JAN 12 1988

JAN 12 1988

Docket No. 50-341

Mr. B. Ralph Sylvia
Group Vice President - Nuclear
Operations
Detroit Edison Company
6400 North Dixie Highway
Newport, Michigan 48166

Dear Mr. Sylvia:

DISTRIBUTION

Docket File	JPartlow
NRC & Local PDRs	TBarnhart (4)
PD31 Plant Gray	Wanda Jones
GHolahan	EButcher
RIngram	ACRS (10)
JStefano	GPA/PA
OGC-Beth	ARM/LFMB
DHagan	
EJordan	

Subject: AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NO. NPF-43; (TAC NO. 66902)

The Commission has issued the enclosed Amendment No. 14 to Facility Operating License No. NPF-43 for the Fermi-2 facility. This amendment consists of changes to the Plant Technical Specifications (TSs) in response to your letter (NRC-88-0001) dated January 6, 1988.

The amendment revises Table 3.4.3.2-2 of the Plant TSs to correct alarm setpoints for the reactor coolant system interface valves leakage pressure monitors (LPMs). This amendment also makes appropriate changes to Bases 3/4.4.3.2 which in consultation with your staff, was accomplished by describing the purpose and intent of the LPM design. The wording contained in the attachment to your January 6, 1988, submittal was added to the Bases in lieu of your proposed wording, accordingly. On January 6, 1988, we issued a temporary waiver of compliance which permitted the LPM setpoints to be changed to enable plant startup from an outage. The temporary waiver of compliance was effective until January 12, 1988, while we completed the processing of your amendment. This change was necessitated upon determining that the alarm setpoints currently specified in the TSs were nonconservatively high such that LPM alarm actuations to alert plant operators on increasing pressure on the low pressure side of the high/low pressure interface would not be timely.

A copy of the Safety Evaluation supporting this amendment is enclosed. Notice of Issuance and Final Determination of No Significant Hazards Consideration and Opportunity for Hearing will be included in the Commission's biweekly Federal Register notice.

Sincerely,

John J. Stefano, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V
& Special Projects

Enclosures:
1. Amendment No. 14 to NPF-43
2. Safety Evaluation

cc w/enclosure:
See next page

LA/PD31:DRSP	PM/PD31:DRSP	EMEB	D/PD31:DRSP	AD:DRSP	OGC-Beth
RIngram	JStefano:lt	KDempsey	MViriglio	GHolahan	J. Scinto *
01/12/88	01/12/88	01/12/88	01/12/88	01/12/88	01/12/88

OFFICIAL RECORD COPY

* by telephone

cc:
Mr. Ronald C. Callen
Adv. Planning Review Section
Michigan Public Service Commission
6545 Mercantile Way
P. O. Box 30221
Lansing, Michigan 48909

John Flynn, Esq.
Senior Attorney
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Nuclear Facilities and Environmental
Monitoring Section Office
Division of Radiological Health
P. O. Box 30035
Lansing, Michigan 48909

Mr. Thomas Randazzo
Director, Regulatory Affairs
Detroit Edison Company
Fermi Unit 2
6400 North Dixie Highway
Newport, Michigan 48166

Mr. Walt Rogers
U.S. Nuclear Regulatory Commission
Resident Inspector's Office
6450 W. Dixie Highway
Newport, Michigan 48166

Monroe County Office of Civil
Preparedness
963 South Raisinville
Monroe, Michigan 48161

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

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. 14
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 January 6, 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 the 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. 14, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Gary M. Holahan, Assistant Director
for Regions III and V
Division of Reactor Projects - III, IV, V
& Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 12, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 14

FACILITY OPERATING LICENSE NO. NPF-43

DOCKET NO. 50-341

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed 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	INSERT
3/4 4-12	3/4 4-12
B 3/4 4-2	B 3/4 4-2
---	B 3/4 4-2a

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

a. Monitoring the primary containment atmospheric gaseous radioactivity at least once per 4 hours,*

b. Monitoring the primary containment sump flow rate at least once per 4 hours,

c. Monitoring the drywell floor drain sump level at least once per 4 hours, and

d. Monitoring the reactor vessel head flange leak detection system at least once per 24 hours.*

4.4.3.2.2 Each reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1 shall be demonstrated OPERABLE by leak testing pursuant to Specification 4.0.5 and verifying the leakage of each valve to be within the specified limit:

a. At least once per 18 months, and

b. Prior to returning the valve to service following maintenance, repair or replacement work on the valve which could affect its leakage rate.

