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SUBJECT: Provides supplemental info re containment purging during normal plant operation in further response to NRC 781129 ltr.

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NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

June 7, 1979

Director of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Containment Purging During Normal Plant Operation
Supplemental Information

In our letter dated January 3, 1979 we provided a preliminary response to a letter dated November 29, 1978 from Mr Thomas Ippolito, Chief, Operating Reactors Branch #3, USNRC. Mr Ippolito's letter identified a number of concerns the NRC Staff has with containment purging during normal operation. The purpose of this letter is to supplement our earlier response.

Review of Safety Actuation Signal Circuits

The review of safety actuation signal circuits for systems other than containment purge valves has now been completed. Our review of containment purge logic was reported in our January 3, 1979 letter. This review included all ECCS, the Reactor Core Isolation Cooling System, all emergency power sources, the Standby Gas Treatment System, the Standby Liquid Control System, the Reactor Protection System, the Primary Containment Isolation System, Nuclear Instrumentation, and the Rod Worth Minimizer. The findings of the review are:

1. No manual override features were found which affect more than one safety actuation signal.

2. Several categories of manual override exist which have different physical and alarm features. These are:

   a. Keyswitch controls with system or component level annunciation in the override position. These are considered adequate.

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b. Non-Key switches with visible switch position and system or component level annunciation in the override position. These are considered adequate.

c. Mechanical trip reset linkages which annunciate in the override (or tripped) condition. These are considered adequate.

d. Pushbutton trip or reset controls which must be held in a physically pushed-in condition against a spring return or repeatedly depressed within a time-delay period to maintain an override condition. These are considered adequate since it requires a continuous or repeated deliberate and abnormal action to defeat a system.

e. Keyswitches which do not annunciate when in the override position. These will be modified to provide annunciation.

f. Pull-to-Lock type handswitches for individual pump motor circuit breakers which do not annunciate. Annunciation will be installed for these switches.

Containment Purge Isolation Valves

In our January 3, 1979 preliminary response, we reported that the 18-inch butterfly valves installed in the containment ventilation supply and exhaust lines were capable of closing with full accident differential pressure (41 psi) across the valve. This statement was based on the requirements contained in the architect-engineer's specifications for containment ventilation butterfly valves. In March, we were informed by the Region III Office of Inspection and Enforcement that, based on reports received from another BWR facility, our valves may not be capable of closing against full accident differential pressure. Contacts with the valve manufacturer, the Continental Division of Fisher Controls, confirmed that the valves installed at Monticello were designed only for tight shutoff at design accident differential pressure. From the fully open position, valve closure cannot be assured with more than a few psi differential pressure across the valve.

Immediately following discovery of this condition, administrative controls were placed into effect prohibiting use of the 18-inch purge path when containment integrity is required (reactor critical or temperature greater than 212 ^{o}F with fuel in the reactor). These administrative controls will remain in effect until modifications can be made to the valves. A Licensee Event Report (79-003) was submitted on March 15, 1979 which reported this problem.

It should be noted that it has been our practice for many years not to purge the containment using the 18-inch valves when containment integrity was required except for brief periods during plant startup and shutdown. Purging at these times was performed to establish an inert nitrogen atmosphere during operation and to restore a normal atmosphere for containment access during shutdown. At other times, the containment is purged through 2-inch bypass valves around the 18-inch valves.

Discussions with the valve manufacturer indicate that installing new high-torque actuators with 45-degree limit stops will assure valve closure with full accident differential pressure. This modification is under consideration.

Effect Upon ECCS Performance of LOCA During Purging

In our January 3, 1979 letter we stated that we would contact the General Electric Company for technical assistance in providing the basis for unlimited purging. An evaluation of ECCS performance with reduced backpressure for a LOCA during containment purging must be satisfactorily completed to justify unlimited purging. We are continuing to pursue this evaluation with General Electric.

If General Electric is unable to complete this evaluation, we will submit a proposed Technical Specification limiting containment purging to less than 90 hours per year. We will resolve this issue with the NRC Staff prior to resuming use of the 18-inch purge path following valve modifications.

Please contact us if you have additional questions relating to this issue.

Yours very truly,

L. O. Mayer

L O Mayer, PE
Manager of Nuclear Support Services

LOM/DM/ak

cc: J G Keppler
G Charnoff