

June 28, 1994

Docket No. 50-341

Mr. Douglas R. Gipson  
Senior Vice President  
Nuclear Generation  
Detroit Edison Company  
6400 North Dixie Highway  
Newport, Michigan 48166

Dear Mr. Gipson:

SUBJECT: FERMI-2 - ISSUANCE OF AMENDMENT RE: REDUCED TESTING DURING POWER OPERATION (GENERIC LETTER 93-05) (TAC NO. M89223)

The Commission has issued the enclosed Amendment No. 99 to Facility Operating License No. NPF-43 for the Fermi-2 facility. The amendment consists of changes to the Technical Specifications (TS) in response to your letter dated March 29, 1994, as corrected April 26, 1994.

The amendment revises the TS surveillance requirements for scram discharge volume vent and drain valves and isolation actuation instrumentation, and modifies the required actions and surveillance requirements for the emergency diesel generators. These TS changes were submitted in accordance with guidance contained in Generic Letter (GL) 93-05 dated September 27, 1993, in order to reduce testing during power operation.

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  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 99 to NPF-43
2. Safety Evaluation

cc w/enclosures:  
See next page

OFFICE	LA:PD31	PM:PD31	BC:EELB	BC:OTSB	OGC	D:PD31
NAME	CJamerson	TColburn:gll	CBerlinger	CGrimes		LBMarsh
DATE	06/3/94	06/3/94	06/09/94	06/13/94	06/14/94	06/16/94

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DFD

Mr. Douglas R. Gipson  
Detroit Edison Company

Fermi-2

cc:

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DATED: June 28, 1994

AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-43-FERMI-2

Docket File

NRC & Local PDRs

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cc: Plant Service list



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DETROIT EDISON COMPANY

DOCKET NO. 50-341

FERMI-2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99  
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 March 29, 1994, as corrected April 26, 1994, 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. 99 , 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 license amendment is effective as of the date of its issuance with full implementation within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 28, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 99

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 vertical lines indicating the area of change.

REMOVE

3/4 1-3  
3/4 1-4  
3/4 3-18  
3/4 3-19  
3/4 3-20  
3/4 8-1  
3/4 8-2  
3/4 8-3  
3/4 8-4  
3/4 8-5  
3/4 8-6

INSERT

3/4 1-3\*  
3/4 1-4  
3/4 3-18  
3/4 3-19  
3/4 3-20\*  
3/4 8-1  
3/4 8-2\*  
3/4 8-3  
3/4 8-4\*  
3/4 8-5\*  
3/4 8-6

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\*Overleaf page provided to maintain document completeness. No changes contained on these pages.

REACTIVITY CONTROL SYSTEMS  
3/4.1.3 CONTROL RODS  
CONTROL ROD OPERABILITY

LIMITING CONDITION FOR OPERATION

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3.1.3.1 All control rods shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

- a. With one control rod inoperable due to being immovable, as a result of excessive friction or mechanical interference, or known to be untrippable:
  1. Within 1 hour:
    - a) Verify that the inoperable control rod, if withdrawn, is separated from all other inoperable control rods by at least two control cells in all directions.
    - b) Disarm the associated directional control valves\*\* either:
      - 1) Electrically, or
      - 2) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

2. Restore the inoperable control rod to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

- b. With one or more control rods trippable but inoperable for causes other than addressed in ACTION a, above:

1. If the inoperable control rod(s) is withdrawn, within 1 hour:
  - a) Verify that the inoperable withdrawn control rod(s) is separated from all other inoperable withdrawn control rods by at least two control cells in all directions, and
  - b) Demonstrate the insertion capability of the inoperable withdrawn control rod(s) by inserting the control rod(s) at least one notch by drive water pressure within the normal operating range\*.

Otherwise, insert the inoperable withdrawn control rod(s) and disarm the associated directional control valves\*\* either:

- a) Electrically, or
- b) Hydraulically by closing the drive water and exhaust water isolation valves.

\*The inoperable control rod may then be withdrawn to a position no further withdrawn than its position when found to be inoperable.

