

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

REGION III

IE Inspection Report No. 050-263/75-12

Licensed: Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Monticello Nuclear Generating Plant
Monticello, Minnesota

License No. DPR-22
Category: C

Type of Licensee: BWR (GE) 1670 Mwt

Type of Inspection: Announced

Dates of Inspection: July 15-18, 1975

Principal Inspector:

B. J. Duvall for
N. C. Choules

7/13/75
(Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By:

B. J. Duvall for
E. L. Jordan
Senior Inspector
Reactor Operations Branch

8/13/75
(Date)

SUMMARY OF FINDINGS

Inspection Summary

Inspection on July 15-18, (75-12): Records, plant operations, and startup testing were reviewed. No items of noncompliance were identified.

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Matters

1. Failure of the Operation Committee to review operating procedure B.7.3^{1/}: Review of the Operation Committee meeting minutes No. 547 held on June 25, 1975 indicated that a revised B.7.3 procedure had been reviewed and approved by the committee. This item is considered resolved.
2. Failure of the Operation Committee to review NRC identified noncompliance item:^{2/} Review of the Operation Committee meeting minutes No. 549 indicated that NRC identified noncompliance items during 1975 had been reviewed by the committee. This item is considered resolved.

Other Significant Findings

A. Systems and Components

The off-gas radiation level at the air ejectors continued to increase indicating additional fuel leakers. The licensee is reducing power as required to maintain a nearly constant radiation level at the air ejectors and preserve fuel integrity. (Report Details, Paragraph 5.f.)

B. Facility Items (Plans and Procedures)

1. The licensee plans to shutdown September 12, 1975 for a refueling outage. At that time the remaining original 7 X 7 fuel assemblies will be removed and replaced with 8 X 8 fuel assemblies.
2. The 4-inch recirculation bypass lines may be replaced during the September outage depending on the results of the inspections of the welds in these lines.

1/ IE Inspection Rpt. No. ODO-263/75-09.

2/ Ibid.

3. The licensee plans to remove a drain line which is attached to the reactor cleanup system line connected to the bottom of the reactor pressure vessel during the September outage. The drain line acts as a crud trap causing high radiation levels in the areas where control rod drive maintenance work is performed.

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Reported Unresolved Items

Not applicable.

Management Interview

The following persons were present at the management interview conducted on July 18, 1975:

C. E. Larson, Plant Manager

M. H. Clarity, Superintendent Plant Engineering and Radiation Protection

W. E. Anderson, Superintendent Operations and Maintenance

D. D. Antony, Plant Engineer Operations

A. Records

The inspector stated that he had reviewed selected parts of the licensee record storage, system of record retrieval, and drawing update system and they appear to be adequate. (Report Details, Paragraph 1)

B. Plant Operations

The inspector stated that he had reviewed general plant operations which included a tour of the plant, review of operating records and discussions with operators and no apparent discrepancies were noted. (Report Details, Paragraph 2)

C. Abnormal Occurrences

The inspector stated that he had reviewed AO 75-08, 75-09, 75-10 and 75-12 with the licensee's representatives and it appeared that appropriate corrective action had been taken for the occurrences. (Report Details, Paragraph 3)

D. Startup Testing

The inspector stated he had reviewed startup testing following the January-February, 1975 outage and no apparent discrepancies were noted. (Report Details, Paragraph 4)

E. Outstanding and Miscellaneous Items

Subject items including turbine piping thinning, recirculation pump seal leakage annunciators, augmented off gas system, motor operated valve overload indication, and IE Bulletin 75-03 were discussed. (Report Details, Paragraph 5)

