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

October 15, 1992

Docket No. 50-341

Mr. William S. Orser
Senior Vice President - Nuclear
Operations
Detroit Edison Company
6400 North Dixie Highway
Newport, Michigan 48166

Dear Mr. Orser:

SUBJECT: FERMI-2 - AMENDMENT NO. 88 TO FACILITY OPERATING LICENSE NO. NPF-43 (TAC NO. M77687)

The Commission has issued the enclosed Amendment No. 88 to Facility Operating License No. NPF-43 for the Fermi-2 facility. This amendment consists of changes to the Plant Technical Specifications (TS) in response to your letter dated November 16, 1989, as supplemented November 14, 1991.

The amendment revises the TS to require periodic leakage tests and visual inspection of the Control Room Emergency Filtration System to assure the integrity of the parts both internal and external to the Control Room. The application has been submitted pursuant to License Condition 2.C.(7) of the Fermi-2 Operating License No. NPF-42 and satisfies the requirements of this License Condition. Therefore, the deletion of License Condition 2.C.(7) is included in the proposed amendment. During the initial licensing of Fermi-2, concerns about the use of silicone sealant material as part of the joints on the duct work at the Control Room Emergency Filtration System (CREFS) outside of the main control room zone were raised by the NRC. The concerns dealt with the ability of the silicone sealant to perform its sealing function over the designed plant lifetime of 40 years. The resolution of these concerns, which are discussed in detail in Section 6.4.1 of the Fermi-2 Safety Evaluation Report (NUREG-0798), Supplement 5 and 6 (SSER 5 and 6), resulted in the issuance of the Fermi-2 Operating License (NPF-43) with License Condition 2.C.(7).

License Condition 2.C.(7) required DECo to either provide assurance that this concern would not significantly impact control room habitability or propose a TS for periodic leakage testing to assure the integrity of the external portions of the CREFS. DECo submitted a proposed TS for leakage testing by application dated November 16, 1989. In October 1991, NRC staff members visited Fermi-2 to review the proposed TS and the installed duct work. In response to NRC staff concerns raised during this visit, DECo submitted supplemental information in a letter dated November 14, 1991.

CP1

200053

D201

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,

Original signed by
Timothy G. Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 88 to NPF-43
2. Safety Evaluation

cc w/enclosures:
See next page

OFFICE	LA:PDIII-1	PM:PDIII-1	SPLB	OGC	PD:PDIII-1
NAME	MShuttleworth	TColburn	CMcCracken	RBachmann	LMarsh
DATE	9/23/92	9/23/92	9/25/92	10/2/92	10/13/92

cc:

John Flynn, Esquire
Senior Attorney
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Nuclear Facilities and Environmental
Monitoring Section Office
Division of Radiological Health
Department of Public Health
3423 N. Logan Street
P. O. Box 30195
Lansing, Michigan 48909

Mr. Stan Stasek
U.S. Nuclear Regulatory Commission
Resident Inspector Office
6450 W. Dixie Highway
Newport, Michigan 48166

Monroe County Office of Civil
Preparedness
963 South Raisinvile
Monroe, Michigan 48161

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Mr. A. Cecil Settles
Director - Nuclear Licensing
Detroit Edison Company
Fermi 2
6400 North Dixie Highway
Newport, Michigan 48166

DATED: October 15, 1992

AMENDMENT NO. 88 TO FACILITY OPERATING LICENSE NO. NPF-43-FERMI-2

Docket File
NRC & Local PDRs
PDIII-1 Reading
Fermi Plant File
B. Boger
J. Zwolinski
L. Marsh
M. Shuttleworth
T. Colburn
OGC-WF
D. Hagan, 3302 MNBB
G. Hill (4), P-137
Wanda Jones, MNBB-7103
C. Grimes, 11/F/23
J. Stang
J. Ravel
ACRS (10)
GPA/PA
OC/LFMB
W. Shafer, R-III

cc: Plant Service list

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

DETROIT EDISON COMPANY

FERMI-2

DOCKET NO. 50-341

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 88
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 November 16, 1989, as supplemented November 14, 1991, 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. 88, 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. Further, License Condition paragraph 2.C.(7) is deleted from Facility Operating License No. NPF-43.*

4. This license amendment is effective as of its date of issuance with full implementation within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

L B Marsh

Ledyard B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachments:
1. Changes to the Technical Specifications
2. Page 4 of license

Date of Issuance: October 15, 1992

* Page 4 is attached, for convenience, for the composite license to reflect this change.