\*\*May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

## REACTIVITY CONTROL SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

#### ACTION: (Continued)

2. If the inoperable control rod(s) is inserted, within 1 hour disarm the associated directional control valves\*\* either:
  - a) Electrically, or
  - b) Hydraulically by closing the drive water and exhaust water isolation valves.

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.

- c. With more than 8 control rods inoperable, be in at least HOT SHUTDOWN within 12 hours.
- d. With one scram discharge volume vent valve and/or one scram discharge volume drain valve inoperable and open, restore the inoperable valve(s) to OPERABLE status within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours.
- e. With any scram discharge volume vent valve(s) and/or any scram discharge volume drain valve(s) otherwise inoperable, restore the inoperable valve(s) to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

4.1.3.1.1 The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

- a. At least once per 31 days verifying each valve to be open,\* and
- b. Evaluating scram discharge volume system response prior to plant startup after each scram to verify that no abnormalities exist.

4.1.3.1.2 When above the preset power level of the RWM, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

- a. At least once per 7 days, and
- b. Within 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

\*These valves may be closed intermittently for testing under administrative controls.

\*\*May be rearmed intermittently, under administrative control, to permit testing associated with restoring the control rod to OPERABLE status.

TABLE 3.3.2-3

ISOLATION ACTUATION SYSTEM INSTRUMENTATION RESPONSE TIME

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)</u>
<b>1. <u>PRIMARY CONTAINMENT ISOLATION</u></b>	
a. Reactor Vessel Low Water Level	
1) Level 3	NA
2) Level 2	NA
3) Level 1	≤ 1.0*
b. Drywell Pressure - High	NA
c. Main Steam Line	
1) Radiation - High	NA
2) Pressure - Low	NA
3) Flow - High	NA
d. Main Steam Line Tunnel Temperature - High	NA
e. Condenser Pressure - High	NA
f. Turbine Bldg. Area Temperature - High	NA
g. Deleted	
h. Manual Initiation	NA
<b>2. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u></b>	
a. Δ Flow - High	NA
b. Heat Exchanger/Pump/High Energy Piping Area Temperature - High	NA
c. Heat Exchanger/Pump/Phase Separator Area Ventilation Temperature ΔT - High	NA
d. SLCS Initiation	NA
e. Reactor Vessel Low Water Level - Level 2	NA
f. Deleted	
g. Manual Initiation	NA
<b>3. <u>REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u></b>	
a. RCIC Steam Line Flow - High	NA
b. RCIC Steam Supply Pressure - Low	NA
c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA
d. RCIC Equipment Room Temperature - High	NA
e. Manual Initiation	NA

TABLE 3.3.2-3 (Continued)

ISOLATION ACTUATION SYSTEM INSTRUMENTATION RESPONSE TIME

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME(Seconds)</u>
<u>4. HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION</u>	
a. HPCI Steam Flow - High	NA
b. HPCI Steam Supply Pressure - Low	NA
c. HPCI Turbine Exhaust Diaphragm Pressure - High	NA
d. HPCI Equipment Room Temperature - High	NA
e. Manual Initiation	NA
<u>5. RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>	
a. Reactor Vessel Low Water Level - Level 3	NA
b. Reactor Vessel (Shutdown Cooling Cut-in Permissive Interlock) Pressure - High	NA
c. Manual Initiation	NA
<u>6. SECONDARY CONTAINMENT ISOLATION</u>	
a. Reactor Vessel Low Water Level - Level 2	NA
b. Drywell Pressure - High	NA
c. Fuel Pool Ventilation Exhaust Radiation - High	NA
d. Manual Initiation	NA

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\*Isolation system instrumentation response time for MSIVs only. No diesel generator delays assumed for MSIVs.