The provisions of Specification 4.0.4 are not applicable for entry into OPERATIONAL CONDITION 3.

4.4.3.2.3 The high/low pressure interface valve leakage pressure monitors shall be demonstrated OPERABLE with alarm setpoints per Table 3.4.3.2-2 by performance of a:

a. CHANNEL FUNCTIONAL TEST at least once per 31 days, and

b. CHANNEL CALIBRATION at least once per 18 months.

*Not a means of quantifying leakage.

TABLE 3.4.3.2-1

REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES

	VALVE NUMBER	VALVE DESCRIPTION
1.	RHR System	
	E11-F015A	LPCI Loop A Injection Isolation Valve
	E11-F015B	LPCI Loop B Injection Isolation Valve
	E11-F050A	LPCI Loop A Injection Line Testable Check Valve
	E11-F050B	LPCI Loop B Injection Line Testable Check Valve
	E11-F023	RPV Head Spray Outboard Isolation Valve
	E11-F022	RPV Head Spray Inboard Isolation Valve
	E11-F008	Shutdown Cooling RPV Suction Outboard Isolation Valve
	E11-F009	Shutdown Cooling RPV Suction Inboard Isolation Valve
	E11-F608	Shutdown Cooling Suction Isolation Valve
2.	Core Spray System	
	E21-F005A	Loop A Inboard Isolation Valve
	E21-F005B	Loop B Inboard Isolation Valve
	E21-F006A	Loop A Containment Check Valve
	E21-F006B	Loop B Containment Check Valve
3.	High Pressure Coolant Injection System	
	E41-F007	Pump Discharge Outboard Isolation Valve
	E41-F006	Pump Discharge Inboard Isolation Valve
4.	Reactor Core Isolation Cooling System	
	E51-F012	Pump Discharge Isolation Valve
	E51-F013	Pump Discharge to Feedwater Header Isolation Valve

TABLE 3.4.3.2-2

REACTOR COOLANT SYSTEM INTERFACE VALVES

LEAKAGE PRESSURE MONITORS

VALVE NUMBER	SYSTEM	ALARM SETPOINT (psig)
E11-F015A & B, E11-F022, F023, E11-F050A & B	RHR LPCI	$\leq$ 449
E11-F008, F009, F608	RHR Shutdown Cooling	$\leq$ 135
E21-F005A & B, E21-F006A & B	Core Spray	$\leq$ 452
E41-F006, F007	HPCI	$\leq$ 71
E51-F012, F013	RCIC	$\leq$ 71

3/4.4.1 RECIRCULATION SYSTEM

Operation with one reactor core coolant recirculation loop inoperable is prohibited until an evaluation of the performance of the ECCS during one loop operation has been performed, evaluated, and determined to be acceptable.

An inoperable jet pump is not, in itself, a sufficient reason to declare a recirculation loop inoperable, but it does, in case of a design-basis-accident, increase the blowdown area and reduce the capability of reflooding the core; thus, the requirement for shutdown of the facility with a jet pump inoperable. Jet pump failure can be detected by monitoring jet pump performance on a prescribed schedule for significant degradation.

Recirculation pump speed mismatch limits are in compliance with the ECCS LOCA analysis design criteria.

In order to prevent undue stress on the vessel nozzles and bottom head region, the recirculation loop temperatures shall be within 50°F of each other prior to startup of an idle loop. The loop temperature must also be within 50°F of the reactor pressure vessel coolant temperature to prevent thermal shock to the recirculation pump and recirculation nozzles. Since the coolant in the bottom of the vessel is at a lower temperature than the coolant in the upper regions of the core, undue stress on the vessel would result if the temperature difference was greater than 145°F.

