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Northern States Power Company Minneapolis, Minn. 55401 Mr. L.O. Mayer	5-20-74	5-24-74	X			

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DESCRIPTION:

Ltr submitting 10 day report concerning..... Abnormal occurences relating to Refueling Outage Valve Leakage Problems.....

ENCLOSURES:

ACKNOWLEDGED

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PLANT NAME: Monticello

5-28-74 JB

FOR ACTION/INFORMATION

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NSP

NORTHERN STATES POWER COMPANY

Minneapolis, Minnesota 55401

May 20, 1974

Mr. J. F. O'Leary, Director
Directorate of Licensing
Office of Regulation
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. O'Leary:

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263, License No. DPR-22, AO 263/74-05
Spring 1974 Refueling Outage Valve Leakage Problems

Written correspondence with Mr. J. G. Keppler, Director of the Region III Regulatory Operations Office, on March 22, 1974, documented discussions with Regulatory Operations Personnel on March 21, 1974. In these discussions it was agreed that followup information and corrective actions for penetrations and isolation valves which exceeded leakage rate acceptance criteria outlined in Section 4.7.A.2.f of the Technical Specifications would be included in the primary containment integrated leak rate test report. However, in subsequent discussions with Regulatory Operations personnel, it was decided that a separate, written report would be submitted to the Director of Licensing within 10 days following repair of all leaking valves. This report is therefore submitted in accordance with that agreement.

During the Spring 1974 refueling outage all primary containment isolation valves were leak tested as required by Technical Specification 4.7.A.2(e)(1). Eight valves were found to have leakage rates in excess of the Technical Specification limit for a single isolation valve. In addition, the total leakage rate for testable penetrations and isolation valves was found to be in excess of the Technical Specification limit.

Feedwater Check Valve, FW 97-2

The leakage past Feedwater Check Valve FW 97-2 was found to be 929 scfh. Examination showed that the upper portion of the valve disc was mating with the valve seat too early in the valve travel. This prevented the lower portion of the disc from seating properly. To get the valve disc to mate with the seat uniformly, the disc hinge pin was bent approximately 0.08". The valve disc seating surface was ground flat and the valve seat was lapped. Following corrective actions the leakage rate had been reduced to an acceptable 0.0 scfh.

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During the Spring 1973 refueling outage, a similar problem was discovered on Feedwater Check Valves FW 94-1, FW 94-2 and FW 97-1. At that time a similar repair was made. During the Spring 1974 refueling outage these three valves were tested and found satisfactory. It is therefore felt that the corrective actions taken will improve future performance of FW 97-2.

HPCI Turbine Exhaust Check Valve, HPCI-9

The leakage rate past HPCI Turbine Exhaust Outboard Isolation Valve HPCI-9 was found to be 65.6 scfh. Examination showed that the valve seat was loose in the valve body. The seat was removed and threaded portions were cleaned. The valve disc and seat were lapped and reinstalled. Care was taken to assure that the seat was properly tightened. Following corrective actions the leakage rate was reduced to an acceptable 0.0 scfh.

The sum of as found leakage through HPCI-9 and the integrated primary containment leakage measured during the 1973 refueling outage is less than the technical specification limit for primary containment leakage.

It is postulated that the loose seat in HPCI-9 was caused by oscillation and vibration during HPCI operation. An exhaust line sparger and vacuum breakers were installed during this outage. It is expected that oscillation and vibration will be reduced by these modifications and future valve performance will be satisfactory.

MSIV AO 2-80A

The leakage rate past Inboard MSIV AO 2-80A was found to be 73.4 scfh. Examination showed that the main plug was not mating properly with the valve seat. The main plug and pilot plug received truing cuts and the main seat and pilot seat were lapped. Following corrective actions the leakage rate was reduced to an acceptable 3.35 scfh.

During the Spring 1973 refueling outage, a similar problem was discovered on MSIV's AO 2-80A, AO 2-86A, and AO 2-86B. It is believed that low spots on MSIV seats have been the result of seat warpage which occurs when stresses in the valve body are relieved at operating temperatures. It is felt that this is a progressive process (as evidenced by the reduced number of MSIV's exhibiting the problem during the Spring 1974 refueling outage) and that in the future the valves will perform satisfactorily.

Main Steam Line Drain Valve, MO 2373

The leakage rate past Main Steam Line Drain Inboard Isolation Valve, MO-2373 was found to be 487.4 scfh. Due to the high contact exposure rate (4 Rem/hour), it was decided to adjust the torque switches on the valve operator as a first repair attempt. The application of additional (but not unacceptable) torque on the valve stem apparently allowed the stem to seat properly. Following this adjustment, leakage was reduced to 1.53 scfh.

The torque switches were adjusted on both the inboard and outboard isolation valves before a second leak rate test was conducted to determine "as found" leakage past the outboard isolation valve. It is therefore infeasible to accurately evaluate related safety implications.

LPCI Check Valve, AO 10-46A

Leakage past LPCI "A" Loop Check Valve AO 10-46A was found to be 28.63 scfh. Examination showed an accumulation of scale on valve seating surfaces. The valve was disassembled and cleaned. Following corrective actions, the leakage rate had been reduced to an acceptable 3.21 scfh.

Core Spray Check Valves, AO 14-13A and AO 14-13B

Leakage past "A" and "B" Core Spray System Testable Check Valves AO 14-13A and AO 14-13B was found to be 299 scfh and 390 scfh respectively. Examination showed an accumulation of scale on seating surfaces of both valves. The valves were disassembled and cleaned. Following corrective actions, the leakage rate past AO 14-13A and AO 14-13B was reduced to an acceptable 15.82 scfh and 2.67 scfh respectively.

Atmospheric Control System Isolation Valve AO-2381

Leakage past Primary Containment Atmospheric Control System Isolation Valve AO-2381 was found to be excessive at test pressures less than 25 psig. Examination showed an accumulation of scale on valve seating surfaces. The valve was disassembled and cleaned. Following corrective actions, the leakage rate past the three valves AO-2377, AO-2378 and AO-2381 had been reduced to an acceptable 2.03 scfh.

In every case except the HPCI Check Valve, HPCI-9, and the Main Steam Line Drain Isolation Valve, MO-2373, a redundant Isolation Valve in the same line was found to meet the Technical Specification leak rate limit.

Leakage past four of the eight subject valves was caused by an accumulation of scale on valve seating surfaces. Based on past experience it is anticipated that valve cleaning and seat lapping will be required periodically. Following completion of corrective actions the total leakage rate for testable penetrations and isolation valves was reduced to an acceptable 95.15 scfh.

Yours very truly,

L. O. Mayer

L. O. Mayer, PE
Director of Nuclear Support Services

LOM/kik

cc: J G Keppler
G Charnoff
Minnesota Pollution Control Agency
Attn: E A Pryzina