TABLE 4.3.2.1-1

ISOLATION ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED</u>
1. <u>PRIMARY CONTAINMENT ISOLATION</u>				
a. Reactor Vessel Low Water Level-				
1) Level 3	S	Q#	R	1, 2, 3
2) Level 2	S	Q#	R	1, 2, 3
3) Level 1	S	Q#	R	1, 2, 3
b. Drywell Pressure - High	S	Q#	R	1, 2, 3
c. Main Steam Line				
1) Radiation - High	S	Q	R	1, 2, 3
2) Pressure - Low	S	Q#	R	1
3) Flow - High	S	Q#	R	1, 2, 3
d. Main Steam Line Tunnel Temperature - High	S	Q#	R	1, 2, 3
e. Condenser Pressure - High	S	Q#	R	1, 2**, 3**
f. Turbine Bldg. Area Temperature - High	S	Q#	R	1, 2, 3
g. Deleted				
h. Manual Initiation	NA	R	NA	1, 2, 3

### 3/4.8 ELECTRICAL POWER SYSTEMS

#### 3/4.8.1 A.C. SOURCES

##### A.C. SOURCES - OPERATING

##### LIMITING CONDITION FOR OPERATION

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3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and
- b. Two separate and independent onsite A.C. electrical power sources, Division I and Division II, each consisting of two emergency diesel generators, each diesel generator with:
  1. A separate day fuel tank containing a minimum of 210 gallons of fuel,
  2. A separate fuel storage system containing a minimum of 35,280 gallons of fuel, and
  3. A separate fuel transfer pump.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

##### ACTION:

- a. With one or both offsite circuits of the above required A.C. electrical power sources inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours; demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter and,
- b. With one or both diesel generators in one of the above required onsite A.C. electrical power divisions inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter, and if the diesel generator(s) became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, by performing Surveillance Requirement 4.8.1.1.2.a.4 for one diesel generator at a time within 24 hours, unless the absence of any potential common mode failure for the remaining diesel generators is determined. Restore the inoperable division to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

## ELECTRICAL POWER SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

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#### ACTION (Continued)

- c. With one or both diesel generators in one of the above required onsite A.C. electrical power divisions inoperable, in addition to ACTION b, above, verify within 2 hours that all required systems, subsystems, trains, components and devices that depend on the remaining onsite A.C. electrical power division as a source of emergency power are also OPERABLE; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  
- d. With both of the above required onsite A.C. electrical power divisions inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1 within one hour and at least once per 8 hours thereafter; restore at least one of the above required inoperable divisions to OPERABLE status within 2 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. Restore both of the above required divisions to OPERABLE status within 72 hours from time of initial loss or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignments and indicated power availability.

4.8.1.1.2 Each of the above required diesel generators shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8.1.1.2-1 on a STAGGERED TEST BASIS by:
  1. Verifying the fuel level in the day fuel tank.
  2. Verifying the fuel level in the fuel storage tank.
  3. Verifying the fuel transfer pump starts and transfers fuel from the storage system to the day fuel tank.
  4. Verifying the diesel starts from ambient condition and accelerates to at least 900 rpm in less than or equal to 10 seconds.\* The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal. The diesel generator shall be started for this test by using one of the following signals:
    - a) Manual.
    - b) Simulated loss-of-offsite power by itself.
    - c) Simulated loss-of-offsite power in conjunction with an ESF actuation test signal.
    - d) An ESF actuation test signal by itself.
  5. Verifying the diesel generator is synchronized, loaded to greater than or equal to an indicated 2500-2600 kW in accordance with the manufacturer's recommendations, and operates with this load for at least 60 minutes.
  6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
  7. Verifying the pressure in all diesel generator air start receivers to be greater than or equal to 215 psig.