3/4.4.2 SAFETY/RELIEF VALVES

The safety valve function of the safety/relief valves operate to prevent the reactor coolant system from being pressurized above the Safety Limit of 1325 psig in accordance with the ASME Code. A total of 11 OPERABLE safety/relief valves is required to limit reactor pressure to within ASME III allowable values for the worst case upset transient.

Demonstration of the safety/relief valve lift settings will occur only during shutdown and will be performed in accordance with the provisions of Specification 4.0.5.

The low-low set system ensures that a potentially high thrust load (designated as load case C.3.3) on the SRV discharge lines is eliminated during subsequent actuations. This is achieved by automatically lowering the closing setpoint of two valves and lowering the opening setpoint of two valves following the initial opening. Sufficient redundancy is provided for the low-low set system such that failure of any one valve to open or close at its reduced setpoint does not violate the design basis.

3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems", May 1973.

3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shutdown to allow further investigation and corrective action. Service sensitive reactor coolant system Type 304 and 316 austenitic stainless steel piping; i.e., those that are subject to high stress or that contain relatively stagnant, intermittent, or low flow fluids, requires additional surveillance and leakage limits.

The purpose of the RCS interface valves leakage pressure monitors (LPMs) is to provide assurance of the integrity of the Reactor Coolant System pressure isolation valves which form a high/low pressure boundary. The LPM is designed to alarm on increasing pressure on the low pressure side of the high/low pressure interface to provide indication to the operator of abnormal interface valve leakage.

The Surveillance Requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

CHEMISTRY (Continued)

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 14 TO FACILITY OPERATING LICENSE NO. NPF-43

DETROIT EDISON COMPANY

WOLVERINE POWER SUPPLY COOPERATIVE, INCORPORATED

FERMI-2

DOCKET NO. 50-341

1.0 INTRODUCTION AND BACKGROUND

By letter dated January 6, 1988, Detroit Edison Company (the licensee) proposed revisions to Table 3.4.3.2-2 of the Fermi-2 Technical Specifications (TSs) to correct alarm setpoints for the reactor coolant system (RCS) interface valves leakage pressure monitors (LPMs).

The RCS interface valve LPMs are designed to alarm on increasing pressure on the low pressure side of the high/low pressure interface to provide indication to the plant operators in the control room of abnormal RCS interface leakage. Should abnormal interface valve leakage occur, the low pressure portion of the system in which the leakage is occurring would begin to increase in pressure due to the leakage from the RCS. The pressure would increase to the setpoint for the system relief valve installed on the low pressure piping. The relief valve would lift to relieve the pressure buildup once that setpoint is reached.

In the course of upgrading Instrumentation and Control (I&C) system surveillance procedures, under a program instituted by the licensee to verify the accuracy of those procedures in reflecting and implementing surveillances required by the Fermi-2 TSs, the licensee determined that the LPM alarm setpoints specified in Table 3.4.3.2-2 of the TSs were nonconservatively high, such that LPM alarm actuations to alert plant operators of increasing pressure on the low side of the high/low pressure interface valves would not be timely. In the case of the Residual Heat Removal-Low Pressure Coolant Injection (RHR-LPCI) system and the RHR Shutdown Cooling System, LPM alarm setpoints specified in Table 3.4.3.2-2 of the TSs are such that the LPM alarms may not occur prior to system relief valve actuation. Accordingly, by letter NRC-88-0001 dated January 6, 1988, the licensee proposed an emergency TS change to reset the alarm setpoints for the RCS interface valve LPMs. Since emergency TS action was needed by the licensee for plant restart, and since the revised setpoint values would provide more conservative and timely indication of RCS leakage, the licensee was granted a temporary waiver of compliance until January 12, 1988, while the NRC completed processing the emergency TS amendment.

