SAFETY EVALUATION BY THE RESEARCH AND POWER REACTOR SAFETY BRANCH

DIVISION OF REACTOR LICENSING

IN THE MATTER OF

YANKEE ATOMIC ELECTRIC COMPANY

PROPOSED CHANGE NO. 67

DOCKET NO. 50-29

Introduction

Pursuant to Section 50.59 of the Commission's regulations, Yankee Atomic Electric Company, in Proposed Change No. 67, dated August 10, 1965, requested authorization of a change in the Technical Specifications attached as Appendix A to License No. DPR-3. The proposed change would authorize relocation of the two Zircaloy test assemblies specified for use in Core V from the peripheral region (Region C) to the middle region (Region B). Region C will then contain all fresh fuel assemblies of 4.94% enrichment.

Discussion

Results of a thermal analysis for the two Zircaloy test assemblies in the peripheral region of Core V is contained in Yankee's application dated June 9, 1965, for Proposed Change No. 63. Final calculations have shown, however, that relocation of the two test assemblies to the middle region of the core will be necessary in order to achieve test conditions which are more representative of the thermal conditions that would exist in a full Zircaloy core. Minimum DNB ratio, maximum heat flux, and maximum hot channel coolant outlet temperature are not significantly changed by relocation of the test assemblies. While the maximum Zircaloy cladding temperature of the relocated test assemblies could reach 1350°F from a loss of coolant flow and 1535°F from a medium (5 inch diameter) coolant line break, there is still ample margin below the 1800°F temperature at which a Zr-water reaction could begin. The licensee concludes, and we agree, that relocation of the test assemblies as described will not significantly affect the safety of the reactor operation.

Conclusion

We have concluded that the Proposed Change does not present significant hazards considerations not described or implicit in the hazards summary report, and that there is reasonable assurance that the health and safety of the public will not be endangered.

Original signed by:
Roger S. Boyd

Roger S. Boyd, Chief
Research & Power Reactor Safety Branch
Division of Reactor Licensing

Date: AUG 2 6 1965