REPORT DETAILS

Persons Contacted

Northern States Power Company

C. E. Larson, Plant Manager
M. H. Clarity, Superintendent, Plant Engineering and Radiation Protection
W. E. Anderson, Superintendent, Operation and Maintenance
D. D. Antony, Plant Engineer Operations
W. A. Shams, Plant Engineer Technical
S. L. Pearson, Shift Supervisor
H. Seibel, Shift Supervisor
R. A. Knitch, Shift Supervisor
R. R. Rodger, Lead Plant Equipment Operational Reactor Operator
J. M. Carsten, Lead Plant Equipment Operational Reactor Operator
H. E. Nimo, Maintenance Supervisor
J. F. Heneage, Engineer
E. D. Day, Engineer
W. J. Hill, Engineer, Instruments
H. M. Kendall, Plant Office Supervisor
F. L. Fey, Assistant Radiation Protection Engineer
C. H. Harmsen, Supervising Engineer, Plant Engineering and Construction Department

1. Records

The inspector reviewed the licensee program of control, storage and retrieval of records to determine if the Technical Specifications requirements of section 6.6 were being complied with. The inspector selected and verified that the following records are retrievable.

- a. Reactor coolant flow recorder charts for February 1974.
- b. Average power range monitor recorder charts for December 1974.
- c. Fuel records for 1973.
- d. Abnormal Occurrence 74-19 records.
- e. Surveillance test, 0064, Radiation Monitor Reactor Building Vent Test for December 1973.
- f. Maintenance records for maintenances performed on the 250 volt battery system listed on Page III-3 of Semi Annual Operating Report No. 8.
- g. Emergency diesel generator preventive maintenance records since April 1974.

- h. Records of reviews made by the Operation Committee of changes made to operating procedure B.8.1.13 and surveillance tests 0/05, 0/06 and 0/07. These changes were indicated in Section I.D.4 of Semi Annual Operating Report No. 8.

The inspector verified that as built drawings for changes in plant design, listed in section I.B.4 and 5 of Semi Annual Operating Report No. 8, were revised to reflect these changes.

The licensee has prepared and maintains equipment history cards on safety related equipment. Maintenance and preventative maintenance performed on the equipment is recorded on the cards. Maintaining equipment history cards has been in effect for about six months. From these cards long term equipment degradation or adverse trends can be determined. Also, the licensee is in the process of setting up a program to provide input to the Edison Electric Institute's Plant Reliability Program. The input to this program will also provide the licensee with equipment history and degradation information.

2. Plant Operations

a. Plant Tour

The inspector toured the plant accompanied by the licensee's representative. Housekeeping practices were generally acceptable. During the tour, two equipment SECURE and two HOLD tags were selected and reviewed for proper approval and the status log reviewed to determine if the tags were accounted for. No discrepancies were noted.

The inspector reviewed the status of various annunciators which were lit in the control room with a control room operator. Adequate explanations were given as to why these annunciators were lit.

b. Log Books

The inspector reviewed the Reactor and Control Room Log and Shift Supervisor's log for selected days during the period of April 1 to July 15, 1975 and confirmed that entries are filled out and initialed and that the Operations Supervisor is reviewing and initialing the log sheets indicating his review. The inspector noted in his review of the logs that the entries are made with good details. The inspector also reviewed Control Room and Reactor Building hourly and daily log sheets for July 1 to 15, 1975 and no discrepancies were noted.

The Jumper Bypass log was reviewed back to March 15, 1975. No discrepancies were noted. As was previously noted^{3/} the licensee has initiated the use of Bypass/Jumper forms and it appears to be a big improvement over his previous method of keeping track of bypasses and jumpers.

- c. The inspector reviewed SOE Reports 75-04 and 75-05 which were prepared and approved by the Operations Committee during April to July 1975.

SOE 75-04 - The event involved oil leakage from two hydraulic suppressors on the HPCI system which were still operable and hence not an abnormal occurrence. The licensee described the event in the cover letter for AO 75-07 dated February 27, 1975.

SOE 75-05 - This event was a condensate demineralizer problem and was previously reported.^{4/}

There were no items of noncompliance noted in the review of these events.

