

HAZARDS ANALYSIS BY THE RESEARCH AND POWER REACTOR SAFETY BRANCH

DIVISION OF LICENSING AND REGULATION

IN THE MATTER OF

COMMONWEALTH EDISON COMPANY

PROPOSED CHANGE NO. 6 - MINIMUM BURNOUT RATIO

Introduction

Commonwealth Edison Company, by application dated September 17, 1963, requested authorization to lower the operating limit on the burnout ratio from 2.0 to 1.5. This change, which was considered by the staff pursuant to the provisions of Section 50.59, of 10 CFR 50, has been designated Proposed Change No. 6. An additional request, to increase the maximum allowable steady state heat flux limits, also requested in the letter of September 17, is not considered in this analysis.

Background

The previously accepted minimum burnout ratio of 2.0 for the Dresden reactor was based on an intermediate correlation prepared by the General Electric Company. Use of a new GE correlation, outlined in APED 3892, was authorized by the Commission by letter dated July 5, 1962. This burnout correlation is also being used at the Big Rock Point and Humboldt Bay reactors. The burnout ratio limit for Big Rock is presently 1.5, and this limit has been utilized for Humboldt Bay.

Analysis

A minimum burnout ratio of 2.0 was considered acceptable for the Dresden reactor utilizing the previous burnout correlation. The new correlation, APED 3892, contains considerably more data than the original correlation. The correlation lines are drawn below essentially all the existing data points, which provides a factor of conservatism. In our opinion, the new correlation is sufficiently conservative and is based on enough experimental data that, for use in calculating thermal margins for this reactor, an associated burnout ratio limit of 1.5 is acceptable for this facility.

Technical Specifications

Accordingly, we believe that the value of the minimum burnout ratio stated in Section D-3 of the Technical Specifications to License DPR-2 should be changed from 2.0 to 1.5, evaluated at 125 percent of rated power.

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Conclusion

Based upon our review of the information submitted, we have concluded that Change No. 6 does not involve 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 Robert H. Bryan

Robert H. Bryan, Chief
Research and Power Reactor Safety Branch
Division of Licensing and Regulation

Date: MAR 13 1964