May 8, 2002

Mr. J. A. Scalice
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 RE: TRITIUM PRODUCTION PROGRAM INTERFACE ISSUE 5 (TAC NO. MB1884)

Dear Mr. Scalice:

The Nuclear Regulatory Commission staff has reviewed your letter of August 20, 2001, requesting an amendment to the operating license for the Watts Bar Nuclear Plant, Unit 1. Tennessee Valley Authority's (TVA's) proposed amendment would modify the Technical Specifications related to irradiation of tritium producing burnable absorber rods in the reactor core.

We need additional information to complete our review and have prepared the attached request for additional information (RAI). Please refer to Interface Issue 5 in your reply. I discussed the enclosed RAI with Mr. Chardos, TVA's Tritium Program Manger, and he agreed to respond to this request by May 17, 2002. Please contact me on 301-415-1423 if you have any questions.

Sincerely,

/RA/

L. Mark Padovan, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Request for Additional Information

cc w/ enclosure: See next page

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Request for Additional Information

Tritium Production Program Interface Issue 5

Watts Bar Nuclear Plant, Unit 1

Docket No. 50-390

1. Section 2.15.6 of Enclosure 4, “Westinghouse Report NDP-00-0344," of Tennessee Valley Authority’s (TVA’s) August 20, 2001, amendment request addresses radiological consequences of various design basis accidents affected by the addition of tritium-producing burnable absorber rods (TPBARs) to the Watts Bar reactor. The U.S. Nuclear Regulatory Commission (NRC) staff needs additional information to make the requisite finding that the consequences of the accidents are consistent with regulatory criteria. Please refer to Regulatory Information Summary 2001-019, “Deficiencies in the Documentation of Design Basis Radiological Analyses Submitted in Conjunction with License Amendment Requests,” for a more complete discussion of the staff’s expectations in regard to analysis descriptions. Please provide the information requested below or give us a specific reference if you have already docketed some of this information. For each accident analyzed:

- Provide a tabulation of all analysis inputs and assumptions used in offsite and control room habitability analyses in sufficient detail to enable the staff to evaluate the appropriateness of these data and, if deemed necessary, to perform confirmatory calculations.

- Describe any analysis methodology or modeling that is different from that previously approved by the NRC in a licensing action for Watts Bar. Please justify each change. This includes any changes in the determination of atmospheric dispersion values (X/Q) for offsite or control room intake.

- Please provide a substantiated basis for assuming 51 cfm control room unfiltered in leakage. Justify your "positive pressure means no in-leakage" assumption in light of industry experience on this subject.

- The NRC’s letter of April 25, 2002, contained a second RAI on Interface Issue 7, questioning the ability of the TPBAR consolidation canister load-handling equipment to meet single failure criteria. If TVA does not address this under Interface Issue 7, please provide an analysis of the offsite and control room doses resulting from a dropped consolidation canister containing 300 TPBARs to demonstrate that the event is, in fact, bounded by the drop of a single assembly containing 24 TPBARs.

2. Section 1.5.5 of Enclosure 4 to TVA’s letter of August 20, 2001, discusses control room habitability. The discussion appears to be limited to the emergency core cooling system leakage component of the loss-of-coolant accident (LOCA). You refer to Table 2.15.6-2 as the basis for TVA’s conclusion that General Design Criterion 19 (GDC -19) will continue to be met. We note that the language of GDC-19 is not restricted to LOCAs, but applies to all accidents. Please explain how TVA’s conclusion that meeting GDC-19 addresses all of the design-basis radiological accidents considered in the Watts Bar Updated Final Safety Analysis Report. If

TVA based this conclusion on the LOCA being the limiting accident, please justify this conclusion addressing the following:

- the impact of accident-specific differences in release point configuration (e.g., upwind direction and distance, release point height, diffuse or point source, etc.)

- the impact of accident-specific differences in the activation of control room protective features inherent delays associated with these differences (e.g., instantaneous safety injection signal versus radiation monitor alarm)

- the impact of accident-specific differences in source terms on monitor response and isolation delay in reaching set point if actuation is based on radiation monitor response

- mode-dependent engineered safety feature operability for the fuel-handling accident versus at-power accidents, including the impact this may have on control room unfiltered in-leakage

3. TVA analyzed the total effective dose equivalent as well as whole body and thyroid doses to determined radiological consequence from TPBARs being in the reactor. TVA's submittal of August 20, 2002, does not appear to request that the total effective dose equivalent (TEDE) dose quantity and its associated dose criteria will replace the whole body and thyroid dose guidelines currently in the Watts Bar licensing basis. Please confirm our understanding that future design basis accident radiological analyses, intended to demonstrate compliance with regulatory criteria, will continue to assess whole body and thyroid doses, as well as TEDE, for tritium.

Mr. J. A. Scalice
Tennessee Valley Authority

WATTS BAR NUCLEAR PLANT

cc:
Mr. Karl W. Singer, Senior Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Jon R. Rupert, Vice President (Acting)
Engineering & Technical
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. William R. Lagergren, Site Vice President
Watts Bar Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Spring City, TN 37381

General Counsel
Tennessee Valley Authority
ET 11A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. Robert J. Adney, General Manager
Nuclear Assurance
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Mark J. Burzynski, Manager
Nuclear Licensing
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Paul L. Pace, Manager
Licensing and Industry Affairs
Watts Bar Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Spring City, TN 37381

Mr. Larry S. Bryant Manager
Watts Bar Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Spring City, TN 37381

Senior Resident Inspector
Watts Bar Nuclear Plant
U.S. Nuclear Regulatory Commission
1260 Nuclear Plant Road
Spring City, TN 37381

Rhea County Executive
375 Church Street
Suite 215
Dayton, TN 37321

County Executive
Meigs County Courthouse
Decatur, TN 37322

Mr. Lawrence E. Nanney, Director
Division of Radiological Health
Dept. of Environment & Conservation
Third Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

Ms. Ann Harris
341 Swing Loop Road
Rockwood, Tennessee 37854

Dr. Gary Drinkard
340 Drinkard Dr.
Spring City, TN 37381

Ms. Vickie G. Davis
TDEC-DOE Oversight Division
761 Emory Valley Road
Oak Ridge, TN 37830-7072