U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-282/79-13; 50-306/79-10

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 Plant, Units 1 and 2

Inspection At: Prairie Island Site, Red Wing, MN

Inspection Conducted: May 1-31, 1979

Inspectors: RF Warnick for C. D. Feierabend 6-22-79

F. T. Daniels (May 1-4, 1979) 6/25/79

E. R. Swanson (May 8-11, 1979) 6-25-79

Approved By: RF Warnick R. F. Warnick, Chief 6-26-79
Reactor Projects Section 2

Inspection Summary

Inspection on May 1-31, 1979 (Report No. 50-282/79-13; 50-306/79-10)
Areas Inspected: Meeting held on May 1, 1979, at the licensee's corporate office to discuss licensee's response to noncompliance identified in previous inspection. Licensee will supplement the response. Routine resident inspection of plant operations, security, licensee responses and actions relating to IE Bulletins, review of licensee event reports, organization and administration. The inspection involved 113 inspector-hours onsite by the resident inspector and 48 inspector-hours by two regional based inspectors.
Results: Of the five areas inspected, no items of noncompliance were identified in four areas. One item of noncompliance (Deficiency - Failure to perform quarterly exercise test of two valves - Paragraph 4) was identified in one area.

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DETAILS

1. Personnel Contacted

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. Hoffman, Superintendent, Technical Engineering
D. Schuelke, Superintendent, Radiation Protection
S. Fehn, Senior Scheduling Engineer
M. Sellman, Senior Nuclear Engineer
R. Conklin, Supervisor, Security and Plant Services
R. Warren, Office Supervisor
J. Leveille, Quality Assurance Engineer
G. Sundberg, Instrument Engineer
J. Lyons, Chief Electrician
M. Mulhausen, Maintenance Supervisor
W. Phillips, Maintenance Supervisor
D. Crago, Shift Supervisor
P. Valtakis, Shift Supervisor
M. Balk, Shift Supervisor
J. Meath, Shift Supervisor
D. Walker, Shift Supervisor

Management personnel contacted at the corporate offices are identified in Paragraph 2. In addition, the inspectors observed and held discussions with other engineers and reactor operators.

2. Management Meeting

A meeting was held in the Northern States Power Company (NSP) corporate offices in Minneapolis, Minnesota on May 1, 1979. The purpose of the meeting was to discuss the licensee's response 1/ to items of noncompliance identified during inspection conducted January 2-31, 1979. Attendees included the following representatives.

1/ NSP letter dated March 8, 1979, responding to RIII letter dated February 15, 1979, Reference IE Inspection Reports No. 50-282/79-01; No. 50-306/79-01.

NRC - Region III

R. F. Heishman, Chief, Reactor Operations and Nuclear Support Branch
R. F. Warnick, Chief, Reactor Projects Section 2
C. D. Feierabend, Reactor Inspector

NSP

L. J. Wachter, Vice President, Power Production and System Operation
D. F. Gilberts, General Manager, Power Production
G. H. Neils, General Superintendent, Nuclear Power Plant Operation
T. E. McFadden, General Superintendent, Operational Quality Assurance
L. O. Mayer, Manager, Nuclear Support Services
P. H. Kamman, Superintendent, Nuclear Quality Assurance
F. P. Tierney, Plant Manager, Prairie Island
E. L. Watzl, Plant Superintendent, Plant Engineering and Radiation Protection, Prairie Island
J. A. Leveille, Quality Assurance Engineer, Prairie Island
R. L. Scheinost, Quality Assurance Engineer, Monticello

NRC representatives reviewed the background and described the areas of concern with respect to the licensee's response[2/]. Considerable discussion followed, during which licensee and NRC representatives expressed opinions and concerns in the general area of implementation of the OQAP, and specifically in the area of the inspection function. The discussions resulted in a mutual agreement that the licensee will submit a supplemental response that will describe the actions being taken to implement the inspection function of the OQAP and will address the mechanism planned to assure prompt completion of corrective actions.

3. IE Bulletin 79-06A, dated April 14, 1979 including 79-06A Revision 1, dated April 18, 1979

a. Licensee Responses[3/]

The inspectors reviewed the status of licensee actions in response to the bulletin and completed independent examination of records, procedures and equipment to verify that engineered

2/ Ibid.

