

May 15, 2010

Mr. Jack M. Davis  
Senior Vice President and  
Chief Nuclear Officer  
Detroit Edison Company  
Fermi 2 - 210 NOC  
6400 North Dixie Highway  
Newport, MI 48166

SUBJECT: FERMIS 2 - ISSUANCE OF EMERGENCY AMENDMENT REGARDING  
ONE-TIME EXTENSION OF THE COMPLETION TIME FOR TECHNICAL  
SPECIFICATION 3.7.3, "CONTROL ROOM EMERGENCY FILTRATION (CREF)  
SYSTEM," CONDITION B (TAC NO. ME3930)

Dear Mr. Davis:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 182 to Facility Operating License No. NPF-43 for the Fermi 2 facility. The amendment consists of changes to the Technical Specifications in response to your application dated May 14, 2010.

The amendment extends the Completion Time for Technical Specifications 3.7.3 "Control Room Emergency Filtration (CREF) System," Condition B, from 24 hours to 48 hours on a one-time basis to support emergent repairs to the Division 2 Return Air Fan.

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/**

Mahesh L. Chawla, Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosures:

1. Amendment No. 182 to NPF-43
2. Safety Evaluation

cc w/encls: Distribution via ListServ

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 Senior Vice President and  
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 Newport, MI 48166

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H. Walker, NRR		V. Cusumano, NRR

Amendment Accession Number: ML101340861

\*via email

OFFICE	NRR/LPL3-1/PM	NRR/LPL3-1/LA	DIRS/ITSB	DSS/SCVB	OGC	NRR/LPL3-1/BC
NAME	MChawla	BTully	RElliott*	RDennig /HWalker for	NLOw/comments LSubin	TBeltz (Acting)
DATE	05 / 15 /10	05 / 15 /10	05 / 15 /10	05/14/10	5/14/10	05 /15 /10

OFFICIAL RECORD COPY

DETROIT EDISON COMPANY

DOCKET NO. 50-341

FERMI 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 182  
License No. NPF-43

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Detroit Edison Company (the licensee) dated May 14, 2010, 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. 182 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in this 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 within 1 day.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/***

Terry A. Beltz, Chief (Acting)  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: May 15, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 182

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following pages of the Facility Operating License and 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

License Page 3

3.7-6

INSERT

License Page 3

3.7-6

- (4) DECo, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material such as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) DECo, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) DECo, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

DECo is authorized to operate the facility at reactor core power levels not in excess of 3430 megawatts thermal (100% power) in accordance with conditions specified herein and in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A as revised through Amendment 182 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated into this license. DECo shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

DECo shall abide by the agreements and interpretations between it and the Department of Justice relating to Article I, Paragraph 3 of the Electric Power Pool Agreement between Detroit Edison Company and

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 182 FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

1.0 INTRODUCTION

By application dated May 14, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML101350002), the Detroit Edison Company (DECo or the licensee) requested a change to the Technical Specifications (TSs) for Fermi 2. The proposed change would amend the Fermi 2 Plant Operating License and extend the Completion Time for Appendix A, TS 3.7.3 "Control Room Emergency Filtration (CREF) System," Condition B, "Two CREF subsystems inoperable due to inoperable control room boundary in MODE 1, 2 or 3," from 24 hours to 48 hours on a one-time basis. During a telephone conversation held with the licensee on May 14, 2010, the Nuclear Regulatory Commission (NRC) staff commented on the note on the proposed TS page 3.7-6, that it did not appropriately reflect a "one-time only" change. The licensee resubmitted the revised TS page via e-mail (ADAMS Accession No. ML101340851).

2.0 REGULATORY EVALUATION

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 Appendix A, General Design Criterion 19 (GDC 19), "Control Room", a control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents.

The control room envelope (CRE) is generally defined in the facility's licensing basis as the area that, in the event of an emergency, can be isolated from the plant areas and the environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.

Enclosure

### 3.0 TECHNICAL EVALUATION

In the letter dated May 14, 2010, the licensee stated that at 0830 hours on May 12, 2010, Division 2 of the Control Center Air Conditioning (AC) System (TS 3.7.4) and Division 2 of the CREF System (TS 3.7.3) were declared inoperable. This declaration was made due to a high vibration reading obtained on the Division 2 Return Air Fan inboard bearing. Shortly before the readings were taken, a loud cyclical rumbling noise in the fan housing was heard locally and in the Main Control Room. Vibration readings taken on the bearing exceeded the administrative limit. The licensee secured the fan and entered the following TS required actions: For one inoperable Control Center AC subsystem, TS 3.7.4, Action A, specifies restoring the subsystem to OPERABLE status within 30 days, and for an inoperable CREF subsystem, TS 3.7.3, Action A, specifies restoration of the subsystem to OPERABLE status within 7 days.

