

ENCLOSURE 1

SAFETY EVALUATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REACTOR PROTECTION SYSTEM UPGRADE - THERMAL MARGIN MONITOR
AUDIT CONFIRMATORY ITEM - TEMPERATURE QUALIFICATION
CONSUMERS POWER COMPANY

1.0 INTRODUCTION

On November 15, 1988 the Commission issued Amendment No. 118 to Provisional Operating Licence No. DPR-20 for the Palisades Plant. To support the review of the proposed amendment the staff performed an audit to the Thermal Margin Monitor (TMM). As a result of the audit Consumers Power Company (CPCo) committed to review the TMM installation and design and confirm that the operating temperature of the TMM is bounded by the qualification testing. CPCo submitted their analysis by letter dated December 28, 1988. The Safety Evaluation addresses the acceptability of CPCo's analysis.

2.0 DISCUSSION AND EVALUATION

The audit performed by the Staff at Palisades resulted in two issues related to the temperature qualification of the TMM. The first issue was that it was not clear to the staff that the installed configuration was bounded by the tested configuration used to determine the allowable maximum ambient temperature. The second issue involved the requirement to show that the design basis operating temperature is bounded by the qualification testing. In the original audit findings the staff noted that standing order 54 had been issued by the licensee to limit maximum control room temperature to 90°F, reduced from the 120°F Technical Specification limit and the 140°F FSAR design basis.

In their December 28, 1988 submittal, CPCo provided an "Engineering Analysis, Thermal Margin Monitor - Thermal Analysis." CPCo concluded that the existing natural convection cooling was inadequate and installed a cooling fan for each of the four TMM channels. The analysis evaluated the fan size required and concluded that a 75 CFM fan would assure temperatures in the TMM lower than the tested configuration. The staff finds this acceptable.

The second issue involving the design basis operating temperature was addressed by CPCo in the December 28, 1988 submittal which stated that, "The design basis temperature for all control room instrumentation is 120°F continuous operation. Therefore, the 131°F design temperature is acceptable for the 120°F design basis control room temperature". Additional clarification by the licensee indicated that even though the FSAR and Technical Specifications currently list higher temperatures, their intent was that Standing Order 54 limit of 90°F would serve as the design basis since this was the maximum temperature assumed in the analysis. Standing Orders at Palisades are evaluated and treated the same as technical specifications by the licensee. Given a design basis temperature maximum of 90°F the staff finds the installed configuration of the TMM to be bounded by the temperature qualification testing and therefore acceptable.

3.0 CONCLUSION

The staff concludes that the TMM temperature qualification testing bounds the installed Palisades configuration (with fans) and is therefore acceptable. This resolution satisfies the confirmatory item of temperature qualification.

The FSAR and Technical Specifications should be revised to reflect Standing Order 54 limits. CPCo has stated that it is their intention to do so.

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