



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

DETROIT EDISON COMPANY

WOLVERINE POWER SUPPLY COOPERATIVE, INCORPORATED

DOCKET NO. 50-341

FERMI-2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 21
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 10, 1988, as supplemented April 21, 1988, 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. , 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.

8807140231 880706
PDR ADOCK 05000341
P PNU

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Acting Director
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 6, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 21

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

3/4 3-12

3/4 3-16

3/4 3-18

3/4 3-21

3/4 6-25

3/4 6-45

3/4 6-46

INSERT

3/4 3-12

3/4 3-16

3/4 3-18

3/4 3-21

3/4 6-25

3/4 6-45

3/4 6-46

TABLE 3.3.2-1

ISOLATION ACTUATION INSTRUMENTATION

TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)	APPLICABLE OPERATIONAL CONDITION	ACTION
1. <u>CONTAINMENT ISOLATION</u>				
a. Reactor Vessel Low Water Level				
1) Level 3	4, 13, 15	2	1, 2, 3	20
2) Level 2	2, 10, 11, 16, 17, 18	2	1, 2, 3	20
	12, 14 ^(b)	2	1, 2, 3 and *	24
3) Level 1	1	2	1, 2, 3	20
b. Drywell Pressure - High	2, 13, 15, 16, 17, 18	2	1, 2, 3	20
	12, 14 ^(b)	2	1, 2, 3	24
c. Main Steam Line				
1) Radiation - High	1, 2	2	1, 2, 3	21
2) Pressure - Low	1	2	1	22
3) Flow - High	1	2	1, 2, 3	21
d. Main Steam Line Tunnel Temperature - High	1	2 ^(c)	1, 2, 3	21
e. Condenser Pressure - High	1	2	1, 2**, 3**	21
f. Turbine Bldg. Area Temperature - High	1	2	1, 2, 3	21
g. Fuel Pool Ventilation Exhaust Radiation - High	14 ^(b) , 16	2	1, 2, 3, and *	24
h. Manual Initiation	1, 2, 4, 12, 13, 14 ^(b) 15, 16, 17, 18	1/valve	1, 2, 3 and *	26

FERMI - UNIT 2

3/4 3-11

TABLE 3.3.2-1 (Continued)

ISOLATION ACTUATION INSTRUMENTATION

<u>TRIP FUNCTION</u>	<u>VALVE GROUPS OPERATED BY SIGNAL</u>	<u>MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)</u>	<u>APPLICABLE OPERATIONAL CONDITION</u>	<u>ACTION</u>
2. REACTOR WATER CLEANUP SYSTEM ISOLATION				
a. Δ Flow - High	10, 11	1	1, 2, 3	23
b. Heat Exchanger/Pump/High Energy Piping Area Temperature - High	10, 11	1	1, 2, 3	23
c. Heat Exchanger/Pump Area Ventilation Δ Temp. - High	10, 11	1	1, 2, 3	23
d. SLCS Initiation	11	NA	1, 2, 3	23
e. Reactor Vessel Low Water Level - Level 2	10, 11 ^(d)	2	1, 2, 3	23
f. Deleted				
g. Manual Initiation	10, 11	1/valve	1, 2, 3	26
3. REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION				
a. RCIC Steam Line Flow - High				
1. Differential Pressure	8	1	1, 2, 3	23
2. Time Delay	8	1	1, 2, 3	23
b. RCIC Steam Supply Pressure - Low	8, 9	2	1, 2, 3	23
c. RCIC Turbine Exhaust Diaphragm Pressure - High	8	2	1, 2, 3	23
d. RCIC Equipment Room Temperature - High	8	1	1, 2, 3	23
e. Manual Initiation	8, 9	1/valve	1, 2, 3	26

