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August 20, 1984
EF2-69694

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

Dear Mr. Keppler:

Reference: (1) Fermi 2
NRC Docket No. 50-341

(2) Letter, D. A. Wells to J. G. Keppler,
February 25, 1984, QA-84-325

Subject: Final Report of 10CFR50.55(e) Item 115
"Possible Impingement of Essential Piping
During Pipe Break"

This is Detroit Edison's final report of Item 115, "Possible Impingement of Essential Piping during Pipe Break". Item 115 was originally reported as a potential deficiency on January 24, 1984, and subsequently documented in Reference (2).

Description of Deficiency

During design reviews, Detroit Edison determined that in this case, although the Fermi 2 plant design basis included appropriate protection for the dynamic effects associated with the postulated rupture of piping inside containment, field design groups had not been supplied with definitive descriptions of the pipe sweep, jet impingement zones, and system protection criteria. The potential existed that field run, small bore piping, instrument lines, and electrical conduit required for safe shutdown were constructed in areas where they could have been subjected to damage from pipe sweep and/or jet impingement from postulated pipe breaks.

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Analysis of Safety Implications

If the potential dynamic effects of high energy pipe breaks are not adequately evaluated, safety related system operation cannot be assured under these conditions. The post installation evaluation indicated that the safe shutdown capability of the plant had not been impaired.

Corrective Action

Detroit Edison Engineering performed an evaluation to assure that the safe shutdown functions had not been impaired. This evaluation included:

- o A review and evaluation of as-built configurations and actual component locations.
- o A conservative definition of the pipe sweep and jet impingement zone for the postulated break locations.
- o Comprehensive field and design drawing survey to identify all mechanical, instrument and electrical components located inside the defined sweep and jet zones.
- o Confirmation of the safe shutdown capability of the plant considering the systems, components and instruments affected by pipe sweep and/or jet impingement, and concurrent assumptions of loss of offsite power and single active component failures.

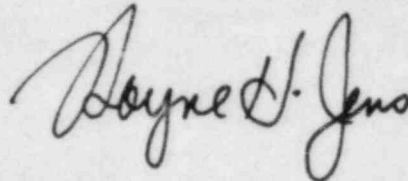
This evaluation determined that no modifications were required to meet safe shutdown requirements.

To prevent recurrence, specification No. 3071-536 was issued. This defines multi-discipline design requirements to ensure that designs properly consider the effects of pipe rupture. The specification includes a definitive description of pipe sweep and jet impingement zones. The specification also identifies the system components and instruments which contribute to safe shutdown for postulated pipe break events. The methods outlined in the specification apply to any future design work inside primary containment.

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This is Detroit Edison's final report on this item. If you have questions concerning this matter, please contact Mr. Lewis P. Bregni, (313) 586-5083.

Sincerely,

A handwritten signature in cursive script, appearing to read "Wayne D. Jeno".

cc: Mr. P. M. Byron
Mr. R. C. DeYoung
Mr. R. C. Knop