

February 8, 1999

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

SUBJECT: FERMI 2 - ISSUANCE OF AMENDMENT RE: RELOCATION OF REACTOR
RECIRCULATION SYSTEM MOTOR-GENERATOR (MG) SET SCOOP TUBE
STOP SETTING SURVEILLANCE (TAC NO. M99071)

Dear Mr. Gipson:

The Commission has issued the enclosed Amendment No. 130 to Facility Operating License No. NPF-43 for the Fermi 2 facility. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated June 20, 1997 (NRC-97-0037), as supplemented on July 2, 1997 (NRC-97-0066), and March 10 (NRC-98-0036) and April 9, 1998 (NRC-98-0083).

The amendment revises the TS by removing surveillance requirement (SR) 4.4.1.1.2 for setting the reactor recirculation system MG set scoop tube stops. In accordance with your commitment in the submittal dated June 20, 1997, this SR will be relocated, with modifications, to the updated final safety analysis report (UFSAR). In approving the proposed action, the staff relied upon this commitment and it is incorporated into our Safety Evaluation, which is also enclosed. Information related to the commitment is also incorporated in the paragraphs of the amendment that describe the changes and the implementation of the amendment.

The notice of issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

ORIGINAL SIGNED BY

Andrew J. Kugler, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures: 1. Amendment No. 130 to NPF-43
2. Safety Evaluation

cc w/encl: See next page

DISTRIBUTION: See attached page

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Mr. Douglas R. Gipson
Detroit Edison Company

Fermi 2

cc:

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DATED: February 8, 1999

AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. NPF-43 - FERMI 2

Docket File (50-341)

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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. 130
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 June 20, 1997, as supplemented on July 2, 1997, and March 10 and April 9, 1998, 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.

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2. Accordingly, Facility Operating License No. NPF-43 is hereby amended to approve the relocation of Surveillance Requirement 4.4.1.1.2 from the Technical Specifications to the updated final safety analysis report (UFSAR) as described in the licensee's application dated June 20, 1997, as supplemented on July 2, 1997, and March 10 and April 9, 1998, and evaluated in the staff's safety evaluation attached to this amendment. Implementation will be completed within 90 days of the issuance of this amendment. With respect to changes to the UFSAR, the action that must be completed within the implementation date is the licensee approval of the UFSAR change documentation. This license is also hereby 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. 130 , 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 the date of its issuance with full implementation within 90 days. Implementation of this amendment shall include the relocation of Surveillance Requirement 4.4.1.1.2 from the Technical Specifications to the UFSAR as described in the licensee's application dated June 20, 1997, as supplemented on July 2, 1997, and March 10 and April 9, 1998, and evaluated in the staff's safety evaluation attached to this amendment.

FOR THE NUCLEAR REGULATORY COMMISSION



Andrew J. Kugler, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: February 8, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 130

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

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

REMOVE

3/4 4-1

3/4 4-2

INSERT

3/4 4-1*

3/4 4-2

*Overleaf page provided to maintain document completeness. No changes contained on these pages.

3/4.4 REACTOR COOLANT SYSTEM
3/4.4.1 RECIRCULATION SYSTEM
RECIRCULATION LOOPS
LIMITING CONDITION FOR OPERATION

3.4.1.1 Two reactor coolant system recirculation loops shall be in operation.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2*.

ACTION:

- a. With one reactor coolant system recirculation loop not in operation:
 1. Within 4 hours:
 - a) Place the individual recirculation pump flow controller for the operating recirculation pump in the Manual mode.
 - b) Reduce THERMAL POWER to less than or equal to 67.2% of RATED THERMAL POWER.
 - c) Limit the speed of the operating recirculation pump to less than or equal to 75% of rated pump speed.
 - d) Increase the MINIMUM CRITICAL POWER RATIO (MCPR) Safety Limit to the value for single loop operation required by Specification 2.1.2.
 - e) Change the Average Power Range Monitor (APRM) Simulated Thermal Power - Upscale Flow Biased Scram and Rod Block Trip Setpoints and Allowable Values to those applicable for single recirculation loop operation per Specifications 2.2.1 and 3.3.6.
 - f) Perform Surveillance Requirement 4.4.1.1.4 if THERMAL POWER is less than or equal to 30% of RATED THERMAL POWER or the recirculation loop flow in the operating loop is less than or equal to 50% of rated loop flow.
 2. Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.
- b. With no reactor coolant system recirculation loop in operation while in OPERATIONAL CONDITION 1, immediately place the Reactor Mode Switch in the SHUTDOWN position.
- c. With no reactor coolant system recirculation loops in operation, while in OPERATIONAL CONDITION 2, initiate measures to place the unit in at least HOT SHUTDOWN within the next 6 hours.

*See Special Test Exception 3.10.4.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.1.1.1 Each pump discharge valve shall be demonstrated OPERABLE by cycling each valve through at least one complete cycle of full travel during each STARTUP* prior to THERMAL POWER exceeding 25% of RATED THERMAL POWER.

4.4.1.1.2 DELETED

4.4.1.1.3 With one reactor coolant system recirculation loop not in operation, at least once per 12 hours verify that:

- a. THERMAL POWER is less than or equal to 67.2% of RATED THERMAL POWER, and
- b. The individual recirculation pump flow controller for the operating recirculation pump is in the Manual mode, and
- c. The speed of the operating recirculation pump is less than or equal to 75% of rated pump speed.

