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ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

SEP 13 1973

Files (Docket No. 50-263)

THRU: D. L. Ziemann, Chief, ORB #2, L

D. L. Ziemann
MONTICELLO CORE COOLANT RELIEF VALVE RESPONSE TIMES AND SAFETY VALVE
SET POINT INCREASES (NORTHERN STATES POWER COMPANY)

By letter dated August 21, 1973, Northern States Power Company (NSP) described "Planned Reactor Operation from 2000 MWD/STU to the End of Cycle 2". Previous analyses (references 1 through 4) have focused on the overpressure transient following a turbine trip without bypass and concluded that shorter scram times and the requirement that four relief valves be in service would limit the coolant overpressure transient during the first 2250 MWD/STU of Cycle 2 operation such that full power operation was acceptable. We approved Technical Specification changes to reduce scram times and require four operating relief valves for continued reactor operation through 2250 MWD/STU of Cycle 2 operation at power levels up to 100% (Ref. 5). NSP later reduced the exposure threshold from 2250 MWD/STU to 2000 MWD/STU (Ref. 6) to account for the reduction in opening speed of the relief valves.

According to the August 21, 1973 letter, NSP plans to submit additional analysis for the period beyond 2000 MWD/STU exposure threshold of Cycle 2 and additional Technical Specification changes to minimize or eliminate the power restriction to be imposed based on all rods out scram reactivity curve (84% according to item IV of the NSP August 21, 1973 letter), the condition achieved near the end of Cycle 2. The reanalysis by NSP of the reactor power level limits for core life-time beyond the 2000 MWD/STU exposure threshold will be based on (1) completion of modifications to the relief valve to restore the original opening speed (0.2 sec instead of 0.8 observed by GE in some instances at unidentified BWRs), (2) faster scram times, at least for the remainder of Cycle 2 life beyond the 2000 MWD/STU exposure threshold, and (3) resetting of safety valve set points upward from 1210-1220 psi to 1240 psi.

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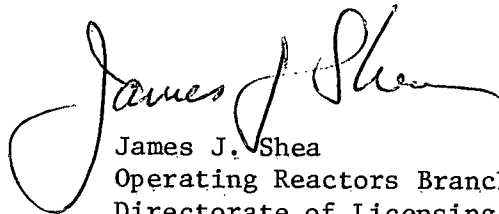
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For the period beyond Cycle 2, the letter indicates that the addition of more relief valves is being considered to permanently eliminate the less than 100% power level restrictions required by the current analysis.

Although the net increase in safety valve set point is only 20-30 psi, we will consider the code requirements and safety valve set points at other BWRs in our evaluation of the information yet to be submitted by NSP.



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REFERENCES

1. "Report of a Change in the Transient Analysis as Described in the FSAR", NSP letter dated August 14, 1972.

NSP report of reanalysis of transients discussed in FSAR based on EOC conditions which is different from the FSAR results. The change involves a slower rate of negative reactivity insertion for the first half of the control rod insertion stroke caused by spatial distribution of reactivity depletion in the core.

2. "Supplemental Report of a Change in the Transient Analysis as Described in the FSAR", NSP letter dated February 13, 1973.

NSP presented GE "Results of Transient Reanalysis for Monticello Nuclear Generating Plant" with end-of-cycle core dynamic characteristics. NSP, on the basis of this analysis, promised to submit, in the near future, a proposed technical specification change to specify (1) shorter scram times and (2) operation with all four relief valves instead of three and to revise the bases for the technical specification.

3. "Request for Authorization to Operate with Reload Fuel in the Core", NSP letter dated February 20, 1973.

NSP claims that the reload core fuel does not respond significantly different from the initial core. Page VI-8 of the attached report assumed that the scram reactivity curve for EOC-1 was valid for Cycle 2 operation.

4. "Request for Changes to the Technical Specifications", NSP letter dated June 1, 1973.

Scram times were reduced and four safety relief valves were required for reactor operation and reactor operation at 100% power was restricted to the first 2250 MWD/STU of the second fuel cycle.

5. Approval of Change 8 requiring four relief valves and shorter scram times, AEC letter dated July 2, 1973.

The AEC letter of approval also requested that analysis and technical specification changes for the period beyond 2250 MWD/STU be submitted for AEC review at least 30 days prior to the 2250 MWD/STU depletion.

6. "Observed Relief Valve Opening Times Different Than Those Assumed in the Transient Analysis", NSP letter dated August 1, 1973.

General Electric informed NSP of delayed opening observed for target rock relief valves, i.e., 0.8 second to open vs 0.2 second reported in Monticello FSAR. NSP cannot measure opening times of the relief valves, but assuming such a delay results in a reduction of the exposure threshold from 2250 MWD/STU as previously approved (Ref. 5 above) to 2000 MWD/STU.