NRC to take additional actions. RED findings represent an unacceptable loss of safety margin and would result in the NRC taking significant actions that could include ordering the plant shut down.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. The color for an indicator corresponds to levels of performance that may result in increased NRC oversight (WHITE), performance that results in definitive, required action by the NRC (YELLOW), and performance that is unacceptable but still provides adequate protection to public health and safety (RED). GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, as described in the matrix. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.