Consumers Power Company as specified in a letter from DECo to the Director of Regulation, dated August 13, 1971, and the letter from Richard W. McLaren, Assistant Attorney General, Antitrust Division, U. S. Department of Justice, to Bertram H. Schur, Associate General Counsel, Atomic Energy Commission, dated August 16, 1971.

(4) Safety/Relief Valve In-Plant Testing (Section 3.8.1, SSER #5)*

Prior to completing the startup test program, DECo shall perform a series of in-plant tests of the safety/relief valves (SRVs). The acceptance criteria for these tests are contained in Section 2.13.9, "SRV Load Assessment by In-Plant Tests" of NUREG-0661, "NRC Acceptance Criteria for the Mark I Containment Long-Term Program." The results of these tests shall be reported to the NRC staff within six months of completing this test series.

(5) Suppression Pool Temperature Measurements (Section 3.8.1, SSER #5)

DECo shall accomplish during the first fuel cycle, all the tasks described in its letter dated March 6, 1985, regarding the series of SRV tests which will confirm its methodology for measuring the suppression pool bulk temperature.

(6) Environmental Qualification (Section 3.11, SSER #5)

No later than November 30, 1985, DECo shall environmentally qualify all electrical equipment according to the provisions of 10 CFR 50.49.

(7) Deleted

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the license condition is discussed.

ATTACHMENT TO LICENSE AMENDMENT NO. 88

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 a vertical line indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE	INSERT
XXIV	XXIV
3/4 7-9	3/4 7-9
-----	3/4 7-10a
-----	3/4 7-10b

LIST OF TABLES (Continued)

SURVEILLANCE REQUIREMENTS

4.7.2.1 The control room emergency filtration system shall be demonstrated OPERABLE:

a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 95°F.

b. At least once per 31 days by:

1. Initiating fan operation from the control room with each subsystem, establishing flow for at least 15 minutes through the HEPA filters and charcoal adsorbers.

2. Verifying flow through the HEPA filters and charcoal adsorbers for at least 10 hours with the associated emergency makeup inlet air heater OPERABLE. The subsystem used to establish the 10 hours of flow through the HEPA filters and charcoal adsorbers shall be staggered such that each subsystem is utilized at least once per 62 days.

c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1. Verifying that the system satisfies the in-place penetration testing acceptance criteria of less than 1.0% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, while operating the system at a flow rate of 1800 cfm ± 10% through the makeup filter and 3000 cfm ± 10% through the recirculation filter.

2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%; and

3. Verifying a system flow rate of 3000 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%.

SURVEILLANCE REQUIREMENTS (Continued)

h. At least once per 36 months by verifying that the sections of Control Room Emergency Filtration System duct listed in Table 4.7.2.1-1, when leak tested in accordance with ASME N510-1989# exhibit inleakage less than the acceptance criteria listed in Table 4.7.2.1-1 for the associated pressures.