\*All diesel generator starts for the purpose of this Surveillance Requirement may be preceded by an engine prelube period. The diesel generator start (10 sec) from ambient conditions shall be performed at least once per 184 days in these surveillance tests. All other engine starts for the purpose of this surveillance testing may be preceded by other warmup procedures recommended by the manufacturer so that the mechanical stress and wear on the diesel engine is minimized.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- b. By removing accumulated water:
  - 1. From the day tank at least once per 31 days and after each occasion when the diesel is operated for greater than 1 hour, and
  - 2. From the storage tank at least once per 31 days.
- c. By sampling new fuel oil in accordance with ASTM D4057-88 prior to addition to the storage tanks and:
  - 1. By verifying in accordance with the tests specified in ASTM D975-91 prior to addition to the storage tanks that the sample has:
    - a) An API Gravity of within 0.3 degrees at 60°F or a specified gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.
    - b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification.
    - c) A flash point equal to or greater than 125°F, and
    - d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-86.
  - 2. By verifying with 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-91 are met when tested in accordance with ASTM D975-91.
- d. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-88, and verifying that total particulate contamination is less than 10 mg/liter when checked in accordance with ASTM D2276-88, Method A.
- e. At least once per 18 months by:
  - 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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2. Verifying the diesel generator capability to reject a load of greater than or equal to 1666 kW while maintaining engine speed less than the nominal speed plus 75% of the difference between nominal speed and the overspeed trip setpoint or 115% of nominal speed, whichever is lower.
3. Verifying the diesel generator capability to reject a load of 2850 kW without tripping. The generator voltage shall not exceed 4784 volts during and following the load rejection.
4. Simulating a loss-of-offsite power by itself, and:
  - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.
  - b) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test.
5. Verifying that on an ECCS actuation test signal, without loss-of-offsite power, the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the auto-start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test.
6. Simulating a loss-of-offsite power in conjunction with an ECCS actuation test signal, and:
  - a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.
  - b) Verifying the diesel generator starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz during this test.

## ELECTRICAL POWER SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

7. Verifying that all automatic diesel generator trips, except overspeed, generator differential, low lube oil pressure, crankcase overpressure, and failure to start are automatically bypassed for an emergency start signal.
8. Verifying the diesel generator operates for at least 24 hours. During the first 22 hours of this test, the diesel generator shall be loaded to greater than or equal to an indicated 2500-2600 kW and during the remaining 2 hours of this test, the diesel generator shall be loaded to an indicated 2800-2900 kW. The generator voltage and frequency shall be  $4160 \pm 420$  volts and  $60 \pm 1.2$  Hz within 10 seconds after the start signal; the steady-state generator voltage and frequency shall be maintained within these limits during this test. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.a.4).\*
9. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 3100 kW.
10. Verifying the diesel generator's capability to:
  - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
  - b) Transfer its loads to the offsite power source, and
  - c) Be restored to its standby status.
11. Verifying that the automatic load sequence timer is OPERABLE with the interval between each load block within  $\pm 10\%$  of its design interval.
12. Verifying that the following diesel generator lockout features prevent diesel generator starting only when required:
  - a) 4160-volt ESF bus lockout.
  - b) Differential trip.
  - c) Shutdown relay trip.

\*If Surveillance Requirement 4.8.1.1.2.a.4) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at an indicated 2500-2600 kW for 2 hours or until operating temperature has stabilized.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

FERMI-2

DOCKET NO. 50-341

1.0 INTRODUCTION

By letter dated March 29, 1994, as corrected April 26, 1994, 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 modify surveillance requirements for scram discharge vent and drain valves and isolation actuation instrumentation, and modify the required actions and surveillance requirements for the emergency diesel generators. The proposed amendment was submitted in accordance with the guidance contained in Generic Letter (GL) 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," dated September 27, 1993.

2.0 DISCUSSION

The NRC staff completed a comprehensive examination of surveillance requirements in TS that require testing during power operation. The results of this study were reported in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," December 1992. In performing this study, the staff found that, while the majority of the testing at power is important, safety can be improved, equipment degradation decreased, and an unnecessary burden on personnel resources eliminated by reducing the amount of testing that the TS require during power operation. Only a small fraction of the TS surveillance intervals warranted relaxation. The staff issued GL 93-05 to provide licensees guidance in preparing a license amendment request to implement the recommendations of NUREG-1366 as line-item improvements to the TS.

3.0 EVALUATION

The licensee's proposed changes to the TS would modify the surveillance requirements for the scram discharge volume vent and drain valves and the isolation actuation instrumentation, and modify the required actions and surveillance requirements for the emergency diesel generators to reduce required testing during power operation.

