

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

REPORT NO. 50-263/95008

FACILITY

Monticello Nuclear Generating Plant

License No. DPR-22

LICENSEE

Northern States Power Company  
414 Nicollet Mall  
Minneapolis, MN 55401

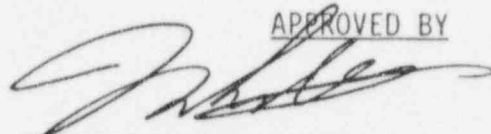
DATES

August 4 through September 22, 1995

INSPECTORS

W. Stearns, Acting Senior Resident Inspector  
D. McNeil, Reactor Operations Assessment Representative

APPROVED BY



Monte P. Phillips, Chief  
Reactor Projects Section 2B

10/5/95  
Date

AREAS INSPECTED

A routine, unannounced inspection of operations, engineering, maintenance, and plant support was performed. Safety assessment and quality verification activities were routinely evaluated.

RESULTS

Assessment of Performance

OPERATIONS: Your recent implementation of the Operator Workaround Program to highlight and resolve issues was considered a strength.

MAINTENANCE: Construction and operation personnel's identification of a leak in association with the phase separator tank pump down was weak. Although present, it was not until the NRC inspector pointed out that a leak had developed that any actions were taken to correct it. Opportunity for discovery existed for all involved. However, once the leak was identified the response by all organizations was excellent.

ENGINEERING: Your review of IN 94-66, Supplement 1, regarding the overspeed concerns of turbine driven pumps caused by binding of governor valve stems demonstrated a conservative approach to problem solving. Although corrosion of governor valve stems has not been seen at Monticello, contingency plans

were established to have less susceptible material available in the event the problem should occur in the future.

PLANT SUPPORT: One administrative weakness was identified by your staff regarding the way in which superseded revisions to safeguards prints were controlled. Your staff's review and corrective actions of this issue were both timely and complete.

Summary of Open Items

Violations: None identified in this report

Unresolved Items: None identified in this report

Inspector Follow-up Items: None identified in this report

Non-cited Violations: None identified in this report

## INSPECTION DETAILS

### 1.0 OPERATIONS

NRC Inspection Procedure 71707 was used in the performance of an inspection of ongoing plant operations. The findings showed performance was consistent. "At power" operations were all conducted well. The unit operated at or near full power for the entire inspection period.

#### 1.1 Established Operator Workaround Criteria was a Strength

In an effort to quantify equipment workarounds, the Operations Department established that an equipment or procedural problem should be defined as an Operator Workaround if it met either of the following criteria:

1. A system designed to operate automatically during an accident or transient required significant operator action to ensure it would perform its intended function.
2. Safety system or important balance of plant equipment that was degraded or inoperable that may affect the operator's ability to respond effectively to a transient.

Using these definitions, on August 8, 1995, the operators completed their initial review and compilation of workaround items. They walked through operations procedures in the associated manuals to identify and track potential workarounds. In addition they kept notes during the performance of their normal duties. Their initial review identified eight potential operator workarounds. In the future, operations planned to maintain a list of 10 items to be resolved, placing a high priority on addressing each issue to effect resolution.

#### 1.2 Material Condition and General Housekeeping was Excellent with Two Minor Exceptions Noted

While the plant was generally clean and overall housekeeping and plant material condition were excellent, the inspectors identified two discrepancies during plant walkdowns. The first related to a small oil leak from the reactor building crane that potentially could drip into the spent fuel pool. This could result in an oil film on the surface of the pool that could be transferred to new fuel during fuel movements in preparation for the next refueling outage. The second related to a leak in a hose used for the phase separator tank drain down (see section 2.2).

#### 1.3 Operations Personnel Performed Their Required Duties in a Capable Manner

Operators were attentive to their duties in the control room and outside the control room. Proper control room staffing was maintained and access to the control room was properly controlled. Necessary information concerning plant systems status was discussed during shift

turnover and understood by the oncoming shift. There were no distractions to safe plant operations in the control room.

All nuclear instrumentation was functional and indicating correct values. The reactor mode switch was in the appropriate position and the mode switch key was inserted in the mode switch.

A tour of the plant was conducted by accompanying a turbine building operator and a reactor building operator on their normal plant rounds. The operators were thorough in their rounds, paying close attention to plant conditions. The operators were familiar with all aspects of their watch station.

#### 1.4 Handswitch Located on Alternate Shutdown System (ASDS) Panel Found in Wrong Position

On September 15, 1995, the inspectors were notified that the handswitch for the core spray suction valve (MO-1742) was found in the closed position on the ASDS panel during a random audit of the panel by the licensee. The switch for MO-1742 was mispositioned; however, since the switch was not enabled, the valve itself remained in the proper position. In the event the ASDS panel would be enabled, a check of all switch positions would be conducted as required by procedure prior to enabling the panel.

