

March 7, 2000

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

SUBJECT: FERMI 2 - NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING (TAC NO. MA7233)

Dear Mr. Gipson:

Enclosed is a copy of the subject notice that relates to your application for amendment, dated November 19, 1999, to revise the Fermi 2 Technical Specifications by changing (1) the design features description of the fuel storage equipment and configuration to allow an increase in the spent fuel pool storage capacity and (2) the description of the high-density spent fuel racks program to clarify that the surveillance program is applicable only to racks containing Boraflex as a neutron absorber.

This notice has been forwarded to the Office of the Federal Register for publication.

Sincerely,

/RA/

Andrew J. Kugler, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-341

Enclosure: Notice

cc w/encl: See next page

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Fermi 2

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November 1999

UNITED STATES NUCLEAR REGULATORY COMMISSION

DETROIT EDISON COMPANY

FERMI 2

DOCKET NO. 50-341

NOTICE OF CONSIDERATION OF ISSUANCE OF AMENDMENT TO
FACILITY OPERATING LICENSE, PROPOSED NO SIGNIFICANT HAZARDS
CONSIDERATION DETERMINATION, AND OPPORTUNITY FOR A HEARING

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-43, issued to the Detroit Edison Company (the licensee), for operation of Fermi 2, located in Monroe County, Michigan.

The proposed amendment would revise the Technical Specifications by changing (1) the design features description of the fuel storage equipment and configuration to allow an increase in the spent fuel pool (SFP) storage capacity and (2) the description of the high-density spent fuel racks program to clarify that the surveillance program is applicable only to racks containing Boraflex as a neutron absorber.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility 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. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The following previously postulated accident scenarios are considered:

- a. A spent fuel assembly drop in the SFP
- b. Loss of SFP cooling flow
- c. A seismic event
- d. Misplaced fuel assembly

The probability that any of the accidents in the above list can occur is not significantly increased by the modification itself. The probabilities of a seismic event or loss of SFP cooling flow are not influenced by the proposed changes. The probabilities of accidental fuel assembly drops or misplacement of a fuel assembly are primarily influenced by the methods used to lift and move these loads. The method of handling loads during normal plant operations is not changed, since the same equipment (i.e., Refuel Bridge) and procedures will be used. Since the methods used to move loads during normal operations remain the same as those used previously, there is no significant increase in the probability of an accident.

During rack removal and installation, all work in the pool area will be controlled and performed in strict accordance with specific written procedures. Any movement of fuel assemblies required to support the modification (e.g., removal and installation of racks) will be performed in the same manner as during normal refueling operations. Spent Fuel shipping cask movements will not be performed during the modification period.

Accordingly, the proposed modification does not involve a significant increase in the probability of an accident previously evaluated.

The consequences of the previously postulated scenarios for an accidental drop of a fuel assembly in the SFP have been re-evaluated for the proposed change. The results show that the postulated accident of a fuel assembly striking the top of the storage racks will not distort the racks sufficiently to impair their functionality. The minimum subcriticality margin, k_{eff} less than or equal to 0.95, will be maintained. The structural damage to the Reactor Building, pool liner, and fuel assembly resulting from a fuel assembly drop striking the pool floor or another assembly located within the racks is primarily dependent on the mass of the falling object and the drop height. Since these two parameters are not changed by the proposed

modification, the structural damage to these items remains unchanged. The radiological dose at the exclusion area boundary will not be increased due to the changes. Thus, the results of the postulated fuel drop accidents remain acceptable and do not represent a significant increase in consequences from any of the same previously evaluated accidents that have been reviewed and found acceptable by the NRC.

The time to boil represents the onset of loss of pool water inventory and is commonly used as a gage for establishing the comparison of consequences before and after a reracking project. The heat up rate in the SFP is a nearly linear function of the fuel decay heat load. The fuel decay heat load will increase subsequent to the proposed changes because of the increase in the number of fuel assemblies stored in the spent fuel pool. The thermal-hydraulic analysis determined the maximum fuel decay heat loads and the corresponding time to boil conditions subsequent to complete loss of forced cooling. These results show that, in the extremely unlikely event of a complete failure of both the FPCCS [fuel pool cooling and cleanup system] and RHR [residual heat removal] System, there would be at least 4.20 hours available for corrective actions. The maximum water boiloff rate is less than 91 gpm. This is less than the normal makeup capacity of 100 gpm available from the condensate storage tanks, and additional sources of makeup are available. It has been determined that this duration provides sufficient time for the operators to provide alternate means of makeup (i.e., fire hoses) before the onset of pool boiling. Therefore, the proposed change represents no increase in the consequences of loss of pool cooling.

