

NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-282/85014(DRP); 50-306/85011(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, MN

Inspection Conducted: June 9 through August 10, 1985

Inspectors: J. E. Hard

M. M. Moser

Approved By: *R. N. Gardner for*  
I. N. Jackiw, Chief  
Reactor Projects Section 2B

8/29/85  
Date

Inspection Summary

Inspection on June 9 through August 10, 1985 (Reports No. 50-282/85014(DRP); 50-306/85011(DRP))

Areas Inspected: Routine unannounced inspection by resident inspectors of previous inspection findings, plant operational safety, maintenance, surveillance, facility modifications, meetings with corporate management, Appendix R work, and followup of Licensee Event Reports. In addition, this report documents the closure of a Confirmatory Action Letter pertaining to operator qualification examinations. The inspection involved a total of 273 inspector-hours by two NRC inspectors including 25 hours onsite during off-shifts.

Results: One violation was identified in the eight areas inspected. The violation involved an annunciator alarm response procedure which was incomplete. In addition two QA audit findings and three plant events directly related to facility modifications are listed as examples of items of safety concern to the resident inspectors. Close inspector followup in this area is planned.

## DETAILS

### 1. Persons Contacted

- \*E. Watzl, Plant Manager
- \*D. Mendele, Plant Superintendent, Engineering and Radiation Protection
- R. Lindsey, Plant Superintendent, Operations and Maintenance
- \*A. Hunstad, Staff Engineer
- A. Smith, Senior Scheduling Engineer
- M. Balk, Superintendent, Operations
- D. Schuelke, Superintendent, Radiation Protection
- J. Nelson, Superintendent, Maintenance
- J. Hoffman, Superintendent, Technical Engineering
- K. Beadell, Superintendent, Quality Engineering
- M. Klee, Superintendent, Nuclear Engineering
- R. Conklin, Supervisor, Security and Services

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

Corporate personnel who visited the site on July 31, 1985 are listed in Section 7 below.

\*Denotes those present at the exit interview.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Deviation (306/84004-01): Reactor coolant system vents. Failure to meet requirements of Amendments 63 and 69 of Technical Specifications. The requirements of the amendments have been met. The vent system is in operation.

### 3. Operational Safety Verification (71707, 71710)

Operation of both units has been continuous during the report period. Unit 1 has been base loaded at 100% power except for reductions for surveillance testing, special maintenance, and weekend load following. Unit 2 is in the coastdown mode with power at about 75% at the end of the report period.

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 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.

On June 24, 1985, the inspector noted that the control room alarm response procedure for annunciator location 47501-0501, Screenhouse General Alarm, referenced Temporary Memo TM-84-10 which had been deleted August 23, 1984 and which was not available in the control room. This alarm response procedure is contained in plant operating procedure C47.26. Prompt action was taken to correct the procedure; an approved and updated procedure was placed in the control room on June 28.

Technical Specification 6.5.A.3 requires, in part, that detailed written procedures shall be prepared and followed covering actions to be taken to correct specific and foreseen potential or actual malfunction of systems or components including responses to alarms. Contrary to this requirement, as noted above, a complete alarm response procedure for annunciator location 47501-501 was not available in the control room from August 23, 1984 to June 24, 1985. This is a violation of Technical Specification 6.5.A.3 as delineated in the Appendix (50-282/85014-01(DRP); 50-306/85011-01(DRP)). Note that this is a repeat of a recent violation of technical specifications involving alarm response procedures. See Inspection Report 50-282/84-05(DRMSP); 50-306/84-05(DRMSP).

On July 2, 1985 a packing leak on the Unit 1 reactor coolant system power operated relief valve block valve 32195 increased to approximately two gallons per minute. An entry was made to the pressurizer vault to investigate the cause, which proved to be a leaking valve stem packing. Manual backseating of the valve reduced the leakage rate to a few tenths of a gallon per minute. The valve is to be repacked during the next outage. The NRC resident inspector considers these actions acceptable.

D-1 diesel generator was declared inoperable at 1630 on July 29, 1985 because of water observed dripping from the exhaust system. Investigation revealed a leaking O-ring seal on the cooling jacket for No. 12 cylinder. Hydro testing showed an additional small leak on No. 11 cylinder. Both cylinders were replaced, as were three damaged bearings. D-1 was again operable on August 3. (D-2 had undergone cooling jacket hydrotesting during a preventive maintenance inspection in March, 1985. No such leaks were found.)

At 10:30 a.m. on August 1, 1985, breaker 228 was tripped accidentally and was reclosed manually at 10:56 a.m. Construction work was in progress in the immediate area of breaker 228 at the time of the trip and the workers involved may have accidentally caused the trip. From 10:30 a.m. to 10:56 a.m., Operations personnel were preparing to shut down both Unit 1 and Unit 2 since D-1 diesel generator was inoperable (see above) and since breaker 228 provided power to other safeguards equipment required to be operable by technical specifications. However, the unit shutdowns were not begun since power was promptly restored to the safeguards equipment from an independent source.

The inspector performed a walkdown of the diesel-generator system including breaker alignment of the safeguards buses and the auxiliary systems supporting the generators. No deficiencies were identified.

4. Maintenance Observation (62703)

Station 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 in conformance with Technical Specifications.

The following items were considered during this review: 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.

Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety-related equipment maintenance which may affect system performance.

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

Repair of D-1 diesel-generator.

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 1028 Radiation Monitoring System Test  
SP 2093 Diesel Generator Function Test

No violations or deviations were identified.