2.0 EVALUATION

As stated in the licensee's proposed TS change, the LPM alarm setpoints in Table 3.4.3.2-2 of the TSs are currently listed as nominal values with a specific tolerance. Since completion of the LPM function depends solely upon the alarm setpoint being less that the lowest pressure relief valve setpoint, the licensee proposes to specify LPM alarm setpoints only as an upper limit to allow flexibility in the system design, while also ensuring that the LPMs alarm before system pressure reaches the relief valve lift setpoint. The existing LPM alarm setpoint for the RHR-LPCI system is 482 ± 12 psig. The relief valve lift pressure value on the RHR-LPCI low pressure piping is set at 464 ± 14 psig. The proposed upper limit for the RHR-LPCI would be ≦ 449 psig to ensure the LPM alarms prior to relief valve actuation which is based on the lowest relief valve lift pressure being 450 psig. Similarly, the existing RHR Shutdown Cooling System LPM alarm setpoint is 138 ± 3 psig, and the corresponding relief valve lift pressure is set at 140 ± 4.2 psig. The proposed upper limit for the RHR Shutdown Cooling System LPM alarm would be ≦ 135 psig, which is based on the lowest relief valve lift pressure being 135.8 psig.

For the remaining interface valves in Table 3.4.3.2-2, the existing LPM alarm setpoints were also found to be below the corresponding relief valve lift pressure setpoint. The proposed equivalent upper limits for those system LPM alarms would be changed as follows:

SYSTEM	EXISTING LPM ALARM SETPOINT (PSIG)	SYSTEM PRESSURE RELIEF VALVE (PSIG)	PROPOSED UPPER LIMIT VALUE (PSIG)
Core Spray	440 ± 12	500 ± 15	≦ 452
HPCI	70 ± 1	100 ± 3	≦ 71
RCIC	70 ± 1	100 ± 3	≦ 71

We have reviewed the changes proposed by the licensee and agree that the specification of an upper limit LPM alarm setpoint in lieu of nominal values plus tolerance in TS Table 3.4.3.2-2 is preferable and will better ensure that the LPM alarms precede relief valve actuations as was intended in the design for RCS leakage monitoring. Therefore, we find the proposed TS changes to be acceptable.

The TS Bases Section 3/4.4.3.2 (page B 3/4 4-2) has been expanded to describe the purpose and intent of the LPM design by incorporating a new paragraph using the wording contained in the "Background/Discussion" section of the attachment to the licensee's January 6, 1988, in lieu of the new sentence suggested by the licensee. This change is agreeable to the licensee.

3.0 EMERGENCY CIRCUMSTANCES

In its January 6, 1988 letter, the licensee requested that this amendment be treated as an emergency because insufficient time exists for the Commission's usual 30-day notice without extending the current outage.

With incorrect LPM alarm setpoints, these LPMs are not properly operable. TS 3.0.4 requires that the LPMs must be operable to permit plant startup.

In accordance with 10 CFR 50.91(a)(5), the licensee has explained that it could not have avoided this emergency situation because the LPM alarm setpoint errors were not discovered until recently during the licensee's I&C validation program instituted to assure that surveillance procedures are consistent with the plant design and that they correctly implement TS requirements.

The Commission has determined that emergency circumstances exist in that swift action is necessary to avoid a delay in startup not related to safety.

In connection with a request indicating an emergency, the Commission expects its licensees to apply for license amendments in a timely fashion. However, with this consideration in mind, it has been determined that a circumstance has arisen where the licensee and the Commission must act quickly, and the licensee has made a good effort to make a timely application.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility, in accordance with the 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 an accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

The Commission has determined that the proposed TS change: (1) does not involve a significant increase in the probability or consequences of an accident previously evaluated as the correction of the LPM alarm setpoints will only ensure that the LPMs provide warning to plant operators of high/low interface valve leakage as intended by the RCS design; (2) does not create the possibility of a new or different kind of accident from any accident previously evaluated since the LPMs are passive indications and thus the change does not add any new equipment, does not affect the operation of any of the systems involved, or alter any of the design assumptions previously evaluated; and (3) does not involve a significant reduction in a margin of safety since, as stated in (1) and (2), the change will result in the specification of more conservative LPM alarm setpoints which will ensure more timely indication of RCS leakages, thereby enhancing the margin of safety.

Therefore, based on these considerations and the three criteria given above, the Commission has made a final determination that the amendment request involves no significant hazards consideration.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, efforts were made to contact the Michigan representative. The state representative was contacted and had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes to requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. We have 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 made a final no significant hazards consideration finding with respect to this amendment. Accordingly, this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

7.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Kenneth Dempsey, NRR
John J. Stefano, NRR

Dated: January 12, 1988