



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

April 25, 1986

Docket No. 50-341

Mr. Frank Agosti
Vice President - Nuclear Operations
Detroit Edison Company
6400 North Dixie Highway
Newport, Michigan 48166

Dear Mr. Agosti:

Subject: Issuance of Amendment No. 1 to Facility Operating License
No. NPF-43, Fermi-2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 1 to Facility Operating License No. NPF-43 for the Fermi-2 facility. This amendment is in response to your letter dated December 23, 1985, as supplemented by your letters dated February 4, 1986, and April 23, 1986.

The amendment revises the Fermi-2 Technical Specifications to change the source range monitor count rates to permit replacement of the neutron sources.

A copy of the related safety evaluation supporting Amendment No. 1 to Facility Operating License No. NPF-43 is enclosed.

Sincerely,

Elinor G. Adensam

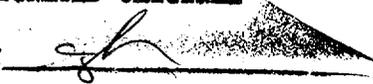
Elinor G. Adensam, Director
BWR Project Directorate No. 3
Division of BWR Licensing

Enclosures:

1. Amendment No. 1 to NPF-43
2. Safety Evaluation

cc w/enclosure:
See next page

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Certified By 

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Mr. Frank Agosti
Detroit Edison Company

Ferri-2 Facility

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

DETROIT EDISON COMPANY

WOLVERINE POWER SUPPLY COOPERATIVE, INCORPORATED

DOCKET NO. 50-341

FERMI-2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 1
License No. NPF-43

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
 - A. The application for amendment filed by the Detroit Edison Company (the licensee), dated December 23, 1985, as supplemented by letters dated February 4, 1986, and April 23, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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 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 set forth in 10 CFR Chapter I;
 - 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 enclosure to this license amendment and paragraph 2.C.(2) of the Facility Operating License No. NPF-43 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 1, 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 amendment is effective as of date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Elinor G. Adensam

Elinor G. Adensam, Director
RWR Project Directorate No. 3
Division of BWR Licensing

Enclosure:
Changes to the Technical
Specifications

Date of Issuance: April 25, 1986

ENCLOSURE TO LICENSE AMENDMENT NO. 1

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain a vertical line indicating the area of change.

REMOVE

3/4 3-44
3/4 9-4

INSERT

3/4 3-44
3/4 9-4

TABLE 3.3.6-2
CONTROL ROD BLOCK INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. <u>ROD BLOCK MONITOR</u>		
a. Upscale	< 0.66 W + 40%*	< 0.66 W + 43%*
b. Inoperative	NA	NA
c. Downscale	≥ 5% of RATED THERMAL POWER	≥ 3% of RATED THERMAL POWER
2. <u>APRM</u>		
a. Flow Biased Neutron Flux - High	< 0.66 W + 42%*	< 0.66 W + 45%*
b. Inoperative	NA	NA
c. Downscale	> 5% of RATED THERMAL POWER	> 3% of RATED THERMAL POWER
d. Neutron Flux - Upscale, Setdown	≤ 12% of RATED THERMAL POWER	≤ 14% of RATED THERMAL POWER
3. <u>SOURCE RANGE MONITORS</u>		
a. Detector not full in	NA	NA
b. Upscale	< 1.0 x 10 ⁵ cps	< 1.6 x 10 ⁵ cps
c. Inoperative	NA	NA
d. Downscale	≥ 3 cps**	≥ 2 cps**
4. <u>INTERMEDIATE RANGE MONITORS</u>		
a. Detector not full in	NA	NA
b. Upscale	< 108/125 divisions of full scale	< 110/125 divisions of full scale
c. Inoperative	NA	NA
d. Downscale	> 5/125 divisions of full scale	> 3/125 divisions of full scale
5. <u>SCRAM DISCHARGE VOLUME</u>		
a. Water Level-High	< 589'11½"	< 591'0"
b. Scram Trip Bypass	NA	NA
6. <u>REACTOR COOLANT SYSTEM RECIRCULATION FLOW</u>		
a. Upscale	< 108/125% of rated flow	< 111/125% of rated flow
b. Inoperative	NA	NA
c. Comparator	≤ 10% flow deviation	≤ 11% flow deviation
7. <u>REACTOR MODE SWITCH SHUTDOWN POSITION</u>	NA	NA

*The rod block function is varied as a function of recirculation loop drive flow (W). The trip setting of this function must be maintained in accordance with Specification 3.2.2.

