

March 3, 2005

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3, LICENSE RENEWAL
APPLICATION (TAC NOS. MC1704, MC1705 AND MC1706)

Dear Mr. Singer:

By letter dated December 31, 2003, Tennessee Valley Authority, (TVA or the applicant) submitted an application pursuant to 10 CFR Part 54, to renew the operating licenses for Browns Ferry Nuclear (BFN) Plant, Units 1, 2, and 3, for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application (LRA) and has identified, in the enclosure, areas where additional information is needed to complete the review.

These RAIs were discussed with your staff, Ken Brune, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me at 301-415-1594 or e-mail RXS2@nrc.gov.

Sincerely,

/RA/

Ram Subbaratnam, Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-259, 50-260, and 50-296

Enclosure: As stated

cc w/encls: See next page

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License Renewal Section A
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Tennessee Valley Authority

- 2 - **BROWNS FERRY NUCLEAR PLANT**

cc:

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DISTRIBUTION: Letter to K. Singer, Re: RAI for review of Browns Ferry Nuclear Plant, Units 1 and 2, Dated: March 3, 2005

Adams Accession No.: **ML050620592**

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BROWNS FERRY NUCLEAR, UNITS 1, 2, AND 3
LICENSE RENEWAL APPLICATION (LRA)
REQUEST FOR ADDITIONAL INFORMATION (RAI)
SECTION 4.7.7 TIME LIMITED AGING ANALYSIS

In Section 4.7.7 of the LRA that it evaluated loss of preload of the core plate hold-down bolts due to thermal and irradiation effects in accordance with the requirements of 10 CFR 54.21(c)(1)(ii). For the 40-year lifetime, the BWRVIP-25 concluded that all core plate hold-down bolts will maintain some preload throughout the life of the plant. For the period of extended operation, the expected loss of preload was assumed to be 20%, which bounds the original BWRVIP analysis. With a loss of 20% in preload, the core plate will maintain sufficient preload to prevent sliding under both normal and accident conditions. Based on this assumption, the applicant concludes that the loss of preload is acceptable for the period of extended operation.

RAI-4.7.7-1

Demonstrate how the BWRVIP-25 analysis can be applied to the BFN units based on the configuration and the geometry of core plate hold-down bolts and the reactor environment (temperature and neutron fluence) assumed in the original report .

RAI-4.7.7-2

Please explain the following questions with the preload determined to be 20%.

- (A) Identify the temperature of the bolts during the normal operation and the projected neutron fluence to be received by the bolts at the end of extended period of operation.
- (B) Explain how it was determined that the effect of temperature and neutron fluence result in a 20% loss of preload.
- (C) Provide a detailed description of the methodology and data used in Browns Ferry to perform the analysis as described in (B). Include the basis for the relaxation curves.

Enclosure