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

NOV 2 3 1979

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 Report (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 4, 1980. 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 page 2

1543 008

Dr. Wayne H. Jens

NOV 2 3 1979

cc: Eugene B. Thomas, Jr., Esq.
LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue., N. W.
Washington, D. C. 20036

Peter A. Marquardt, Esq.
Co-Counsel
The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. William J. Fahrner
Project Manager - Fermi 2
The Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. Larry E. Schuerman
Licensing Engineer - Fermi 2
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Charles Bechhoefer, Esq., Chairman
Atomic Safety & Licensing Board
Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. David R. Schink
Department of Oceanography
Texas A & M University
College Station, Texas 77840

Mr. Frederick J. Shon
Atomic Safety & Licensing Board
Panel
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Jeffrey A. Alson
772 Green Street, Building 4
Ypsilanti, Michigan 48197

David E. Howell, Esq.
21916 John R
Hazel Park, Michigan 48030

Mrs. Martha Drake
230 Fairview
Petoskey, Michigan 49770

ENCLOSURE

REQUESTS FOR ADDITIONAL INFORMATION

ENRICO FERMI ATOMIC POWER PLANT UNIT 2

DOCKET NO. 50-341

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

321.0 HYDROLOGY-METEOROLOGY BRANCH - HYDROLOGIC ENGINEERING SECTION

321.5 The breakwater (also called a shore barrier) serves a safety-related function in attenuating wind waves and therefore should be included in the Q-list (FSAR Table 3.2-1). The quality assurance program for the breakwater should assure that it is designed and built in accordance with high quality standards and that it remains functional throughout the plant life. Provide a description of the following elements of the quality assurance program for the breakwater:

1. A quality assurance program during construction to assure that the breakwater is built as designed and to good engineering standards. Included in this program should be items such as verification of foundation conditions and verification of rock weights by random weighing. Drawings, photographs and cross-sections of the structure during construction and when complete should be included.

2. An initial survey of the breakwater. Survey lines perpendicular to the breakwater should be spaced no greater than 100 feet apart and should extend past the toe of the breakwater. Photographic documentation and visual descriptions of the breakwater condition should also be included.

3. Re-surveys at least annually and after any major storm or when damage to the breakwater is observed.

4. A commitment to repair in a timely manner any damage or degradation identified.

5. Documentation of all of the above. The plant annual reports can be used for items 3 and 4.

130.0 STRUCTURAL ENGINEERING BRANCH

130.5A After reviewing the responses to staff's concerns as contained in item 130.5, the staff has reservations about the adequacy of the method of analysis used in the design of the sacrificial shield due to the following reasons:

a) The role played by the concrete fill is ambiguous; on one hand you stated that the concrete fill only transfers shear and on the other hand you indicate that the concrete will have the capability to hold the studs in place so that the plates to which the studs are welded will not buckle. Note that in order to have the studs functional in such a way, the concrete should have bearing as well as shearing capability.

b) In the design the stiffness of the concrete fill is neglected. However in computing the stiffness of the shield it appears that the thin steel plates on the interior and exterior of the shield wall are considered as one and the stiffness of the columns is smeared into that of the plate. The structure thus idealized is considered as a shell of uniform thickness.

The results of analysis based on such an idealized model are unlikely representative of the actual behavior of the shield structure.

Under the assumption that the stiffness of concrete fill is neglected, and with the stiffness of the columns much greater than that of the steel plates, a rational analysis for such a system should be one in which the steel plates with the concrete fill is considered as one way slab and the columns as beams supporting the slab. Provide an analysis of the sacrificial shield on the basis of such an idealization.

In your information so far provided, there is no mention of the size and the weight of the column. Provide all the pertinent information required for the design of the columns. Indicate if the anchor bolts under the columns are different from those in between the columns.

130.6A Your response to question 1 of Item 130.6 is not satisfactory. The references which you gave in your response are not specific. Provide on each figure in Section 4.1 the specific source of information on which each figure in section 4.1 is established, indicating particularly the source figure number and report number.

In response to question 9 it is indicated that link elements are used to connect the water mass and torus beam element. Since the position of the centroid of the water mass varies with the pool swell and other dynamic loads indicate how this variation is taken into account in your analysis.

In response to question 18 it is indicated that you would finish sample calculations only for areas which we could specify. The staff wants to see sample computations for structures or structural components where the computed stress are near or exceed the allowables, specifically (a) the computed stress intensity of 22 ksi in table 6.2.1-4, (b) the calculated tensile force of 104 kips (c) the computed

stress intensity of 37 ksi and 29.3 ksi in table 6.2.5.1 and (d) the weld stress of 11.3 ksi in table 6.2.5.2. List the contribution of force or stress due to each load in the loading combination.