**The downscale rodblock setpoint count rate may be reduced to 0.3 cps prior to achieving a burnup of 2000 MWD/T on the first core provided the signal-to-noise ratio is >2. After a burnup of 2000 MWD/T on the first core, the count rate may be reduced to 0.7 cps provided the signal-to-noise ratio is ≥2.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- b. Performance of a CHANNEL FUNCTIONAL TEST:
 - 1. Within 24 hours prior to the start of CORE ALTERATIONS, and
 - 2. At least once per 7 days.

- c. Verifying that the channel count rate is at least 0.7* cps:
 - 1. Prior to control rod withdrawal,
 - 2. Prior to and at least once per 12 hours during CORE ALTERATIONS, and
 - 3. At least once per 24 hours.

- d. Verifying, within 8 hours prior to and at least once per 12 hours during, that the RPS circuitry "shorting links" have been removed during the time any control rod is withdrawn** unless adequate shutdown margin has demonstrated per Specification 3.1.1.

*For only the fuel movements required to replace neutron sources, the count rate may be reduced to 0.3 counts per second prior to achieving a burnup of 2000 MWD/T on the first core provided the signal-to-noise ratio ≥ 2 . After a burnup of 2000 MWD/T, the count rate must be at least 0.7 cps provided the signal-to-noise ratio is ≥ 2 . Otherwise, 3 cps.

**Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.



UNITED STATES
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WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI-2

DOCKET NO. 50-341

1.0 INTRODUCTION

In its submittal dated December 23, 1985, supplemented by letter dated February 4, 1986, Detroit Edison Company (licensee) proposed to amend Appendix A, Technical Specifications, to Facility Operating License NPF-43. The proposed changes would permit the reduction of the source range monitor (SRM) minimum permissible count rate from 0.7 counts per second (cps) to 0.3 cps for a limited period of time during the first fuel cycle. On April 23, 1986, following a decision to replace the depleting sources prior to restart, the licensee withdrew a portion of its earlier request which was not required to support the replacement of the sources.

2.0 EVALUATION

The Fermi-2 facility was issued a low power license on March 20, 1985. Initial criticality with the reactor head installed was achieved on June 21, 1985, and thereafter the plant was operated below five percent of full rated power (i.e., 165 megawatts) in accordance with its low power license. The full power license for Fermi-2 was issued on July 15, 1985. However, a Confirmatory Action Letter was issued by the NRC on July 16, 1985, confirming the licensee's agreement to limit power to values less than five percent of rated power. The plant was operated at or below this power level until October 10, 1985, when it was shutdown to install various pieces of safety-related equipment. Due to a number of problems, the plant has remained shutdown for the last six months.

As a result of this extended shutdown and the relatively low power levels for the preceding four months, the four neutron sources in the reactor core have decayed to levels where the neutron count rates measured by the source range monitors no longer satisfy the minimum values for operations contained in the Fermi-2 Technical Specifications. To achieve the presently required minimum count rate of 0.7 cps, the sources will have to be replaced. However, some fuel must be moved to replace the sources and the Technical Specifications related to refueling operations also presently require a minimum count rate of 0.7 cps.

For this reason, the licensee has maintained a portion of its original request for limited relief from a surveillance requirement applicable to the SRM's in the Fermi-2 Technical Specifications; the affected portions are Specifications 4.3.6 and 4.9.2. These changes were first proposed in

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the licensee's letter dated December 23, 1985, and later supplemented in its letters dated February 4, 1986, and April 23, 1986. The most recent submittal by the licensee requests that the staff revise only the SRM surveillance requirement and the control rod block instrumentation setpoints for those fuel movements required to replace the neutron sources. The licensee in this recent letter requested that its prior request for a change in Specification 4.3.7.6 not be granted. Accordingly, this evaluation is directed only towards the proposed revisions to Specifications 3/4.3.6 and 3/4.9.2.

