

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-282/87017(DRP); 50-306/87016(DRP)

Docket Nos. 50-282; 50-306

Licenses No. DPR-42; DPR-60

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Facility Name: Prairie Island Nuclear Generating Plant

Inspection At: Prairie Island Site, Red Wing, Minnesota

Inspection Conducted: November 15, 1987 through January 2, 1988

Inspectors: James E. Hard

Morris M. Moser

Approved By: Robert Defayette, Chief
Reactor Projects Section 2B

1/15/88
Date

Inspection Summary

Inspection on November 15, 1987 through January 2, 1988 (Reports No. 50-282/87017(DRP); No. 50-306/87016(DRP))

Areas Inspected: Routine unannounced inspection by resident inspectors of previous inspection findings, plant operational safety, maintenance, surveillances, ESF systems, preparation for refueling, training, followup of Licensee Event Reports, meetings with corporate management, and staff changes.

Results: Of the nine areas inspected, no violations or deviations were identified.

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DETAILS

1. Persons Contacted

- **K. Albrecht, Director, Power Supply Quality Assurance
- **P. Kamman, Superintendent, Nuclear Operations Quality Assurance
- *E. Watzl, Plant Manager
 - D. Mendele, General Superintendent, Engineering and Radiation Protection
 - R. Lindsey, Assistant to the Plant Manager
- *M. Sellman, General Superintendent, Operations
 - D. Schuelke, Superintendent, Radiation Protection
 - G. Lenertz, General Superintendent, Maintenance
 - K. Beadell, Superintendent, Technical Engineering
- *M. Klee, Superintendent, Quality Engineering
 - R. Conklin, Supervisor, Security and Services
 - D. Vincent, Project Manager, Nuclear Engineering and Construction
 - J. Goldsmith, Superintendent, Nuclear Technical Services
- *A. Hunstad, Staff Engineer
- *A. Smith, General Superintendent, Planning and Services
- A. Vukmir, Site Services Representative, Westinghouse Electric Corporation

The inspectors interviewed other licensee employees, including members of the technical and engineering staffs, shift supervisors, reactor and auxiliary operators, QA personnel, Shift Technical Advisors, and Shift Managers.

*Denotes those present at the exit interview of January 4, 1988.

**Denotes corporate personnel who visited the plant on December 9, 1987.

2. Licensee Action On Previous Inspection Findings (92701)

(Closed) Unresolved Item 282/87009-01: TDAFW Failed to Pump Cooling Water.

During testing of motor valves during an outage, sludge and clams from the cooling water system were introduced to the No. 11 AFW pump. Testing later in the outage revealed that the pump would not deliver the required flow. The licensee's investigation, done with support of the pump manufacturer, concluded that had the plant been in a more normal configuration at the time cooling water was introduced, the pump would have remained operable. Corrective actions completed as a result of this event included:

- a. The No. 11 AFW pump was removed, cleaned, reassembled, and tested satisfactorily.
- b. Supply lines to the other three AFW pumps were flushed.

- c. Other connections to the cooling water header, such as backup cooling to the diesel-generators and the fire protection header, were flushed.
- d. PM procedures were prepared to conduct periodic flushing of the affected cooling water connections.

3. Operational Safety Verification (71707)

Unit 1 and Unit 2 were base loaded at 100% power, except during reductions for surveillance testing, until December 8, 1987, when Unit 2 commenced coastdown for a refueling outage. At the end of this inspection report period, Unit 2 had completed a plant record of 403 days of continuous operation.

The inspector observed control room operations, reviewed applicable logs, conducted discussions with control room operators, and observed shift turnovers. The inspector verified operability of selected emergency systems, reviewed equipment control records, and verified the proper return to service of affected components. Tours of the auxiliary building, turbine building, and external areas of the plant were conducted. Plant equipment conditions were observed, including potential fire hazards, to verify that maintenance work requests had been initiated for equipment in need of maintenance.

On November 17 with both units at 100 percent power, the licensee declared emergency diesel generator (EDG) No. 1 inoperable due to a cooling water leak on the diesel scavenging air heat exchanger. The heat exchanger leak was visually discovered during a surveillance test of the diesel. Operability tests were performed satisfactorily on the remaining EDG to comply with site technical specifications. The leaking gasket (small drops) on No. 1 EDG was repaired, and the diesel was returned to service the next day after completing its operability test.

No violations or deviations were identified.

4. Maintenance Observation (62703)

Routine, preventive, and corrective maintenance activities (on safety-related systems and components) listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides, and industry codes or standards, and were in conformance with Technical Specifications: The limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; radiological controls were implemented; and fire prevention controls were implemented.