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P PDR

TS 4.1.3.1.1.b requires that each scram discharge volume (SDV) vent and drain valve be cycled through at least one full cycle of travel at least once per 92 days. The proposed change would require an evaluation of the SDV system response prior to plant startup after each scram to verify that no abnormalities exist. This is in accordance with the guidance of item 4.5 of GL 93-05 and is, therefore, acceptable. The 18-month surveillance requirement of TS 4.1.3.1.4 described below combined with an evaluation of the SDV system response after each scram to verify that no abnormalities exist is considered adequate to demonstrate the operability of the SDV vent and drain valves.

TS 4.1.3.1.4 requires that at least once every 18 months each SDV vent and drain valve be tested to assure that it will close within 30 seconds after receipt of a signal for control rods to scram and will open when the scram signal is reset. The standard technical specifications (STS) for boiling water reactors (BWR) of this design (BWR-4), required that this 18-month surveillance requirement be performed when control rods are scram tested from "a 50 percent rod density or less." GL 93-05 proposed guidance that the "50 percent rod density or less" requirement be eliminated and replaced with a requirement that the surveillance be performed when control rods are scram tested from "a shutdown condition."

The "50 percent rod density or less" requirement was eliminated from the Fermi 2 Operating License with the issuance of the Full Power Operating License. The licensee's practice has been to perform this surveillance during shutdown conditions. However, the requirement to perform this surveillance exclusively during shutdown conditions was removed with the issuance of amendment 95 to the Fermi 2 Operating License on October 29, 1993. That amendment had been requested in accordance with the guidance contained in GL 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle." Based on the above, the licensee has determined that the current wording of the Fermi TS is more appropriate for this line item improvement and therefore, the licensee has not requested a change.

TS 4.1.3.1.2.b requires that, when above the preset power level of the RWM [rod worth minimizer], all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically be demonstrated OPERABLE by moving each control rod at least one notch at least once per 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference. The proposed change would require that the control rod be moved only once within 24 hours.

GL 93-05 recommends that the TS should be changed to require that if a control rod is immovable because of friction or mechanical interference, the other control rods should be tested within 24 hours and every 7 days thereafter. The recommendation to change the frequency for tests that apply when a control rod is immovable to include "once every 7 days thereafter," is already covered by the existing requirements of TS 4.1.3.1.2.a and no additional change is needed. The licensee provided justification for the change from "at least once per 24 hours" to "within 24 hours." This single test should provide sufficient information to determine if any additional control rods have become immovable as a result of friction or mechanical interference and allow a

return to the normal 7-day testing frequency. Additionally, this proposed change is in accordance with the guidance contained in item 4.2.2 of GL 93-05 and is, therefore, acceptable.

TS 4.3.2.3 requires that the isolation system response time of each isolation trip function shown in Table 3.3.2-3 be demonstrated for each trip function, to be within its limit at least once per 18 months. The proposed TS change would remove those limits that correspond to the emergency diesel generator (EDG) start and sequencing times.

The EDG start and sequencing of loads are tested in accordance with TSs 4.8.1.1.2.a.4 and 4.8.1.1.2.e.11. The additional testing required by TS 4.3.2.3 increases the risk of plant trips and equipment challenges due to the large number of lifted leads, jumpers and pulled fuses required to simulate the necessary conditions. Additionally, the safety analyses for the plant assume that the instrument channel actuation for non-MSIV [main steam isolation valves] channels occurs simultaneously with EDG start and sequencing. It is unlikely that the typical response time (less than a second) would degrade to where it exceeds the diesel start time of 13 seconds without a failure that is noticeable in other ways. This proposed change also meets the guidance of item 5.9 of GL 93-05 and is, therefore, acceptable.

TS 3.8.1.1, Action Statement a, requires testing of the operable EDGs within 24 hours when the offsite circuit is determined to be inoperable. The proposed change would eliminate this testing requirement.

The requirement to test the EDGs when the offsite circuit is unavailable may result in an increased potential for an EDG to become unavailable at a time when its potential for need is greatest. The licensee cites an analysis of relative unavailabilities from EDG testing performed by Vermont Yankee as basis for the proposed change. The analysis yields a factor of 3 higher unavailability for the case where testing followed an offsite circuit being inoperable than for normal monthly EDG testing. The proposed change also meets the guidance of item 10.1 of GL 93-05, and is, therefore, acceptable.