TABLE 3.3.2-2

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. <u>CONTAINMENT ISOLATION</u>		
a. Reactor Vessel Low Water Level		
1) Level 3	≥ 173.4 inches*	≥ 171.9 inches
2) Level 2	≥ 110.8 inches*	≥ 103.8 inches
3) Level 1	≥ 31.8 inches*	≥ 24.8 inches
b. Drywell Pressure - High	≤ 1.68 psig	≤ 1.88 psig
c. Main Steam Line		
1) Radiation - High	≤ 3.0 x full power background	≤ 3.6 x full power background
2) Pressure - Low	≥ 756 psig	≥ 736 psig
3) Flow - High	$\leq 137.9\%$ of rated flow/109.0 psid	$\leq 139.5\%$ of rated flow/112.0 psid
d. Main Steam Line Tunnel Temperature - High	$\leq 200^{\circ}\text{F}^{**}$	$\leq 206^{\circ}\text{F}^{**}$
e. Condenser Pressure - High	≤ 6.85 psia	≤ 7.05 psia
f. Turbine Bldg. Area Temperature - High	$\leq 200^{\circ}\text{F}$	$\leq 206^{\circ}\text{F}$
g. Fuel Pool Ventilation Exhaust Radiation - High	≤ 10 mR/hr**	≤ 15 mR/hr**
h. Manual Initiation	NA	NA

TABLE 3.3.7-2 (Continued)

ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
2. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. Δ Flow - High	≤ 55.1 gpm	≤ 63.4 gpm
b. Heat Exchanger/Pump/High Energy Piping Area Temperature - High	$\leq 175^{\circ}\text{F}^{**}$	$\leq 183^{\circ}\text{F}^{**}$
c. Heat Exchanger/Pump Area Ventilation Δ Temperature - High	$\leq 50^{\circ}\text{F}^{**}$	$\leq 53^{\circ}\text{F}^{**}$
d. SLCS Initiation	NA	NA
e. Reactor Vessel Low Water Level - Level 2	≥ 110.8 inches*	≥ 103.8 inches
f. Deleted		
g. Manual Initiation	NA	NA
3. <u>REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>		
a. RCIC Steam Line Flow - High		
1. Differential Pressure	≤ 87.0 inches $\text{H}_2\text{O}/90,875$ lbm/hr**	≤ 95.0 inches $\text{H}_2\text{O}/94,865$ lbm/hr
2. Time Delay	3 seconds	3 ± 2 seconds
b. RCIC Steam Supply Pressure - Low	≥ 62 psig	≥ 53 psig
c. RCIC Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	≤ 20 psig
d. RCIC Equipment Room Temperature - High	$\leq 150^{\circ}\text{F}^{**}$	$\leq 160^{\circ}\text{F}^{**}$
e. Manual Initiation	NA	NA

TABLE 3.3.2-2 (Continued)
ISOLATION ACTUATION INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
4. <u>HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION</u>		
a. HPCI Steam Line Flow - High		
1. Differential Pressure	≤ 395.0 inches H ₂ O/536,625 lbm/hr**	≤ 410.0 inches H ₂ O/546,165 lbm/hr
2. Time Delay	3 seconds	3±2 seconds
b. HPCI Steam Supply Pressure - Low	≥ 100 psig	≥ 90 psig
c. HPCI Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	≤ 20 psig
d. HPCI Equipment Room Temperature - High	≤ 150°F**	≤ 162°F**
e. Manual Initiation	NA	NA
5. <u>RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>		
a. Reactor Vessel Low Water Level - Level 3	≥ 173.4 inches*	≥ 171.9 inches
b. Reactor Vessel (Shutdown Cooling Cut-in Permissive Interlock) Pressure - High	≤ 89.5 psig***	≤ 95.5 psig***
c. Manual Initiation	NA	NA

*Above TAF. See Bases Figure B 3/4 3-1.

**Initial setpoint. Final setpoint to be determined during startup test program. Any required change to this setpoint shall be submitted to the Commission within 90 days of test completion.

