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Docket No. 50-346

License Number NPF-3

Serial Number 3109

December 22, 2004

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001Subject: Design Basis Critical Calculations Program and System Description Improvement  
Plan

Ladies and Gentlemen:

The purpose of this letter is to provide the Nuclear Regulatory Commission (NRC) additional information regarding the Davis-Besse Nuclear Power Station (DBNPS) design basis critical calculations program and the System Description Improvement Plan. In letter Serial Number 2998, "Supplemental Information Related to NRC Request for Information Regarding the Adequacy and Availability of Design Basis Information," dated November 20, 2003, the FirstEnergy Nuclear Operating Company (FENOC) provided information regarding actions planned to improve the quality of design basis calculations. These planned actions were modified by letter Serial Number 3068, "Upgrading Critical Calculations," dated July 30, 2004. Based on discussions with Nuclear Regulatory Commission staff after the submittal of letter Serial Number 3068, FENOC is submitting this letter to provide additional information regarding: 1) FENOC's actions to improve the quality of design basis critical calculations, and 2) the implementation status of the System Description Improvement Plan.

Critical Calculations

As documented in letter Serial Number 2998, an independent assessment of the DBNPS calculations was performed in 2003. This independent assessment benchmarked the calculation process, which included the calculations procedure in place at the time of the assessment (FENOC procedure NOP-CC-3002, "Calculations" Revision 0). The report from the independent assessment was issued to FENOC on October 3, 2003, and included recommendations for improvements to the calculation program. Revision 1 of procedure NOP-CC-3002, was reviewed prior to becoming effective on March 31, 2004, to ensure that appropriate actions were taken in response to the recommendations of the independent assessment.

One of the changes included in Revision 1 of the procedure was the introduction of the term "Tier-1 Calculations." This replaced the term "critical calculations" which was earlier defined in letter Serial Number 2998, prior to the issuance of Revision 1 of procedure NOP-CC-3002.

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The revision to the calculation procedure included a requirement that a formal, documented design verification of a Tier-1 calculation be performed prior to the first alteration or use of the calculation as a design input, if it was not already prepared or altered per procedure NOP-CC-3002. Tier-1 calculations include (however, are not limited to) calculations that establish the input data used for safety analysis of an Updated Safety Analysis Report (USAR)-defined accident; verify the ability of a system, structure, or component to withstand the USAR-defined accident; or establish the acceptance criteria or analytical limits for Technical Specification Limiting Conditions for Operation, safety-related surveillances or test instructions.

Letter Serial Number 2998 described FENOC's plans for upgrading existing DBNPS design basis calculations to the standards of the new FENOC calculation procedure NOP-CC-3002, Revision 1. This letter described the intent to upgrade "critical calculations" (referred to as Tier-1 calculations in the revised FENOC calculation procedure) when each is revised during planned modification activities or other planned calculation revisions. Later, letter Serial Number 3068 modified these plans for upgrading the entire critical calculation when each is revised during planned modification activities or other planned calculation revisions, to upgrading only the affected portion of the critical calculation during a planned modification or other planned calculation revision.

The FENOC procedure NOP-CC-3002, Revision 1 describes two methods of altering calculations (i.e., by means of a revision or an addenda). A revision normally results in changing the content with new information that supersedes the information in the previous revision(s) and/or addenda. Revisions are expected when the numerical analysis needs to be re-run, or the conclusions of the calculation are changed. FENOC intends to perform revisions of the entire calculation to upgrade the calculation to the improved standards of procedure NOP-CC-3002, Revision 1 whenever calculation revisions are required. Exceptions to this intent would be instances of a time critical nature (i.e., emergent operability questions) and certain unique calculations where multiple components (pipe supports, Motor-Operated Valves, fuses, etc.) have been evaluated within the same calculation. In these cases, only the portion of the calculation for the specific component being addressed need be revised. Again, it is FENOC's preference that for the majority of the DBNPS calculations requiring full revisions, particularly in the case of Tier-1 calculations, the entire calculation be revised to raise it up to current standards.

