

January 26, 2006

MEMORANDUM TO: Thomas Martin, Director
Division of Safety Systems

THRU: David L. Solorio, Chief /RA/
Safety Issues Resolution Branch
Division of Safety Systems

FROM: Ralph Architzel, Senior Reactor Systems Engineer /RA/
Safety Issues Resolution Branch
Division of Safety Systems

SUBJECT: REPORT ON RESULTS OF STAFF PILOT PLANT AUDIT– FORT
CALHOUN STATION ANALYSES REQUIRED FOR THE RESPONSE
TO GENERIC LETTER 2004-02 AND GSI-191 RESOLUTION
(NON-PROPRIETARY VERSION)

Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors," requested that all PWR licensees (1) evaluate the adequacy of the emergency sump recirculation function with respect to potentially adverse effects associated with post-accident debris, and (2) implement any plant modifications the evaluation determined to be necessary. To provide assurance that licensees' sump performance evaluations and any subsequent modifications are performed with adequate quality, in addition to reviewing licensees' generic letter responses, the staff plans to perform sample audits.

Fort Calhoun Station (FCS), conducted a partial evaluation of recirculation sump performance ahead of the schedule requested by GL 2004-02 and volunteered to be a pilot plant for an NRC staff audit.

The staff has completed an audit of the FCS evaluation. A non-proprietary version of the report containing the audit's results is enclosed with this memorandum. In addition to providing the FCS licensee feedback on its sump performance evaluation, another primary purpose of the staff's audit report is to serve as a vehicle to inform and potentially improve other licensees' responses to GL 2004-02. The staff's audit report summarizes the plant modifications planned by the licensee to improve recirculation sump performance.

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The staff's audit report provides detailed feedback to the licensee in each section of the sump performance evaluation (e.g., debris generation, debris transport, head loss), identifying areas that were adequately addressed as well as areas where further analysis or justification may be warranted. The audit report includes a review of the proposed design of the licensee's planned sump modification, and also reviews the licensee's evaluation of upstream and downstream blockage and the other post-accident debris effects identified in GL 2004-02. The audit report concludes by rating each section of the licensee's sump performance evaluation into one of three categories: (1) robust, (2) partially complete with an approach that seems reasonable, and (3) limited information.

Enclosures: 1. Pilot Plant Audit Report – Fort Calhoun Station Analyses Required for the Response to Generic Letter 2004-02 and GSI-191 Resolution
2. Report Appendix II: GE Testing for Fort Calhoun Station

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