

## **NRR-PMDAPEm Resource**

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**From:** Schaaf, Robert  
**Sent:** Thursday, March 16, 2017 4:31 PM  
**To:** Wells, Russell Douglas; Gordon Arent  
**Cc:** Bucholtz, Kristy; Karipineni, Nageswara; Hamm, Matthew; Beasley, Benjamin; Hon, Andrew; Saba, Farideh  
**Subject:** Watts Bar, Units 1 and 2 - Final Request for Additional Information Concerning Request to Amend ABGTS TS (CAC Nos. MF8526 and MF8527)  
**Attachments:** Watts Bar - Final RAIs Related to ABGTS LAR - MF8526.docx

On February 22, 2017, the U.S. Nuclear Regulatory Commission (NRC) staff sent the Tennessee Valley Authority draft Requests for Additional Information (RAIs) via e-mail. These RAIs relate to TVA's license amendment request (LAR) dated October 20, 2016 (ADAMS Accession No. ML16294A551), that would revise the Technical Specifications related to the auxiliary building gas treatment system (ABGTS) to provide an action for when the auxiliary building secondary containment enclosure (ABSCE) boundary is degraded, and to allow the ABSCE boundary to be open intermittently under administrative controls without entering the associated ABGTS limiting condition for operation.

An RAI clarification call was held on March 6, 2017. The final RAIs, modified from the February 22, 2017, draft as discussed below, are attached to this e-mail.

Regarding question ARCB-RAI-2, TVA stated that it did not believe that Part 3 of the question is needed as TVA considered it to not be consistent with Standard Technical Specifications. The staff indicated during the call that it would consider deleting or rewording the question. Upon further consideration, the staff has determined that the requested change remains necessary in order to ensure that the compensatory measures will be implemented to protect plant personnel consistent with the intent of the cited regulatory criteria.

Regarding question SBPB-RAI-1, TVA questioned whether Part 2 of the question was redundant to elements of ARCB-RAI-1. The staff indicated during the call that the information was necessary as supplemental to the information requested in ARCB-RAI-1. The staff has modified the text in the bullet preceding the numbered parts of this question to clarify the staff's concern and modified Part 2 to clarify the requested licensee response.

During the March 6, 2017, clarification call the licensee agreed to provide a response to the final RAIs within 45 days from the date of the call, which is April 20, 2017.

If you have any questions, please contact me at 301-415-6020 or [Robert.Schaaf@nrc.gov](mailto:Robert.Schaaf@nrc.gov).

Regards,

*Robert G. Schaaf*

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REQUEST FOR ADDITIONAL INFORMATION RELATED TO  
LICENSE AMENDMENT REQUEST TO REVISE TECHNICAL SPECIFICATION 3.7.12,

“AUXILIARY BUILDING GAS TREATMENT SYSTEM (ABGTS).”

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-390 AND 50-391

By letter dated October 20, 2016, (Agencywide Documents Access and Management System Accession Number ML16294A551), Tennessee Valley Authority (TVA), the licensee, proposed changes to the Watts Bar Nuclear Plant (WBN), Units 1 and 2, technical specifications (TSs). The proposed changes would revise WBN TS 3.7.12, “Auxiliary Building Gas Treatment System (ABGTS),” to provide an action when both trains of the ABGTS are inoperable due to the auxiliary building secondary containment enclosure boundary being inoperable.

During the Nuclear Regulatory Commission (NRC) staff’s review of the impact of the proposed changes on all DBAs currently analyzed in the WBN updated final safety analysis report (UFSAR) that could have the potential for significant dose consequences per Regulatory Guide (RG) 1.195 and 1.183, the NRC staff determined that more information was needed to complete the review.

**ARCB-RAI-1**

In the application a proposed change adds a Note to TS Limiting Condition of Operation (LCO) 3.7.12, “Auxiliary Building Gas Treatment System (ABGTS).” The proposed Note states, “The Auxiliary Building Secondary Containment Enclosure (ABSCE) boundary may be opened intermittently under administrative control.”

