



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

February 21, 2013

**LICENSEE:** Tennessee Valley Authority

**FACILITY:** Watts Bar Nuclear Plant, Unit 1

**SUBJECT:** SUMMARY OF JANUARY 23, 2013 PRE-SUBMITTAL MEETING WITH  
TENNESSEE VALLEY AUTHORITY ON A PROPOSED LICENSE  
AMENDMENT REQUEST

On January 23, 2013, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of the Tennessee Valley Authority (TVA) at NRC Headquarters, One White Flint North, 11545 Rockville Pike, Rockville, Maryland.

TVA requested a meeting to discuss a proposed license amendment request (LAR) for tritium producing burnable absorber rods (TPBARs) at Watts Bar Nuclear Plant, Unit 1.

A preliminary agenda was provided with the meeting notice (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13007A045). A list of attendees is enclosed.

After initial introductions, Mr. Terry Cribbe, Manager, TVA Licensing and Regulatory Programs, began the meeting with a presentation (ADAMS Accession No. ML13023A412) that included the final agenda. He was followed by more detail presentations from the staff and consultants of the Department of Energy (DOE) and TVA. The highlights of the discussion include the following:

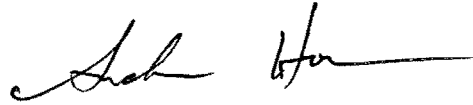
- Both DOE and TVA do not plan to submit a revision to the original Tritium Production Core Topical Report (TR) (NDP-98-181, Revision 1), which received NRC staff's approval in NUREG-1672, "Safety Evaluation Report Related to the DOE's Proposal for the Irradiation of Lead Test Assemblies Containing Tritium Producing Burnable Absorber Rods in Commercial Light-Water Reactors," issued in May 1999. These documents assumed DOE's initial design goal of less than one (1.0) curie (Ci)/TPBAR/year tritium permeation rate through the TPBAR cladding. The tritium release limits for previous amendment requests to increase the number of TPBAR loading for each fuel cycle were consistent with this limit. However, the proposed LAR will increase release limit to five (5.0) Ci/TPBAR/year. This increase is based the result of DOE's subsequent analysis of the actual fuel cycles' performance that the attempted design improvements did not seem to significantly change the actual permeation rate to less than 1.0 Ci/TPBAR/year. This result suggested that the inherit design limit has been reached. The staff informed TVA that additional review efforts in effluent releases, radwaste system design and dose consequences can be expected, because of the proposed tritium permeating rate

assumption is no longer consistent with that of NUREG-1672, even though the proposed release limit is still expected to meet the Title 10 of *Code of Federal Regulation* (10 CFR) Part 20 and 10 CFR Part 50 Appendix I discharge limits.

- TVA proposed to modify the essential raw cooling water supply line. This modification is expected to eliminate post-loss-of-coolant accident (LOCA) manual operator actions and, thereby, eliminates 40 gallon per minute source of unborated water leakage into the containment. TVA will credit this modification for post-LOCA shutdown margin calculations in the proposed LAR. Because this was not in previous LARs, additional NRC review effort can be expected.
- The staff provided feedback that other safety analyses that are significant with respect to post-accident shutdown margin and radiological consequences, such as the main steam line break and steam generator tube rupture events, should be discussed in the submittal. The licensee responded that these events were already contained in the original TR but could summarize relevant material from the TR in the LAR. TVA was encouraged to list all the parts in the TR and NUREG-1672 that would be impacted by the proposed change to facilitate the review.
- TVA plans to submit the LAR in June 2013 for Watts Bar Unit 1 and will request the NRC staff to approve the LAR in approximately 17 months to support DOE's tritium production goal. The NRC staff informed TVA that this proposed LAR could be considered a complex review because of the additional scope and it may take up to 24 months to complete. Thus, TVA should ensure the initial LAR and requests for additional information are timely and of high quality to minimize any delays. For example, the LAR should include expanded details in the models and data used to estimate the tritium permeation, and the new assumptions that will be used in the post-LOCA reactivity hold down analyses, as discussed above, to facilitate a thorough review.

No proprietary or security related information was discussed and no regulatory decisions were made at the meeting. Members of the public were not in attendance. Thus, no public meeting feedback forms were received.

Please direct any inquiries to me by phone at 301-415-8480, or e-mail at [Andrew.Hon@nrc.gov](mailto:Andrew.Hon@nrc.gov).

A handwritten signature in black ink, appearing to read 'Andrew Hon', with a long horizontal flourish extending to the right.

Andrew Hon, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-390, 50-327, and 50-328

Enclosure:  
List of Attendees

cc w/encl: Distribution via Listserv

**DATE & TIME:** Wednesday, January 23, 2013. 2:00PM-4:00PM

## Attendees

[illegible]

\* by telephone

Enclosure

Please direct any inquiries to me by phone at 301-415-8480, or e-mail at [Andrew.Hon@nrc.gov](mailto:Andrew.Hon@nrc.gov).

**/RA/**

Andrew Hon, Project Manager  
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ADAMS Accession Nos.: Package ML13044A475 Notice ML13007A045 Slides ML13023A412 Summary ML13044A477

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