4.7.2.2 The portions of the Control Room Emergency Filtration System duct listed below, which are accessible during normal operation, shall be visually inspected at least once per 366 days for cracking, debonding, or other abnormal degradation of the applied silicone sealant. Any such cracking, debonding, or other abnormal degradation shall be reported in accordance with Specification 6.9.2 within 14 days in a Special Report describing the findings and giving the intended course of action, including evaluation of and justification for continued plant operation.

a. Normal intake between damper T4100F042 and the Control Room wall (Penetration V-430)

b. Normal exhaust between damper T4100F044 and the Control Room wall (Penetration V-429)

c. Discharge of recirculation fans T4100C047, 48 between the discharge flanges on filter train T4100D016 and the 5th Floor CCHVAC Equipment Room wall (Penetration V-504B)

d. Division II supply plenum between the Control Room wall (Penetration V-431) and the 4th Floor Aux. Building ceiling (Penetration V-9014)

e. Emergency intake between the discharge flange on filter train T4100D011 and the inlet flange on filter train T4100D016

f. Recirculation duct between the 5th Floor CCHVAC Equipment Room wall (Penetration V-504A) and the inlet flange on filter train T4100D016

#Tests performed in accordance with ANSI N510-1980 prior to the implementation of this requirement satisfy this requirement until the next required performance of the test.

TABLE 4.7.2.1-1

CONTROL ROOM EMERGENCY FILTRATION SYSTEM DUCT LEAK TESTING SURVEILLANCE REQUIREMENTS

DUCTS

1. Normal intake between damper T4100F042 and the Control Room wall (Penetration V-430)

2. Normal exhaust between damper T4100F044 and the Control Room wall (Penetration V-429)

3. Discharge of recirculation fans T4100C047, 48 between the discharge flanges on filter train T4100D016 and the 5th Floor CCHVAC Equipment Room wall (Penetration V-504B)

4. Division II supply plenum between the Control Room wall (Penetration V-431) and the 4th Floor Aux. Building ceiling (Penetration V-9014)

Acceptance Criteria	Leakage Determined at Maximum Negative Pressure Expected For Each Specific Duct During Normal System Operation	Leakage Determined at Maximum Negative Pressure Expected For Each Specific Duct During Operation With a Single Damper Failure
Cumulative Total for all four ducts (SCFM)	11	34

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 88 TO FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI-2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated November 16, 1989, as supplemented November 14, 1991, 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 to require periodic leakage tests and visual inspection of the Control Room Emergency Filtration System to assure the integrity of the parts both internal and external to the Control Room. The application has been submitted pursuant to License Condition 2.C.(7) of the Fermi-2 Operating License No. NPF-42 and satisfies the requirements of this License Condition. Therefore, the deletion of License Condition 2.C.(7) is included in the proposed amendment. During the initial licensing of Fermi-2, concerns about the use of silicone sealant material as part of the joints on the duct work at the Control Room Emergency Filtration System (CREFS) outside of the main control room zone were raised by the NRC. The concerns dealt with the ability of the silicone sealant to perform its sealing function over the designed plant lifetime of 40 years. The resolution of these concerns, which are discussed in detail in Section 6.4.1 of the Fermi-2 Safety Evaluation Report (NUREG-0798), Supplement 5 and 6 (SSER 5 and 6), resulted in the issuance of the Fermi-2 Operating License (NPF-43) with License Condition 2.C.(7).

License Condition 2.C.(7) required DECo to either provide assurance that this concern would not significantly impact control room habitability or propose a TS for periodic leakage testing to assure the integrity of the external portions of the CREFS. DECo submitted a proposed TS for leakage testing by application dated November 16, 1989. In October 1991, NRC staff members visited Fermi-2 to review the proposed TS and the installed duct work. In response to NRC staff concerns raised during this visit, DECo submitted supplemental information in a letter dated November 14, 1991.

2.0 EVALUATION

The proposed periodic leakage test surveillance requirements consist of three parts. These are test method, acceptance criteria, and test frequency. Each aspect is evaluated below.

2.1 Test Method

The licensee proposed that a duct leakage test be performed on the Control Room Emergency Filtration System (CREFS). The test method would demonstrate the operability of the silicone sealant material used to assure leak tightness of the CREFS. The amendment proposed to perform testing of the CREFS in accordance with ANSI N510-1980. This document provided standards for the testing of emergency filtration systems at nuclear power plants. At the time of the 1989 application, this standard was the most recently available industry standard for this purpose.

