September 8, 2010

Mr. Ashok S. Bhatnagar
Senior Vice President
Nuclear Generation Development
and Construction
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – REQUEST FOR ADDITIONAL INFORMATION REGARDING LICENSEE'S FINAL SAFETY ANALYSIS REPORT AMENDMENT RELATED TO CHAPTER 14, "INITIAL TEST PROGRAM" (TAC NO. ME2731)

Dear Mr. Bhatnagar:

By letters dated November 24 and December 14, 2009, January 11, May 7, and May 17, 2010, Tennessee Valley Authority (TVA) submitted Final Safety Analysis Report Amendments 95, 96, 97, 98, and 99, respectively. The Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed to complete its review.

To support NRC staff review schedules, a response is required within 14 days of receipt of this letter.

If you should have any questions, please contact me at 301-415-6606.

Sincerely,

**/RA/**

Joel S. Wiebe, Senior Project Manager
Watts Bar Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

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OFFICIAL AGENCY RECORD

REQUEST FOR ADDITIONAL INFORMATION

WATTS BAR NUCLEAR PLANT, UNIT 2

FINAL SAFETY ANALYSIS REPORT CHAPTER 14

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-391

By letters dated November 24, 2009 (Agencywide Document and Management System Accession No. ML093370274), December 14, 2009 (ML093570464), and January 11, 2010 (ML100191426), May 7, 2010 (ML101340795), May 17, 2010 (ML101610291) Tennessee Valley Authority (TVA) submitted Final Safety Analysis Report (FSAR) Amendments 95, 96, 97, 98, and 99, respectively. The following additional information related to Chapters 11, "Radioactive Waste Management" and 12, "Radiation Protection" is required to complete our review.

Chapter 14

The Watts Bar Unit 2 (WBN2), FSAR Section 14.2.7, states that the initial test program will be developed and conducted in accordance with Regulatory Guide 1.68, Revision 2 (August 1978) "Initial Test Programs for Water-Cooled Nuclear Power Plants" except for the specific listed exceptions. Regulatory Guide 1.68, Section 5 lists the following test as one that should be included in the power-ascension test phase. "bb Conduct neutron and gamma radiation surveys to establish the adequacy of shielding and identify high-radiation zones as defined in 10 CFR Part 20." The WBN2 FSAR, Table 14.2-2, Sheet 18, summarizes the Radiation Baseline Survey Test to be performed, but doesn't commit to any regulatory guidance or standards for conducting the test.

Regulatory Guide 1.69, "Concrete Radiation Shields and Generic Shield Testing for Nuclear Power Plants," Revision 1 (May 2009), Section C.3 endorses American National Standards Institute/American Nuclear Society document ANSI/ANS-6.3.1-1987; R2007, "Program for Testing Radiation Shields in Light Water Reactors (LWR)," which describes a test program to be used in evaluating biological radiation shielding in nuclear reactor facilities under normal operating conditions, including anticipated operational occurrences.

The Commission, in Staff Requirements Memorandum SECY-07-096, directed the staff to encourage TVA to adopt updated standards for Unit 2 where it would not significantly detract from design and operational consistency between Units 1 and 2. Conducting the test program in accordance with ANSI/ANS-6.3.1 may substantially improve the confidence that the WBN2 shielding results in as low as reasonably achievable exposures to personnel and the confidence in equipment qualification assumptions. The staff requests TVA to evaluate conducting the Radiation Baseline Survey Test in accordance with ANSI/ANS-6.3.1-1987; R2007 or otherwise show how adopting the updated standard for the test program significantly detracts from design or operational consistency between Unit 1 and 2.

Enclosure