

NSP

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

July 27, 1973

Mr. J F O'Leary, Director
Directorate of Licensing
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

Report on Instrument Line Excess Flow Check Valve Test Program

This report is submitted in accordance with Section 6.7.C.9, Special Reports, of the Technical Specifications of the Provisional Operating License DPR-22.

A procedure has been developed for the periodic testing of the primary containment instrument line excess flow check valves. The procedure is included in the plant surveillance test program and is scheduled to be completed each refueling outage.

The excess flow check valves, model 50PM-8346 manufactured by Chemiquip Company, basically consist of a spring loaded slug in the flow path through the valve body. The valves are designed so that at flow rates in excess of 2 gpm, the force on the slug overcomes the spring restraining force causing the slug to move forward onto a seating surface and check the flow. In a line break condition, the differential pressure on the slug would keep the valve in the checked condition. Some valve leakage is required in the checked condition, however, to assure that the differential pressure can equalize to reset the valve for test purposes.

The excess flow check valve test procedure was developed to demonstrate the following operability requirements:

- (1) That each valve checks properly to limit the flow through the instrument line;
- (2) That the valve leakage rate in the checked condition is less than 2 gpm (2 gpm is the maximum checked leakage specified for the valve at a 1000 psi differential pressure);

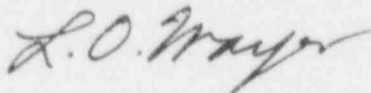
- (3) That the valve leakage rate in the checked condition is greater than 0 gpm (to assure that the differential pressure can equalize).

The check valve test is conducted during the operational 1000 psig hydro test of the reactor vessel following refueling operations. Flow through each check valve is established by opening the sensing line at the instrument calibration tap and allowing the reactor water to blow down through the line. After an initial surge of water, the checking action of the valve can be heard. Once the valve has checked, the leakage rate is monitored to verify that the greater than 0 gpm, less than 2 gpm limits are satisfied. The test is repeated a second time to verify that the spring loaded slug is free and resetting properly. After all excess flow check valves have been tested in the above manner, the reactor is depressurized and the instrument lines are backflushed with demineralized water to clean crud, air bubbles, and contaminated reactor water out of the lines. Valves that fail to meet the leakage requirements are removed for inspection. Repaired or replacement valves are tested on a pressurized test stand before being returned to service.

Seventy-four excess flow check valves are subject to the test program. Testing was conducted in accordance with the test procedure during the March, 1973 refueling outage. All valves functioned correctly and leaked less than the 2 gpm upper leakage limit. Seven valves had zero leakage and consequently did not reset. The seven valves were repaired and performed satisfactorily on retest.

The excess flow check valve test procedure described above does verify check valve operability and satisfies the testing requirement of the Technical Specifications. The procedure and detailed test results of the check valve test procedure completed during the March, 1973 refueling outage are available for review by the Regulatory Operations Inspector.

Yours very truly,



L O Mayer, PE
Director of Nuclear Support Services

LOM/br

cc: B H Grier
G Charnoff
Minnesota Pollution Control Agency
Attn. L Dzugan

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PLANT NAME: Monticello

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