In October 1991, the NRC staff visited the Fermi-2 site to obtain further information about the CREFS design and construction to aid in the review of the application. During the site visit, the staff and the licensee reviewed the applicability of a more recent standard to perform duct leakage testing on the CREFS, ASME N510-1989. The new standard made minor improvements to the 1980 standard and was determined to be applicable to the proposed TS. By letter dated November 14, 1991, the licensee proposed to utilize ASME N510-1989 for the duct leakage testing requirement to be performed under TS Section 4.7.2.1.h. The staff has reviewed the test method for the CREFS duct work and finds ASME N510-1989 as an acceptable test method which will provide adequate assurance that the silicone sealant will perform its intended function.

2.2 Acceptance Criteria

The CREFS duct silicone sealant inleakage will be tested as discussed above in accordance with ASME N510-1989. A test volume is created by blocking the CREFS duct at points at or outside the test boundary. The test procedure starts with an initial pressure of 125% of the pressure at which the leak rate is determined. The time for the pressure to decay to 75% of pressure of interest is determined. The decay time period is translated into a leak rate by application of a formula given in ASME N510-1989. The formula provides the leak rate in terms of the initial test temperatures and pressures, the test volume, and the gas constant for air.

The licensee has proposed acceptance criteria of 11 standard cubic feet per minute (SCFM) and 34 SCFM for maximum inleakage into the CREFS duct work during normal and failure mode operation of the CREFS, respectively. The original design basis has been updated by the licensee under the provisions of 10 CFR 50.59 to account for design changes which did not involve an unreviewed safety question, and power uprate, which have occured since the original licensing of Fermi-2. The current dose calculations assume 35 SCFM unfiltered leakage for the first 30 minutes and 12 SCFM for the remainder of the 30 days. One SCFM of this inleakage is assigned to ingress and egress through vestibules at the Control Room doors. The licensee's evaluation of the Control Room dose under the new inleakage assumptions continues to show that the dose remains well below the GDC 19 criteria.

The proposed acceptance criteria for the surveillance test correspond to the assumed inleakage for the test conditions less the 1.0 SCFM inleakage assigned to ingress and egress. Thus, the acceptance criteria for test conditions associated with the first 30 minutes is 34 SCFM and the acceptance criteria

for test conditions associated with the remainder of the 30 days is 11 SCFM. The expected dose to operators is 1.72 rem whole body and 18.7 rem to the thyroid, assuming these leakage rates which is well below the criteria of 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 19 and within the current design basis. Based upon the above, the staff finds the proposed acceptance criteria to be acceptable.

2.3 Test Frequency

The licensee has proposed that duct work with the silicone sealant to be leak tested as described above at a 36-month interval. This interval is based upon industry experience with silicone sealant of the type installed at Fermi-2. The 36-month interval is short enough to detect any degradation prior to the failure of the sealant.

To monitor the sealant during the proposed 36-month interval, the licensee has proposed an annual visual inspection of sealant. This testing will detect an unexpected degradation of the silicone sealant. During the site visit in October 1991, the NRC expressed concerns about the scope of the visual inspection program. By letter dated November 14, 1991, the licensee committed to expand the visual inspection program from the proposal in the November 16, 1989, letter to include in the TS additional sections of duct in the CREFS as identified in TS Section 4.7.2.2, which may experience inleakage but will receive filtration.

Based on the above and the licensee's commitment to expand the visual inspection program, the staff finds the proposed testing frequency to be acceptable. Therefore, based on the above evaluation, the staff finds the proposed changes to the TS and deletion of License Condition 2.C.(7) from the Fermi-2 Operating License 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 in surveillance requirements. The staff has determined that the 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 the amendment involves no significant hazards consideration and there has been no public comment on such finding (57 FR 2591). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 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 staff 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: John Stang
Janak Raval

Date: October 15, 1992