

Detroit  
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Nuclear  
Operations

September 25, 1991  
NRC-91-C115

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555

- References:
- 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43
  - 2) Generic Letter GL 91-09, "Modification of Surveillance Interval for the Electrical Protective Assemblies in Power Supplies for the Reactor Protection System"
  - 3) General Electric SIL No. 496, Revision 1, "Electrical Protection Assembly Performance"

Subject: Proposed Technical Specification Change  
(License Amendment) - Reactor Protection  
System Electrical Power Monitoring (3/4.8.4.4)

Pursuant to 10CFR50.90, Detroit Edison Company hereby proposes to amend Operating License NPF-43 for the Fermi 2 plant by incorporating the enclosed changes into the Plant Technical Specifications (TS). The proposed change modifies the Reactor Protection System (RPS) electrical protective assemblies (EPA) channel functional test surveillance interval in TS Surveillance Requirement 4.8.4.4.a. This modification is a line item TS improvement as described in Reference 2.

Detroit Edison has evaluated the proposed TS against the criteria of 10CFR50.92 and determined that no significant hazards consideration is involved. The Fermi 2 Onsite Review Organization has approved and the Nuclear Safety Review Group has reviewed the proposed TS and concurs with the enclosed determinations. In accordance with 10CFR50.91, Detroit Edison has provided a copy of this letter to the State of Michigan.

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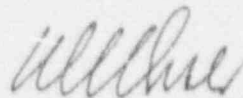
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If you have any questions, please contact Mr. David H. Brown at (313) 586-4213.

Sincerely,



Enclosure

cc: A. B. Davis

R. W. DeFayette

J. F. Stang

S. Stasek

Supervisor, Electric Operators, Michigan

Public Service Commission - J. R. Padgett

USNRC

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I, WILLIAM S. ORSER, do hereby affirm that the foregoing statements are based on fact and circumstances which are true and accurate to the best of my knowledge and belief.

*William S. Orser*

WILLIAM S. ORSER

Senior Vice President

On this 25<sup>th</sup> day of September, 1991, before me personally appeared William S. Orser, being first duly sworn and says that he executed the foregoing as his free act and deed.

*Rosalie A. Armetta*

Notary Public

ROSAIE A. ARMETTA  
Notary Public, Monroe County, ME  
My Commission Expires Jan. 11, 1992

## INTRODUCTION

Technical Specification (TS) Surveillance Requirement 4.8.4.4.a requires that a channel functional test be performed on the Reactor Protection System (RPS) electrical protection assemblies (EPA) at least once per six months. The purpose of this proposal is to change the EPA channel functional test surveillance interval in TS Surveillance Requirement 4.8.4.4.a to each time the plant is in cold shutdown for a period of more than 24 hours, unless the channel functional test has been performed in the previous six months. This change is in accordance with the guidance in NRC Generic Letter 91-09 (Reference 2).

The RPS power supplies (RPS motor generator (MG) sets and alternate power supplies) contain EPAs which protect RPS trip relay logic from abnormal operating voltage or frequency. An individual EPA consists of a circuit breaker with an under-voltage release controlled by a protection logic circuit card. The protection logic disconnects the RPS logic from the RPS power supply whenever voltage or frequency exceeds normal tolerances. There are two EPAs connected in series between each RPS power supply and RPS bus.

To perform a functional test on an EPA channel, the power is transferred from the associated MG set to the alternate power supply. This involves a dead bus transfer which causes half of the logic for a reactor scram and many containment group isolation signals to be satisfied. This event is commonly referred to as a half-scram or half-isolation. As reported in Reference 2, many BWR plants have encountered problems with the reset of half-scram or half-isolation conditions following the testing of EPAs during power operation resulting in inadvertent scrams and group isolations that challenge safety systems.

An alternative to testing the EPAs every six months during power operation is to test them each time the plant is in cold shutdown for more than twenty-four hours if this test has not been performed within the previous six months. This alternative eliminates the need to test the EPAs during power operation and thereby reduces the possibility of inadvertent challenges to the protection systems. This surveillance requirement retains testing within a six month interval when the unit is in cold shutdown for more than twenty-four hours.

