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FILE:

FROM: Northern States Power Company Minneapolis, Minn. 55401 Mr. L.O. Mayer			DATE OF DOC 10-10-73	DATE REC'D 10-17-73	LTR X	MEMO	RPT	OTHER
TO: D.J. Skovholt			ORIG 3	CC	OTHER	SENT AEC PDR <u>XXX</u> SENT LOCAL PDR <u>XXX</u>		
CLASS	UNCLASS	PROP INFO	INPUT	NO CYS REC'D 40		DOCKET NO: 50-263		
	XXX							

DESCRIPTION:

Ltr re our 10-2-73 ltr....concern EOC  
Transient Analysis...and trans the following...  
....

ENCLOSURES:

REPORT: Monticello-Cycle 2 Scram Reactivity  
Considerations, Analysis and  
Modifications, dtd 10, 1973.

(40 cys encl rec'd)

**ACKNOWLEDGED**

**DO NOT REMOVE**

PLANT NAME: Monticello

FOR ACTION/INFORMATION

10-17-73

JB

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**NSP**

NORTHERN STATES POWER COMPANY

MINNEAPOLIS, MINNESOTA 55401

October 10, 1973

Mr. D J Skovholt  
Assistant Director for Operating Reactors  
Office of Regulation  
United States Atomic Energy Commission  
Washington, D C 20545



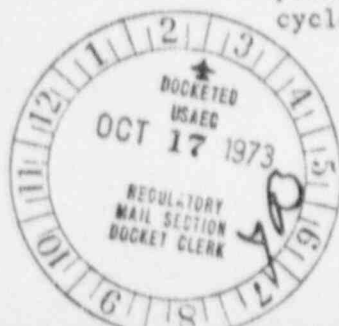
Dear Mr. Skovholt:

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

Response to October 2, 1973 Letter  
Requesting EOC Transient Analysis

Your October 2, 1973 letter transmitted Technical Specification Change No. 10 which allowed the Monticello safety valve set points to be increased to 1240 psig. During the Monticello outage which commenced September 28, 1973, this set point change was made. In addition, modifications were made to the relief valves as discussed in our August 21, 1973 letter. This modification has been demonstrated to result in a significant improvement in valve opening time. The transient analyses submitted with our September 13, 1973 request for increasing the safety valve set points took credit only for these set point changes; they did not include the effect of improved relief valve response. We are, therefore, submitting the attached transient analysis report which covers all phases of cycle 2 using the appropriate plant conditions. It includes the information required by your October 2, 1973 letter to remove the 1200 MWD/STU control rod inventory restriction.

In brief, the attached analysis justifies full power operation to 2680 MWD/T at which time the control rod inventory will remain fixed until the power coasts down to 91% of rated. The reactor will then be operated at 91% power until all control rods are fully withdrawn. We are choosing this operating plan to maintain a calculated 25 psi design margin between peak vessel pressure and the safety valve set points in the event of a turbine trip without bypass transient. The analyses show that a main steamline isolation valve closure with failure of the direct scram, the transient of prime safety concern, can be tolerated from full power at any time in the cycle with sufficient safety margins.



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D J Skovholt

- 2 -

October 10, 1973

In our September 13, 1973 letter, we informed you that estimation techniques, believed to be conservative, had recently indicated that the 25 psi design margin to safety valve set points would be reached at 1640 MWD/T in cycle 2. As reported, we acted conservatively and fixed the control rod pattern at 1540 MWD/T. On September 24, 1973, after coasting down to approximately 98% of rated power with the 1540 MWD/T control rod pattern, we were informed of the preliminary results of the General Electric transient analysis attached. In particular, we learned that the margin to safety valve set points calculated for 1640 MWD/T was 17 psi. Control rods were immediately inserted and fixed in the 1200 MWD/T inventory, dropping power to 93%, to assure a margin of approximately 25 psi. That control inventory was maintained until the outage. It should be noted that had the unlikely MSIV closure with failure of direct scram occurred at rated power during this 11 day interval, calculations show that the peak vessel pressure would have remained 99 psi or more from the vessel design limit.

The calculations presented in the report are complete transient analyses for the Monticello reactor. They are inherently conservative in that they use Technical Specification, rather than the much faster measured, scram time. Likewise, conservative design multipliers are used in applying Doppler and void feedback coefficients and in the scram reactivity used to calculate the transient effects.

No Technical Specifications must be changed as a result of this analysis. Certain values and statements in the Technical Specification Bases must be updated to reflect the recent analytical results; they will be considered with future change requests.

Yours very truly,

*L. O. Mayer / m. r. v.*

L O Mayer, PE  
Director of Nuclear Support Services

LOM/MHV/br

cc: J G Keppler  
G Charnoff  
Minnesota Pollution Control Agency  
Attn K Dzugan

Attachment