



# NSP

Regulatory

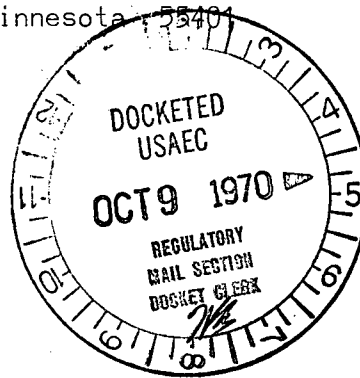
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## NORTHERN STATES POWER COMPANY

Minneapolis, Minnesota 55401

October 6, 1970

Dr. Peter A. Morris, Director  
Division of Reactor Licensing  
United States Atomic Energy Commission  
Washington, D.C. 20545



Dear Dr. Morris:

MONTICELLO NUCLEAR GENERATING PLANT  
Docket No. 50-263 License No. DPR-22  
Reporting of Operating Occurrence

A condition has occurred at the Monticello Nuclear Generating Plant recently which we are reporting to your office in accordance with provisions of Appendix A, Technical Specifications, of the Provisional Operating License DPR-22. The condition was considered reportable in accordance with Section 6.6.B.2 of the Specifications. The Region III Compliance office has been notified in accordance with the requirements of Section 6.6.A of the Technical Specifications.

The condition occurred when the inlet valve to the A circuit of the Standby Gas Treatment System failed to open when a startup of the system was automatically initiated during a planned test. The cause of the problem has been determined and the necessary repairs have been completed. The details of the occurrence are described in the attached Unusual Occurrence Report No. 5.

Yours very truly,

A handwritten signature in cursive script, appearing to read "R.O. Duncanson, Jr."

R.O. Duncanson, Jr. P.E.  
Gen. Supt. of Power Plants - Mechanical  
Chairman - Monticello Safety Audit Committee

ROD/caf

October 5, 1970

Received w/Ltr Dated 10-6-70

## MONTICELLO NUCLEAR GENERATING PLANT

## Unusual Occurrence Report No. 5

1. Summary Description of Occurrence

At approximately 1400 hours, September 28, 1970, during a test of Standby Gas Treatment System train A, the inlet valve failed to open. An investigation of this occurrence was begun immediately and was concluded on October 5, 1970.

2. Detailed Description of the Occurrencea. Summary of Conditions

At the time of the occurrence, the core was fully loaded and conditions were in accordance with Technical Specification 3.7.C such that Secondary Containment Integrity was not required.

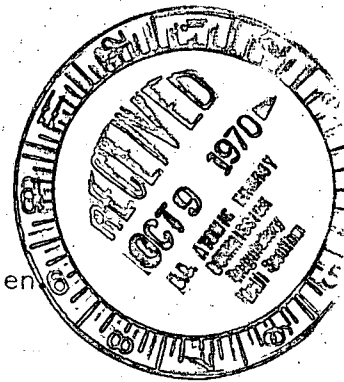
b. Account and Analysis of the Occurrence

At approximately 1400 hours, September 28, 1970, SGTS train A was started by Mr. R. Kmitch, NSP Lead Plant Equipment Operator, under the direction of Mr. D. Antony, NSP Engineer, for testing purposes. When the unit was started, it was noticed that the filter train inlet valve, AO 2945, had not opened. Train A was allowed to operate for approximately 15 seconds before it was shutdown. An attempt was then made to open the valve using the manual handswitch, however, the valve would not open. The problem was immediately investigated by Mr. Antony, Mr. J. Przybys (Bechtel Field Engineer) and Mr. E. Seedorf (NSP Instrument Technician).

The following brief description of the valve operating mechanisms (refer to attached diagram) will aid in understanding the account and findings of the investigation. When the solenoid valve is energized, air is allowed to pass through the solenoid valve, through the bleed-off valve via the spring loaded poppet and air ports, around the rubber diaphragm of the diaphragm valve and to the air operator, causing the butterfly valve (AO 2945) to close. When the solenoid valve is de-energized, the air supply is interrupted and the air above the rubber diaphragm is vented via the bleed-off valve and the solenoid valve. When air is vented from above the rubber diaphragm, the diaphragm is lifted due to the high pressure below it, allowing the air from the air operator to vent and causing the valve (AO 2945) to open.

