

November 23, 2004

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: BROWNS FERRY NUCLEAR PLANT, UNITS 2 AND 3 — REQUEST FOR  
ADDITIONAL INFORMATION REGARDING ONE-TIME INTEGRATED LEAK  
RATE TESTING (TAC NOS. MC3745 AND MC3746)

Dear Mr. Singer:

By letter dated July 8, 2004, the Tennessee Valley Authority submitted an application to revise the Technical Specifications and the Licensing Basis for the Browns Ferry Nuclear Plant, Units 2 and 3 (TS change 448). The proposed amendment requests the modification of Technical Specification Section 5.5.12, "Primary Containment Leakage Rate Testing Program" to allow a one-time 5-year extension to the 10-year frequency of the performance-based leakage rate testing program for Type-A tests. The proposed changes are submitted on a risk-informed basis as described in Regulatory Guide 1.174, *An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis*.

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. Bert Morris of your staff on November 15, 2004, and it was agreed that a response would be provided within 30 days of the date of this letter. If you have any questions, please contact me at (301) 415-2315.

Sincerely,

/RA/

Eva A. Brown, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-260 and 50-296

Enclosure: Request for Additional Information

cc w/encl: See next page

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Mr. Karl W. Singer  
Tennessee Valley Authority

**BROWNS FERRY NUCLEAR PLANT**

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REQUEST FOR ADDITIONAL INFORMATION

ONE-TIME FREQUENCY EXTENSION FOR CONTAINMENT

INTEGRATED LEAKAGE RATE

TEST INTERVAL

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY PLANT, UNITS 2 AND 3

DOCKET NOS. 50-260 AND 50-296

1. Results of the previous Type-A tests for Browns Ferry Nuclear Plant (BFN), Units 2 and 3, are presented on a table shown in page E1-6 of the Tennessee Valley Authority (TVA) application for amendment, dated July 8, 2004. The table appears to indicate that the November 6, 1995, Type-A test for Unit 3 registered a leak rate almost three times the leak rates measured for the other three tests for both Units 2 and 3 reported in the table. Please discuss plausible reasons for registering such large fluctuations in the above mentioned BFN Type-A test results.
2. Referring to the last paragraph of page E1-6 of the July 8 submittal, "Appendix J Visual Inspections," discuss how the proposed one-time extension of the integrated leak rate test (ILRT) interval from 10 years to 15 years would impact the visual inspection plans originally scheduled for BFN containment. Specifically, provide a description of TVA's inservice inspection methods/plans for the additional 5-year extended period that would provide assurance that in the absence of an ILRT for 15 years, the containment structural and leak-tight integrity will be maintained.
3. Regarding the Category E-A Examinations discussed on page E1-8 of the submittal, it is stated that the general visual examinations identified some mechanical damages such as pitting, gouges, dents, rust and arc strikes, which were said to be evaluated and found acceptable. Discuss the extent of the loss of the liner material that resulted from the observed mechanical damages and the technical basis for TVA's determination that the incurred damages were acceptable.
4. With respect to the Category E-C Examinations discussed in the first paragraph of page E1-9 of the submittal, it is indicated that VT-1 visual examinations of the interior surfaces of Units 2 and 3 torus waterline region (elevation 536' to elevation 538') identified minor localized corrosion and pitting and these degradations were evaluated to be acceptable. Discuss the extent of the loss of material that was associated with the localized corrosion and pitting observed and the technical basis for TVA's determination that the observed containment shell degradation was acceptable.
5. Referring to the Category E-D Examinations (Seals, Gaskets, and Moisture Barriers) discussed on page E1-9 of the submittal, discuss past BFN operating experience regarding the results of the VT-3 visual examinations of seals, gaskets and moisture barriers implemented once each inspection interval. Also, describe the extent of defects

Enclosure

found regarding BFN's moisture seal barrier and the defective portions replaced. Considering the defects found in BFN containment's moisture barriers, and its implication upon the affected liner degradation, discuss the potential negative impact of the proposed one-time ILRT interval extension upon TVA's continued ability to timely identify and dispose containment degradation and reasonably assure the leak-tightness and structural integrity of the BFN containment.

6. With respect to the Generic Letter 87-05 Inspections discussed on page E1-10 of the submittal, TVA stated that no significant corrosion had occurred in the sand region but there has been evidence of water leaking from the sand bed drains, on both Units 2 and 3, since the 1987 inspections. Discuss the results of the ultrasonic testing thickness measurements at the sand bed region performed in September 1998 for Unit 3 and April 1999 for Unit 2, including the extent of liner thickness reductions observed and the basis for TVA's determination that the inspections verified the integrity of the liner. Also, considering the extent of the liner degradation found, discuss the potential negative impact of the proposed one-time ILRT interval extension upon TVA's continued ability to timely identify and dispose containment degradation and reasonably assure the leak-tightness and structural integrity of the BFN containment.
7. Discuss BFN's past-operating experience regarding its use of the monitoring of the nitrogen makeup to containment as a complimentary means for assuring the leak tightness and structural integrity of the BFN containment. Discuss why the use of this supplementary approach strengthens TVA's case for requesting a one-time extension of the BFN containment's ILRT interval.
8. Inspections of some reinforced concrete and steel containment structures have identified degradation on the uninspectable (embedded) side of the drywell steel shell and steel liner of the primary containment. These degradations cannot be found by visual (i.e., VT-1 or VT-3) examinations unless they are through the thickness of the shell or liner, or when 100 percent of the uninspectable surfaces are periodically examined by ultrasonic testing. Provide additional information addressing how these undetected potential leakages under high pressure during core-damage accidents are factored into the risk assessment implemented for justifying the proposed one-time ILRT interval extension.