After discovery, the switch was returned to the open position in accordance with the Plant Prestart Checklist-Alternate Shutdown System procedure 2203. The Licensee has generated an NCR to document and resolve this issue. The inspectors will continue to follow the licensee's corrective actions.

#### 1.5 Follow-up of Previous Inspection Findings

##### (Closed) Violation 263/94004-03: Multiple Personnel Performance Errors.

The inspectors reviewed operator training performance, procedural modifications, and a revision made to stores forms. The licensee's corrective actions to all parts (A, B, C and D) were adequate and this item is closed.

## 2.0 MAINTENANCE

NRC Inspection Procedure 62703 and 61726 were used to perform an inspection of maintenance and testing activities. No violations or deficiencies were identified and overall performance in this area was considered excellent. However, the construction and operation personnel's identification of a leak in association with the phase separator tank pump down was weak. Although present, it was not until the NRC inspector pointed out that a leak had developed that any actions were taken to correct it. Opportunity for discovery existed for all involved. However, once the leak was identified the response by all organizations was excellent.

## 2.1 Performance of Maintenance and Surveillance Testing Activities was Excellent

The inspectors observed the following routine preventive and corrective maintenance and surveillance activities to ascertain that they were conducted in accordance with approved procedures, regulatory guides, industry codes or standards, and in conformance with Technical Specifications:

- WO 950838 Fire Header Piping Replacement in the Intake Structure
- WO 951044 Electrical Work to Upgrade Vehicle Trap (Mod 95Q035)
- WO 945151 Preparation for #11CST Maintenance
- 8178PM Radwaste Shipment
- WO 950982 Computer Room and RW Fire Protection (Mod 95Q005)

In all cases, the work was performed well with no problems noted.

## 2.2 Response to Leak During Construction Activities

On August 15, 1995, while monitoring construction and operations activities in progress, the inspectors observed a hose that was leaking. The hose was being used to pump down contaminated water from the phase separator tank in the radwaste building. The leak was in a non-radiologically controlled area. The leak was small but had been leaking long enough for a puddle to develop around and under the hose. Construction and operations personnel were both present during the activities yet it was not until the inspector pointed out the leak that any corrective actions were taken. Once the licensee became aware of the leak, radiation protection personnel were notified and work was stopped. Duct tape was used to temporarily seal the hose until it could be replaced. The area where the leak occurred was roped off and a Radiation Work Permit was established for the plant helpers to clean up the area. The inspectors observed the licensee's response to the leak and had no concerns with regard to their activities.

## 3.0 ENGINEERING

NRC Inspection Procedure 37551 was used to perform an onsite inspection of the engineering function. No violations or deficiencies were identified. The items "Closed" as a result of this report met the criteria established in the Inspection Procedures.

### 3.1 Evaluation of Turbine Bypass Valve (BPV) Oscillations Seen at Quad Cities for Applicability to Monticello

Quad Cities Unit 2 experienced BPV oscillations during startups on July 25, 1995, and July 28, 1995. The oscillations resulted in diverging swings in reactor power of about 1% and minor fluctuations in reactor vessel water level. The licensee later determined that the BPV oscillations were a result of partial implementation of GE SIL 589.

Monticello was requested to assess the applicability of this phenomenon to their plant. SIL 589, "Pressure Regulator Tuning," is not entirely applicable to Monticello. Monticello uses a mechanical-hydraulic control system as opposed to an electrical-hydraulic control system for main turbine control. Engineering has not completed their formal review to date (September 30, 1995 is the expected completion date for their review); however, their initial review of the SIL determined that they expect to do nothing differently than they have done in the past. Testing as recommended in the SIL was already being performed in their testing program. Engineering has been requested to provide a copy of their completed review to the resident staff upon completion.

The resident inspectors will continue to follow this issue.

3.2 Information Notice (IN) 94-66, Supplement 1: Overspeed of Turbine Driven Pumps Caused by Binding in Stems of Governor Valves

Per IN 94-66, Supplement 1, corrosion on the valve stem of governor valves has resulted in binding and subsequent overspeeding of turbine driven pumps. The system potentially affected by governor valve stem binding at Monticello is the Reactor Core Isolation Cooling (RCIC) system. The licensee had completed its assessment and determined that no operability problems existed or had previously occurred due to corrosion on the valve stem resulting in valve binding. However, the valve stem material used for the terry turbine governor valve on RCIC was liquid nitrided stainless steel (Alloy 410). This was the material more likely to corrode and bind.

As a followup action, the licensee was arranging to have contingency valve stem material (Alloy 718) on site or readily available should the binding occur. Alloy 718 was the material that had been used by other utilities to correct the binding problem. The inspectors will continue to follow this issue.