***Represents steam dome pressure; actual trip setpoint is corrected for cold water head with reactor vessel flooded.

TABLE 3.3.2-3

ISOLATION ACTUATION SYSTEM INSTRUMENTATION RESPONSE TIME

<u>TRIP FUNCTION</u>	<u>RESPONSE TIME (Seconds)#</u>
1. <u>CONTAINMENT ISOLATION</u>	
a. Reactor Vessel Low Water Level	
1) Level 3	$\leq 13^{(a)}$
2) Level 2	$\leq 13^{(a)**}$
3) Level 1	$\leq 1.0^* / \leq 13^{(a)**}$
b. Drywell Pressure - High	$\leq 13^{(a)}$
c. Main Steam Line	
1) Radiation - High ^(b)	$\leq 13^{(a)**}$
2) Pressure - Low	$\leq 13^{(a)**}$
3) Flow - High	$\leq 13^{(a)**}$
d. Main Steam Line Tunnel Temperature - High	NA
e. Condenser Pressure - High	NA
f. Turbine Bldg. Area Temperature - High	NA
g. Fuel Pool Ventilation Exhaust Radiation - High ^(b)	$\leq 13^{(a)}$
h. Manual Initiation	NA
2. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u>	
a. Δ Flow - High	NA ^{##}
b. Heat Exchanger/Pump/High Energy Piping Area Temperature - High	NA
c. Heat Exchanger/Pump Area Ventilation Temperature ΔT - High	NA
d. SLCS Initiation	NA
e. Reactor Vessel Low Water Level - Level 2	$\leq 13^{(a)}$
f. Deleted	
g. Manual Initiation	NA
3. <u>REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>	
a. RCIC Steam Line Flow - High	$\leq 13^{(a)}$
b. RCIC Steam Supply Pressure - Low	$\leq 13^{(a)}$
c. RCIC Turbine Exhaust Diaphragm Pressure - High	NA
d. RCIC Equipment Room Temperature - High	NA
e. Manual Initiation	NA

TABLE 4.3.2.1-1 (Continued)
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>
2. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u>				
a. Δ Flow - High	S	M	R	1, 2, 3
b. Heat Exchanger/Pump/High Energy Piping Area Temperature - High	S	M	R	1, 2, 3
c. Heat Exchanger/Pump Area Ventilation Δ Temperature - High	S	M	R	1, 2, 3
d. SLCS Initiation	NA	R	NA	1, 2, 3
e. Reactor Vessel Low Water Level - Level 2	S	M	R	1, 2, 3
f. Deleted				
g. Manual Initiation	NA	R	NA	1, 2, 3
3. <u>REACTOR CORE ISOLATION COOLING SYSTEM ISOLATION</u>				
a. RCIC Steam Line Flow - High				
1. Differential Pressure	S	M	R	1, 2, 3
2. Time Delay	NA	M	R	1, 2, 3
b. RCIC Steam Supply Pressure - Low	S	M	R	1, 2, 3
c. RCIC Turbine Exhaust Diaphragm Pressure - High	S	M	R	1, 2, 3
d. RCIC Equipment Room Temperature - High	S	M	R	1, 2, 3
e. Manual Initiation	NA	R	NA	1, 2, 3

TABLE 4.3.2.1-1 (Continued)

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>
4. <u>HIGH PRESSURE COOLANT INJECTION SYSTEM ISOLATION</u>				
a. HPCI Steam Line Flow - High				
1. Differential Pressure	S	M	R	1, 2, 3
2. Time Delay	NA	M	R	1, 2, 3
b. HPCI Steam Supply Pressure - Low	S	M	R	1, 2, 3
c. HPCI Turbine Exhaust Diaphragm Pressure - High	S	M	R	1, 2, 3
d. HPCI Equipment Room Temperature - High	S	M	R	1, 2, 3
e. Manual Initiation	NA	R	NA	1, 2, 3
5. <u>RHR SYSTEM SHUTDOWN COOLING MODE ISOLATION</u>				
a. Reactor Vessel Low Water Level - Level 3	S	M	R	1, 2, 3
b. Reactor Vessel (Shutdown Cooling Cut-in Permissive Interlock) Pressure - High	S	M	R	1, 2, 3
c. Manual Initiation	NA	R	NA	1, 2, 3

* When handling irradiated fuel in the secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

** May be bypassed under administrative control.

TABLE 3.6.3-1 (Continued)
PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION AND NUMBER</u>	<u>MAXIMUM ISOLATION TIME (Seconds)</u>
<u>Automatic Isolation Valves</u> ^(a) (Continued)	
<u>Reactor Core Isolation Cooling (RCIC) System</u>	
<u>Exhaust Line Isolation Valves</u>	
Inboard: E51-F007	15
Outboard: E51-F008	15
<u>Group 9 - Reactor Core Isolation Cooling (RCIC) System Vacuum Breakers</u>	
<u>Exhaust Line Vacuum Breaker Isolation Valves</u>	
E51-F002	60
E51-F004	60
10. <u>Group 10 - Reactor Water Cleanup (RWCU) System (Inboard)</u>	
Inboard: G33-F001	10
11. <u>Group 11 - Reactor Water Cleanup (RWCU) System (Outboard)</u>	
Outboard: G33-F004	10
12. <u>Group 12 - Torus Water Management System (TWMS)</u>	
<u>TWMS to RHR Line Isolation Valves</u> ^{(b)(d)}	
G51-F605	60
G51-F604	60
<u>TWMS to CSS Test Line Isolation Valves</u> ^{(b)(d)}	
G51-F507	60
G51-F606	60
<u>Torus Drain Isolation Valves</u> ^{(b)(d)}	
G51-F600	60
G51-F602	60
G51-F601	60
G51-F603	60