TS 3.8.1.1, Action Statement b, requires testing of the remaining EDGs within 24 hours when an EDG is determined to be inoperable. The proposed change would eliminate this testing requirement if the inoperable EDG is determined to be inoperable due to an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, or if the absence of any potential common mode failure for the remaining EDGs is determined. The proposed change makes two exceptions to the guidance contained in item 10.1 of GL 93-05. The licensee retains the current completion time of the testing, 24 hours, rather than change to the 8-hour completion time recommended in GL 93-05. The licensee also proposes that the absence of any potential common mode failure be "determined" rather than "demonstrated."

The licensee states that the Fermi 2 design includes four EDGs in total, two per division. This means that three EDGs will normally require testing per this requirement. The licensee states that the 24-hour completion time is needed to effectively test the remaining EDGs. The licensee also points out

that the exceptions are consistent with the completion time and required actions provided in the recently issued Improved STS and are consistent with the Bases for that document as well.

The staff has reviewed the licensee's proposed change and determined that, except as noted, the proposed change conforms with the guidance in item 10.1 of GL 93-05. The staff has reviewed the exceptions in the licensee's proposal and determined that they are in accordance with other approved guidance and, therefore, are acceptable.

TS 4.8.1.1.2.a.5 requires fast loading of the EDGs within 150 seconds. The proposed change would allow all loading of the EDGs to be conducted in accordance with the manufacturer's recommendations (with the exception of the 18-month loss of offsite power (LOOP) tests both with and without a loss of coolant accident signal).

The licensee states that several program studies have determined that fast loading during surveillance testing is the most significant cause of accelerated degradation of an EDG. It can cause rapid piston ring and cylinder liner wear up to 40 times greater than normal. The proposed change is also in accordance with the guidance contained in item 10.1 of GL 93-05. The staff has reviewed the licensee's proposed change and has determined that it is acceptable.

TS 4.8.1.1.2.e.8 requires the conduct of a simulated LOOP test (TS 4.8.1.1.2.e.4.b) within 5 minutes of a 24-hour run test. The proposed change would require that the test following the 24-hour run test to be the EDG start test (TS 4.8.1.1.2.a.4). The proposed change would also require running the EDG for at least 2 hours if the hot restart test is conducted at a time other than following the 24-hour run test.

The 24-hour run test is set up such that the EDG is run for 22 hours at 2500-2600 kW load and then 2 hours at 2800-2900 kW load. TS 4.8.1.1.2.e.8 requires that within 5 minutes after completion of the 24-hour run test, the emergency buses must be de-energized and loads shed with a subsequent fast start and full load acceptance. This latter start and load is currently required by conducting the LOOP test of TS 4.8.1.1.2.e.4.b. The licensee states that scheduling these tests during a time when all engineered safety features (ESF) loads are available generally requires 48 hours (24 per division) where no other testing can be performed on the full complement of ESF necessary for these combined tests. The licensee proposes to separate these two tests (the 24-hour run and LOOP test) to provide additional flexibility during refueling outages. The licensee proposes to do this by revising the hot start test to include only starting the EDG as per TS 4.8.1.1.2.a.4 and conducting the LOOP test without consideration of the 24-hour test. The licensee also states that performing these tests in quick succession requires shutdown of the EDG faster than recommended in the EDG shutdown procedure. Because the Fermi 2 EDGs are water cooled, and maintained in hot standby conditions, they are not expected to experience the temperature rise transients associated with small forced air-cooled EDGs which may lead to failure to restart when hot or extended delay in restarting.

The licensee is also proposing to modify the note which allows repeating the hot restart test, if unsuccessful, without first conducting the 24-hour test. The repeated test must be preceded by running the EDG for "1 hour at 2500-2600 kW or until temperature has stabilized." The licensee proposes to change the run time to "2 hours...or until temperature has stabilized" consistent with the manufacturer's recommendations. The above changes are consistent with the guidance in item 10.1 of GL 93-05. The staff has reviewed the proposed changes and determined that they are acceptable.

#### 4.0 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.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements 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 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 that 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 (59 FR 27053). 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.

#### 6.0 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.

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