

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No: 50-282/82-05; 50-306/82-05(DPRP)

Docket No: 50-282; 50-306

License 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, MN 55066

Inspection Conducted: March 1-31, 1982

Inspectors:

*C. D. Feierabend*  
C. D. Feierabend

4/13/82

*B. L. Burgess*  
B. L. Burgess

4/13/82

Approved By:

*R. L. Nelson*  
R. L. Nelson, Acting Chief  
Reactor Projects Section 2C

4/19/82

Inspection Summary

Inspection on March 1-31, 1982 (Report No. 50-282/82-05; 50-306/82-05(DPRP))

Areas Inspected: Routine resident inspection of plant operation, surveillance, security, training, radiation protection, followup on Licensee Events, followup on previous Inspection Findings, followup of IE Bulletins, followup on IE Circulars, and review of plant trip. The inspection involved a total of 138 inspector hours onsite by 2 NRC inspectors including 14 inspector hours onsite during off-shifts.

Results: No items of noncompliance or deviations were identified.

## DETAILS

### 1. Personnel Contacted

D. Gilberts, Senior Vice President, Power Supply  
\*W. Jokela, Director, Power Supply Quality Assurance  
\*P. Kamman, Superintendent, Nuclear Quality Assurance  
\*G. Bart, Power Supply Quality Assurance Engineer  
F. Tierney, Plant Manager  
J. Brokaw, Plant Superintendent, Operations and Maintenance  
E. Watzl, Plant Superintendent, Plant Engineering and Radiation Protection  
A. Hunstad, Staff Engineer  
R. Lindsey, Superintendent, Operations  
J. Nelson, Superintendent, Maintenance  
J. Hoffman, Superintendent, Technical Engineering  
M. Klee, Superintendent, Nuclear Engineering  
K. Albrecht, Superintendent, Quality Assurance  
G. Lenertz, Engineer  
G. Miller, Engineer  
D. Cragoe, Shift Supervisor  
P. Ryan, Shift Supervisor  
M. Balk, Shift Supervisor  
D. Walker, Shift Supervisor  
P. Valtakis, Shift Supervisor

\*Denotes those attending meeting in licensee's corporate offices on 3/25/82.

### 2. Licensee Action on Previous Inspection Findings

The inspectors reviewed previous inspection reports to determine whether items previously identified have been addressed. Some of these items may have been addressed during subsequent inspections but had not been identified as "Closed" in inspection reports.

- a. (Closed) Noncompliance (50-282/78-06; 50-306/78-06)  
Related to Testing Hydraulic Shock Suppressors.

The inspector verified that the licensee's hydraulic test stand was received and is being utilized for testing shock suppressors.

- b. (Closed) Noncompliance (50-282/79-01; 50-306/79-01)  
Related to Corrective Actions.

Licensee's corrective actions have been confirmed during follow-up of TMI-2 Action Item I.C.5.

- c. (Closed) Unresolved Item (50-282/80-13)  
Related to a Quality Control Stop Work Order.

This item was reviewed during followup of Licensee Event Report No. P-RO-80-20.

- d (Closed) Noncompliance (50-306/80-03)  
Related to Failure to Follow Liquid Penetrant NDE Procedure.

Subsequent inspections of inservice NDE performance have not identified any deficiencies.

### 3. Operational Safety Verification

#### a. General

Unit 1 operated routinely throughout the month.

Unit 2 tripped from 100% power on 3/25/82 and returned to power operation the same day. The trip occurred during a safeguards logic test when an operator erroneously reset the safety injection signal causing a reactor trip (Paragraph 6). The unit operated routinely through the rest of the month.

#### b. Control Room Observations

The inspector observed control room operation, reviewed applicable logs, conducted discussions with control room operators, and observed shift turnovers. The inspector verified the operability of selected emergency systems, reviewed equipment control records, and verified the proper return to service of affected components.

#### c. Tours

Tours of the external areas and of the turbine and auxiliary buildings were conducted to observe plant equipment conditions, including potential fire hazards, and to verify that maintenance work requests had been initiated for equipment in need of maintenance.

No items of noncompliance were identified.

### 4. Surveillance

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 LCO's were not violated, that system and equipment restoration was completed, and that test results were acceptable to test and Technical Specification requirements.

Tests witnessed included:

- a. SP-2032 Unit 2 Safeguards Logic Test.

During performance of the test operator error caused a Unit 2 trip (described in paragraph 6). The test was suspended until Unit 2 recovered from the trip and returned to power. The test was resumed the following day and completed satisfactorily.

The licensee is considering revisions to the surveillance test procedure to reduce the probability of further operator errors of this type.

- b. SP-2198 Unit 2 Power Range Startup Test.

Test was required prior to Unit 2 startup. Test was completed satisfactorily.

No items of noncompliance were identified.

5. Licensee Event Followup

- a. P-RO-81-22 One Pressurizer Pressure Transmitter Recalibrated Incorrectly. (Closed)

The inspector reviewed the event report (LER) and determined that reportability requirements were met and corrective actions were accomplished to prevent reoccurrence.

Pressure transmitters requiring overranging were identified and the appropriate procedures were revised to alert the technician to perform the over-ranging to ensure proper transmitter calibration.

- b. P-RO-81-23 Inoperability of One Cooling Water Header Isolation Valve. (Closed)

The inspectors' review of the event was described in a previous inspection report.<sup>1/</sup>

- c. P-RO-81-28 Pressurizer Pressure Bistables Failed to Trip Within Specified Tolerance. (Closed)

A potentiometer was replaced and leads were tightened. No further drifts were noticed during subsequent surveillance testing.

