

FROM: Northern States Power Company  
Minneapolis, Minnesota 55401  
R. G. Duncan, Jr.

TO: Dr. Peter A. Morris

CLASSIF: U POST OFFICE  
REG. NO:

DESCRIPTION: (Must Be Unclassified)  
Ltr reporting a condition on 9-4-71  
the (HPCI) system was declared in-  
operable at the Monticello Plant and  
remained inoperable until 9-10-71...

ENCLOSURES:

REMARKS:

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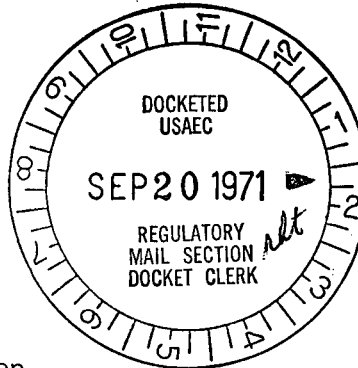
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NORTHERN STATES POWER COMPANY  
Minneapolis, Minnesota 55401

September 15, 1971

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

Inoperability of the High Pressure  
Coolant Injection System

The High Pressure Coolant Injection (HPCI) system was declared inoperable at the Monticello Nuclear Generating Plant on September 4, 1971, and remained inoperable until September 10, 1971. This occurrence is being reported in accordance with Section 6.6.B.2 of Appendix A, Technical Specifications, of the Provisional Operating License DPR-22. The Region III Compliance Office has been notified of the occurrence.

#### Summary Description of Occurrence

On September 4, 1971, during a monthly operability test of the HPCI system, the HPCI steam line isolation valves tripped closed from a false high steam flow signal. The HPCI system was declared inoperable and the RCIC, LPCI, and core spray systems were immediately demonstrated to be operable as required by Section 4.5.D.2 of the Technical Specifications.

Elbow taps with four differential pressure indicating switches are installed on the HPCI steam supply lines to detect high steam flow conditions. Two of the four high flow sensors are connected in a one of two logic array and trip at a steam flow of 150,000 #/hr. If either of these switches remain tripped for more than 45 seconds, the HPCI steam line will isolate. (The other two high flow sensors trip at a steam flow of 300,000 #/hr, either sensor causing an instantaneous isolation). Whenever the HPCI system is started, the initial surge of steam flow results in a trip of the 150,000 #/hr flow sensors; however, the rated steam flow of approximately 100,000 #/hr is established within 45 seconds and no isolation occurs. The flow sensors reset at a value of approximately 125,000 #/hr.

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Investigation of the September 4 occurrence revealed that the differential pressure measured at the elbow taps on the HPCI steam line was higher than previously measured during HPCI testing. Because of the change in the indicated differential pressure, the 150,000 #/hr flow sensors did not reset within 45 seconds and the HPCI isolation was initiated. During the September 4th testing, the sensors falsely indicated the normal flow to be approximately 140,000 #/hr.

On September 10, 1971, following backflushing of the flow elbow sensing lines, the system was tested at reactor pressures of 150 psig, 350 psig, and 1000 psig, and found to operate properly. The differential pressure at the elbow taps was found to have returned to the values measured during testing prior to September 4th.

Weekly testing of the HPCI system will be conducted until such time that the Operations Committee is satisfied that the change in the flow elbow differential pressure is not a recurring problem. Also, flow elbow differential pressures will be recorded during all future surveillance tests.

Yours very truly,

R O Duncanson / C E f

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

ROD/caf