



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

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April 24, 2015

10 CFR 50.4

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Units 1, 2, and 3  
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68  
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: **Browns Ferry Nuclear Plant (BFN) - Fuel Pool Cooling System - Piping Seismic Reclassification**

- Reference:
1. Letter from J.E. Gilleland (TVA) to J. F. O'Leary (AEC), "Submitted Amendment 48 to TVA applications for Units 1, 2, and 3 of the Browns Ferry Nuclear Plant," dated March 5, 1973
  2. Letter from T. M. Ross (NRC) to D. A. Nauman, (TVA), "Reclassification of Reactor Building Closed Cooling Water System Outside Containment," dated March 6, 1991
  3. Letter from E. G. Wallace (TVA) to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 2 - Response to NRC Safety Evaluation on Reclassification of the Reactor Building Closed Cooling Water System Outside Containment," dated April 4, 1991
  4. Letter from T. M. Ross (NRC) to D. A. Nauman (TVA), "Reclassification of Reactor Building Closed Cooling Water System at Browns Ferry Nuclear Plant, Unit 2 (TAC NO. 80074)," dated May 16, 1991

In the Reference 1 letter from the Tennessee Valley Authority (TVA) to the Atomic Energy Commission (AEC) dated March 5, 1973, TVA committed to qualifying the Browns Ferry (BFN) Units 1, 2, and 3 Fuel Pool Cooling (FPC) system piping to Seismic Class I. TVA subsequently reclassified portions of the FPC system piping to Seismic Class II without notifying the Nuclear Regulatory Commission (NRC). Therefore, TVA is providing this notification of the FPC system piping seismic reclassification and commitment change.

## **BACKGROUND INFORMATION:**

BFN's Licensing Basis requires assurance of adequate Fuel Storage Pool (FSP) level makeup under all normal and off normal conditions (i.e. fuel pool water boil off), and includes the Residual Heat Removal (RHR) / Residual Heat Removal Service Water (RHRSW) crosstie that provides a permanently installed Seismic Class I qualified makeup water source for the spent fuel pool. This ensures that the irradiated fuel remains submerged in water and that maintaining normal fuel pool water level is possible under all anticipated conditions. Two additional sources of Seismic Class I FSP makeup water are provided via a standpipe and hose connection on each of the two Emergency Equipment Cooling Water (EECW) headers. Each hose is capable of supplying makeup water in sufficient quantity to maintain fuel pool water level under conditions of no fuel pool cooling.

In the Reference 2 letter dated March 6, 1991, the NRC responded to the TVA request to reclassify the Reactor Building Closed Cooling Water (RBCCW) system, outside containment, from Seismic Class I to Seismic Class II. The NRC Safety Evaluation (SE) considered TVA's discussion of the compensatory measures and/or alternate plant features that are available to ensure the safety functions of the affected systems could still be accomplished. In particular, with regard to Fuel Pool Heat Exchangers, it was acknowledged that there would be sufficient time for the operator to manually provide alternate cooling using the RHR system. Additionally, cooling would also be available by allowing the pool to boil and provide makeup water with installed hoses from the EECW system. The NRC concluded that based on the staff's evaluation the RBCCW system should continue to be classified as a Seismic Class I system.

In the Reference 3 letter dated April 4, 1991, TVA responded to the Reference 2 NRC SE. TVA disagreed with the conclusion to retain the RBCCW system piping outside containment as Seismic Class I and requested a supplement to the SE.

In the Reference 4 letter dated May 16, 1991, the NRC responded to TVA's letter of April 4, 1991, (Reference 3) and provided a Supplemental SE. The Staff's Supplemental SE confirmed that the March 6, 1991 SE acknowledged safety-related back-up systems and/or compensatory measures exist at BFN to accomplish the intended safety functions of those systems directly affected (e.g., spent fuel pool) by a loss of RBCCW. The staff's supplemental SE concluded that the RBCCW system outside containment was not safety-related and need not be maintained in accordance with Seismic Class I standards.

In 1992 TVA performed a Safety Assessment (SA), and associated SE, and concluded that some of the FPC system piping currently classified as Seismic Class I could be reclassified as Seismic Class II and continue to meet and maintain commitments made in applicable licensing documents to the NRC. As noted, the NRC SE found it acceptable for the RBCCW system piping to be non-safety related and non-seismic. Therefore, RBCCW was considered unqualified to provide the support function required to remove heat from the FPC heat exchangers following a Design Basis Earthquake (DBE). Consequently, it then follows that those portions of FPC system piping that rely upon RBCCW to support FSP forced cooling also are not required to be Seismic Class I. As a result of the 1992 SA/SE, TVA reclassified those portions of the FPC system piping not required to assure makeup water to the FSP to Seismic Class II. TVA has retained the Seismic Class I classification

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for the FPC system piping makeup water line from the RHR system to assure a Seismic Class I source of makeup water to the FSP. Maintaining the Seismic Class I RHR makeup water source ensures that irradiated fuel remains submerged in water and that normal FSP water level is possible under all anticipated conditions.

Therefore, contrary to the statements contained in Reference 1 to certify the FPC system piping to Seismic Class I, and based on the results of the engineering SA/SE for FPC system piping seismic reclassification, TVA will maintain those portions of the FPC system piping designed to support FSP forced cooling as Seismic Class II.

There are no new regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact J. L. Paul, Nuclear Site Licensing Manager, at (256) 729-2636.

Respectfully,

A handwritten signature in black ink, appearing to read "K. J. Polson", is written over a horizontal line.

K. J. Polson  
Site Vice President

cc:

NRC Regional Administrator - Region II  
Senior Resident Inspector - Browns Ferry Nuclear Plant