- d. Temporary Memo's

Temporary Memo's are temporary changes to the Operation's Manual. The subject memos which were in effect at the time of the inspection were reviewed. Four Orders were in effect and no discrepancies were noted.

3. Abnormal Occurrences

- a. AO 263/75-08

The licensee informed the inspector on May 5, 1975 by telephone that the control circuit for the RCIC turbine steam supply valve MO 2078 was determined to be deenergized due to an open undervoltage relay coil. The details and the corrective action for this occurrence is as described in licensee's report.^{5/}

The licensee representative stated that there has been no further failures of the relay coil and that the failed coil had been sent to their electrical laboratory in Minneapolis for analysis.

- 3/ IE Inspection Rpt. No. 050-263/75-05.
4/ Ibid.
5/ AO Rpt. No. 050-263/75-08, NSP to DL 5/15/75.

b. AO 75-09

The licensee informed the inspector on May 27, 1975 by telephone that during surveillance testing the core spray injection valve No. 1751 closed but would not reopen on signal from the control room. The valve was opened by hand and subsequently operated properly during testing. The details for this occurrence are described in the licensee's report. 5/

The inspector inquired if the licensee had determined why the valve did not open. The licensee's representative stated that they had completely checked out the valve and control circuits and could find no reason why the valve did not open and it has operated properly since the occurrence.

c. AO 75-10

The licensee reported to the inspector on July 3, 1975 by telephone that reactor high pressure scram switch PS 2-3-55A was found inoperable due to the bourdon tube hitting the stop plate. The details and corrective action for this occurrence are given in the licensee's report. 6/

The licensee's representative indicated that the switch should operate prior to the bourdon tube striking the stop. It appeared that two problems were involved in this occurrence. The stop was set so close to the bourdon tube that it did not allow for any drift and the adjustment screw had a builtup collar under the head of the screw which allowed the adjusting mechanism to slip over the collar and the tube to hit the stop. The collar was apparently formed during the manufacture and is not present on all adjustment screws. The licensee's inspection adjustment screws in other switches to determine if similar collars exist.

d. AO 75-12

The licensee reported to the inspector on July 14, 1975 that a small leak developed in a local reactor pressure gauge. The leak lowered the water level in the reference leg for the scram and ECCS initiating Yarway instruments causing them to indicate high water level and preventing them from tripping within the limiting safety system setting. The redundant Yarways were not affected. The leak was caused by a cracked bourdon tube. The licensee isolated the local gauge and returned the reference legs to normal without interruption of reactor power. The licensee's report had not been prepared at the time of this inspection.

5/ AO Rpt. No. 050-263/75-09, NSP to DL 6/6/75.

6/ AO Rpt. No. 050-263/75-10, NSP to DL 7/11/75.

4. Startup Testing

The inspector reviewed testing performed during startup following the January-February, 1975 outage. Testing performed and reviewed were as follows.

- a. Control rod drive insertion time per surveillance test 0081 was performed on all rods on which maintenance was performed during the outage. Insertion times of rods tested met the Technical Specification requirements.
- b. Shutdown margin testing with the most reactive rod withdrawn was performed per surveillance test 0073. This testing verified the reactor was shutdown by greater than 1.22% ΔK with the most reactive rod fully withdrawn and met the requirements of Technical Specification 3.3.A.1 and 4.4.A.1.
- c. Power to flow maps and core ΔP data were obtained.
- d. Core power distribution measurements were obtained at 53%, 62%, 84% and 96% power using the traversing in-core power detectors.
- e. Heat balances were performed at 22%, 50%, 59%, 72%, 93% and 100%.
- f. Critical rod position in the A and B rod sequence configurations were obtained and were within 1% of the estimated critical position as required by the technical specifications.

