February 7, 2007

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
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6A Lookout Place
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SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 - AUDIT REPORT OF NEW STRAINER DESIGN IN RESPONSE TO GENERIC LETTER 2004-02 AND GENERIC SAFETY ISSUE-191

The enclosed report provides the results of the U.S. Nuclear Regulatory Commission (NRC) staff audit of the design, and the associated analysis and testing of the new sump strainer design at the Tennessee Valley Authority's (the licensee) Watts Bar Nuclear Plant, Unit 1 (WBN).

The audit report includes a review of the design of the planned sump modifications, the evaluation of upstream and downstream blockage, and other post-accident debris effects identified in Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors." It also provides detailed feedback on each section of the licensee's sump performance evaluation (e.g., debris generation, debris transport, head loss), identifying areas that were adequately addressed, as well as areas for which further analysis or justification may be warranted. Overall, the staff's impression is that the WBN new sump modifications appear to be robust with sufficient design margin. However, the final conclusions regarding the adequacy of the licensee's corrective actions for GL 2004-02 will be based on the staff's review of open items resulting from this audit and on any other supplemental responses to GL 2004-02.

This was the first of several audits to be conducted by the NRC staff to help verify the adequacy of corrective actions to address GL 2004-02. The WBN staff was very supportive during the audit. In particular, the NRC staff appreciates the effort to obtain detailed reactor vessel internal structure hydraulic data. This first audit was a learning process for both the licensee and the NRC staff, and the licensee's flexibility and cooperation were crucial in the successful completion of the audit.

In addition to providing feedback on the WBN sump performance evaluation, the report also documents staff findings that have significant generic implications. Thus, the report will serve as a vehicle to inform other licensees of the staff's technical positions. The staff provided the draft audit report to the licensee on November 28, 2006, and requested that it be reviewed for any proprietary information. On January 25, 2007, Mr. James Smith, WBN Licensing Manager, informed the staff that no proprietary information was found in the report.

Therefore, the report will be made available to the public in the NRC's Agencywide Document Access and Management System (Accession Number ML062120469) and through the NRC public web site (www.nrc.gov).

If you have any questions, please contact me at (301) 415-3974.

Sincerely,

/RA/

Brendan T. Moroney, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Audit Report

cc w/o enclosure: See next page

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