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Docket Number 50-346

License Number NPF-3

Serial Number 2661

May 25, 2000

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: Request for Additional Information Pertaining to Individual Plant Examination
for External Events (TAC No. M83613)

Ladies and Gentlemen:

The attachment to this letter provides First Energy Nuclear Operating Company's (FENOC) final response for the Davis-Besse Nuclear Power Station, Unit 1, to Nuclear Regulatory Commission Supplemental Request for Additional Information Pertaining to Individual Plant Examination for External Events (RAI) dated August 30, 1999 (Log Number 5539). By letter dated October 29, 1999, (Serial Letter Number 2621) FENOC provided an initial response to the subject RAI and committed to:

- 1) Perform a high-confidence low probability of failure capacity evaluation on the Borated Water Storage Tank;
- 2) Review the anchorage calculations for the IPEEE equipment to determine the interaction ratio;
- 3) Perform a walkdown of the masonry walls to determine if there exists a credible seismic interaction hazard and;
- 4) Provide the results of these evaluations to the NRC by May 31, 2000.

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Should you have any questions or require any additional information, please contact
Mr. James L. Freels, Manager - Regulatory Affairs, at (419) 321-8466.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. L. Freels". The signature is written in a cursive style with a large initial "J" and "L".

DHL/s

Attachments

cc: J. E. Dyer, Regional Administrator, NRC Region III
S. P. Sands, NRC/NRR Project Manager
K. S. Zellers, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
FOR THE IPEEE PROGRAM
DAVIS-BESSE NUCLEAR POWER STATION**

- 1) Perform a high-confidence low probability of failure (HCLPF) capacity evaluation on the Borated Water Storage Tank:

The HCLPF evaluation for the Borated Water Storage Tank (BWST) was performed by EQE International in accordance with EPRI NP-6041 and NRC NUREG-1407. The HCLPF values for the individual components of the BWST are:

| | |
|---------------------------------|-------|
| Overturning Moment | 0.64g |
| Sliding | 0.60g |
| Fluid Pressure | 1.62g |
| Roof Impact from Fluid sloshing | 0.28g |

The lowest HCLPF value is for potential roof damage due to fluid sloshing. Roof damage is unlikely to impair the ability of the tank to contain fluid. Therefore, the HCLPF capacity for the BWST is in excess of 0.3g before the ability of the tank to function is compromised.

- 2) Review the anchorage calculations for the IPEEE equipment to determine the interaction ratio:

A review of the anchorage calculations for all of the equipment on the IPEEE Safe Shutdown Equipment List (SSEL) was performed. Equipment whose anchorage capacity/demand ratio exceeded 2.0 is considered to have a HCLPF exceeding 0.30g. The basis for this is that the peak ground acceleration ratio of the Review Level Earthquake (RLE) to the Safe Shutdown Earthquake (SSE) is 2.0 (0.30g vs 0.15g), and conservatism of the USI A-46 Generic Implementation Procedure (GIP) versus NP-6041 make up the differences in the spectral shape. The equipment whose GIP anchorage capacity/demand ratio is less than 2.0 were then evaluated by EQE International.

Eighty individual pieces of equipment were identified that had an anchorage capacity/demand ratio less than 2.0. The Conservative Deterministic Failure Margin (CDFM) methodology of EPRI NP-6041 was used to analyze the equipment. The IPEEE In-structure Response Spectra are based on the median NUREG/CR-0098 spectral shape anchored to 0.30g. The IPEEE seismic demand was determined by scaling the anchorage demand determined from the USI A-46 program by the ratio of IPEEE spectral acceleration at the equipment frequency to the USI A-46 demand

acceleration. This evaluation concluded that all eighty pieces of equipment had HCLPF values of 0.30g or greater.

With the exception of anchorage, equipment that meets the USI A-46 GIP walkdown requirements also meets the EPRI NP-6041 criteria for a 0.3g screening. Since all of the equipment on the SSEL was walked down in accordance with the USI A-46 GIP requirements, and the evaluation of the highest stressed anchorage revealed HCLPF values greater than 0.3g; it can be concluded that the equipment on the IPEEE SSEL have a HCLPF value of at least 0.3g.

- 3) Perform a walkdown of the masonry walls to determine if there exists a credible seismic interaction hazard.

A walkdown was performed of all of the masonry walls that could interact with the IPEEE SSEL equipment. A total of 41 masonry walls were evaluated. EPRI NP-6041 recommends the most cost-effective method of re-evaluation is to scale the existing analysis. The interaction from the USNRC IE Bulletin 80-11 analysis was used as the basis of this evaluation. This interaction was proportioned by the acceleration at the frequency of interest for the IPEEE response spectra at 6% damping to the SSE response spectra. Of the 41 masonry walls evaluated, 37 had HCLPF values equal to or greater than 0.30g, and 4 had HCLPF values less than 0.30g. Table 1 identifies those 4 masonry walls, the corresponding HCLPF value, and the affected equipment.

Table 1 Masonry Wall Summary

| Masonry Wall No. | HCLPF Value | Affected Equipment | Description of Equipment |
|-------------------------|--------------------|---------------------------|--|
| 2367 | 0.26g | E11D | 480 V Essential MCC |
| 3407 | 0.27g | TE-5443 | Component Cooling Water Room Temp. Element |
| | | TIC-5443 | Component Cooling Water Room Temp. Index Control |
| | | TS-5433 | Component Cooling Water Room Temp. Switch |
| | | TT-5443 | Component Cooling Water Room Temp. Transmitter |
| 4786 | 0.27g | D2N | Essential Distribution Panel "D2N" |
| | | YV4 | 125VDC/a20VAC Inverter Ch4 |
| 6107 | 0.29g | TS-5261 | Control Room Emergency Vent Fan Temperature Switch |

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COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station in this document. Any other actions discussed in the submittal represent intended or planned actions by Davis-Besse. They are described only as information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8466) at Davis-Besse of any questions regarding this document or associated regulatory commitments.

| <u>COMMITMENTS</u> | <u>DUE DATE</u> |
|--------------------|-----------------|
| None | N/A |