March 29, 2012

MEMORANDUM TO: Harold Chernoff, Chief
Operating Experience Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

FROM: Jesse Robles, Reactor Systems Engineer ***/RA/***
Operating Experience Branch
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation

SUBJECT: CLOSURE MEMORANDUM: ISSUE FOR RESOLUTION 2011-01, "FORT CALHOUN – FAILURE TO MAINTAIN EXTERNAL FLOODING PROCEDURES"

The Nuclear Regulatory Commission (NRC) staff has completed their review of Issue for Resolution (IFR) 2011-01: Fort Calhoun – Failure to Maintain External Flooding Procedures.

On September 17, 2009, during a Component Design Basis Inspection (CDBI) at Fort Calhoun Station (FCS), the inspection team identified that the licensee failed to maintain adequate procedures that protect the intake structure and auxiliary building during external flooding events. This procedure consisted of stacking and draping sandbags on top of installed floodgates to protect the plant up to a flood elevation of 1,014 feet mean sea level (msl). When inspectors asked plant staff to demonstrate this procedure, they were unable to complete the procedure because the cross section on the top of the floodgates was too small to accommodate enough sandbags to retain a four foot static head of water. This resulted in a Yellow Finding (substantial safety significance) being issued to Fort Calhoun Station.

The subject event was screened into the IFR program by the Operating Experience (OpE) Clearinghouse on October 14, 2010, based on LIC-401 criteria: 1.B, "Reactor Oversight Process Significance Determination Process finding of white or higher" (i.e., yellow), and 2.J, "potential new or novel failure mode, system interaction, material condition or degradation, or other phenomena that may have instructive value for the industry or the NRC." The NRC staff issued an internal communication pertaining to the inadequate flood procedure issue in the form of a Reactor Operating Experience Community Forum posting on October 19, 2010. Additionally, this event has been captured in the Reactor Operating Experience database for future tracking and trending purposes (reference ROE record 7432).

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In addition to this IFR, the Office of Research has opened GI-204 (See GI Submission Document (ML101900305), Acceptance Review Document (ML102210339), Screening Analysis Report (ML112430114), and the Approval of the Establishment of GI-204 (ML12062A199)). Currently, GI-204 has been transferred for Regulatory Office Implementation (ML120261155). This GI was proposed to address the uncertainty in the risk associated with external flooding caused by dam failures upstream of Nuclear Power Plants (NPP). The GI stipulates that more recent flooding studies may also indicate an overall change in risk not previously considered in other original studies.

FCS experienced prolonged flooding conditions during the summer of 2011 that prompted them to declare a Notification of Unusual Event. A Reactor Operating Experience Community Forum posting was posted for this event as well. The NRC issued a Confirmatory Action Letter (CAL) (ML112490164) on September 2, 2011, to confirm the actions FCS plans to take in its submitted Post-Flooding Recovery Action Plan (ML112430102). Additionally, FCS was placed in the Inspection Manual Chapter (IMC) 0350, "Oversight of Reactor Facilities in a Shutdown Condition Due to Significant Performance and/or Operational Concerns," process on December 13, 2011 (see Notification of Change to Regulatory Oversight of Fort Calhoun Station (ML113470721) and Fort Calhoun IMC 0350 Charter (ML120120661)). This IMC establishes criteria for the oversight of reactors that are shutdown due to significant performance or operational problems. IMC 0350 establish criteria for the oversight of licensee performance for licensees that are in a shutdown condition as a result of significant performance problems or operational events. It establishes a record of the major regulatory and licensee actions taken and technical issues resolved leading to approval for restart and to the eventual return of the plant to the routine Reactor Oversight Process (ROP). It does this by establishing a review panel that verifies that licensee corrective actions are sufficient prior to restart and provides assurance that following restart the plant will be operated in a manner that provides adequate protection of public health and safety. Additional inspections related to the flood recovery will be performed as part of this oversight.

The Mechanical and Civil Engineering Branch (EMCB) provided input to the evaluation of this IFR. The staff's conclusions and recommendations are presented in the enclosed staff evaluation (ML111680450). Based on the nature of the issue, EMCB recommends the NRC develop a process for periodic interactions with relevant federal agencies such as the U.S. Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA) in order to update licensees on flood studies. Some procedures for this already exist, including the Memorandum of Understanding (MOU) with USACE (ML062920211) and the MOU with FEMA (ML051680117). This IFR Closure Memorandum and enclosure will be sent to the points-of-contact of these MOUs for their awareness. EMCB also recommends the issuance of an Information Notice (IN) in order to address the fact that the availability of third-party information such as studies, technical papers, and assessments has the potential to affect the design basis of a licensed facility, and therefore should be evaluated. There is no explicit requirement that requires licensees to determine if third-party information represents a safety concern to the site. TAC ME6847 was opened on August 12, 2011 for this IN entitled "Third-Party Information That Can Potentially Affect the Design Basis of a Licensed Facility" (ML101400109). This information originated from Region IV staff, but the IN will be issued by EMCB. Additionally, the staff recommends that Inspection Procedure (IP) 71111.01, "Adverse

Weather Protection," be revised to add a caveat to perform the inspection if any substantial change to the design basis flood levels and/or operating procedures has occurred (see enclosure). A feedback form will be submitted to the appropriate Reactor Inspection Branch (IRIB) staff member so that the enclosed recommendations and the IN mentioned above are incorporated in the next revision to the IP.

IOEB staff recommends closure of IFR 2011-01.

Enclosure:
As stated

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ADAMS Accession Number: ML12066A030

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