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**Detroit Edison**



*A DTE Energy Company*

10CFR50.90

May 24, 2001  
NRC-01-0016

U. S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington D C 20555-0001

Reference: Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43

Subject: Proposed Operating License Amendment –  
Removal of Inapplicable License Condition

Pursuant to 10CFR50.90, Detroit Edison hereby proposes to amend the Fermi 2 Plant Operating License NPF-43 by incorporating the enclosed change. The proposed change deletes License Condition 2.C.(11), which is no longer applicable to the facility.

Enclosure 1 provides a description and an evaluation of the proposed change. Enclosure 2 provides an analysis of the issue of significant hazards consideration using the standards of 10CFR50.92. Enclosure 3 provides a marked up page of the existing license conditions to show the proposed change and a typed version of the affected license condition page with the proposed change incorporated.

Detroit Edison has reviewed the proposed change against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration, nor does it significantly change the types or significantly increase the amounts of effluents that may be released offsite. The proposed change does not significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed change meets the criteria provided in 10CFR51.22 (c) (9) for a categorical exclusion from the requirements for an Environmental Impact Statement or an Environmental Assessment.

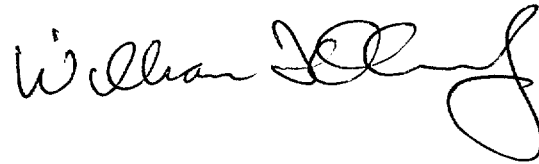
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Detroit Edison requests that the NRC approve and issue a license amendment by August 30, 2001 with an implementation period of within 30 days following NRC approval.

There are no commitments being made in this letter.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.


Sincerely,

A handwritten signature in black ink, appearing to read "William J. King". The signature is written in a cursive style with a large, looping final flourish.

Enclosures


cc: T. J. Kim  
M. A. Ring  
NRC Resident Office  
Regional Administrator, Region III  
Supervisor, Electric Operators,  
Michigan Public Service Commission

I, WILLIAM T. O'CONNOR, JR., do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

  
WILLIAM T. O'CONNOR, JR.  
Vice President - Nuclear Generation

On this 24<sup>th</sup> day of May, 2001 before me personally appeared William T. O'Connor, Jr., being first duly sworn and says that he executed the foregoing as his free act and deed.

**NORMAN K. PETERSON**  
Notary Public, Monroe County, MI  
My Commission Expires July 24, 2002

  
Notary Public

**ENCLOSURE 1**

**FERMI 2 NRC DOCKET NO. 50-341  
OPERATING LICENSE NO. NPF-43**

**REQUEST TO DELETE OPERATING LICENSE CONDITION**

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**LICENSE CONDITION 2.C.(11)**

**DESCRIPTION AND EVALUATION  
OF THE PROPOSED CHANGE**

## **DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGE**

### **DESCRIPTION:**

The purpose of this submittal is to remove License Condition 2.C.(11) from the Fermi 2 Operating License. License Condition 2.C.(11) requires inspection of the low-pressure turbine-discs during the second refueling outage, including volumetric examination of the disc base using ultrasonic techniques, and specifies that the frequency of subsequent inspections shall be in accordance with the turbine manufacturer's recommendations. The license condition requirement is no longer applicable. The initial inspection was completed during the second refueling outage (RFO2) as required. Following this, the low-pressure turbine rotors were replaced during the fifth refueling outage (RFO5) with monoblock designed rotors that do not utilize shrunk-on discs. The subsequent inspections specified in License Condition 2.C.(11) for shrunk-on discs would therefore be meaningless with the new rotor design. The Fermi 2 inspection and maintenance program for the new low-pressure turbine is based on the current turbine manufacturer's recommendations for the monoblock design.

### **EVALUATION OF THE PROPOSED CHANGE:**

#### **LICENSE CONDITION 2.C.(11)**

##### *Current wording*

##### (11) Low-Pressure Turbine-Disc Inspection (Section 10.2.2, SER)<sup>1</sup>

DECo shall perform an inspection of the low-pressure turbine-discs during the second refueling outage, including volumetric examination of the disc base using ultrasonic techniques. The frequency of subsequent inspections shall be in accordance with the turbine manufacturer's recommendations.

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<sup>1</sup>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.

