U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-263/83-03(DPRP)

Docket No. 50-263 License No. DPR-22

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

Facility Name: Monticello Nuclear Generating Station

Inspection At: Monticello Site, Monticello, MN

Inspection Conducted: January 30 - March 1, 1983

Inspector: M J Jordan for C. H. Brown 4/12/83

Approved By: M J Jordan for R. D. Walker, Chief 4/12/83
Reactor Projects Section 2C

Inspection Summary:

Inspection on January 30 - March 1, 1983 (Report No. (50-263/83-03(DPRP))
Areas Inspected: Routine, unannounced inspection by the resident inspector of operational safety; maintenance; surveillance; the onsite review committee; foreign material in RHR pump; and an enforcement conference. The inspection involved a total of 52 inspector-hours onsite by 1 NRC inspector, including 4 inspector-hours onsite during off-shifts.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*W. A. Shamla, Plant Manager
M. H. Clarity, Plant Superintendent, Engineering and Radiation Protection
H. M. Kendall, Plant Office Manager
*D. D. Antony, Superintendent, Operating Engineering
W. E. Anderson, Plant Superintendent, Operations and Maintenance
*R. L. Scheinost, Superintendent, Quality Engineering
J. R. Pasch, Superintendent, Security and Services
F. L. Fey, Superintendent, Radiation Protection
W. J. Hill, Superintendent, Technical Engineering
W. W. Albold, Superintendent of Maintenance

The inspectors also talked with and interviewed other licensee employees including members of the technical and engineering staffs and reactor and auxiliary operators.

*Denotes those licensee representatives attending the management interviews.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of February. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the reactor building and turbine building were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance. The inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the month of February, the inspector walked down the accessible portions of the Residual Heat Removal (RHR) Service Water and portions of the systems to verify operability. The inspector also witnessed portions of the radioactive waste system controls associated with radwaste shipments and barreling.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under technical specifications, 10 CFR, and administrative procedures.

No items of noncompliance or deviations were identified.

3. Monthly Maintenance Observation

Station maintenance activities of 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; parts and materials used were properly certified; 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.

The following maintenance activities were observed/reviewed:

Residual Heat Removal (RHR) Service Water Valve Repair

Following completion of maintenance on the RHR Service Water and RHR Systems, the inspector verified that these systems had been returned to service properly.

No items of noncompliance or deviations were identified.

4. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing which was accomplished using Surveillance Test Procedure and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

The inspector also witnessed portions of the following test activities:

STP No. 0301, "Essential Bus Degraded Voltage Test"
STP No. 0303, "Essential Bus Loss of Voltage Test"

STP No. 0017, APRM Heat Balance Calibration
STP No. 0008, MSIV Closure Scram Functional Check

No items of noncompliance or deviations were identified.

5. Onsite Review Committee

The inspector examined selected onsite review functions conducted during the month of February to verify conformance with technical specifications and other regulatory requirements. The review included meeting frequency and that a quorum was present when required. The activities verified to be reviewed by the Committee included technical specification changes, items of noncompliance and corrective actions, proposed facility and procedure changes, and proposed tests and experiments conducted per 10 CFR 50.59 including the test results. Other items required by technical specifications and facility procedures were verified to have been performed.

No items of noncompliance or deviations were identified.

6. Foreign Material Found in Residual Heat Removal (RHR) System Pump

During a flow verification test (per Section XI) of the No. 14 RHR pump, the licensee noted that the flow rate was in the "alert range". The pump was disassembled for inspection and internal measurements. After the pump was removed, the remains (approximately 5% to 10%) of a mop head were found in the suction side of the pump casting. The mop head was thought to have been caught in the impeller and to have fallen back into the suction as the impeller was removed. The mop material was 50% cotton and 50% man-made materials. The man-made materials would decompose at around 300°F and a test was performed to determine what would occur with the cotton if it would have gotten into the reactor vessel. The licensee also made an evaluation and determined that if the mop head material had gotten to the reactor no flow blockage or core damage should have occurred. The results of the reactor water chemistry analysis have not shown any indication of cladding damage or indications that any of the mop head was pumped into the vessel during periods when shutdown cooling was being used. The RHR piping to the isolation valves was inspected for any more foreign material. None was found and the pump was reassembled. As the actual entry point for the mop head could not be placed with certainty, several possibilities were discovered during the event investigation. This includes several connecting systems as follows: (a) Due to the low flow velocity in the ring header on the torus and the condensate storage tank, the mop head may have been in one of these for several years as these systems were open several times in the past three years; (b) The shutdown cooling valve body was opened for maintenance during the 1982 outage. Interviews with the maintenance personnel indicated no mop heads were used in the valve body during work. One QC personnel had informally inspected the valve seats and did not observe any foreign material just before the valve was reassembled. Therefore, to limit any recurrence, the licensee is revising procedures to provide more complete controls of any "critical systems" when they are "open" and to provide for a QC inspection before the system is closed up.

No items of noncompliance or deviations were identified.

7. Management Meeting

A meeting was held on February 18, 1983, in the Region III offices with Northern States Power (NSP) management. This enforcement conference was held to discuss the background and results of the investigations into the loss of primary containment integrity discovered on January 8, 1983. This matter is fully covered in Inspection Report No.50- 263/83-01(DPRP).

8. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection on March 1, 1983, and summarized the scope and findings of the inspection activities. The licensee acknowledged the findings and provided a status report on the foreign material found in the RHR system.