

May 3, 2005

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Document Control

Subject: Oconee Nuclear Station
Docket Numbers 50-269, -270, -287
Error in Topical Report DPC-NE-3003-PA, Mass and
Energy Release and Containment Response
Methodology, Revision 1, September 2004

Duke Energy Corporation (Duke) topical report DPC-NE-3003-PA, Revision 1, describes the methodology for analyzing the mass and energy release and the containment response to high-energy line breaks inside containment for the Oconee Nuclear Station. The Nuclear Regulatory Commission (NRC) Safety Evaluation Report (SER) for Revision 1 is dated September 24, 2003. An error in the methodology described in this topical report has been identified. During the calculation of the long-term mass and energy release for a hot leg break Loss Of Coolant Accident (LOCA) in Section 2.4.1.2 (p. 2-28) of the report, the following statement is made:

"In the case of a hot leg break, the core decay heat is added to the cold water coming from the low pressure injection (LPI) coolers. This flow stream is then added back into the containment volume, with the steam (if any) being added to the atmosphere region and the liquid being added to the sump region."

In addition, Figure 2.4-1 (p. 2-51) shows the liquid being delivered to the sump region.

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Recent analyses have shown that the equation in the FATHOMS code to model the liquid flowstream is in error in that the total pressure of the Reactor Building atmosphere is used in the calculation of the flashing fraction, whereas the partial pressure of the steam should have been used. This error results in an excessive amount of energy delivered to the sump, which is excessively conservative when determining the sump water temperature for the NPSH evaluation.

This error was discussed in a phone call with Mr. Richard Lobel of the NRC staff on March 18, 2005. Duke proposed to correct this error and to use the revised methodology without prior NRC review. The corrected text in Section 2.4.1.2 would be as follows:

"In the case of a hot leg break, the core decay heat is added to the cold water coming from the low pressure injection (LPI) coolers. This flow stream is then added back into the containment volume, with the steam (if any) being added to the atmosphere region and the liquid being added to the containment at the elevation of the break."

In addition, Figure 2.4-1 would be revised to show the liquid flowstream being delivered into the Reactor Building above the sump region.

Modeling revisions which involve injecting the liquid flowstream into the containment at the elevation of the break, consistent with the above topical report revisions, result in the liquid flowstream flashing to the steam partial pressure. This modeling approach corrects the identified error. Mr. Lobel notified Duke on March 18 that the proposed error correction is acceptable to the NRC, provided that the proposed revisions to the topical report and this letter would be included in Revision 2 (the next revision) to topical report DPC-NE-3003-P, whenever that revision is made. Duke hereby commits to include the above changes in Revision 2 to DPC-NE-3003-P when it is submitted.

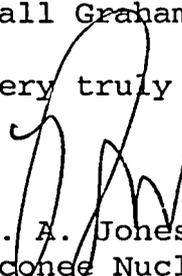
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If there are any questions concerning this matter, please call Graham Davenport at (864) 885-3044.

Very truly yours,



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Oconee Nuclear Site

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