Portions of the following maintenance activities were observed/reviewed during the inspection period:

- Spent Fuel Pool Crane Repair
- Emergency Diesel Generator No. 2 Exhaust Manifold Repairs
- Guardhouse Emergency Diesel Generator Repair
- Prefabrication of Control Rod Drive Mechanism Vent Modification
- Spent Fuel Pool Cleanup Following Rod Consolidation Work

As a part of the continuing program to monitor secondary side pipe thinning, ultrasonic testing was performed December 8-9, 1987, in five selected areas near the Unit 1 feedwater pumps. This testing was performed with the unit operating at full power. Results showed that all measured wall thicknesses were well above the minimum allowable thicknesses specified by the licensee's architect-engineer, Fluor Corporation. However, the data also seems to show measurable erosion since previous testing in June 1987, although the apparent trend may be the result of variations in the test procedure or the test equipment. Special testing of the same five selected areas will be redone in March 1988 in order to better resolve these trend questions.

No violations or deviations were identified.

5. Surveillance (61726)

The inspector witnessed portions of surveillance testing of safety-related systems and components. The inspection included verifying that the tests were scheduled and performed within Technical Specification requirements, observing that procedures were being followed by qualified operators, that Limiting Conditions for Operation (LCOs) were not violated, that system and equipment restoration was completed, and that test results were acceptable to test and Technical Specification requirements.

Portions of the following surveillances were observed/reviewed during the inspection period:

- SP 1093 CD1 Diesel Generator Manual and 4KV Voltage Rejection-Restoration Scheme Test, Bus 16
- SP 1661 Monthly Guardhouse Emergency Diesel Generator Operation
- SP 2003 Safeguards Logic Test
- SP 1112 Steam Exclusion Damper Test
- SP 1110 Cooling Water System Isolation Valves Test

No violations or deviations were identified.

6. ESF System Walkdown (71710)

The inspector performed a complete walkdown of the accessible portions of Unit 1 and Unit 2 auxiliary feedwater systems. Observations included: confirmation of selected portions of the licensee's procedures, checklists, plant drawings; verification of correct valve and power supply breaker positions to insure that plant equipment and instrumentation were properly aligned; and verification of local system indication to insure proper operation within prescribed limits.

No violations or deviations were identified.

7. Preparation for Refueling (60705)

The inspectors observed new fuel assembly receipt inspection and storage operations during several shifts. Observations included confirmation of: properly qualified and supervised personnel; use of approved fuel handling procedures; proper use of fuel handling equipment; proper radiation controls; and good housekeeping.

No violations or deviations were identified.

8. Licensee Event Reports Followup (92700)

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with Technical Specifications:

(Closed) 282/87007-LL: Failure of No. 11 Turbine Driven Auxiliary Feedwater Pump (Voluntary).

Action was taken as described in Section 2 above, Unresolved Item 282/87009-02.

9. Meeting with Corporate Officials

A meeting with the Director, Power Supply Quality Assurance, and the Superintendent, Nuclear Operations Quality Assurance, was held at the plant on December 9, 1987. This meeting discussed Corporate QA's role in evaluating plant events and subsequent corrective actions. Personnel from Corporate QA are planning the following actions on this subject:

- a. An in-depth review of all Plant Licensee Event reports and significant operating event reports for the past two years.
- b. Review of corrective actions which were taken on these events.

- c. Review results of the trending program for the events.
- d. Evaluate the possibility of trending events at the corporate level, thus combining the Monticello and Prairie Island experience.

These reviews and evaluations began immediately.

On November 30, 1987, NSP announced the pending retirement of Dennis E. Gilberts, Senior Vice President of Power Supply. Roland J. Jensen, currently Vice President of Engineering and Construction, has been selected to succeed him.

10. Training (41701)

Senior Reactor Operator (SRO) exams were administered by the NRC to eleven candidates from November 3-12, 1987. Nine out of eleven candidates passed.

On November 24, 1987, the licensee received accreditation by INPO in five training areas making it accredited in all training areas recognized by INPO.

11. Plant Staff Changes

On December 18, 1987, the plant manager announced the following staff changes:

The Superintendent of Technical Engineering was transferred to Nuclear Engineering and Construction, to assume charge of the Emergency Diesel Generator No. 5 and No. 6 engineering and acquisition project. The Superintendent of Quality Engineering was transferred to fill the Superintendent of Technical Engineering vacancy. The Superintendent of Nuclear Engineering was transferred to fill the Superintendent of Quality Engineering vacancy.

12. Exit (30703)

The inspectors met the licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on January 4, 1988. The inspectors discussed the purpose and scope of the inspection and the findings.

The inspectors also discussed the likely information content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any document/processes as proprietary.

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