If Fermi 2 is not placed in cold shutdown during the fuel cycle, the effect of not testing the EPAs during this interval is a small risk to safety because of the safety benefits of reducing the possibility of inadvertent scrams and challenges to safety systems. Reference 2 concludes that the benefit to safety by reducing the frequency of

testing during power operation and the attendant possible challenges to safety systems more than offsets any risk to safety from relaxing the surveillance requirement to test the EPAs during power operation. The basis for this conclusion is provided in the Nine Mile Point, Unit 2 EPA channel functional test surveillance interval TS amendment submittal reviewed and approved by the NRC. The Fermi 2 EPAs are of the same type as those installed at Nine Mile Point, Unit 2. Therefore, this conclusion is also applicable to the Fermi 2 EPA design. A review and evaluation of the Fermi 2 maintenance history has confirmed that the EPAs are reliable. Furthermore, Fermi 2 has also implemented the recommendations of Reference 3 to improve EPA performance.

The proposed TS page change is attached. It is written in accordance with the guidance in Reference 2.

#### EVALUATION

This proposal changes the EPA channel functional test surveillance interval only. This change will not alter the design, function, or operation of the EPAs. This amendment will enhance plant operations and safety by removing the potential for inadvertent reactor scrams and the resultant challenges to safety systems that exists when EPA channel functional tests are performed at power. Reference 2 states that this TS change applies generically for BWRs as a line item TS improvement. As discussed above, the benefits of not performing the EPA channel functional tests at power outweigh any risks associated with extending the surveillance interval. Therefore, this TS change produces a net benefit to safety and is acceptable.

#### SIGNIFICANT HAZARDS CONSIDERATION

In accordance with 10CFR50.92, Detroit Edison has made a determination that the proposed amendment involves no significant hazards considerations. To make this determination, Detroit Edison must establish that operation 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) involve a significant reduction in a margin of safety.

The proposed amendment changes the EPA channel functional surveillance interval in TS Surveillance Requirement 4.8.4.4.a. It changes the interval from at least once per six months to each time the plant is

in cold shutdown for a period of more than 24 hours, unless the channel functional test has been performed in the previous six months. This eliminates the need to test the EPAs during power operation and thereby reduces the possibility of inadvertent challenges to the protection systems. This surveillance requirement retains testing within a six month interval when the unit is in cold shutdown for more than twenty-four hours.

This amendment:

1. Does not involve a significant increase in the probability or consequences of an accident previously evaluated because this amendment does not alter the design, function, or operation of the EPAs. As stated in Reference 2, the benefit to safety by reducing the frequency of testing during power operation and the attendant possible challenges to safety systems more than offsets any risk to safety from relaxing the surveillance requirement to test the EPAs during power operation.
2. Does not create the possibility of a new or different kind of accident from any accident previously evaluated. As stated above, this amendment does not alter the design, function, or operation of the EPAs. The RPS relay trip logic remains protected from power supplies operating with out-of-tolerance voltage or frequency. Additionally, the redundancy of this protection is not changed. Therefore, no new or different accident scenarios are created.
3. Does not involve a significant reduction in a margin of safety because, as stated above, the benefit to safety by reducing the frequency of testing during power operation and the attendant possible challenges to safety systems more than offsets any risk to safety from relaxing the surveillance requirement to test the EPAs during power operation.

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

#### ENVIRONMENTAL IMPACT

Detroit Edison has reviewed the proposed Technical Specification changes against the criteria of 10CFR51.22 for environmental considerations. The proposed change does not involve a significant hazards consideration, nor significantly change the types or



significantly increase the amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, Detroit Edison concludes that the proposed Technical Specifications do meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

#### CONCLUSION

Based on the evaluation above: (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 proposed amendment will not be inimical to the common defense and security or to the health and safety of the public.