UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 28, 2009

Mr. Preston D. Swafford
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
3R Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 1, REQUEST FOR ADDITIONAL INFORMATION FOR EXTENDED POWER UPRATE - ROUND 26 (TAC NO. MD5262) (TS-431)

Dear Mr. Swafford:

By letter dated June 28, 2004, the Tennessee Valley Authority (TVA, the licensee) submitted an amendment request for Browns Ferry Nuclear Plant (BFN), Unit 1, as supplemented by letters dated August 23, 2004, February 23, April 25, June 6, December 19, 2005, February 1 and 28, March 7, 9, 23, and 31, April 13, May 5, 15, and 16, June 15, 23, and 27, July 6, 21, 26, and 31, August 4, 16, 18, and 31, September 1, 15, and 22, October 3, 5, and 13, November 7, December 1, 5, 11, and 21, 2006, January 31, February 16 and 26, April 6, 18, and 24, July 27, September 24, November 15 and 21, December 14, 2007, January 25 and 31, February 11 and 21, March 6, April 4 and 9, May 1, June 3, 12, and 16, August 15, September 2 and 19, October 3 ,17, and 31, November 11 and 14, December 15, 2008, January 9, 16, and 23, February 18 and 24, March 11, 12, and 27, April 3, 10, 21, and 29, and May 7 and 29, 2009. The proposed amendment would change the BFN operating license for Unit 1 to increase the maximum authorized power level by approximately 14 percent.

A response to the enclosed Request for Additional Information (RAI) is needed before the Nuclear Regulatory Commission staff can complete the review. This request was discussed with Mr. Gordon Arent of your staff on August 31, 2009, and it was agreed that TVA would respond within 30 days of issuance of this letter.

If you have any questions, please contact me at (301) 415-2315.

Sincerely

/ra/

Eva A. Brown, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-259

Enclosure:
RAI

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REQUEST FOR ADDITIONAL INFORMATION

EXTENDED POWER UPRATE

ROUND 26

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-259, AND 50-260

EMCB

(Units 1 and 2 Only)

81./87. During a recent inspection at Browns Ferry Nuclear Plant (BFN) from April 20-24, 2009 [See Inspection Report (IR) 50-259(260)(296)/2009-007] the response to a significant fire was reviewed. Based on this review and information provided in support of the BFN extended power uprate (EPU) review, it is the Nuclear Regulatory Commission (NRC) staff's understanding that upon detection of a significant fire the reactor operators would first enter the emergency operating instructions (EOIs). From there the operators may stay in the EOIs or subsequently enter the safe shutdown instructions (SSIs), if the conditions for entry are satisfied. Observations by the inspection staff of a simulated significant fire [IR 50-259(260)(296)/2009-007] indicated the possibility that, at the time of entry into the SSIs, the suppression pool temperature may be greater than the initial suppression pool temperature of 95 degrees Fahrenheit (degrees F) assumed in the net positive suction head (NPSH) Appendix R analyses due to the discharge of steam from the reactor vessel to the suppression pool.

Explain how this sequence of events is consistent with the timing assumed in the Appendix R Fire analyses provided in a letter dated March 12, 2009, to demonstrate adequate NPSH for the residual heat removal (RHR) pump credited with cooling the suppression pool and the core. Also, justify the use of an initial suppression pool temperature of 95 degrees F, if entry into the SSIs is not made at the time of reactor trip. Address how a higher initial suppression pool temperature (the suppression pool

temperature at entry into the SSIs) will affect the peak suppression pool temperature and the timing of assumed operator actions (manually opening the main steam relief valves and terminating the cooling of the containment fan coolers).

82./88. Provide detailed justification for each fire area that demonstrates that during a significant fire spurious actuations of containment isolation valves or maloperation of other systems or components will not result in loss of containment integrity.

83./89. The March 12, 2009, letter to the NRC revising the BFN Appendix R Fire NPSH analyses assumes a required NPSH value corresponding to a 3-percent head loss. By definition, the RHR pump will be operating with a level of cavitation greater than the level of cavitation assumed in previous Appendix R analyses. Provide an explanation why the RHR pump can be expected to perform its safety function at the 3-percent head loss value of required NPSH.

If you have any questions, please contact me at (301) 415-2315.

Sincerely

/ra/

Eva A. Brown, Senior Project Manager
Plant Licensing Branch II-2
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