##### *Proposed Change*

(11) Deleted

**BASIS FOR CHANGE:**

The basis for License Condition 2.C.(11) is found in the Fermi 2 SER (NUREG 0798) Section 10.2.2, "Turbine Materials." This section discusses the properties of materials used in the low-pressure turbine-discs manufactured by English Electric, and contains Detroit Edison's commitment to perform an inspection of the turbine-discs during the second refueling outage.

The deletion of License Condition 2.C.(11) is proposed because the license condition is no longer applicable to the Fermi 2 facility. The inspection during the second refueling outage was completed in June 1991. During the fifth refueling outage (RFO5) in 1996, the low-pressure (LP) turbine steam path consisting of rotors, buckets (blades), diaphragms and steam flow guides, all manufactured by English Electric Co., were replaced with General Electric (GE) designed components. As discussed in the Updated Final Safety Analysis Report (UFSAR) Section 10.2.3, the GE rotors utilize a monoblock design. Each rotor was machined from a single forging that accounts for bucket (blade) attachment points, as well as the coupling configuration. The material used for the forging is GE proprietary NiCRMov similar to ASTM A470. The rotors have the bucket (blade) wheel dovetails machined directly into the rotor forgings. The first six stages utilize tangential entry "pinetree" dovetails to attach the buckets, and the last two stages utilize radial entry finger dovetails with pins.

The use of monoblock construction for the low-pressure turbine rotors was reviewed by the NRC for the Advanced Boiling Water Reactor and is currently in use at several BWR facilities. The surveillance program and inspection requirements associated with the new low-pressure turbine are based on the current turbine manufacturer's recommendations for the monoblock design and meet the Nuclear Electric Insurance Limited (NEIL) company standards. Additionally, the overspeed control system is included in the Fermi 2 Maintenance Rule Program required by 10CFR50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This ensures maintenance related failures are understood and system reliability is tracked.

Based on this review, License Condition 2.C.(11) that was originally included in the Operating License to reflect the construction of the original turbine no longer applies to the Fermi 2 plant.

**ENCLOSURE 2**

**FERMI 2 NRC DOCKET NO. 50-341  
NRC LICENSE NO. NPF-43**

**REQUEST TO DELETE OPERATING LICENSE CONDITION**

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**10CFR50.92 SIGNIFICANT HAZARDS CONSIDERATION**

## **10CFR50.92 SIGNIFICANT HAZARDS CONSIDERATION**

### **BASIS FOR SIGNIFICANT HAZARDS DETERMINATION**

In accordance with 10CFR50.92, Detroit Edison has made a determination that the proposed amendment involves no significant hazards consideration. The proposed license condition change described above does not involve a significant hazards consideration for the following reasons:

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

The proposed amendment removes Fermi 2 Operating License Condition 2.C.(11) which details the inspection frequency of the low-pressure (LP) turbine discs. The inspection frequency was recommended because the original turbine rotor design involved a shrunk-on disc configuration. The inspection attributes applied specifically to this disc design and were intended to enhance design reliability. In 1996, however, the LP turbine steam path consisting of rotors, buckets (blades), diaphragms and steam flow guides, all manufactured by English Electric Co., were replaced with General Electric (GE) components. In particular, the GE design does not utilize shrunk-on discs; it includes rotors of monoblock construction, thus negating the applicability of License Condition 2.C.(11). There are no relevant aspects of the previously recommended inspections that apply to the new monoblock construction.

Section 3.5.1.2.1 of the Fermi 2 UFSAR addresses the potential for missiles generated from rotating equipment including those generated from a low-pressure turbine rotor segment. Section 10.2.3 of the UFSAR states that following the low-pressure turbine rotor replacement during RFO5, "there will no longer be a design basis turbine missile at Fermi 2." Section 3.5.1.2.2 further states, "The new low-pressure rotors are of monoblock construction. The monoblock rotors have higher speed capability than the maximum attainable speed of the turbine generator units. Per General Electric, the supplier of the new rotors, the probability of missiles being generated is well below 10 to the -8 power."

