SAFETY EVALUATION BY THE

OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 9

TO LICENSE NPF-9

DUKE POWER COMPANY

INTRODUCTION

By letter dated November 11, 1981, the licensee requested a change to the McGuire Nuclear Station Unit 1 Technical Specifications, Appendix A, to License NPF-9, Item 3/4.2.3. The requested change relates to the minimum measured reactor coolant system flow rate. Based on preliminary measurements the licensee may be unable to achieve the thermal design flow limits defined in Item 3/4.2.3. The licensee requested that the Technical Specifications minimum reactor coolant system flow rate as a function of F be modified to permit an option for operation at a reduced flow rate (95% of the current value) in conjunction with a reduced power level (90% of the specification value). The reduced power level is specified to maintain the thermal margin at the full flow value which was the basis for the final design safety analysis.

EVALUATION

In Attachment 1 to the November 11, 1981 letter, the licensee stated that the relationship between power and flow is:

$$\frac{\triangle \text{Power}}{\triangle \text{Flow}} = \frac{1\%}{1.8\%}$$

By using this relationship, a 5% reduction in flow results in a 2.7% reduction in power.

The staff has performed an independent ausit using the sensitivity factors reported in References (1), (2) and (3)*. For the worst cast, Reference (3), a 5% reduction in flow requires a 4.32% reduction in power.

*References:

(1) Westinghouse Topical Report, WCAP-8567, "Improved Thermal Design Procedure"
(2) Memorandum, K. Goller to R. Baer, October 21, 1977, "Evaluation of Indian Point No. 2 Thermal Margins for DBR Reduction Due to Fuel Rod Bow"
(3) Battelle Northwest Laboratory Report, FATE-79-101, "Analysis of the Sensitivity of Calculated MDNBR to Eight Selected DNB Parameters"

The staff has also reviewed the amount of bypass flow stated in the McGuire Final Safety Analysis Report. The bypass flow reported in the Final Safety Analysis Report is consistent with that required to ensure the validity of the safety analyses at the proposed technical specification flow limit.

Based on our evaluation we conclude that the proposed change to technical specification 3/4.2.3 is acceptable.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION

e have concluded, based on the consideration discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: November 23, 1981