January 24, 2006

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

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 — REQUEST FOR ADDITIONAL INFORMATION REGARDING EXTENSION OF THE INTEGRATED LEAKAGE RATE TEST INTERVAL (TAC NO. MC9239)

Dear Mr. Singer:

By letter dated December 14, 2005, the Tennessee Valley Authority (TVA, the licensee) submitted a proposed license amendment (WBN-TS-05-07) that would revise Technical Specification 5.7.2.19, "Containment Leakage Rate Testing Program," to allow a one time, 5-year extension to the current 10-year test interval for the performance-based leakage rate test program in accordance with Title 10 of the *Code of Federal Regulations*, Part 50, Appendix J, Type A test.

In order for the staff to complete its review of the information provided by the licensee, we request that TVA provide responses to the enclosed request for additional information (RAI). Based on discussions with your staff, we understand that you plan to respond to the enclosed RAI within 60 days of receipt of this letter. If you have any questions about this material, please contact me at (301) 415-1364.

Sincerely,

/RA/

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Request for Additional Information

cc w/enclosure: See next page

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Mr. Karl W. Singer
Tennessee Valley Authority

WATTS BAR NUCLEAR PLANT

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REQUEST FOR ADDITIONAL INFORMATION

WATTS BAR NUCLEAR PLANT, UNIT 1

INTEGRATED LEAKAGE RATE TEST INTERVAL EXTENSION

DOCKET NO. 50-390

1. The risk assessment methodology used to support the integrated leakage rate test (ILRT) interval extension for Watts Bar is based on a methodology developed by the Electric Power Research Institute (EPRI) in 1994. A revision to this methodology, developed for the Nuclear Energy Institute (NEI) by EPRI in 2001, corrected/improved the original methodology in several areas. Based on a Nuclear Regulatory Commission (NRC) staff assessment, the revised methodology (referred to as the NEI interim guidance) would indicate larger risk impacts (e.g., Δlarge early release frequency (LERF)) for the ILRT interval extension than the original. In view of the nonconservative nature of the original EPRI methodology, please provide a reassessment of the risk impacts of the requested change for Watts Bar based on the NEI interim guidance. In reporting risk results (for Δperson-rem, ΔLERF, and Δconditional containment failure probability), include results corresponding to a change in test frequency from three tests in 10 years to one test in 15 years.

2. In Enclosure 4, the population dose for each release class is obtained based on information in Table 6, together with an assumption that the 50-mile population dose for an intact containment (1 La) is equal to the average conditional population dose (2.76E+5 person-rem per core damage event). The resulting population dose for each release class is substantially higher than estimated in the Tennessee Valley Authority's evaluation of severe accident mitigation alternatives (SAMDAs) performed in 1994 (Reference 10 in Enclosure 4). For example, the population dose assigned to the intact containment release class is 2.76E+5 person-rem per event in the ILRT amendment request, versus approximately 200 person-rem per event in the SAMDA evaluation; the population dose assigned to the largest release class is 2.76E+7 person-rem per event in the ILRT amendment request versus approximately 4E+5 person-rem per event in the SAMDA evaluation. Furthermore, use of a very large population dose for the intact containment release class in the ILRT evaluation (both in absolute terms and relative to the largest release class) leads to an over-estimate of the impact of the ILRT extension on population dose. Please reconcile the population dose values with those in the SAMDA analysis, and provide a reassessment of the impact of the ILRT interval extension on population dose based on appropriate population dose values.

ENCLOSURE

3. Inspections of some reinforced and steel containments (e.g., North Anna, Brunswick, D. C. Cook, and Oyster Creek) have indicated degradation from the uninspectable (embedded) side of the steel shell and liner of primary containments. Please describe the uninspectable areas of the Watts Bar containment, and the programs used to monitor their condition. Provide a quantitative assessment of the impact on LERF due to age-related degradation in these areas, in support of the requested ILRT interval extension to 15 years. This could be based on methods such as those utilized in the Browns Ferry ILRT extension request.

4. In Enclosure 4, it is assumed that the LERF associated with both internal and external events can be estimated by doubling the LERF associated with only internal events. This simplified approach has been accepted by the NRC if sufficient justification is provided that the core damage frequency (CDF) from external events, including seismic and fire events, is approximately equal to or less than that for internal events. Although fire risk is discussed briefly in Section 9.0, the contribution from seismic events was dismissed on the basis that the seismic margin assessment did not calculate seismic CDF or LERF. Provide additional justification that the contribution from seismic events is small. This could be based on simplified methods such as those utilized in the Browns Ferry ILRT extension request.