

March 30, 2000

Temple NRR-058

Mr. Douglas R. Gipson  
Senior Vice President  
Nuclear Generation  
Detroit Edison Company  
6400 North Dixie Highway  
Newport, MI 48166

SUBJECT: FERMII 2 - ISSUANCE OF AMENDMENT RE: SAFETY LIMIT MINIMUM  
CRITICAL POWER RATIO LIMITS FOR CYCLE 8 (TAC NO. MA7372)

Dear Mr. Gipson:

The Commission has issued the enclosed Amendment No. 138 to Facility Operating License No. NPF-43 for the Fermi 2 facility. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated December 17, 1999, as supplemented March 8, 2000.

The amendment revises TS 2.1, "Safety Limits (SLs)," changing the safety limit minimum critical power ratio limits in TS 2.1.1.2 to reflect the results of cycle-specific calculations performed for Fermi 2 operating Cycle 8.

Because full implementation of this amendment may not take place until the spring of 2000, until full implementation, Detroit Edison should submit two sets of TS pages for any pages affected in future amendments by the issuance of this amendment. The TS pages should reflect the conditions before and after full implementation of this amendment so that the correct TS pages may be issued in any future amendments. The NRC also requests that you submit a letter informing the staff when this amendment is fully implemented.

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,  
/RA/

Andrew J. Kugler, Project Manager, Section 1  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures: 1. Amendment No. 138 to NPF-43  
2. Safety Evaluation

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

March 30, 2000

Mr. Douglas R. Gipson  
Senior Vice President  
Nuclear Generation  
Detroit Edison Company  
6400 North Dixie Highway  
Newport, MI 48166

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The amendment revises TS 2.1, "Safety Limits (SLs)," changing the safety limit minimum critical power ratio limits in TS 2.1.1.2 to reflect the results of cycle-specific calculations performed for Fermi 2 operating Cycle 8.

Because full implementation of this amendment may not take place until the spring of 2000, until full implementation, Detroit Edison should submit two sets of TS pages for any pages affected in future amendments by the issuance of this amendment. The TS pages should reflect the conditions before and after full implementation of this amendment so that the correct TS pages may be issued in any future amendments. The NRC also requests that you submit a letter informing the staff when this amendment is fully implemented.

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Sincerely,

Andrew J. Kugler, Project Manager, Section 1  
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Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures: 1. Amendment No. 138 to NPF-43  
2. Safety Evaluation

cc w/encls: See next page

**Fermi 2**

cc:

**John Flynn, Esquire  
Senior Attorney  
Detroit Edison Company  
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**Regional Administrator, Region III  
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**Norman K. Peterson  
Director, Nuclear Licensing  
Detroit Edison Company  
Fermi 2 - 280 TAC  
6400 North Dixie Highway  
Newport, MI 48166**

November 1999



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

DETROIT EDISON COMPANY

DOCKET NO. 50-341

FERMI 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 138  
License No. NPF-43

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Detroit Edison Company (the licensee) dated December 17, 1999, as supplemented March 8, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-43 is hereby amended to read as follows:

Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 138 , and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. DECo shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented prior to the startup from the seventh refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

*for* 

Claudia M. Craig, Chief, Section 1  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 30, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 138

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

2.0-1

INSERT

2.0-1

## 2.0 SAFETY LIMITS (SLs)

---

### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq$  25% RTP.

2.1.1.2 With the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.07 for two recirculation loop operation or  $\geq$  1.09 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq$  1325 psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 138 FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By application dated December 17, 1999, as supplemented March 8, 2000, the Detroit Edison Company (DECo or the licensee) requested changes to the Technical Specifications (TSs) for Fermi 2. The proposed changes would revise TS 2.1.1.2, "Safety Limits (SLs)," changing the safety limit minimum critical power ratio (SLM CPR) limits in TS 2.1.1.2 to reflect the results of cycle-specific calculations performed for Fermi 2 operating Cycle 8. For Cycle 8, the core will be loaded with 764 GE-11 fuel assemblies consisting of 208 fresh GE11 bundles, 220 once-burned GE11 bundles, 176 twice-burned GE11 bundles, and 160 thrice-burned GE11 bundles.

The March 8, 2000, 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 consideration determination. Because the implementation date for this amendment is tied to the seventh refueling outage, the NRC requests that the licensee submit a letter informing the staff when this amendment is implemented.

2.0 EVALUATION

The licensee proposed to change the SLM CPR limit from 1.11 to 1.07 for two recirculation loop operation, and to change the limit from 1.13 to 1.09 for single-loop operation. These SLM CPR values are applicable when the reactor steam dome pressure is greater than 785 psig and core flow is greater than 10 percent of rated flow.

The licensee described the methodology it used to calculate the new SLM CPR values for the TSs in its application, as supplemented. The Cycle 8 SLM CPR analysis was performed by the General Electric Company (GE) using the plant- and cycle-specific fuel and core parameters and NRC-approved methodologies, including GESTAR-II (NEDE-24011-P-A-13, "General Electric Standard Application for Reactor Fuel," August 1996, Sections 1.15 and 1.25); Amendment 25 to NEDE-24011-P-A (GESTAR II); NEDE-32505P, Revision 1, "R-Factor Calculation Method for GE11, GE12 and GE13 Fuel;" NEDC-32601-P-A, "Methodology and Uncertainties for Safety Limit MCP R Evaluations;" and NEDC-32694-P-A, "Power Distribution

Uncertainties for Safety Limit MCPR Evaluation.” The GE analysis included reductions of the SLMCPR values due to revised power distribution uncertainties and SLMCPR uncertainties as required by the NRC-approved methodologies.

The staff has reviewed the justification for the SLMCPR values of 1.07 for two recirculation loop operation and 1.09 for single-loop operation using the approach stated in Amendment 25 to GESTAR-II. The staff based its review on the licensee’s application, as supplemented. The staff concludes that the SLMCPR analysis for Fermi 2 Cycle 8 operation was performed using plant- and cycle-specific calculations in conjunction with the NRC-approved methodologies. The Fermi 2 Cycle 8 SLMCPR limits will ensure that 99.9 percent of the fuel rods in the core will not experience boiling transition, which satisfies the requirements of General Design Criterion 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits. Therefore, the staff has concluded that the SLMCPR values of 1.07 for two recirculation loop operation and 1.09 for single-loop operation for Fermi 2 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. 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 (65 FR 4269). 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: T. Huang

Date: March 30, 2000