3/ NSP letters dated April 30, 1979, and May 18, 1979, to IE RIII, responding to IE Bulletin 79-06A including Revision 1.

safety features (ESF) were operable and that the licensee procedures and administrative controls provide adequate assurance of continued operability.

Item 1

The inspector verified that the presentation of Three Mile Island, Unit 2 (TMI-2) accident information had been completed for the personnel that had been unable to attend the presentation on March 28. (Complete)

Item 2

The inspector reviewed emergency procedures revised as a result of TMI-2 experience. (Complete)

Item 3

Reviewed during previous inspection.[4/] (Complete)

Item 4

Licensee reviews were completed. No changes were required. (Complete)

Item 5

Not applicable

Item 6

The inspector reviewed the licensee's procedure E1-1, Small LOCA - Pressurizer Steam Space, and verified that it addresses coping with isolation of an open power operated relief valve. (Complete)

Item 7

Operating procedure review and revision are in progress as described in the response.

Item 8

The inspector verified that the licensee had completed the reviews as stated and that valve control programs are being evaluated to determine where improvements may be made.

4/ IE Inspection Reports No. 50-282/79-11; No. 50-306/79-09.

Item 9

The plant design provides isolation and prevents inadvertant venting or transfer of fluids when high radiation exists. The licensee response accurately describes the isolation design. (Complete)

Item 10

The existing procedures and controls for restoration of ESF systems to operable status are functioning effectively, however, the licensee is addressing ways of making improvements.

Item 11

Notification requirements have been revised. Procedures will be written when NRC communications equipment is installed. (Installation is currently in progress.)

Item 12

Licensee actions were in progress as described in the response.

Item 13

The inspector verified that the licensee had received the Technical Specification change authorizing modification of the safety injection (SI) logic prior to completing the design change and that the revised logic was tested prior to restart of each reactor. (Complete)

b. Onsite Review of Operator Training

Review of records and discussions with operators and supervisors verified that all operators and appropriate supervisors had received the TMI-2 presentation and that shift supervisors were assigned responsibility for assuing that operators reviewed the ESF procedure changes promptly. Additional training is being conducted during requalification training now in progress. The first shift started requalification training May 11, with a continuing schedule of one shift per week. This is planned to be completed in June, 1979.

c. Onsite Inspection of ESF

(1) Review of Alignment Procedures

In addition to reviewing the licensee's response to the bulletin, the inspectors completed a review of valve alignment procedures, comparing them with the system

piping and instrumentation drawings (P&ID's) and the appropriate sections of the Final Safety Analysis Report (FSAR). Systems reviewed included the following.

(a) Auxiliary Feedwater (AFW) System
(b) Safety Injection (SI) System
(c) Residual Heat Removal (RHR) System
(d) Containment Spray (CS) System
(e) Component Cooling (CC) System
(f) Containment Purge Procedures
(g) Containment Integrity Procedures
(h) Diesel Generator System

Procedures reviewed included initial lineup procedures and the integrated operating procedures and checklists that are used for heatup, startup and shutdown of the plant.

In additon, switch positions and indicating light verifications were reviewed against logic diagrams for portions of the Diesel Generator, AFW, SI, CS and RHR systems. No deficiencies or omissions were identified with the exception of a few typographical errors that would not affect the use of the procedures.

(2) Verification of Alignment

Using the licensee's procedures, the inspectors verified alignment of the following ESF systems.

(a) AFW
(b) RHR
(c) SI
(d) CS
(e) Diesel Generators

Alignment verification included switch positions, indicating lights, safeguards status lights and annunciators in the control room. The verification also included physical verification of selected accessible valves, local switches and circuit breakers to assure that the appropriate "Hold Tags" were in place and that the components were in their designated positions. No deviations were identified.

(3) Administrative Controls

Surveillance test procedures include steps for returning components to operable status after testing. Maintenance is controlled by preventive maintenance procedures, work requests and work request authorizations. In all cases, the shift supervisor controls authorization to remove any

equipment from service and to return to service. Equipment out of service is logged on shift turnover documentation, so that the oncoming shift supervisor controls status and assures return to service within the allowable time.

