



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

Washington, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 112 TO FACILITY OPERATING LICENSE NO. NPF-43  
DETROIT EDISON COMPANY  
FERMI-2  
DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated December 2, 1996, the Detroit Edison Company (DECo or the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. NPF-43 for Fermi-2. The proposed amendment would modify TS 3.1.4.3, TS Table 3.3.6-1, and TS Table 4.3.6-1 to change the operability requirements for the Rod Block Monitor (RBM). Specifically, the proposed changes will require the RBM to be operable when reactor thermal power is greater than or equal to 30 percent of rated thermal power (RTP).

2. BACKGROUND/EVALUATION

The licensee installed the General Electric Average Power Range Monitoring (GE APRM)/Rod Block Technical Specification (ARTS) improvements to the RBM during Fermi-2's second refueling outage. By letter dated August 20, 1990, the licensee requested changes to the TS to implement the ARTS RBM systems. Specifically, implementation of the ARTS program included a revision to the RBM Applicability Section in TS 3.1.4.3, TS Table 3.3.6-1, and TS Table 4.3.6-1. The operability statement for the RBM was revised to read "Operational condition 1 with (a) thermal power greater than or equal to 30% RTP and less than 90% RTP and MCPR [minimum critical power ratio] less than 1.71, or (b) thermal power greater than or equal to 90% RTP and MCPR less than 1.40." These changes were approved in Amendment 69 to the Fermi-2 Operating License.

The design basis of the RBM is to mitigate the consequences of the rod withdrawal error (RWE) event at power. The analysis of the RWE requires a determination that appropriate fuel thermal limits (MCPR, mechanical overpower (MOP), thermal overpower (TOP)) are not exceeded for the RWE event. The MCPR limits incorporated into the Fermi RBM operability statement with the ARTS changes were determined from a generic RWE analysis documented in NEDC-31843P ("Fermi-2 Maximum Extended Operating Domain Analysis") (proprietary information - not publicly available). The limits were developed to assure that complete withdrawal of any single rod would not violate the Safety Limit MCPR.

GE performed an analysis of the RWE for the Cycle 6 core at Fermi-2 and determined that the RBM was required to be operable whenever reactor thermal power is greater than 30 percent of rated thermal power in order to meet MOP

requirements. This RBM restriction was included with the Fermi Cycle 6 Core Operating Limits Report (COLR).

In order to ensure that RBM TS requirements are adequate without reliance on additional cycle-specific requirements being included in the COLR, the licensee has proposed to modify the TS to add the more restrictive condition of requiring RBM operability for all operation at or above 30 percent RTP.

The staff has concluded that requiring both channels of the RBM to be operable for all operations at and above 30 percent RTP bounds all conditions for which a RWE may cause fuel thermal limits to be exceeded. Below 30 percent RTP, fuel damage cannot occur for any single rod withdrawal. Therefore, requiring the RBM to be operable below 30 percent RTP is not necessary. On these bases, the changes requested are acceptable.

### 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 and changes a surveillance requirement. 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 (62 FR 124). 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.

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Date: May 15, 1997