

June 13, 2006

Mr. R. T. Ridenoure  
Vice President - Chief Nuclear Officer  
Omaha Public Power District  
Fort Calhoun Station FC-2-4 Adm.  
Post Office Box 550  
Fort Calhoun, NE 68023-0550

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 RE: REPORT ON RESULTS OF  
STAFF PILOT PLANT AUDIT OF ANALYSES REQUIRED FOR THE  
RESPONSE TO GENERIC LETTER 2004-02 AND GSI-191 RESOLUTION  
(MC6467)

Dear Mr. Ridenoure:

Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors [PWRs]," requested that all pressurized-water reactor 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. In addition to reviewing licensees' generic letter responses, the Nuclear Regulatory Commission (NRC) staff plans to perform sample audits to provide assurance that licensees' sump performance evaluations and any subsequent modifications are performed with adequate quality.

Omaha Public Power District conducted for Fort Calhoun Station, Unit 1 (FCS) a partial evaluation of the 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 NRC staff has completed an audit of the FCS evaluation and a non-proprietary and proprietary version of the report containing the audit's results is enclosed with this letter. The NRC staff's audit report provides detailed feedback 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.

In addition to providing the FCS licensee feedback on its sump performance evaluation, another primary purpose of the NRC staff's audit report is to serve as a vehicle to inform and potentially improve other licensees' responses to GL 2004-02. The NRC staff's audit report summarizes the plant modifications planned by the licensee to improve recirculation sump performance.

This audit focused only on modifications intended to address GL 2004-02, and it did not address the adequacy of the existing containment sump system. Additionally, a significant

chemical effect issue has been identified with the interaction of trisodium phosphate and calcium silicate that will likely have a significant impact on the sump screen design. Information on this phenomena was provided to you in Information Notice 2005-26, "Results of Chemical Effects Head Loss Tests in a Simulated PWR Sump Pool Environment," dated September 16, 2005. This issue is not addressed in the enclosed report.

Pursuant to Section 2.390 of Title 10 of the *Code of Federal Regulations* (10 CFR), we have determined that the audit report provided as Enclosure 1 contains proprietary information. A non-proprietary version of the audit report that has been determined does not contain proprietary information and has been added to the Agencywide Documents Access and Management System Public Electronic Reading Room is provided as Enclosure 2.

If you have any questions or comments, please contact Alan B. Wang, Project Manager, at (301) 415-1445.

Sincerely,

**/RA/**

Catherine Haney, Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-285

cc w/oencls: See next page

Enclosures:

1. Pilot Plant Audit Report – Fort Calhoun Station Analyses Required for the Response to Generic Letter 2004-02 and GSI-191 Resolution (Proprietary)
2. Pilot Plant Audit Report – Fort Calhoun Station Analyses Required for the Response to Generic Letter 2004-02 and GSI-191 Resolution (Non-Proprietary)

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Division of Operating Reactor Licensing  
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**MEMO: ML060610771**

**ENCLOSURE 1: ML053110238, ML053110245, and ML053110259 (Proprietary)**

**ENCLOSURE 2: ML060240026 and ML060230461 (Non-Proprietary)**

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January 2006