



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 129 FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated June 5, 1998 (NRC-98-0067), as supplemented August 24, 1998, the Detroit Edison Company (DECo or the licensee) requested an amendment to the Technical Specifications (TSs) appended to Facility Operating License No. NPF-43 for Fermi 2. The proposed amendment would revise TS 2.1.2, "Thermal Power, High Pressure and High Flow," by changing the values for the safety limit minimum critical power ratio (MCPR) from 1.09 to 1.11 for two recirculation loop operation and from 1.11 to 1.13 for single recirculation loop operation for Cycle 7. The amendment would also revise the footnote to TS 2.1.2 to indicate that these revised values are applicable for Cycle 7 operation only. The August 24, 1998, letter provided clarifying information that was within the scope of the original *Federal Register* notice and did not change the staff's initial proposed no significant hazards considerations determination.

The safety limit MCPR is set such that no mechanistic fuel damage is calculated to occur if the limit is not violated. This limit is applicable when the reactor steam dome pressure is greater than 785 psig and core is flow greater than 10 percent of rated flow. The licensee has proposed changes to the safety limit MCPR based on the cycle-specific core reload analyses for Cycle 7.

2.0 EVALUATION

The licensee proposed to change the safety limit MCPR from 1.09 to 1.11 for two recirculation loop operation and from 1.11 to 1.13 for single loop operation. The licensee described the methodology to calculate the new safety limit MCPR values for the TSs in its submittals. The Cycle 7 safety limit MCPR analysis was performed by the General Electric Company (GE) using the plant- and cycle-specific fuel and core parameters, NRC-approved methodologies (including GESTAR-II (NEDE-24011-P-A-13, proprietary information, not publicly available), Sections 1.15 and 1.25), a revised R-factor methodology described in NEDE-32505P, "R-Factor Calculation Method for GE11, GE12 and GE13 Fuel," November 1995 (proprietary information, not publicly available), and proposed Amendment 25 to GESTAR II (proprietary information, not publicly available). The revised R-factor calculation method uses the same NRC-approved equation stated in GESTAR except for adding the correction factors and substituting rod-integrated powers for the lattice peaking factors to account for the effects of the part-length rod design. The proposed Amendment 25 to GESTAR II on cycle-specific safety limit MCPR provides for cycle-specific safety limit MCPRs that replace the former generic, bounding safety limit MCPR.

9810050243 980921
PDR ADOCK 05000341
PDR

The Cycle 7 core will contain 764 GE-11 fuel assemblies, 220 of which will be fresh fuel assemblies.

The staff has reviewed the following: (1) the R-factor calculation method for GE11 fuel, (2) the clarification of the .02 increase of the proposed safety limit MCPR for the Cycle 7 operation provided in the August 24, 1998, letter, and (3) the relevant information provided in the proposed Amendment 25 to GESTAR II, NEDE-24011 (which is under NRC staff review).

Based on its review, the staff finds that the Cycle 7 safety limit MCPR analysis for Fermi 2 using a revised R-factor calculation method in conjunction with the approved methodologies will ensure that 99.9 percent of the fuel rods in the core will not experience boiling transition. Therefore, the staff concludes that the analysis supporting the safety limit MCPR values of 1.11 for two recirculation loop operation and 1.13 for single loop operation for Fermi 2 Cycle 7 operation is acceptable since it was based on NRC-approved methodologies and Fermi 2 cycle-specific inputs and the fuel bundles in the core for Cycle 7 operation. The proposed change from Cycle 6 to Cycle 7 in the footnote is also acceptable to reflect the applicability of the proposed TS changes to the upcoming Cycle 7 operation.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (63 FR 35988). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Tai Huang

Date: September 21, 1998