The consequences of a design basis seismic event are not increased. The consequences of this accident are evaluated on the basis of subsequent fuel damage or compromise of the fuel storage or building configurations leading to radiological or criticality concerns. The racks are analyzed in their new configuration and found safe during seismic motion. Fuel has been determined to remain intact and the storage racks maintain the fuel and fixed poison configurations subsequent to a seismic event. The structural capability of the pool and liner will not be exceeded under the appropriate combinations of dead weight, thermal, and seismic loads. The Reactor Building structure will remain intact during a seismic event and will continue to adequately support and protect the fuel racks, storage array, and pool moderator/coolant. Thus, the consequences of a seismic event are not increased.

A fuel misplacement accident represents a fuel assembly inadvertently lowered or dropped outside of and adjacent to a storage rack. The consequence of a fuel misplacement accident has been analyzed for the worst possible storage configuration subsequent to the proposed modification, and it has been shown that the consequences remain acceptable with respect to the neutron multiplication factor staying below 0.95 (i.e. the same acceptance criteria as used for normal conditions). Therefore, there is no increase in consequences.

Therefore, it is concluded that the proposed changes do not significantly increase the probability or consequences of any accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any previously evaluated.

Load drops were determined to be events that might represent a new or different kind of accident. The new loads that will be required during or subsequent to installation of the new racks include the rack modules, the overhead platforms, and the pool gates. Racks will not be allowed to travel over any racks containing fuel assemblies, thus a rack drop onto fuel is precluded. A construction accident of a rack dropping onto the pool floor liner is not a postulated event due to the defense-in-depth approach to be taken, as discussed in detail within Section 10.2 of the attached Licensing Report (Enclosure 4 [to the November 19, 1999, application]). A new temporary hoist and rack lift rig will be introduced to lift and suspend the racks from the bridge of the Reactor Crane. These temporary lift items are designed in accordance with the requirements of NUREG 0612 and ANSI N14.6. Nevertheless, the analysis of a rack dropping to the liner has been performed and shown to be acceptable. The integrity of the liner will be maintained and no loss of pool coolant would occur subsequent to a rack dropping to the liner. Since fuel integrity is maintained and significant loss of coolant does not occur, the drop of a rack is not considered a new type of accident.

A drop of a pool gate is also an extremely unlikely event. The new storage racks will not be located directly beneath the gates. However, the drop of a gate, weighing approximately 9500 pounds, onto racks containing irradiated fuel assemblies, and the drop of a gate onto the pool liner have been analyzed. The analysis performed for the drop of a pool gate onto fuel demonstrates that the number of fuel rods damaged (81) remains below the Fermi 2 fuel handling accident design basis (of 140 rods). The analysis performed for the drop of a pool gate onto the liner demonstrates that the liner would be locally ruptured. However, the underlying concrete slab remains intact and possible leakage would be confined to the leak chase system, which is monitored and controllable. The kinetic energy associated with the drop of the heaviest (1460 pound) overhead platform is enveloped by the kinetic energy associated with the gate drop. Therefore, the potential structural damage to fuel and the liner would be bounded by the results for the gate. Since the resulting fuel damage does not exceed the previously analyzed design basis condition and significant loss of coolant would not occur, the drops of a gate or an overhead platform are not considered a new type of accident.

The additional heat load resulting from additional storage of spent fuel has been evaluated for the possibility of creating a new or different kind of accident. The existing Fermi 2 SFP cooling system, has been shown by analysis, to be capable of removing the decay heat generated by the additional spent fuel assemblies. The pool coolant will not be significantly affected. Thus, the increased heat load does not create the possibility a new or different kind of accident.

No unproven technology has been utilized in the design, analysis or in the proposed installation methodology. The basic technology for the Fermi 2 spent fuel pool capacity increase is consistent with other license amendments (over 80) approved by the USNRC. This change has been evaluated in accordance with the

USNRC position paper "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications,[" dated] April 14, 1978 and Addition dated January 18, 1979.

The proposed change does not alter the operating requirements of the plant or of the equipment credited in the mitigation of the design basis accidents. The proposed change does not affect the parameters required for safe fuel storage. Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Involve a significant reduction in the margin of safety.

The function of the SFP is to store the fuel assemblies in a subcritical and coolable configuration through all environmental and abnormal loadings, such as an earthquake or fuel assembly drop. The new rack design must meet all applicable requirements for safe storage and be functionally compatible with the SFP.

