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August 21, 1984  
EF2-69695

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,  
December 5, 1983, EF2-66482  
Subject: Final Report of 10CFR50.55(e) Item 105  
"Thermal Separation Criteria Violations"

This is Detroit Edison's final report of Item 105, "Thermal Separation Criteria Violations." This item was originally reported as a potential 10CFR50.55(e) deficiency in November, 1983. Additional information has been provided in Reference (2).

#### Description of Deficiency

Edison Specification 3071-33 requires a minimum separation of 12 inches for conduits and trays crossing a single insulated process steam pipe. Crossing multiple insulated steam pipes or running parallel to a single insulated steam pipe is to be avoided whenever possible; however, if not avoidable a four foot separation is required. Contrary to specification requirements, the required separation was not maintained in some cases.

#### Analysis of Safety Implications

In situations where steam pipes are too close to electrical conduits and trays, high temperatures can result in the immediate vicinity of the cable. These high temperatures can affect the electrical characteristics of the cable and may result in premature aging of cable insulation.

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If left uncorrected, this situation could result in failure of safety related cable, thereby reducing the level of protection provided by the safety systems. The potential effects of this deficiency are mitigated by redundancy, separation, and proximity criteria designed into the safety related systems.

#### Corrective Action

Quality Control initially identified thermal separation criteria violations in the main steam tunnel.

Edison Engineering Research Department completed an engineering study on heat transfer from steam pipes to electrical conduits and trays for specific applications where the specification could not be met. The study determined the relationship between pipe surface temperature, pipe size and radial thermal effects at various distances from the pipe. From this data, acceptance criteria for steam pipe and cable separation was established.

Quality Control inspected the steam tunnel electrical equipment and identified instances of thermal separation criteria violations in DDR E-12051. Thermal separation was evaluated in accordance with the criteria and corrective actions documented in the DDR Disposition.

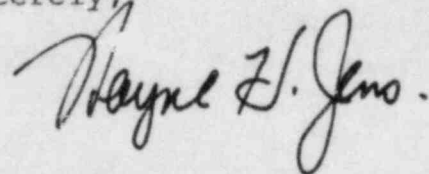
Based on the results of the inspection of the main steam tunnel, Edison determined that the potential for similar deficiencies existed in the Drywell. Edison initiated a walkdown of the Drywell using special procedure, Number 7.39, "Inspection Requirements for Drywell Thermal Separation Between Electrical Components and Hot Mechanical Components." Based on Edison Engineering Research Department criteria, Edison Engineering initiated DCN 10060 to specification 3071-33 to establish the inspection criteria to be used in the walkdown. The results of the walkdown were documented in DDR's 13079, 13080 and 13083.

All DDR's identified in this report have been dispositioned and required modifications initiated in accordance with the Detroit Edison Quality Assurance Program.

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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 dark ink, appearing to read "Wayne H. Jones". The signature is written in a cursive style with a large, stylized "W" and "J".

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