In addition, the proposed change adds the following sentences to TS 3.7.12 LCO Bases.

The LCO is modified by a Note allowing the ABSCE boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for auxiliary building isolation is indicated.

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.36 requires the technical specifications be derived from the analyses and evaluation included in the safety analysis report.

Section 15.5.3 of the WBN Updated Final Safety Analysis Report (UFSAR) contains the analysis of the environmental consequences of a postulated Loss of Coolant Accident

ENCLOSURE

(LOCA). This analysis assumes that activity leaking to the Auxiliary Building is directly released to the environment for the first four minutes, after which it is held up for 0.3 hours and then released through the ABGTS filter system.

The proposed LCO note to TS 3.7.12 described above is not consistent with the environmental consequences of a LOCA licensing basis for WBN, which assumes the ABSCE boundary is established with a negative internal pressure within 4 minutes after occurrence of a LOCA. The proposed note allows the ABSCE boundary to be opened for an indefinite length of time, in addition to its unlimited use. Furthermore, the referenced administrative control is not defined in the operating license or proposed TS for WBN. The administrative control is discussed in the TS Bases. The TS Bases should describe or clarify the TS; the TS bases are not allowed to change the TS. The proposed TS 3.7.12 Bases state requirements for TS 3.7.12 and therefore the TS 3.7.12 Bases are changing the TS.

Therefore, the NRC staff requests TVA to provide the following:

- a proposed change to TS 3.7.12 that is consistent with the NRC-approved design basis as reflected in the UFSAR Section 15.5.3, "Environmental Consequences of a LOCA" analysis, and
- TS 3.7.12 Bases that are consistent with the proposed change to TS 3.7.12.

#### **ARCB-RAI-2**

WBN current TS 3.7.12 requires the plant to be in hot standby (mode 3) in six hours and in cold shutdown (mode 5) in 36 hours if both ABGTS trains are inoperable for any reason. In this license amendment request (LAR) a new Condition B is proposed which will address both trains of ABGTS being inoperable due to the ABSCE boundary being inoperable and would allow 24 hours to restore the ABSCE boundary and therefore restore operability to both ABGTS trains. Section 3.2 "Technical Analysis," of the LAR states:

During the period that the ABSCE boundary is inoperable, appropriate compensatory measures will be utilized. The preplanned measures will be available to address these concerns for intentional and unintentional entry into proposed new LCO 3.7.12 Condition B. TVA will have approved written procedures in place that describe the compensatory measures to be taken in the event of an intentional or unintentional entry into LCO 3.7.12 Condition B. The procedures will provide appropriate, preplanned compensatory measures consistent with the intent, as applicable, of [Generic Design Criteria] GDCs 19, 60, and 64 and 10 CFR Part 100 to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security (see Enclosure 2). The proposed 24 hour completion time is reasonable based on the low probability of a DBA occurring during this period and the use of preplanned compensatory measures.

Reasonable assurance of adequate protection cannot be based solely on the probability of the accident occurring. With both trains of ABGTS inoperable, the plant is in an

unanalyzed condition because the radiological consequence analysis for LOCA does not show that the limits of the 10 CFR 100 and GDC 19 of 10 CFR 50 Appendix A can be met without operation of the ABGTS. This proposal will allow the plant to remain in modes 1, 2, 3, or 4 for an additional 24 hours before requiring the plant to be placed in cold shutdown or mode 5. However, the technical analysis section of the LAR does not provide reasonable assurance that adequate protection will be maintained without the ABGTS and that the limits in GDC 19 of 10 CFR 50 Appendix A and 10 CFR 100 will be met by use of compensatory measures. The conclusion section of the LAR states that the 24 hour time limit to restore the inoperable boundary is based on the availability of compensatory measures and the low probability of an accident occurring during the 24 hour periods that the ABGTS trains are inoperable, and TVA concludes that the proposed change is acceptable and complies with applicable regulatory requirements. However, there is no information presented to support this conclusion. Therefore, please:

1. Explain what compensatory measures will be used when the ABSCE boundary is inoperable and in what document they are located; and
2. Explain how the requirements of 10 CFR 100 and GDC 19 of 10 CFR 50 Appendix A are met using these compensatory measures.

