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MAY 5 1982

Docket No.: 50-341

Mr. Harry Tauber
Engineering & Construction
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Dear Mr. Tauber:

Subject: Errors in BWR Water Level Indication

By memorandum dated February 9, 1982, we transmitted to the Atomic Safety and Licensing Boards for six BWRs, including Fermi 2, the staff's evaluation to date of the subject matter. This evaluation was initiated to investigate errors in indicated water level at Pilgrim 1 during a routine reactor shutdown and depressurization with drywell air temperature at 240°F. Large oscillations of the level instrument were attributed to flashing of water in the level instrument lines when reactor water pressure was decreased below saturation pressure at 240°F. High drywell temperature may result from faulty or inoperable drywell coolers and from high energy line leaks or breaks in the drywell. This evaluation was transmitted to you by copy of the February 9, 1982 transmittal to the ASLB.

Based on its evaluation, the staff has concluded that current emergency operating procedure guidelines (NEDO-24934, January 1981) are not adequate for operators to recognize and cope with unreliable reactor water level indications caused by water flashing in instrument lines under all potential abnormal operating and accident conditions. For example, the guidelines recommend depressurization and refill of the reactor if vessel level cannot be determined. However, the guidelines do not provide an adequate method for operators to recognize false high water level indications. Further, based on an audit of procedures for two operating plants, we find that even those portions of the guidelines which provide acceptable steps for coping with water level errors have not been incorporated into plant procedures.

The staff's recommendations for resolution of this problem are contained in its evaluation that was transmitted to you on February 9, 1982. As a first step in the resolution, staff recommends the performance of plant specific analyses of the susceptibility of reactor vessel water level instrumentation to flashing. The magnitude of the error due to flashing depends on the type of instrument (whether the reference leg is heated or cold) and changes of elevation of the instrument line inside the drywell. Accordingly, please amend your application to provide:

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(1) A description of the Fermi 2 reactor vessel water level instruments, including the types of instruments and instrument line elevation changes inside the drywell.

(2) The results of an analysis of the magnitude and consequences of errors in water level indication for shutdown and depressurization following equipment failures that cause high drywell air temperatures, e.g. after failure of drywell coolers, or high energy line breaks or leaks inside the drywell.

(3) A commitment to revise plant operating procedures within 90 days if the analysis of (2) above indicates it is needed to enable the operator to recognize excessive water level errors and to maintain adequate core cooling.

Our review schedule is based on the assumption that the above information will be available for our review by June 1, 1982. If you wish clarification of the requests or if you cannot meet these dates, please telephone the Licensing Project Manager, L. Kintner, within 7 days after receipt of this letter.

Sincerely,

Original signed by:
Spottswood Burwell

B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing

cc: See next page

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Mr. Harry Tauber
Vice President
Engineering & Construction
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

cc: Mr. Harry H. Voigt, 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
Detroit Edison Company
3331 West Big Beaver Road
Troy, Michigan 48084

David E. Howell, Esq.
3239 Woodward Avenue
Berkley, Michigan 48072

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

Dr. Wayne Jens
Detroit Edison Company
2000 Second Avenue
Detroit, Michigan 48226

Mr. James G. Keppler
Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137