It is noted that the air which is vented via the bleed-off valve must do so by passing between the seat of the adjustable plug and the main seat of the valve. The rate of venting is therefore dependent on the setting of the adjustable plug.

Following the failure on September 28, adjustments of the bleed-off valve plug were made and the valve was cycled approximately five times by Mr. R. Tigie, NSP Lead Plant Equipment Operator. The valve operated properly, but was slow on



opening (15 to 20 seconds) during one of the cycles. The plug was then removed from the bleed-off valve at which time it was discovered that there was a piece of teflon tape approximately  $1\frac{1}{2}$  inches in length located near the main seat. The teflon tape, which was still attached to the copper tubing, was removed and the plug was put back into the bleed-off valve. SGTS train A was then started by Mr. Tighe under the direction of Mr. Antony and was shutdown approximately 10 seconds later because AO 2945 had not opened. Another adjustment of the bleed-off valve was made and AO 2945 was cycled and found to be slow at opening (15 seconds). During the course of this testing it was discovered that the filter train discharge valve AO 2979, was also slow at opening (15 seconds).

On September 30, 1970, air operated butterfly valve AO 2945 was removed from the line and disassembled. Paint found on the bronze bushings was removed and the bushings were lubricated with silicone grease. The valve was reassembled and bench tested. At this time it was discovered that the butterfly valve would travel beyond the center point of the rubber valve liner when the valve was closed, thereby making it more difficult to open the valve. The air operator was adjusted to eliminate the overtravel. The valve was reinstalled on October 1st. The valve was cycled approximately ten times and it operated properly.

Investigation of this occurrence indicated that air operated valve, AO 2945, failed to open due to adjustments made to the bleed-off valve on September 26, 1970. These adjustments were made by Mr. Seedorf under the direction of Mr. Antony in an attempt to quiet AO 2945 which had been excessively noisy when opening. Both SGTS trains were run on September 26th and 27th and they operated properly. It is believed that when the bleed-off valve was adjusted on September 26, the adjustable plug was fully seated. This would normally prevent AO 2945 from opening, however, it is also believed that the teflon tape which was found in the bleed-off valve had prevented the spring loaded poppet from seating, allowing the valve (AO 2945) to open during the operability tests on September 26th and 27th. The teflon tape was apparently blown from the seat of the poppet during operation on September 27th. With the poppet seated and the adjustable plug seated there was no means of venting the air, thus preventing AO 2945 from opening on September 28th. The slowness in opening during subsequent testing is attributed to the valve overtravel condition and the rate of bleed-off.

c. Results of the Occurrence

As a result of the failure of the Standby Gas Treatment System train A inlet valve to open, the train was considered inoperable.

3. Corrective Action

The corrective actions taken on AO 2945 included the removal of the piece of

teflon tape from the bleed-off valve and adjustment of the bleed-off valve to provide for rapid venting. The air operator was also adjusted to prevent overtravel of the butterfly valve. Neolube was applied to the lining of the valve and paint was removed from the valve bushings. The bleed-off valves for AO 2944 (filter train B inlet), AO 2978 (filter train B discharge) and AO 2979 (filter train A discharge) were also disassembled and inspected. A piece of teflon tape was found and removed from the main seat of the bleed-off valve for AO 2978. Neolube was applied to the valve liners and the valves were inspected for overtravel. Overtravel was discovered on AO 2979 and the air operator was adjusted accordingly. The rate of bleed-off for AO 2979 was also increased. All of the valves (AO2944, 2945, 2978 and 2979) were tested and found to operate properly.

Prepared By:

Douglas D. Antony

D.D. Antony, Engineer  
Occurrence Investigator

DDA/mmm