6. Facility Modifications (37700)

A review was conducted of the facility modification control process and of recent events involving facility modifications. These items are as follows:



- a. NSP Corporate QA Audit No. AG 85-16-Outage resulted in a Finding (No. FG-85-5) that Commonwealth Electric Co., a contractor to NSP at Prairie Island, had conducted work activities which were ineffective in complying with NSP QA program requirements as delineated in Corporate Administrative Work Instruction NIAWI 5.1.15, Revision 0. This instruction specifies in Sections 6.5.2 and 6.5.3, among other things, that an Engineering Change Request (ECR) is to be released for implementation only after resolution of the ECR. Specifically, the Corporate QA Auditor found that conduit support hangers and other electrical components were installed without prior engineering approval and not in accordance with existing design documents.

In-plant corrective actions have included review of the existing installations of conduit support hangers. To date, two safety related electrical cable supports have been found which will require special seismic analysis. This analysis is to be completed by August 30, 1985.

Corrective actions by the construction forces have included management review of the Finding, review and updating of construction standards, personnel additions to the NSP Nuclear Engineering and Construction field staff, and personnel changes in Commonwealth Electric Company.

- b. NSP Corporate QA Audit No. AG 85-17-Outage resulted in Findings that the Prairie Island plant staff, the Nuclear Technical Services staff, and the Nuclear Engineering and Construction staff all failed to properly implement the NSP uniform modification processes described in Corporate Nuclear Administrative Work Instruction NIAWI 5.0, Modification and Maintenance, Revision 1, which contains an overall description and general instructions for the use of the process. The Corporate QA Auditor found in his report for the period January 14 - March 18, 1985 that the Prairie Island plant staff, the Nuclear Technical Services staff, and the Nuclear Engineering and Construction staff all failed to properly implement the uniform modification process. These failures were in the areas of planning and coordination, design, logging/tracking, document control, project control, and turnover.

Corrective actions implemented by the licensee have included retraining of the users of the modification process. In addition, further audits of the use of the process are to be conducted by Corporate QA during the Unit 2 10-year outage scheduled to begin in September 1985. The resident inspector will review the results of these audits.

- c. During the conduct of and in the location of Appendix R work in the Auxiliary Building on May 8, 1985, the two-inch instrument air supply line for Unit 1 failed. One result of this failure was a trip of Unit 1. (See Inspection Report 50-282/85010(DRP); 50-306/85008(DRP)). Possible causes of the break include accidental bumping of the line and relocation of the line to accommodate Appendix R work.

Corrective actions have included inspection of the line and reinforcement of leaking solder joints. The licensee's final Investigative Report will be reviewed by the Resident inspector.

- d. On July 26, 1985, a temporary cable splice in the power supply to MCC 1TA1 failed by shorting to ground. This fault disabled many of the D-1 diesel generator auxiliaries. The fault occurred in a location where Appendix R work had been done and might be related to that activity.

An investigation by the licensee is underway.

- e. On August 1, 1985, breaker 228 tripped, thus disabling certain safeguards equipment momentarily. (See also Section 3, above). The tripping might accidentally have been caused by construction activity near the breaker. Subsequent electrical testing of the breaker showed no fault conditions in the breaker itself.

An investigation by the licensee is underway.

The items discussed above, though not specifically identified as being violations, are of safety concern since they pertain to either serious audit findings related to facility modifications or to serious events which occurred as a result of modifications being made to the facility. Further information is needed to assure that these safety concerns are properly addressed. This is considered an unresolved item (50-282/85014-02(DRP); 50-306/85011-02(DRP)) pending review by our resident inspector of the completed corrective actions.

#### 7. Meeting with Corporate Management (30702)

On July 31, 1985, the inspectors met with the following NSP people in corporate headquarters:

- D. McCarthy - Chairman of the Board
- D. Gilberts - Sr. Vice President, Power Supply
- C. Larson - Vice President, Nuclear Generation
- F. Tierney - General Manager, Nuclear Engineering and Construction
- K. Albrecht - Director, Power Supply Quality Assurance
- P. Kamman - Superintendent, Nuclear Operations QA
- P. Suleski - Superintendent, Nuclear Projects QA
- D. Musolf - Manager, Nuclear Support Services
- D. Rautmann - Superintendent, Safety Analysis

M. Moser was introduced as the new resident inspector at Prairie Island. Discussions were held on the subjects of the NRC inspection program and operation of the plant.

8. Appendix R Modifications (37701)

Plant modifications required by 10 CFR 50, Appendix R, were completed on June 14.

No violations or deviations were identified.

9. 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) 282/84018-01 One Component Heat Exchanger in Each Unit Made  
(PRE-1-85-3) Inoperable

(Closed) 282/85001-02      One Containment Valve Failed its LLRT  
(PRE-1-85-5)

10. Confirmatory Action Letter

A licensed operator annual requalification examination was administered the week of March 26, 1985. Three of the four sections of each examination were provided by the NRC. After grading, it was determined that six Senior Reactor Operators and two of the Operators had not met the 80% overall or 70% in each section, minimum scores specified in the licensee requalification program. After notification by the NRC on April 26, 1985 (the date of the Confirmatory Action Letter) the licensee removed the operators from performing licensed duties and placed them in an accelerated training program. The NRC reviewed and approved the June 14 and July 1 examinations prior to administration by the facility. The licensee complied with the commitments made during the April 26, 1985 conference call.

On July 23, 1985, further review of the examination grading resulted in passing grades for all the individuals and NSP was informed of our agreement with their grading in a telephone call on July 23, 1985.

All actions required by the licensee are considered completed.

11. Exit Interview (30703)

The inspector met with licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on August 12, 1985. The inspector discussed the purpose and scope of the inspection and the findings.

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