There are no other postulated accidents that were directly attributable to the English Electric Company shrunk-on disc design; therefore, the removal of License Condition 2.C.(11) does not increase the probability of occurrence or the consequences of any 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 change removes License Condition 2.C.(11) because it is no longer applicable to the design of the low-pressure turbine currently installed at the facility. Therefore, removal of the license condition affects neither the design nor the operation of the plant. It cannot create a new failure mode, nor can its removal create the possibility of a new or different kind of accident than any accident previously evaluated.

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

License Condition 2.C.(11) is not applicable to the facility because the low-pressure turbine rotor was replaced with a design which does not include shrunk-on turbine discs. This rotor replacement eliminated the potential for a design basis accident resulting from the turbine missiles at Fermi 2, which was the accident scenario that the inspections referenced in License Condition 2.C.(11) were intended to prevent. Since the license condition no longer applies to the current facility design, and the potential design basis accident associated with the license condition no longer exists, the removal of the license condition will not reduce any margin of safety.

Based on the above, Detroit Edison has determined that the proposed amendment does not involve a significant hazards consideration.

**ENCLOSURE 3**

**FERMI 2**

**NRC DOCKET NO. 50-341  
OPERATING LICENSE NPF-43**

**REQUEST TO DELETE OPERATING LICENSE CONDITION**

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**LICENSE CONDITION 2.C.(11)**

**Attached is a mark-up of the existing license condition indicating the proposed change (Part 1) and a typed version of the license condition incorporating the proposed change with a list of included pages (Part 2).**

**ENCLOSURE 3 - PART 1**

**PROPOSED OPERATING LICENSE AMENDMENT MARKED UP PAGE**

**INCLUDED PAGE:**

**OPERATING LICENSE PAGE 5**

Delete

(11) ~~Low-Pressure Turbine Disc Inspection (Section 10.2.2, SER)<sup>1</sup>~~  
~~DECo shall perform an inspection of the low-pressure turbine-discs during the second refueling outage, including volumetric examination of the disc base using ultrasonic techniques. The frequency of subsequent inspections shall be in accordance with the turbine manufacturer's recommendations.~~

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- (18) Deleted
- (19) DECo shall return the Division 2 primary containment oxygen monitoring subsystem to operable status prior to startup following the sixth refueling outage.
- (20) The licensee is authorized by Amendment No. 134 to relocate certain Technical Specification requirements included in Appendix A to licensee-controlled documents as described in the licensee's application dated April 3, 1998, as supplemented by letters dated September 28, October 19, and December 10, 1998, and January 8, January 26, February 24, March 30, April 8, April 30, May 7, June 2, June 24, June 30, July 7, July 13, July 26, August 4, August 17, August 25, and September 8, 1999 and evaluated in the NRC staff's safety evaluation dated September 30, 1999, enclosed with the amendment. Implementation of Amendment No. 134 shall include the relocation of these requirements to the appropriate documents, which shall be completed within 90 days of the date of the amendment. The relocations to the Updated Final Safety Analysis Report and the Technical Requirements Manual shall be included in the next required update of these documents in accordance with 10 CFR 50.71(e).

Delete

~~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.~~

**ENCLOSURE 3 - PART 2**

**PROPOSED OPERATING LICENSE AMENDMENT REVISED PAGE**

**INCLUDED PAGE:**

**OPERATING LICENSE PAGE 5**

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- (15) Deleted
- (16) Deleted
- (17) Deleted
- (18) Deleted
- (19) DECo shall return the Division 2 primary containment oxygen monitoring subsystem to operable status prior to startup following the sixth refueling outage.
- (20) The licensee is authorized by Amendment No. 134 to relocate certain Technical Specification requirements included in Appendix A to licensee-controlled documents as described in the licensee's application dated April 3, 1998, as supplemented by letters dated September 28, October 19, and December 10, 1998, and January 8, January 26, February 24, March 30, April 8, April 30, May 7, June 2, June 24, June 30, July 7, July 13, July 26, August 4, August 17, August 25, and September 8, 1999 and evaluated in the NRC staff's safety evaluation dated September 30, 1999, enclosed with the amendment. Implementation of Amendment No. 134 shall include the relocation of these requirements to the appropriate documents, which shall be completed within 90 days of the date of the amendment. The relocations to the Updated Final Safety Analysis Report and the Technical Requirements Manual shall be included in the next required update of these documents in accordance with 10 CFR 50.71(e).