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Fax: 419-321-7582November 23, 2011  
L-11-353Ms. Cynthia D. Pederson, Acting Administrator  
United States Nuclear Regulatory Commission  
Region III  
2443 Warrenville Road, Suite 210  
Lisle, IL 60532-4352

## Subject:

Davis-Besse Nuclear Power Station, Unit 1  
Docket Number 50-346, License Number NPF-3  
Documentation of Commitments for the Davis-Besse Nuclear Power Station, Unit 1

On October 1, 2011, the Davis-Besse Nuclear Power Station (DBNPS) commenced a planned Mid-cycle Outage to replace the Reactor Pressure Vessel (RPV) Head with a new RPV head constructed with Alloy 690 CRDM nozzles. In order to remove the old RPV head and install the new RPV Head, temporary openings were created in both the Shield Building and the Containment Vessel. Hydro-demolition, a process that utilizes high-pressure water, was used to remove the concrete for the opening in the reinforced concrete Shield Building.

On October 10, 2011, during the hydro-demolition process, a laminar crack was found in the Shield Building concrete where the opening was being created, in an architectural feature that is not credited for structural capacity. Further inspection identified similar cracks in other architectural features of the Shield Building, near the openings for two steam line penetrations, and near the top of the Shield Building. These cracks are under evaluation as a 10 CFR 50 Appendix B material nonconforming condition in the Corrective Action Program to determine causes, effects, and corrective actions. The Containment Vessel, a separate steel structure surrounded by and separated from the Shield Building by an annular space, is not affected by this issue.

A material nonconforming condition under 10 CFR 50 Appendix B must be assessed and evaluated. Four options are available to disposition this type condition: Accept (analyze the condition as if it were designed in the as found condition), Reject, Repair (modify the component to an alternate acceptable condition), or Rework (restore the component to original configuration). The extent of the condition was assessed and appropriate analyses were performed consistent with our current license basis. These analyses demonstrated the structure remains well within the allowable values of the

appropriate design codes committed to in our licensing basis. This analysis supported our 10 CFR 50.59 evaluation and permits a "Use As Is" disposition.

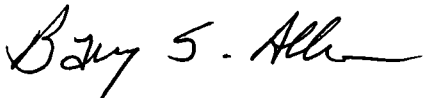
To assess the cracking and the extent of the condition, Impulse Response Testing, a non-destructive method to investigate the rigidity of concrete, was used. The Impulse Response readings were confirmed by core bores in the areas indicated to contain cracks, along with adjacent areas bounding the cracked regions. The examination locations were selected from areas where observations indicated cracking was suspected.

Based on the data obtained, an evaluation determined that the safety functions of the Shield Building are not degraded and the condition is acceptable as is. Additional margins of safety also exist that were not credited in the analyses, which provide added assurance for the Shield Building structure. Therefore, although the cause evaluations have not been completed, sufficient analysis has been conducted to determine that the Shield Building continues to comply with its design basis requirements in the as-found condition.

Based on the analysis and conclusions, there are no operating restrictions or compensatory actions required for the Shield Building. However, FENOC intends to take a number of actions that will continue to confirm the conclusions reached during the assessment of the Shield Building. These interim actions are appropriate until the root cause is finalized and long term condition monitoring actions can be developed. FENOC is establishing as regulatory commitments the actions outlined in the attachment to this letter. These commitments were discussed during teleconferences between the NRC and FENOC on November 21 and 22, 2011.

If there are any questions or if additional information is required, please contact Mr. Kendall W. Byrd, Director, Site Performance Improvement, at (419) 321-8585.

Sincerely,



Barry S. Allen

TAH/GMW

Attachment: Commitments for the Davis-Besse Nuclear Power Station

cc: USNRC Document Control Desk  
DB-1 NRC/NRR Project Manager  
DB-1 Senior Resident Inspector  
Utility Radiological Safety Board

Attachment  
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Commitments for the Davis-Besse Nuclear Power Station

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The following list identifies those actions committed to by FirstEnergy Nuclear Operating Company (FENOC) for the Davis-Besse Nuclear Power Station in this document. Any other actions discussed in the submittal represent intended or planned actions by FENOC. They are described only as information and are not Regulatory Commitments. Please notify Patrick J. McCloskey, Manager, Site Regulatory Compliance, at (419) 321-7274 of any questions regarding this document or associated regulatory commitments.

<u>Regulatory Commitment</u>	<u>Due Date</u>
1. FENOC will provide the results of the root cause evaluation and corrective actions to the NRC, including any long-term monitoring requirements.	February 28, 2012.
2. FENOC will identify four locations of the Shield Building which were core bored during this evaluation for examination. These uncracked locations will be directly adjacent to locations that have been confirmed to be cracked. The four uncracked locations are: a. adjacent to a flute shoulder [S9-666.0-12], b. in a flute area [F4-1-666.0-3], c. adjacent to Main Steam Line penetration 39 [S7-652.0-6.5], and d. adjacent to Main Steam Line penetration 40 [S9-650.0-9].	Complete. (locations as designated on drawing C-111A in brackets)
3. FENOC will examine the four core bore locations from Commitment 2 above with a bore scope to verify cracking has not migrated to these core bores located in solid concrete.	Ninety (90) days following plant restart (Mode 2) from the 2011 Mid-cycle outage.
4. FENOC will examine the crack interface to identify any changes by performing a core bore in a known crack area within the Main Steam Line Room.	Ninety (90) days following plant restart (Mode 2) from the 2011 Mid-cycle outage.

Regulatory Commitment

Due Date

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| <p>5. FENOC will identify two additional locations of the Shield Building which were core bored during this evaluation for examination. These uncracked locations will be directly adjacent to locations that have been confirmed to be cracked. The two uncracked locations are:</p> <ul style="list-style-type: none"><li>a. in a flute area [F5-777.0-4], and</li><li>b. adjacent to a flute shoulder [S2-783.5-4.0].</li></ul>              | <p>Complete. (locations as designated on drawing C-111A in brackets)</p>                        |
| <p>6. FENOC will examine the four core bore locations from Commitment 2 along with the two core bore locations from Commitment 5 with a bore scope to verify cracking has not migrated to these core bores located in solid concrete.</p>   | <p>During the Seventeenth Refueling Outage, currently scheduled to commence on May 6, 2012.</p> |
| <p>7. FENOC will examine the crack interface to identify any changes by examining either existing core bore locations with known cracks, or by performing a core bore in a similar area:</p> <ul style="list-style-type: none"><li>a. adjacent to a flute shoulder [S9-666.0-11],</li><li>b. near the top of the Shield Building [S9-785-22.5], and</li><li>c. adjacent to Main Steam Line penetration [core bore from Commitment #4]</li></ul> | <p>During the Seventeenth Refueling Outage, currently scheduled to commence on May 6, 2012.</p> |