(4) Surveillance Test and Maintenance Procedures

The inspectors reviewed the current ESF component and systems surveillance test procedures and verified that the systems would be returned to an operable status when completed.

(5) Surveillance Test Results

The inspectors reviewed the results of the most recent surveillance tests of ESF components and verified that the acceptance criteria were met.

(6) Logic Tests

The inspector verified that the licensee had revised procedure 1S1032 (2S1032) - Safeguards Logic Test on May 29, 1979, to reflect the new design that eliminated the pressurizer level inputs and provides SI actuation by 2 of 3 low pressurizer pressure signals. The inspector verified that the revised tests had been satisfactorily completed on both units.

(7) ESF Alignment after Extended Outages

The inspector reviewed the licensee's procedures, checklists and controls for returning systems to operable status after extended outages and found them to be satisfactory.

(8) Independent Verification

The inspector determined that the licensee does provide some independent verification of valve/ breaker/switch alignment following extended outages, by requiring two checklists to be completed for each integrated operating and/or system checklist. The licensee is considering similar requirements or special periodic verifications following surveillance testing and maintenance.

(9) Verification of AFW System Valves

The inspectors verified that locks and tags were physically installed on all accessible AFW system components requiring such controls by Technical Specifications and operating procedures.

d. Onsite Assessment of Operating Procedures

(1) The system design does not require or allow use of SI to assist in pressurizer level control during routine operating event level transients.

(2) The licensee has instructed operators to keep at least one reactor coolant pump running unless continued operation would degrade the situation.

(3) The licensee had issued instructions to maintain 150 psi subcooling prior to receipt of the bulletin. Emergency procedures increasing subcooling margin to require a minimum of 50°F subcooling were approved and implemented on May 31, 1979.

(4) The licensee does not have procedures for feeding dry steam generators. Procedure reviews and evaluations in progress will determine whether such a procedure is needed or desirable.

(5) Observation of tagging practices had not identified a potential for obscuring status lights or switch positions.

4. Inservice Testing of Valves

During review of surveillance test results (Par. 3.c.5 above), the inspector noted that test results were not in file for SP2159 - Reactor Vessel Injection Valve Test. This is a quarterly exercise of valves MV-32167 and MV-32168, motor operated valves that are normally closed to provide isolation of the RHR system from the reactor coolant system pressure.

Further investigation found that the test had been inadvertently omitted from the Unit 2 surveillance test schedule, and thus had not been performed. The test was successfully performed on the same day that the omission was identified, May 9, 1979. It was also learned that these valves had been exercised during the Unit 2 refueling outage completed in December, 1978, however, failure to exercise the valves during the first three quarters of 1978 and the first quarter of 1979 was noncompliance with the requirement of 10 CFR 50.55a(g) that inservice testing of Category A valves be in accordance with ASME Boiler and Pressure Vessel Code, Section XI. Article IWV-3410(a) of the code requires that these valves be exercised quarterly unless exemption has been requested. The licensee is planning to request exemption of these valves from quarterly exercise tests.

The inspector confirmed that the testing had been successfully completed and that the licensee will report the omission in accordance with Technical Specification reporting requirements.

5. Plant Operation

Unit 1 returned to power May 7 following a refueling outage. A turbine trip on May 12 was due to loss of feedwater (FW) flow to one steam generator caused by a malfunctioning FW regulating valve. The plant was returned to operation, but later required shutdown to affect repairs. Unit 2 was shut down on May 7 to complete modification of the SI initiation logic, and returned to power on May 8.

The inspector reviewed plant operations including examination of selected operating logs, special orders, temporary memos, jumper and tagout logs for the month of May. Tours of the plant included walks through the various areas of the plant to observe operations and activities in progress; to inspect the status of monitoring instruments, to observe for adherence to radiation controls and fire protection rules, to check proper alignment of selected valves and equipment controls, and to review status of various alarmed annunciators with operators.

The inspector also reviewed annunciator status, recorder charts, surveillance records, and logs to verify that plant operations were maintained in accordance with Technical Specification requirements.

No items of noncompliance or deviations were identified.