4.4.1.1.4 With one reactor coolant system loop not in operation with THERMAL POWER less than or equal to 30% of RATED THERMAL POWER or with recirculation loop flow in the operating loop less than or equal to 50% of rated loop flow, verify the following differential temperature requirements are met within no more than 15 minutes prior to either THERMAL POWER increase or recirculation flow increase:

- a. Less than or equal to 145°F between reactor vessel steam space coolant and bottom head drain line coolant, and
- b. Less than or equal to 50°F between the reactor coolant within the loop not in operation and the coolant in the reactor pressure vessel**, and
- c. Less than or equal to 50°F between the reactor coolant within the loop not in operation and the operating loop.**

*If not performed within the previous 31 days.

**Requirement does not apply when the recirculation loop not in operation is isolated from the reactor pressure vessel.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated June 20, 1997, as supplemented on July 2, 1997, and March 10 and April 9, 1998, 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 revise the TS by removing surveillance requirement (SR) 4.4.1.1.2 for setting the reactor recirculation system motor-generator (MG) set scoop tube stops. In accordance with the licensee's commitment in the submittal dated June 20, 1997, this SR would be relocated, with modifications, to the updated final safety analysis report (UFSAR). The July 2, 1997, and March 10 and April 9, 1998, supplements provided additional 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.

2.0 BACKGROUND

2.1 Requirements For TS Contents

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. In particular, 10 CFR 50.36(c)(3), "Surveillance requirements," states:

Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

2.2 MG Set Scoop Tube Stops Design Bases

Each MG set has both an electrical and a mechanical high speed stop for the scoop tube. These stops limit the maximum speed of the reactor recirculation pumps. The mechanical stop is assumed to operate to limit the reactor power during a slow flow increase event, which is a design-basis event for operation in the Maximum Extended Operating Domain (MEOD). Report NEDC-31843P, "Fermi 2 Maximum Extended Operating Domain Analysis," dated July 1990, (proprietary information - not publicly available) provides additional information related to this function. As described in Section 6.7 of that report, the slow flow increase event is not

terminated by a scram, but stabilizes at a new core power corresponding to the maximum possible core flow (i.e., the flow corresponding to the mechanical stop for the scoop tube). The maximum core flow is considered in making the determination that the flow-dependent minimum critical power ratio (MCPR_r) and flow-dependent maximum average planar linear heat generation rate (MAPLHGR_r) limits are not exceeded.

Implementation of the MEOD was approved by the NRC in Amendment No. 69 to Facility Operating License No. NPF-43 on May 15, 1991. The cycle-specific MCPR_r and MAPLHGR_r limits are contained in the Core Operating Limits Report (COLR). The COLR reflects that these limits are based, in part, on the maximum core flow as limited by the MG set mechanical scoop tube stop setting listed in the COLR.

3.0 EVALUATION

Current SR 4.4.1.1.2 states that the mechanical and electrical stops "shall be demonstrated OPERABLE with overspeed setpoints less than or equal to 110% and 107%, respectively, of rated core flow, at least once per 18 months."

In its June 20, 1997, submittal, the licensee indicated the following:

1. The MG set mechanical stop setting is considered in the calculation of the MCPR_r and MAPLHGR_r limits as described in NEDC-31843P. The electrical stop also functions to limit the maximum speed of the associated MG set and has a set point lower than the mechanical stop. However, operation of the electrical stop is not credited in any of the accident or transient analyses.
2. The cycle-specific MCPR and MAPLHGR operating limits presented in the COLR are established such that postulated transients and accidents will not, as analyzed, result in the violation of fuel safety limits. Implicit in the establishment of the operating limits is the assumption that the plant is operated and configured in accordance with the plant design and licensing bases, including the information contained in the UFSAR. Details of the configuration and routine activities necessary to provide reasonable assurance that the limits are satisfied are generally not placed in the TS but are maintained in the UFSAR. Changes to the UFSAR are controlled under programs developed to satisfy the requirements of 10 CFR 50.59, "Changes, tests and experiments."
3. Compliance with the TS provides assurance that the plant will be operated consistent with adequate protection of public health and safety. Location of the configuration and routine support activities in the UFSAR provides flexibility for licensee control of these details under an appropriate framework of regulatory control. In addition, the proposed relocation is consistent with the boiling-water reactor improved standard technical specifications (iSTS), NUREG-1433, Rev. 1, which has been approved by the NRC.

The NRC staff reviewed the licensee's submittal and related documentation (e.g., TS, COLR, iSTS). The staff concluded that the electrical MG set stop was not credited in the UFSAR transient or accident analyses. The mechanical MG set stop is credited for the slow flow increase event under the MEOD analysis and the limit is included in the COLR as an input for both the MCPR_r and MAPLHGR_r operating limits. A change to the set point in the COLR would require detailed analyses by the licensee and would have to be reported to the NRC in

accordance with TS 6.9.3. TSs 3.2.1, "Average Planar Linear Heat Generation Rate," and 3.2.2, "Minimum Critical Power Ratio," require the licensee to comply with the MAPLHGR_r and MCPR_r operating limits, respectively.

The staff then reviewed the proposed change versus 10 CFR 50.36(c)(3). The setting of the stops does not assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, or that the limiting conditions for operation are met. Rather, the set point of the mechanical stop is an input used to determine the MCPR_r and MAPLHGR_r operating limits. The licensee monitors plant conditions to assure that operation is within the safety limits and that the limiting conditions for operation are met. Therefore, the staff concludes that the activity related to setting the stops does not need to be a surveillance requirement in the TS.

In addition to relocating SR 4.4.1.1.2 to the UFSAR, the licensee proposed to make changes to the surveillance testing methodology once the information is in the UFSAR. The licensee must evaluate these changes in accordance with 10 CFR 50.59 to determine whether they are permissible without prior staff approval.

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment 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 38134). 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.

6.0 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 Contributors: A. Kugler
A. Ulses

Date: February 8, 1999