The proposed change to Specification 3/4.3.6, Instrumentation/Control Rod Block Instrumentation, would lower the required minimum value of the SRM trip setpoint and the associated "Allowable Value" from 0.7 cps to 0.3 cps to permit replacement of the neutron sources. Table 3.3.6-2 currently requires, in a footnote for the SRM downscale values (Item 3.d), an SRM neutron count rate of at least 0.7 cps with a signal-to-noise ratio of at least 2. The proposed change would modify this footnote to indicate that the 0.7 cps requirement may be reduced to 0.3 cps prior to achieving a burnup of 2000 MWD/T in the first core with a signal-to-noise ratio maintained at a minimum value of 2.

The licensee has stated in its letter dated April 23, 1986, that this proposed change to Table 3.3.6-2 of Specification 3/4.3.6 will allow performance of the required SRM functional tests without altering circuits. Any such circuit alteration, even if only for a limited purpose such as replacing the neutron sources, is undesirable in that it introduces the possibility of personnel error in making the circuit alteration and then restoring the circuitry to its original configuration. The proposed change to Specification 3/4.3.6 for a limited time (i.e., replacement of the sources during the first fuel load) introduces less potential risk than the alternative of modifying and restoring the circuitry. More importantly, the proposed change avoids the presence of a continual downscale alarm in the control room, generated by one of the two SRMs at or below 0.3 cps, that could mask an anomalous condition in which one of the two SRMs which are presently below 0.7 cps but above 0.3 cps, might go downscale. Because the proposed change maintains the present system of alarms, the change does not alter our prior conclusions regarding core alterations during refueling operations. On this basis, the proposed change to Specification 3/4.3.6 is acceptable.

Specification 3/4.9.2, Refueling Operation/Instrumentation, currently requires, in a footnote for the relevant operability surveillance, an SRM count rate of at least 0.7 cps with a signal to noise ratio of at least 2. (If not, the count rate must be at least 3 cps.) The proposed change would modify the appropriate footnote to indicate that the 0.7 cps requirement may be reduced to 0.3 cps prior to achieving a burnup of 2000 MWD/T in the first core with a signal to noise ratio maintained at a minimum value of 2. The only core changes permitted with the reduced SRM count rate of 0.3 cps are those fuel movements necessary to replace the neutron sources.

The licensee has demonstrated that the noise signal is normally less than 0.1 cps, determined with the detectors withdrawn from the core, and that, therefore, the signal to noise ratio is greater than 2 with an SRM count rate of 0.3 cps. This provides assurance that the system is counting neutrons and will respond appropriately to any changes in the neutron flux level. Decreases in the flux level by about a factor of two are of no significance for establishing the initial conditions when analyzing transients from low power levels, i.e., a rod withdrawal or a rod drop. Conservatively low count rates are assumed in these analyses. Furthermore, scrams initiated by the SRM's are not assumed in these transient analyses; rather, these transient analyses assume that a scram is initiated by the average power range monitors. Thus, the original safety analyses for low power transients are unchanged by the proposed reduction in the minimum neutron count rate.

We conclude, therefore, on the basis of the preceding discussion, that the proposed reduction in the value of the minimum permissible SRM count rate in Specification 3/4.9.2, is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in the installation and use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents which 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (51 FR 3714) on January 29, 1986, and consulted with the State of Michigan. No public comments were received, and the State of Michigan did not have any comments.

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Howard Richings, NRR

Dated: April 25, 1986

AMENDMENT NO. 1 TO FACILITY OPERATING LICENSE NO. NPF-43 - FERMI, UNIT 2

DISTRIBUTION:

Docket No. 50-341

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