5. Outstanding and Miscellaneous Items

The following items were reviewed.

a. Turbine Moisture Separator No. 3 Inlet Steam Piping

It was previously reported that the licensee had observed thinning in the subject piping.^{7/} The inspector inquired as to what action the licensee was taking in regard to this item. The licensee's representative stated that a meeting was held with General Electric regarding the piping. General Electric requested a section of piping to perform burst testing on. The licensee will cut out a six foot section of piping with thinning during the September outage to send to General Electric. After the burst testing is completed and evaluated, General Electric believes they will be in a position to make recommendations concerning replacement of piping.

^{7/} IE Inspection Rpt. No. 050-263/75-05.

b. Recirculation Pump Leakage Annunciators

During the tour of the plant the inspector noted that one of four subject annunciators was lit continuously. A similar situation was observed previously.^{8/} The inspector inquired as to the status of corrective action regarding these annunciators. The licensee's representative stated that a design change was being processed which will delete this system of leakage detection because the pico switches for the switches are unreliable. The licensee will rely on pump seal pressures and temperatures, and drywell sump levels to detect leakage.

c. Augmented Off Gas System

The inspector reviewed the performance of the subject system with the licensee's representative for the past two months.

On May 29, 1975, the Train B recombiner was shutdown due to a recombiner condenser high level. Investigation revealed that catalyst (palladium) pellets had clogged the condenser level control valve. Further investigation revealed that the upper catalyst retention screen in the recombiner had failed. The vessel designer inspected the vessel and calculated that the screen had failed as a result of bed fluidization subsequent to a differential pressure (d/p) in excess of the 0.8 psid for which it was designed. This d/p was attributed to the rapid equalization of the partial vacuum created by condensation of entrapped steam in a shutdown train when the train is returned to service. Further investigation revealed that catalyst particles had flushed into the 42 inch delay line.

The system was modified and repaired and the licensee has changed the operating procedure to require that a shutdown train be gradually equalized with the operating train. Also, because of the presence of palladium particles in the 42 inch delay line the licensee is not permitting operation of the plant without a recombiner train in operation due to the potential hydrogen detonation problem.

Following the repair of the B train, the A recombiner train was shutdown and the upper catalyst retention screen inspected. The catalyst loading door trap had opened, allowing catalyst pellets to go downstream during system transients. The system was modified and repaired in the same manner as the B recombiner train. Both the units were operable at the time of the inspection.

^{8/} RO Inspection Rpt. 050-263/74-10

d. Motor Operated Valve Overload Indication

The licensee had previously committed to review methods to provide assurance of power to the subject valves.^{9/} The licensee's representative informed the inspector that a design change was being processed which will modify the indication circuitry such that if the thermal overload is actuated, the valve indicating lights in the control room will go out, indicating a problem to the operator.

e. IE Bulletin 75-03, ASCO 8300 and 8302 Solenoid Valves

The inspector reviewed the licensee's response^{10/} to the subject bulletin with the licensee's representative. The licensee stated in his response that they had eight solenoid valves of the type described in the bulletin but they have metal seats and resilient seats which is not the type which have problems. The licensee representative indicated they have had no failures of the eight valves they have installed and further action is planned for this bulletin.

f. Off-Gas Radiation Levels and Reactor Power Level

For a previous inspection on May 14-16, 1975^{11/}, it was reported that the licensee had reduced power from 100% to 93% due to increasing radiation levels at the air ejectors apparently due to increased fuel leakers. Since that time the licensee has gradually decreased power to about 83% to limit the radiation levels. The licensee has administratively set a limit of 12 R/hr at the air ejectors. On July 12, 1975, the licensee reduced power to about 45% for a rod pattern exchange. When power level was increased, 64% was the maximum power that could be obtained without exceeding 12 R/hr at the air ejector. By July 18, 1975, the licensee had been able to increase power to 70% and stay below 12 R/hr at the air ejector.

^{9/} RO Inspection Rpt. No. 050-243/74-10.

^{10/} Letter, NSP to Region III dtd 4/16/74.

^{11/} IE Inspection Rpt. No. 050-263/75-09.