

December 29, 2005

MEMORANDUM TO: David Terao, Chief, Section 1  
Project Directorate IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

FROM: David L. Solorio, Chief // **RA** by L. Whitney for //  
Safety Issue Resolution Branch  
Division of Safety Systems  
Office of Nuclear Reactor Regulation

SUBJECT: FORT CALHOUN STATION, UNIT NO. 1 RE: RESPONSE TO  
REQUEST FOR AN EXTENSION TO THE COMPLETION DATE FOR  
CORRECTIVE ACTIONS TAKEN IN RESPONSE TO GENERIC  
LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON  
EMERGENCY RECIRCULATION DURING DESIGN BASIS  
ACCIDENTS AT PRESSURIZED WATER REACTORS"

The Safety Issue Resolution Branch (SSIB) has reviewed and evaluated the information provided in the OPPD letter dated November 18, 2005, requesting an extension to the Generic Letter 2004-02 completion due date for the GSI-191 sump clogging issue corrective actions at Fort Calhoun Station (FCS). Enclosed with this letter is a proposed extension denial letter for FCS. If you have any questions, please contact Leon Whitney or Jon Hopkins. Please include Jon Hopkins and Leon Whitney on the distribution list.

Docket No: 50-285

Enclosure: As stated

CONTACTS: Leon Whitney, SPLB/DSSA  
415-3081  
Jon Hopkins, ADRA/DRA  
415-3027

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DATE	12/ 29 /05	12/ 29 /05	12/ 29 /05

OFFICIAL RECORD COPY

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: RESPONSE TO REQUEST FOR AN  
EXTENSION TO THE COMPLETION DATE FOR CORRECTIVE ACTIONS  
TAKEN IN RESPONSE TO GENERIC LETTER 2004-02, "POTENTIAL IMPACT  
OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN  
BASIS ACCIDENTS AT PRESSURIZED WATER REACTORS"

Dear Mr. Ridenoure:

On September 30, 2005 the NRC staff held a public meeting to discuss Generic Safety Issue (GSI)-191. In particular, this public meeting was intended to address issues related to chemical effects head-loss information provided in Information Notice 2005-26, "Results of Chemical Effects Head Loss Tests in a Simulated PWR Sump Pool Environment." This Information Notice (IN) described a set of research test results indicating that a simulated containment sump pool environment containing phosphate and dissolved calcium can rapidly produce a calcium phosphate precipitate that, if transported to a fiber bed covered screen, produces significant head loss. This information is relevant to PWR plants which use tri-sodium phosphate (TSP) as a sump pool pH buffer and which have calcium sources in containment (e.g. Cal-Sil piping insulation, exposed concrete, certain fire retardant boards, etc.), such as the Fort Calhoun Station (FCS). During the September 30, 2005 meeting the Nuclear Energy Institute (NEI) stated that pressurized water reactor (PWR) plants using TSP as a containment sump pool pH buffer and having calcium silicate (Cal-Sil) piping insulation would respond to the NRC Bulletin by November 30, 2005. This response was to address the corrective actions these plants will be taking to address the potential formation of calcium phosphate in containment after a loss-of-coolant accident (LOCA).

The NRC has reviewed Omaha Public Power District's (OPPD/the licensee) letter dated November 18, 2005 in which it provided information regarding the FCS considerations of Information Notice 2005-26. In OPPD's November 18, 2005, letter you listed five corrective measures to be completed in the FCS 2006 refueling outage (including removal of significant quantities of calcium silicate insulation material from containment). This letter also described existing procedural guidance: 1) to shutdown, under certain conditions, redundant high pressure safety injection (HPSI) and core spray (CS) pumps to minimize the strainer approach velocity; 2) to reduce the total sump flow when pump cavitation is detected; and 3) to refill of the safety injection refueling water tank (SIRWT) with HPSI re-alignment to draw a suction on the SIRWT and inject into the reactor coolant system (RCS), if HPSI suction via the containment sump strainers in the recirculation mode is lost.

ENCLOSURE

In addition, OPPD indicated that its strategy for compliance with Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" was provided in the FCS August 31, 2005 followup response to Generic Letter 2004-02. This strategy has been to "procure sump strainers with sufficient margin to accommodate any chemical effects that were identified by industry testing." OPPD concluded that: "... OPPD has [now] determined that the chemical effects and potential downstream effects from the combination of trisodium phosphate (TSP) and calcium silicate insulation identified in Information Notice 2005-26 cannot be accommodated by this [current strainer sizing] strategy and will require additional testing (industry and plant-specific) and evaluation." OPPD described that envisioned testing and stated that such testing could not be completed in time to support design and installation of replacement sump strainers during the scheduled fall 2006 refueling outage. Therefore, OPPD stated that the implementation of the complete GSI-191 modifications by December 31, 2007, as required by GL 2004-02, could not be accomplished. OPPD requested an extension of the Generic Letter 2004-02 modifications and corrective actions completion December 31, 2007 due date to the end of the 2008 refueling outage. This refueling outage is currently scheduled to begin in March of 2008.

In its letter dated November 18, 2005 OPPD did not provide any new, focused interim compensatory measures to mitigate its post-LOCA sump pool calcium phosphate levels (e.g. removal or sequestration of either the TSP pH buffer or the significant quantities of Cal-Sil insulation remaining after the FCS fall 2006 outage). Therefore, the NRC denies OPPD's request for an extension of the FCS Generic Letter 2004-02 GSI-191 sump modifications and corrective actions completion due date from December 31, 2007, to the end of the FCS 2008 refueling outage. If you can have any comments or questions regarding this letter, please contact Alan Wang at (301)415-1445.

Sincerely,

David Terao, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-285

cc: See next page

**Distribution to include: Leon Whitney, Jon Hopkins, Ralph Architzel, Shanlai Lu, David Solorio, Alan Wang, John Hannon, Thomas Martin, Brian Sheron**