

December 5, 2003

Mr. J. A. Scalice  
Chief Nuclear Officer and  
Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNIT 3 - REQUEST FOR ADDITIONAL  
INFORMATION RELATED TO REVISION OF THE SAFETY LIMIT MINIMUM  
CRITICAL POWER RATIO (TAC NO. MC0918)

Dear Mr. Scalice:

By letter dated October 1, 2003, Tennessee Valley Authority submitted an application to revise the Technical Specifications (TSs) for the Browns Ferry Nuclear Plant, Unit 3. The proposed revision includes a change to the safety limit minimum critical power ratio value in TS 2.1.1.2. The U.S. Nuclear Regulatory Commission staff has reviewed your submittal and finds that a response to the enclosed request for additional information is needed before we can complete the review.

This request was discussed with Mr. T. Abney of your staff on December 3, 2003, and it was agreed that a response would be provided within 30 days of receipt of this letter. If you have any questions, please contact me at (301) 415-1496.

Sincerely,

*/RA/*

Kahtan N. Jabbour, Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION  
RELATED TO PROPOSED TECHNICAL SPECIFICATION REVISION  
TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT, UNIT 3  
DOCKET NO. 50-296

1. Please provide a reference core loading pattern for cycle 12 operation and a detailed description of the final core and fuel design to achieve a 24-month fuel reload cycle at the licensed rated power of 3458 Mwt and operation to normal end of full power (EOFP); (cycle exposure of approximately 16,700 Mwd/MTU). Please include post-EOFP and coastdown extensions.
2. Provide a flow chart including input parameters to describe the analysis done for the safety limit minimum critical power ratio (SLMCPR) in the mixed core configuration. Also, identify the approved methodologies used in this analysis and justify their applicability to the SLMCPR analysis for Cycle 12 operation. Please address the technical position and limitations, and conditions in the staff Safety Evaluation Report stated in ANF-524(P)(A) Revision 2 and ANF-524(P)(A) Supplements 1 and 2, EMF-2209(P)(A) Revision 1, and EMF-2158(P)(A), Revision 0.
3. Please demonstrate, based on results of the SLMCPR analysis, that the margin for the proposed increase of the SLMCPR value is adequate. Also, identify the dominant fuel type with respect to cycle exposure during the Cycle 12 operation, and the main contributors for the increase of the proposed SLMCPR value.
4. Please describe the procedures used in the approved methodologies to generate fuel- and plant-related uncertainties listed in Table A.1 of Attachment A of the October 1, 2003, submittal. Please provide an equation, as a function of these uncertainties, that can be used as an input to the SLMCPR calculations.
5. In relation to the SLMCPR analysis, the submittal did not provide a reference for the conditions listed below. Please identify which approved methodology has the condition listed below.
  - (a) 50 percent of the local power range monitors (LPRMs) out of service (LPRM bypass model on or off);
  - (b) up to two traversing incore probe (TIP) machines out of service, or the equivalent number of TIP channels;
  - (c) 2500 effective full power hour (EFPH) LPRM calibration interval; and
  - (d) no reused channels.

Also, please describe the rationale for each of the above conditions.

Enclosure

Mr. J. A. Scalice  
Tennessee Valley Authority

**BROWNS FERRY NUCLEAR PLANT**

cc:

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