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 Office of Nuclear Reactor Regulation, Director

SUBJECT: Responds to NRC 811013 request for addl info re NUREG-0737,
 Item II.K.3.15, isolation of HPCI & reactor core isolation
 cooling.Mod to include time delay in Tech Spec Table 3.2.1
 will be proposed by end of Jan 1982.

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December 22, 1981

Director
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U S Nuclear Regulatory Commission
Washington, DC 20555



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

Information Related to Resolution of NUREG-0737, Item II.K.3.15

Reference: (a) Letter from Thomas A Ippolito, Chief, Operating Reactors
Branch #2, USNRC, to L O Mayer, NSP, dated October 13, 1981

In our letter of December 30, 1980 we provided plans and schedule for resolution of NUREG-0737, Item II.K.3.15, "Isolation of HPCI and RCIC," at the Monticello Nuclear Generating Plant. Reference (a) was a request for additional information related to the actions we have taken to resolve this issue. The purpose of this letter is to provide the requested information.

The following information is provided concerning our RCIC system modification:

- 1.a) No test data or information has been accumulated on this modification since there has never been a spurious high steam flow isolation of the RCIC system. The modification was done solely to comply with the NUREG-0737 requirement and to further ensure no trips are experienced in the future.
- b) We have completed an analysis of the Owners' Group assumptions and have compared them to the original plant safety analysis and have found that the Owners' Group analysis is within the design basis assumptions and is applicable to the Monticello Plant for both transients and equipment qualification. Both the FSAR HPCI steam line break analysis and the equipment qualification analysis assumed the 13-second valve closure time that is referenced in NEDE-24953.
2. The time delay will be added to Technical Specification Table 3.2.1 which is a Limiting Condition for Operation. Testing of the time delay will be added to current surveillance testing. A License Amendment Request will be submitted by the end of January, 1982.

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NORTH STATES POWER COMPANY

Director of NRR
December 22, 1981
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The following is applicable to the currently installed HPCI break detection. Flow measurement uses a venturi installed in the steam line. The logic (see attachment 1) consists of a $\geq 300,000$ lbm/hr instantaneous trip or a $\geq 150,000$ lbm/hr for ≤ 60 second (45 second nominal) trip. The 140-inch water column contact with the 600 psig permissive compensates for differences in venturi flow measurement characteristics at low steam pressure to assure that the flow setpoint remains less than 150,000 lbm/hr.

The isolation logic meets the criteria as stated in reference (a) for the following reasons:

1. Nearly eight years of plant experience, including automatic initiation and cold quick starts of the HPCI system have shown that the logic and venturi does prevent spurious isolations.
2. The Technical Specifications already include provisions in the Limiting Conditions for Operation to test this logic. Therefore, no revisions are required to be submitted.
3. The use of the time delay logic in the HPCI isolation scheme to avoid inadvertent isolation due to starting steam flow transients was included in the original plant design and original Technical Specifications. Installation of the venturi in 1973 provided more reliable and repeatable flow measurement than did the original elbow taps. A pressure switch was added to assure the trip setting would remain within required limits while maintaining adequate margin above normal steam flow. The entire installation meets all original separation, single failure, ASME Code, and other FSAR criteria. No new failure modes have been identified. The pressure switches are tested per the original Technical Specification surveillance requirements which remained unchanged. Testing of the venturi has confirmed acceptable accuracy and freedom from extraneous effects. The original technical specification HPCI steam flow isolation setpoints remain unchanged. The change was performed in accordance with 10CFR 50.59 and was reported in Six-Month Operating Report No. 5 in 1973. For these reasons we believe there was no degradation of the safety function of primary system isolation.

Please contact us if you have any questions related to information.

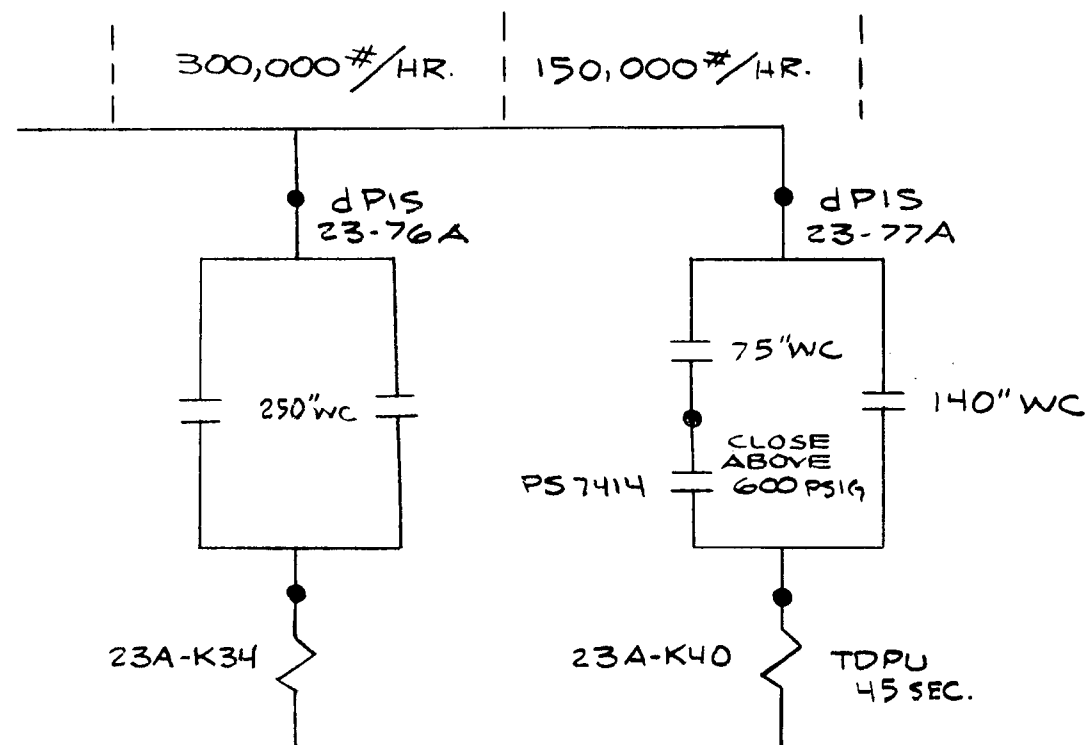


L O Mayer, PE
Manager of Nuclear Support Services

LOM/DMM/bd

cc: Regional Administrator-III
NRR Project Manager, NRC
Resident Inspector, NRC
G Charnoff

Attachment



HPCI HIGH FLOW ISOLATION SCHEMATIC
(TYPICAL OF TWO TRIP SYSTEMS)