3.3 Seimens Fuel - Update

As discussed in Inspection Report No. 50-263/95006, small leaf springs used in the fuel assembly spacers for Seimens Atrium 96 fuel assemblies were found missing at three locations in one fuel assembly at another facility. Seimens Power Corporation has completed its formal safety evaluation and has concluded that there was no safety concern resulting from this condition. In addition, Seimens had determined that the reporting requirements of 10 CFR 21 were not applicable.

Seimens stated that, in the case of Monticello, they have documented evidence that all spacers were inspected and verified by the manufacturer to be in place by use of the BEECO vision process. This method was not used for the other fuel where the problems were identified. Seimens believed that the spacers had been fabricated as intended and were performing as expected.

Northern States Power was in agreement with Seimens' safety assessment. Additionally, NSP evaluated the feasibility of inspecting the irradiated fuel for missing leaf springs and determined that such an inspection would not be practical. The dimensions of the springs are approximately 1/8" x 1" and there are approximately 2,000 of them per assembly. The inspection required to verify the springs were in place due to the close tolerances involved could potentially damage the fuel.

The inspectors agreed with the licensee's assessment and decision not to pursue further corrective actions.

### 3.4 Followup of Previous Inspection Findings

#### (Closed) Unresolved Item 263/94007-02: Structural Beam Connection of the Cable Spreading Room (CSR) Floor Outside the Design Basis

As discussed in Inspection Report No. 50-263/94007, during a design basis review, the licensee discovered the floor of the CSR had not been analyzed for potential pressure load associated with a halon fire suppression system discharge or during a postulated tornado with the breach of a wall. (LER 94-008 was generated, documenting the issue.) The NRC's Office of Nuclear Reactor Regulation performed a review and determined that the licensee's analysis provided reasonable assurance that the CSR floor should be able to withstand the extreme load conditions created by a tornado or the infrequent loading condition generated by a halon system actuation with full load. This issue is considered closed.

## 4.0 PLANT SUPPORT

NRC Inspection Procedures 71750 and 83750 were used to perform an inspection of Plant Support Activities. No violations were identified and overall performance in this area was excellent. One administrative weakness was identified by your staff concerning the disposition of superseded safeguards material.

### 4.1 Performance of Personnel During Routine Radiological Controls Activities was Excellent

The inspectors verified that personnel were following health physics procedures for dosimetry, protective clothing, frisking, posting, etc., and randomly examined radiation protection instrumentation for use, operability, and calibration. No deficiencies were identified.

### 4.2 Performance of Personnel During Routine Security and Safeguards Activities was Excellent

Each week during routine activities or tours, the inspectors monitored the licensee's security program to ensure that observed actions were being implemented according to the approved security plan. The inspectors noted that persons within the protected area displayed proper photo-identification badges and those individuals requiring escorts were

properly escorted. Additionally, the inspectors observed that personnel and packages entering the protected area were searched by appropriate equipment or by hand.

During this inspection period the inspectors held a meeting with the plant's security superintendent and others to update the resident staff on recent developments, events, and plans regarding security.

#### 4.2.1 Improperly Marked and Stored Safeguards Information

On August 4, 1995, the licensee discovered, while removing deleted aperture cards from the library files, that an old revision of a security print existed in a non-safeguards storage area. The new revision to this print was stored correctly in the safeguards viewing area.

The licensee notified both the resident office and Region III of their preliminary findings. In addition they generated an NCR to document and resolve the issue. The licensee's review determined that several prints had been upgraded to safeguards following modifications and that the old revisions (not safeguards related) had not been removed from files. There was one case where a print had not been revised, yet upgraded to safeguards, and the old version still existed in a non-secured area. This issue highlighted a vulnerability in the administrative control on superseded prints in which corrective action was required.

The licensee's corrective actions included:

1. Perform a review of the inventory all site drawing files for safeguard prints and removing all old revisions to the safeguards viewing area; and
2. Change the Administrative Work Instructions to provide more specific instruction on handling and storage of superseded safeguard prints.

The regional security inspector will followup on this issue.

#### 5.0 **MANAGEMENT CHANGES**

The licensee has appointed G. Brevig as the new Monticello Quality Supervisor effective September 8, 1995.

#### 5.0 **PERSONS CONTACTED AND MANAGEMENT MEETINGS**

The inspectors contacted various licensee operations, maintenance, engineering, and plant support personnel throughout the inspection period. Senior personnel are listed below.

At the conclusion of the inspection on September 20, 1995, the inspectors met with licensee representatives (denoted by \*) and summarized the scope and findings of the inspection activities. The



licensee did not identify any of the documents or processes reviewed by the inspectors as proprietary.

Northern States Power Company

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L. Nolan, General Superintendent Safety Assessment  
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E. Reilly, Superintendent Plant Scheduling  
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W. Shamla, Manager Quality Services  
S. Engelke, Superintendent, I & C Engineering  
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