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

ACTION STATEMENTS

- ACTION 30 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement:
- a. For one trip system, place that trip system in the tripped condition within 1 hour* or declare the associated ECCS inoperable.
 - b. For both trip systems, declare the associated ECCS inoperable.
- ACTION 31 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, declare the associated ECCS inoperable.
- ACTION 32 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place the inoperable channel in the tripped condition within 1 hour.
- ACTION 33 - Restore the manual initiation function to OPERABLE status within 8 hours or declare the associated ECCS inoperable.
- ACTION 34 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip System requirement, place at least one inoperable channel in the tripped condition within 1 hour*, align the HPCI system to take suction from the suppression pool, or declare the HPCI system inoperable.
- ACTION 35 - With the number of OPERABLE channels:
- a. One less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 72 hours or declare the associated emergency diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.
 - b. Less than the Minimum Channels OPERABLE requirement, declare the associated diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2, as appropriate.

*The provisions of Specification 3.0.4 are not applicable.

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

TABLE NOTATIONS (Continued)

8. Group 8 - Reactor Core Isolation Cooling (RCIC) System
RCIC Steam Line Flow - High
RCIC Steam Supply Pressure - Low
RCIC Turbine Exhaust Diaphragm Pressure - High
RCIC Equipment Room Temperature - High
9. Group 9 - Reactor Core Isolation Cooling (RCIC) Vacuum Breakers
Drywell Pressure - High with simultaneous RCIC
Steam Supply Pressure - Low
10. Group 10 - Reactor Water Cleanup (RWCU) System (Inboard)
RWCU Differential Flow - High
RWCU Area Temperature - High
RWCU Area Ventilation Differential Temperature - High
Reactor Vessel Low Water Level - Level 2
11. Group 11 - Reactor Water Cleanup (RWCU) System (Outboard)
SLCS Initiation (not a containment isolation signal)
RWCU Differential Flow - High
RWCU Area Temperature - High
RWCU Area Ventilation Differential Temperature - High
Reactor Vessel Low Water Level - Level 2
12. Group 12 - Torus Water Management System (TWMS)
Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High
13. Group 13 - Drywell Sumps
Reactor Vessel Low Water Level - Level 3
Drywell Pressure - High
14. Group 14 - Drywell and Suppression Pool Ventilation System
Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High
Fuel Pool Ventilation Exhaust Radiation - High
15. Group 15 - Traversing In-Core (TIP) System
Reactor Vessel Low Water Level - Level 3
Drywell Pressure - High

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

TABLE NOTATIONS (Continued)

15. Group 15 - Traversing In-Core (TIP) System (Continued)

NOTE: Either of these signals initiate TIP withdrawal which results in automatic closure of the TIP Ball Valves when the TIP probe has entered the shield cask.

16. Group 16 - Nitrogen Inerting System

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High
Fuel Pool Ventilation Exhaust Radiation - High

17. Group 17 - Recirculation Pump System and Primary Containment Radiation Monitoring System

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High

18. Group 18 - Primary Containment Pneumatic Supply System

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High

- (b) These valves are hydrostatically leak tested.
- (c) Deleted.
- (d) Also closes automatically as a result of Torus Room Floor Drain Sump Level - High - High and Drywell Floor Drain Sump Level - High - High.
- (e) These valves may be closed remotely from one of the following locations:
 - 1) control room.
 - 2) their respective local panels.
- (f) Will automatically reposition as a result of the actuation of the LPCI Loop Selection Logic.
- (g) Will automatically close when the corresponding RHR loop flow is greater than 1500 gpm.
- (h) Will automatically close when the corresponding core spray loop flow is greater than approximately 775 gpm.
- (i) Will automatically close when a) HPCI Turbine Steam Stop Valve E41-F067 closes or b) HPCI Turbine Steam Supply Isolation Valve E41-F001 closes.
- (j) Will automatically close as a result of the condition listed in Note (i), above, as well as when HPCI flow is greater than 1200 gpm.