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

NOV 21 1978

Docket No. 50-341

Dr. Wayne H. Jens
Assistant Vice President
Engineering & Construction
The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Dear Dr. Jens:

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION IN FERMI 2 FSAR

As a result of our continuing review of the Final Safety Analysis (FSAR) for the Enrico Fermi Atomic Power Plant Unit 2, we have developed the enclosed requests for additional information.

Please amend your FSAR to comply with the requirements listed in the enclosure. Our review schedule is based on the assumption that the additional information will be available for our review by January 16, 1979. If you cannot meet this date, please inform us within 7 days after receipt of this letter so that we may revise our scheduling.

Sincerely,

John F. Stolz

John F. Stolz, Chief
Light Water Reactors Branch No. 1
Division of Project Management

Enclosure:
Requests for Additional
Information

cc w/enclosure:
See next page

(A)

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION

ENRICO FERMI ATOMIC POWER PLANT UNIT 2

DOCKET NO. 50-341

Requests by the following branch in NRC are included in this enclosure. Requests and pages are numbered sequentially with respect to previously transmitted requests.

Branch	Page No.
Containment Systems Branch	042-10 through 042-16

ENCLOSURE

042.0 CONTAINMENT SYSTEMS BRANCH

042.12 Provide the following information regarding the annulus pressurization analysis for the sacrificial shield:

a) Justification for the initial temperature assumed for the annulus air space.

b) Graphic presentations of the break node transient pressure response and the vessel support transient moment response to postulated breaks in the recirculation outlet line (28-in), recirculation inlet line (12-in) and the feedwater line.

c) The basis and its justification for the design differential pressure for both the shield wall and the shield doors located at both the recirculation line and feedwater line. The shield wall design differential pressure of 50 psid was given on page 6.2-30b Amendment 1 - November 1975. However, the peak calculated pressure difference for the feedwater line break was shown to exceed the design pressure in the NUS-3129, Amendment 12.

d) The projected areas of each node around the shield wall that were used in calculating the force and moment acting on the vessel and its support.

042.13 Standard Review Plan 6.2.5, Combustible Gas Control in Containment, requires that the results of environmental qualfication tests performed on the hydrogen recombiners be reviewed to determine the functional capability and operability of the recombiner unit in the accident environment. Those tests should be conducted on the full scale production unit or an identical unit that is used for the combustible gas control system. We understand that Fermi-2 will use AI thermal recombiners that was previously found acceptable by the Staff for the Hatch-2 application. Therefore, identify the differences, if any, regarding the recombiner design and its application between the Hatch-2 and Fermi-2 hydrogen recombiner. Provide and justify the basis for each difference.

042.14 It appears that the recombiner system has a piping system connecting the drywell directly to the wetwell air space. Since this arrangement could allow a direct steam bypass path of the pool, provide the following:

a) The procedures and/or interlocks which would prevent inadvertent opening of the line; and

b) A discussion of the steam bypass potential during the heat up phase as well as the operation phase of the recombiner.

042.15 The response (a letter dated 10/20/77) to our request for additional information regarding the suppression pool temperature limit (staff letter to applicant dated 9/14/77) mentioned that the final design and analysis would be provided by August 1, 1978. We have not received this additional information. Specify the schedule for providing the information requested.

042.16 It appears that the containment isolation signal for penetrations X-205A and X-205B given in Table 6.2.2 of the FSAR is inappropriate. Therefore, provide the basis to actuate these isolation valves.

042.17 For those containment isolation systems that rely on remote manual actuation, we require that leakage detection capability be provided, or those valves be administratively closed. (Standard Review Plan 6.2.4, "Containment Isolation Systems," states that provisions should be made to allow the operator in the main control room to know when to isolate systems that require remote-manual isolation.) Please characterize the Fermi-2 isolation systems in terms of the above requirement.

042.18 Appendix J to 10 CFR 50 requires a demonstration of leak tight integrity for the containment isolation systems. Therefore, those valves listed in Table 6.2.2 of FSAR with Note 9 should be locally leak tested (Type C). Please discuss your plans in terms of this provision of Appendix J.

042.19 The test pressure for the valves identified in Table 6.2.2 will not be applied in the same direction as the pressure existing when the valves are required to perform their safety functions. (Reference: Appendix J to 10 CFR 50). Provide a demonstration that the measured valve leakage rate will be equivalent to or conservative with respect to that which would occur if the test pressure were applied in the direction that would exist when the valve is required to perform its safety function.

042.20 The statement is made in Table 6.2.2 that instrumentation lines are designed to the provisions of Regulatory Guide 1.11. Provide the analysis performed which demonstrates that in the event of a rupture of any component in the instrument lines, outside the primary containment, the integrity and functional performance of secondary containment and its associated filtration systems are maintained.

042.21 Identify all openings provided for gaining access to the secondary containment, and discuss the administrative controls that will be exercised over them. Discuss the instrumentation to be provided to monitor the status of the openings and whether or not position indicators and alarms will have readout and alarm capability in the main control room.

042.22 Discuss the design capability of the door seals to be leak tested at a pressure of Pa; i.e., the peak calculated containment internal pressure. If it will be necessary to exert a force on the doors to prevent them from being unseated during leak testing, describe the provisions for doing this and discuss whether or not the mechanism can be operated from within the air lock. Also, discuss how the force exerted on the door will be monitored.

042.23 Closed systems outside containment having a post accident function, become extensions of the containment boundary following a LOCA. Certain of these systems may also be identified as one of the redundant containment isolation barriers. Since these systems may circulate contaminated water or the containment atmosphere, system components which may leak are relied on to provide containment integrity. Therefore, discuss your plans for specifying a leakage limit for each system that becomes an extension of the containment boundary following a LOCA, and leak testing the system either hydrostatically or pneumatically. Also discuss how the leakage will be included in the radiological assessment of the site.

042.24 Identify those fluid lines penetrating the containment which will be vented and drained to ensure exposure of the system containment isolation valves to the containment atmosphere and the full differential

pressure during the containment integrated leakage rate (Type A) test. Discuss the design provisions that will permit this to be done. Those systems that will remain fluid filled for Type A test should be identified and justification provided.

042.25 Provide the following additional information related to potential bypass leakage paths:

a) For each air or water seal other than the pool, perform an analysis that will demonstrate that a sufficient inventory of the fluid will be available to maintain the seal for 30 days, and describe the testing program and proposed entries for the Technical Specifications that will verify the assumptions used in the analysis. Provide the basis for the valve fluid leakage used in the analysis.

b) For each of these paths where water seals eliminate the potential for bypass leakage, provide a sketch to show the location of the water seal relative to the system isolation valves.

c) Table 6.2.2 indicates that the combustible gas control system is eliminated as a potential bypass leakage path. Show how this system meets each of the provisions of Branch Technical Position, CSB 6-3, Section 9a-f, for a closed system.

042.26 Section 3.11 of FSAR states that Class IE equipment located inside the containment building (motors for four drywell cooler fans) can withstand a temperature of 300°F saturated steam environment for three to four hours. Provide further justification that those pieces of Class IE equipment can still be qualified at an accident environmental condition of 100% steam and temperature exceeding 300°F for three hours. Also, discuss the discrepancy of the qualification test conditions described within Section 3.11 and the Table 3.11-1 of FSAR.