In addition, if compensatory measures are relied upon as the safety basis for the proposed change then they must be either a condition of the license or be incorporated into the TS, not the TS Bases.

3. Please provide a license condition or proposed TS change that requires immediate implementation of the compensatory measures.

### **ARCB-RAI-3**

The licensee states in the amendment request:

In order to support normal operation, short duration events (e.g., venting operations, test evolutions, fire damper testing, annulus entries), penetration openings, and auxiliary building (AB) isolations may be required. These events have been analyzed and do not exceed Title 10 of the *Code of Federal Regulations* (10 CFR) Part 100 limits for offsite dose and 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 19 for the control room dose.

It is not clear to the NRC staff which events have been analyzed that support the addition of the new Condition B. Please clarify the statement above, identifying which events have been analyzed, and explain the details of the analysis performed for each event showing that the 10 CFR Part 100 and 10 CFR Part 50, Appendix A, GDC 19 limits are not exceeded.

**SBPB-RAI-1**

The LAR proposes two changes to the TSs. One of the changes proposes to revise LCO 3.7.12 by adding a note stating “The Auxiliary Building Secondary Containment Enclosure (ABSCE) boundary may be opened intermittently under administrative control. The second change adds a new Condition B to specify Required Action with a completion Time of 24 hours to restore an inoperable ABSCE boundary to operable status. Based on the discussion provided in the LAR (e.g. Sections 2.2 and 3.2 of Enclosure 1):

- The intent of the new Condition B is to support normal operation, short duration events (e.g. venting operations, test evolutions, fire damper testing, annulus entries). The proposed Condition B would allow the completion time for restoration of the ABSCE boundary to be extended to 24 hours, significantly reducing the potential to enter LCO 3.7.12, Condition C (Condition B under the current TS).

Please provide a brief synopsis of how many entries into current LCO 3.7.12, Condition B resulted under the current TS in the last 5 years and if they proceeded into unnecessary shutdowns.

- The intent of the new note under LCO 3.7.12 is to allow normal personnel entry and exit through the doors, and to allow breaches through the ABSCE boundary above those limits applied on a normal basis (i.e. 24 hours as a result of new Condition B) during refueling and maintenance outage activities such as ice blowing activities. All the associated breaches will be handled by administrative procedures. Additionally, the new note will also be used during future replacement of WBN Unit 2 steam generators. Section 2.2 of Enclosure 1 to the LAR states “Otherwise with the proposed changes, intermittent opening of the ABSCE boundary under administrative controls will be allowed in Modes 1, 2, 3, and 4 without entering LCO 3.7.12.” This note could be interpreted to allow indefinite breaching of the ABSCE boundary (i.e., in excess of the 24-hour limitation imposed as a result of new Condition B).
  - 1) Please provide additional information about the frequency and duration of the expected ABSCE boundary breaches to support the work activities as stated in the LAR, and the extent of control the proposed TS may have on the frequency and duration of the breaches.
  - 2) Please provide appropriate licensing basis changes to limit the application of the new note to short duration breaches of the ABSCE boundary (i.e., not to exceed the 24-hour period permitted by proposed new Condition B).
  - 3) SR 3.7.2.4 requires to “Verify one ABGTS train can maintain a pressure between 0.25 and 0.5 inches water gauge with respect to atmospheric pressure during the post-accident mode of operation at a flow rate  $\geq 9300$  and  $\leq 9900$  cfm”. Is there any drawdown test applicable to the ABGTS to pull the ABSCE to a minimum vacuum?

Please provide available data to verify the capability of ABGTS to establish a negative pressure in the ABSCE (see item 2 above) and discuss the margins embedded in that data.