Technical Specification 3.7.3 governs the CREF system and is applicable in MODES 1, 2, and 3; during movement of recently irradiated fuel assemblies in the secondary containment; and during operations with a potential for draining the reactor vessel. Condition B states that with two CREF subsystems inoperable due to an inoperable control room boundary in MODES 1, 2 or 3, the boundary must be restored to operable status within 24 hours. Condition C states that, if the Required Action of Condition B is not met within the associated Completion Time, the unit must be placed in MODE 3 within 12 hours and in MODE 4 within 36 hours.

The licensee identified that repairs to the Division 2 return fan would require replacement of the shaft and both inboard and outboard bearings. This corrective maintenance evolution requires breaching a section of ductwork common to both divisions and would result in inoperability of the control room boundary. As a result, TS 3.7.3, Condition B, would be entered. The licensee determined that the schedule for effecting repairs indicated that the common section of ductwork may be open for at least 28 hours, which would exceed the 24 hour Completion Time for restoring the control room boundary to OPERABLE status.

The licensee stated that during the CREF System breach, compensatory measures will be in place to restore the CRE boundary and Division 1 of the CREF System to operable status within 20 minutes. The licensee stated that if conditions arise that would require restoration of the boundary, maintenance activities would be immediately suspended and the ductwork breach will be closed by dedicated personnel that will be stationed specifically for this purpose. Once the breach is restored, Division 1 of the CREF System is fully OPERABLE, and CONDITION B is exited. The system remains in CONDITION A. In addition, a walkdown of the maintenance area has been performed to identify any potential sources of hazards in the vicinity of the repair that could result in the introduction of hazardous material into the CRE. No hazards in the immediate work area were identified that would pose any risk to control room occupants. It was also verified that no unnecessary transient combustibles are located in the area that could increase the risk of fire or smoke infiltration into the CRE. These compensatory measures and controls ensure that control room occupant radiological exposures will be minimized and will not exceed the calculated dose in the design-basis accident analysis, and that control room occupants are protected from hazardous chemicals and smoke.

The NRC staff finds these compensatory actions acceptable.



Based on the above and the staff's judgment of the low probability of a DBA challenging control room habitability occurring during this time period, the requested change to allow the extension of the Completion Time for Condition B of TS 3.7.3 from 24 hours to 48 hours on a one-time basis is acceptable.

#### 4.0 EMERGENCY CIRCUMSTANCES

The NRC's regulations in 10 CFR 50.91 contain provisions for issuance of an amendment where the Commission finds that an emergency situation exists in that failure to act in a timely manner would result in shutdown of a nuclear power plant. In such a situation, the NRC may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment. In such a situation, the Commission will not publish a notice of proposed determination of no significant hazards consideration, but will publish a notice of issuance under 10 CFR 2.106.

Regulation 10 CFR 50.91(a)(5) states that where the Nuclear Regulatory Commission (NRC) finds that an emergency situation exists, in that failure to act in a timely manner would result in derating or shutdown of a nuclear power plant or in prevention of either resumption of operation or of increase in power output up to the plant's licensed power level, it may issue a license amendment involving no significant hazards consideration without prior notice and opportunity for a hearing or for public comment. The regulation also states that the NRC will decline to dispense with notice and comment on the determination of no significant hazards if it determines that the licensee has abused the emergency provision by failing to make timely application for the amendment and thus itself creating the emergency. The regulation requires that a licensee requesting an emergency amendment explain why the emergency situation occurred and why the licensee could not avoid the situation.

In its May 14, 2010, application, the licensee stated that an emergency amendment is needed to avoid an unnecessary plant shutdown, and Detroit Edison could not have reasonably avoided the situation or made timely application for an amendment. The licensee states that no adverse trends in vibration or other indications of potential failure were identified for the failed Return Air Fan prior to May 12, 2010. When the scope of the repair was identified, the schedule for effecting the repairs indicated that the common section of the ductwork would be open in excess of 24 hours to replace the shaft and bearing assemblies. The licensee indicated that once Action B was exited, continuing repair activities, system restoration, and post-maintenance testing of the Return Air Fan would require additional time. These circumstances required making a timely application and expedited approval of the proposed amendment, since TS 3.7.3, Action A, required restoration of the Division 2 CREF subsystem to operable status within 7 days and this Completion Time expires on May 19, 2010, at 0830 hours.