The second method of altering a calculation is defined as an addendum in procedure NOP-CC-3002, Revision 1. An addendum may only be used under the limited circumstances defined in the procedure and cannot result in a change to the conclusions of the calculation. Furthermore, the addendum should not require the re-running of the numerical analysis, as this should be performed using a revision to the calculation. Calculation addenda, by definition, affect only a portion of the numerical analysis and therefore do not require full upgrading of the calculation to the standards of the revised procedure. Note that the portions of the calculation altered through the addenda will meet the requirements of the revised procedure. As was discussed in letter Serial Number 3068, the above two methods of altering calculations are considered a change to FENOC's previously described plans in letter Serial Number 2998 to upgrade the entire calculation each time it is altered.

Docket Number 50-346  
License Number NPF-3  
Serial Number 3109  
Page 3 of 4

The top 10 safety-related, risk-significant system Tier-1 calculations have been identified and are captured in the DBNPS Design Basis Assessment Report. Those with low design margin and/or low overall rating have been prioritized and actions for improvement have been identified as part of the DBNPS safety margin improvement initiative committed to through the Operational Improvement Plan (OIP Item 6.1). Several low margin analyses for risk-significant systems are currently being addressed with the goal of improving the safety margin of these systems by the end of the 14<sup>th</sup> operating cycle. As the remaining Tier-1 calculations are identified, they will be prioritized for upgrading by age, risk significance, margin, and number of open items (Note: This is a change to the DBNPS commitment made in letter Serial Number 3068 to prioritize and schedule for upgrading through the Design Basis Assessment Report).

The current procedure, NOP-CC-3002, Revision 1 requires that Tier-1 calculations be design verified prior to their next use if a documented design verification has not previously been performed. This requires a full design verification of all Tier-1 calculations performed prior to the establishment of the FENOC calculation procedure due to the past practice of performing a checking function for individual calculations as opposed to an individual design verification of each calculation. This procedural requirement to perform a full design verification of older Tier-1 calculations is expected to result in additional open items against older calculations and thus an increased priority on implementing calculation revisions for these older calculations.

#### System Description Improvement Plan

Letter Serial Number 2998 also provided information regarding implementation of a System Description Improvement Plan. In this letter, a commitment to implement the System Description Improvement Plan by December 31, 2004, was included. This plan included revising the System Descriptions. System Descriptions are being revised as part of the ongoing risk-informed, system-based backlog reduction effort, and is now forecast to be completed by the end of the 14<sup>th</sup> refueling outage (currently scheduled for the Spring of 2006). This is consistent with the overall DBNPS plans to achieve a steady-state level of workload by the end of the 14<sup>th</sup> operating cycle.

If you have questions or require additional information, please contact Mr. Clark A. Price, Manager, Regulatory Compliance, at (419) 321-8585.

Very truly yours,



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Enclosure

Docket Number 50-346

License Number NPF-3

Serial Number 3109

Page 4 of 4

cc: Regional Administrator, NRC Region III  
NRC/NRR Senior Project Manager  
NRC Region III, DB-1 Senior Resident Inspector  
Utility Radiological Safety Board

### COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions by the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager – Regulatory Compliance (419-321-8585) at the DBNPS of any questions regarding this document or any associated regulatory commitments.

#### COMMITMENT

#### DUE DATE

- |  |   |
|--|---|
| 1. During planned modification activities or other planned calculation revisions, rather than requiring the entire critical calculation be upgraded at that time, only the revised portion of the calculation will require upgrading. (No change in previous commitment from letter Serial Number 3068)  | None (Currently in NOP-CC-3002)               |
| 2. The top 10 safety related, risk significant system Tier-1 calculations have been identified and are captured in the DBNPS Design Basis Assessment Report. Those with low design margin and/or low overall rating have been prioritized and actions for improvement have been identified as part of the DBNPS safety margin improvement initiative committed to through the Operational Improvement Plan (OIP Item 6.1). | December 31, 2004                             |
| 3. The upgrading of the System Descriptions is now forecast to be completed by the end of the 14 <sup>th</sup> Refueling Outage.   | End of the 14 <sup>th</sup> Refueling Outage. |

Docket Number 50-346  
License Number NPF-3  
Serial Number 3109  
Enclosure  
Page 2 of 2

COMMITMENT (Continued)

DUE DATE

4. As the remaining Tier-1 calculations are identified, they will be prioritized for upgrading by age, risk significance, margin, and number of open items.

End of 14<sup>th</sup> Refueling Outage.

[Note: The second, third, and fourth commitments are changes to commitments previously made by letters dated November 20, 2003, and July 30, 2004 (Serial Numbers 2998 and 3068, respectively)]