<sup>1/</sup> IE Inspection Report No. 50-282/81-01; 50-306/81-01.

d. P-RO-81-31 Spent Fuel Assembly D-34 Top Nozzle Event. (Open)

Description of the event, including recovery and transfer to a storage location, were addressed in previous inspection reports.<sup>2/3/</sup>

The fuel vendor, Westinghouse Nuclear Fuel Division, (W) had contracted for metallurgical examination of the top nozzle at Batelle Memorial Institute. The licensee has received an interim report from W summarizing the status of the investigation. The report concluded that the failure mode was intergranular stress corrosion cracking (IGSCC), with significant corrosive attack prior to the failure of the sleeves.

W is working on development of a means for nondestructive examination (NDE) for detecting cracks in other sleeves in the field. This is to aid in determining the extent of the problem and to determine what corrective steps may be required.

Discussions with W representatives via telephone indicate that W has discussed the problem with regard to 10 CFR 21 reporting requirements. At the present time W considers that the consequences of separation of the top nozzle are within the bounds of the evaluation for a dropped fuel element,<sup>4/</sup> but that a report could be required by the results of further NDE.

The licensee is planning to supplement the event report.

e. Foreign Material in Safety Valve Loop Seal. (Closed)

This event was initially identified and described in a previous inspection report,<sup>3/</sup> and has been discussed in subsequent inspection reports.<sup>6/7/</sup>

RIII Division of Engineering and Technical Programs Branch has evaluated the licensee's supplemental report,<sup>8/</sup> and concluded that the rags would not have appreciably affected valve operation.

- <sup>2/</sup> IE Inspection Report No. 50-282/81-22; 50-306/81-24.
- <sup>3/</sup> IE Inspection Report No. 50-282/82-01; 50-306/82-01
- <sup>4/</sup> FSAR Section 14.2.1, Fuel Handling Accidents
- <sup>5/</sup> IE Inspection Report No. 50-282/81-18; 50-306/81-20.
- <sup>6/</sup> IE Inspection Report No. 50-282/81-19; 50-306/81-21.
- <sup>7/</sup> IE Inspection Report No. 50-282/81-22; 50-306/81-24.
- <sup>8/</sup> NSP Letter to RIII, Subject: Supplemental Information on Event Involving Foreign Material in Prairie Island Unit 1 Pressurizer Safety Valve Loop Seal, dated 12/9/81.

No items of noncompliance were identified.

## 6. Plant Trip

Prairie Island Unit 2 tripped from 100% reactor power at 1139 on 3/25/82. The trip occurred due to operator error during the performance of SP-2032 Unit 2 Safeguards Logic Test. With train "A" Safeguards in test a containment isolation signal was inserted. After verifying proper response, the operator was asked by procedure to reset the containment isolation signal. Instead the operator pressed the safety injection reset push-button, taking "A" safeguards logic out of test. Because the containment isolation signal was still inserted, feedwater isolation occurred, isolating feedwater flow to the steam generators. The reactor tripped on low steam generator level followed by a turbine trip.

The inspector observed operator and supervisory response to the trip. The cause of the trip was determined immediately and the NRC was notified via the ENS telephone within 10 minutes of the trip. The inspector notified RIII of the plant trip by telephone.

Plant systems were stabilized at hot shutdown conditions and preparations were made for restart. Prior to restart a failed source range detector, N31, was investigated and replaced. Surveillances required for restart were completed and the plant was restarted and on line at 2042 on 3/25/82.

No items of noncompliance were identified.

## 7. Training

The inspectors have completed the licensee's annual retraining, including verification of fit of face masks for respirators.

The licensee has moved the Prairie Island Training Department into the recently completed Simulator/Training Building located on County Road 18. The simulator is expected to be completed late 1984.

No items of noncompliance were identified.

## 8. IE Bulletins

The inspector completed review of the licensee's actions in response to the following Bulletins and verified that required actions are complete.

- a. IEB No.79-19 Packaging Low-Level Radioactive Waste for Shipment.  
(Closed)

This was reviewed during previous inspections. 9/10/

- 9/ IE Inspection Report No. 50-282/79-24; 50-306/79-20.  
10/ IE Inspection Report No. 50-282/80-02; 50-306/80-02.



- b. IEB No.80-20 Failure of Westinghouse Type W-2 Spring Return to Neutral Control Switches. (Closed)

All affected circuits have been modified.

- c. IEB No.81-02 Supplement 1, Failure of Gate Type Valves to Close Against Differential Pressure. (Closed)

None of the valves identified are in use or planned.

No items of noncompliance were identified.

9. IE Circulars

For the IE Circulars listed below, the inspector verified that the Circular was received by the licensee management, that a review for applicability was performed, and that is the Circular were applicable to the facility, appropriate corrective actions were taken or were scheduled to be taken. (Closed)

- a. IEC No.80-22 Confirmation of Employee Qualifications.  
b. IEC No.81-11 Inadequate Decay Heat Removal.

Not applicable to PWR's.

No items of noncompliance were identified.

10. Management Interviews

The inspector met informally with Mr. D. Gilberts on March 24 and with members of the corporate Quality Assurance (QA) staff (designated in paragraph 1) on March 25. The licensee discussed the status of planned revisions to the QA procedures related to design changes and additions to the corporate staff.

The inspectors conducted interim interviews during the inspection period and met with Mr. Tierney at the conclusion of the inspection. The inspectors discussed the scope and results of the inspection.

No items of noncompliance were identified.