In this instance, an emergency situation exists in that the proposed amendment is needed to allow the licensee to preclude an unnecessary plant shutdown. Based on the above, the requirements for an emergency situation as stipulated in 10 CFR 50.91(a)(5) have been satisfied.

The Commission expects its licensees to apply for license amendments in a timely fashion. In this situation, the NRC staff has determined that the licensee has explained, as set forth above, why this emergency situation occurred and why it could not avoid this situation. Based on the

licensee's reasons set forth above, the NRC staff has determined that the licensee could not reasonably have foreseen the failure of the CREF system, and thus, could not have applied for the amendment in a timely fashion. Accordingly, the NRC staff has determined that the licensee made a timely application for the amendment, has not abused the emergency provisions of 10 CFR 50.91(a)(5), and did not itself create the emergency.

## 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations at 10 CFR 50.92(c) states that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) result in a significant reduction in a margin of safety. The NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91. The following analysis was provided by the licensee in its May 14, 2010, letter:

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The CREF System is not assumed to be an initiator of any analyzed accident. Therefore, the proposed change does not affect the probability of any accident previously evaluated.

The CREF System is not modeled in the Fermi 2 Probabilistic Risk Assessment (PRA) because it does not serve a mitigating function for the prevention of core damage or large-early containment release; therefore, the PRA does not model the impact of the CREF boundary outage time. The Control Center Air conditioning (AC) and the CREF Systems are non-risk significant systems in the Maintenance Rule (based upon both qualitative and quantitative considerations).

The CREF System provides a radiologically controlled environment from which the plant can be safely operated following a Design Basis Accident. If the control room boundary is inoperable in MODE 1, 2, or 3, the CREF system cannot perform its intended function. Actions must be taken to restore an OPERABLE control room boundary within the specified time. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) are utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. The proposed one time 24-hour Completion Time extension to provide for Division 2 Return Air fan maintenance is reasonable based on the low probability of a design basis accident (DBA) occurring during this period, and the use of compensatory measures. The requested one time Technical Specification change to a 48-hour Completion Time provides an adequate time to repair the Division 2 Return Air Fan and to restore the control room envelope boundary.

The maintenance work plan for repairing the Division 2 Return Air Fan includes stationing dedicated personnel in the vicinity of the breach area in radio contact with the control room. If necessary, the fan shaft hole can be sealed and the common ductwork access hatches restored within 20 minutes to minimize the potential for an unfiltered inleakage into the ductwork that can affect dose to the control room occupants in the event of a design basis accident. A security watch will also be performed during the period the control center envelope is breached. Control room temperature and humidity will be controlled by the Division 1 control center air conditioning system which will be running during the maintenance evolution.

Therefore the proposed change to allow a onetime additional 24 hours to restore the inoperable control room pressure boundary to operable status to facilitate maintenance on the Division 2 Return Air Fan does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed one-time change increases the CREF system Technical Specification 3.7.3 Required Action B Completion Time for restoring the control room boundary from 24 to 48 hours.

No physical changes are being made to the installed CREF system that were not considered by the original Technical Specifications. No new or different accident scenarios are created by this change.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in the margin of safety.

As discussed above the proposed onetime 24-hour Completion Time extension to provide the time required to complete the maintenance activity is reasonable based on the low probability of a DBA occurring during this period, and the use of compensatory measures. The maintenance work plan for the repair the Division 2 Return Air Fan includes stationing dedicated personnel in the vicinity of the breach area in radio contact with the control room. If needed, the fan shaft hole can be promptly sealed and the common ductwork access hatches can be restored within 20 minutes to minimize the potential for an unfiltered inleakage into the ductwork that can affect dose to the control room occupants in the event of a design basis accident. Furthermore, the CREF system is not an accident initiator and does not serve a mitigating function for the prevention of core damage or large-early containment release.

Therefore, the proposed change does not involve a significant reduction in the margin of safety.

## 6.0 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.

## 7.0 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 or change the surveillance requirements. The NRC 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. During the system breach, compensatory measures are in place to restore the control room envelope boundary and Division 1 of the CREF System to operable status within 20 minutes should a DBA occur. Therefore, the proposed change does not significantly increase individual or cumulative occupational radiation exposures. The Commission has made a final no significant hazards finding with respect to this amendment. 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.

## 8.0 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:  
Harold Walker, NRR  
Victor Cusumano, NRR  
Mahesh Chawla, NRR

Date: May 15, 2010