6. Security

The inspector conducted periodic observations of access control, issuing badges, vehicle inspection, escorting, and communication checks.

No items of noncompliance or deviations were identified.

7. Organization and Administration

The inspector was informed that Mr. J. Leveille, Quality Assurance (QA) Engineer had submitted his resignation from that position. The licensee was interviewing interested candidates and expects to announce selection of a replacement early in June. Mr. D. Silvia, a member of the QA staff will be acting QA Engineer in the interim.

8. Licensee Event Reports (LER's)

The inspector reviewed the following LER's submitted by the licensee, determined that reporting requirements had been met, and that corrective actions appeared appropriate. (Closed)

a. P-RO-79-4, RTD Bypass Flowmeter Functional Test performed late.

b. P-RO-79-5, Missed Surveillance Test.

c. P-RO-79-7, Potential Non-Conservatism in SAR.

9. Exit Interviews

The inspector attended an exit interview conducted by Mr. I. Yin, RIII inspector on May 4, 1979. No items of noncompliance were identified.

The inspector met weekly with licensee representatives and with Mr. F. Tierney at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection. One item of noncompliance was identified. This was a deficiency in implementation of inservice testing of valves. The inspector stated that because the item was identified and adequately corrected prior to completion of the inspection no response to the noncompliance would be required.

Attachment: Preliminary
Inspection Findings

PRELIMINARY INSPECTION FINDINGS

1. LICENSEE	2. REGIONAL OFFICE
Northern States Power Company 414 Nicollet Mall Minneapolis, MN 55401 Prairie Island 1 (Red Wing, MN) Prairie Island 2 (Red Wing, MN)	U.S. Nuclear Regulatory Commission Office of Inspection & Enforcement, RIII 799 Roosevelt Road Glen Ellyn, IL 60137

3. DOCKET NUMBERS	4. LICENSE NUMBERS	5. DATE OF INSPECTION
50-282; 50-306	DPR-42: DPR 60	May 1-11, 1979

☐ 6. Within the scope of the inspection, no items of noncompliance or deviation were found.

☒ 7. The following matters are preliminary inspection findings:

10 CFR50.55a(g) requires that inservice inspection and testing be conducted in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. Article IWV of that code requires that Category A and B valves be exercised at least once every three months. This requirement became effective on April 21, 1979.

Contrary to the above, due to a program error, exercise of motor operated valves MV-32167 and MV-32168 were not scheduled for exercise test until May 9, 1979.

☒ 8. These preliminary inspection findings will be reviewed by NRC Supervision/ Management at the Region III Office and they will correspond with you concerning any enforcement action.

C. D. Feierabend

Nuclear Regulatory Commission Inspector

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3. DOCKET NUMBERS	4. LICENSE NUMBERS	5. DATE OF INSPECTION
50-282; 50-306	DPR-42; DPR 60	May 26-31, 1979

[X] 6. Within the scope of the inspection, no items of noncompliance or deviation were found.

[ ] 7. The following matters are preliminary inspection findings:

[ ] 8. These preliminary inspection findings will be reviewed by NRC Supervision/ Management at the Region III Office and they will correspond with you concerning any enforcement action.

C. D. Feierabend
Nuclear Regulatory Commission Inspector

PRELIMINARY INSPECTION FINDINGS

1. LICENSEE	2. REGIONAL OFFICE
Northern States Power Company 414 Nicollet Mall Minneapolis, MN 55401 Prairie Island 1 (Red Wing, MN) Prairie Island 2 (Red Wing, MN)	U.S. Nuclear Regulatory Commission Office of Inspection & Enforcement, RIII 799 Roosevelt Road Glen Ellyn, IL 60137

3. DOCKET NUMBERS	4. LICENSE NUMBERS	5. DATE OF INSPECTION
50-282; 50-306	DPR-42; DPR 60	May 12-25, 1979

[X] 6. Within the scope of the inspection, no items of noncompliance or deviation were found.

[ ] 7. The following matters are preliminary inspection findings:

[ ] 8. These preliminary inspection findings will be reviewed by NRC Supervision/ Management at the Region III Office and they will correspond with you concerning any enforcement action.

O S Fairchild

Nuclear Regulatory Commission Inspector