Detroit Edison has addressed the safety issues related to the expanded pool storage capacity in the following areas:

1. Material, mechanical and structural considerations
2. Nuclear criticality
3. Thermal-hydraulic and pool cooling

The mechanical, material, and structural designs of the new racks are reviewed in accordance with the applicable provisions of the USNRC position paper "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications,[" dated] April 14, 1978 and Addition dated January 18, 1979. The rack materials used are compatible with the spent fuel assemblies and the SFP environment. The design of the new racks preserves the proper margin of safety during abnormal loads such as a dropped assembly and tensile loads from a stuck assembly. It has been shown that such loads will not invalidate the mechanical design and material selection to safely store fuel in a coolable and subcritical configuration.

The methodology used in the criticality analysis of the expanded SFP storage capacity meets the appropriate NRC requirements and the ANSI standards (GDC 62, NUREG-0800, Section 9.1.2, the OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications, Reg. Guide 1.13, and ANSI ANS 8.17). The margin of safety for subcriticality is maintained by having the neutron multiplication factor equal to, or less than, 0.95, including uncertainties, under all accident conditions. This criterion is the same as that used previously to establish criticality safety evaluation acceptance and remains satisfied for all analyzed accidents. Therefore, the accepted margin of safety remains the same.

The thermal-hydraulic and cooling evaluation of the pool demonstrated that the pool can be maintained below the specified thermal limits under the conditions of the maximum heat load and during all credible accident sequences and seismic events. The bulk pool temperature will not exceed 150°F during any conditions when forced cooling is available. The increase from the current maximum normal SFP bulk temperature of 125°F is not significant, because the existing racks and cooling system were previously evaluated for the 150°F condition, as stated in UFSAR [Updated Final Safety Analysis Report] sections 9.1.2.2.2 and 9.1.3.1, respectively. The maximum local water temperature in the hottest rack cell will remain below the boiling point. The fuel will not undergo any significant heat up after an accidental drop of a fuel assembly on top of the rack blocking the flow path. The time of 4.20 hours for the onset of pool boiling, subsequent to total loss of forced cooling allows sufficient time for the operators to intervene and line up alternate cooling paths and/or the means of inventory make-up before the onset of pool boiling.

Thus, it is concluded that the changes do not involve a significant reduction in the margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days of the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the FEDERAL REGISTER a

notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this FEDERAL REGISTER notice. Written comments may also be delivered to Room 6D59, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By April 12, 2000, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's "Rules of Practice for Domestic Licensing Proceedings" in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (<http://www.nrc.gov>). If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven,

would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

The Commission hereby provides notice that this is a proceeding on an application for a license amendment falling within the scope of Section 134 of the Nuclear Waste Policy Act of 1982 (NWPA), 42 U.S.C. 10154. Under Section 134 of the NWPA, the Commission, at the request of any party to the proceeding, must use hybrid hearing procedures with respect to “any matter which the Commission determines to be in controversy among the parties.”

The hybrid procedures in Section 134 provide for oral argument on matters in controversy, preceded by discovery under the Commission’s rules and the designation, following argument of only those factual issues that involve a genuine and substantial dispute, together with any remaining questions of law, to be resolved in an adjudicatory hearing. Actual adjudicatory hearings are to be held on only those issues found to meet the criteria of Section 134 and set for hearing after oral argument.

The Commission’s rules implementing Section 134 of the NWPA are found in 10 CFR Part 2, Subpart K, “Hybrid Hearing Procedures for Expansion of Spent Fuel Storage Capacity at Civilian Nuclear Power Reactors” (published at 50 FR 41662 dated October 15, 1985). Under those rules, any party to the proceeding may invoke the hybrid hearing procedures by filing with the presiding officer a written request for oral argument under 10 CFR 2.1109. To be timely, the request must be filed within ten (10) days of an order granting a request for hearing or petition to intervene. The presiding officer must grant a timely request for oral argument. The presiding officer may grant an untimely request for oral

argument only upon a showing of good cause by the requesting party for the failure to file on time and after providing the other parties an opportunity to respond to the untimely request. If the presiding officer grants a request for oral argument, any hearing held on the application must be conducted in accordance with the hybrid hearing procedures. In essence, those procedures limit the time available for discovery and require that an oral argument be held to determine whether any contentions must be resolved in an adjudicatory hearing. If no party to the proceeding timely requests oral argument, and if all untimely requests for oral argument are denied, then the usual procedures in 10 CFR Part 2, Subpart G, apply.

For further details with respect to this action, see the application for amendment dated November 19, 1999, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and accessible electronically through the ADAMS Public Electronic Reading Room link at the NRC Web site (<http://www.nrc.gov>).

Dated at Rockville, Maryland, this 7th day of March 2000.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Andrew J. Kugler, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation