

## **NRR-PMDAPEm Resource**

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**From:** Minarik, Anthony  
**Sent:** Wednesday, April 15, 2015 3:17 PM  
**To:** Arent, Gordon (garent@tva.gov)  
**Cc:** Bryan, Robert H Jr (rhbryan@tva.gov); Matharu, Gurcharan; Zimmerman, Jacob; Quichocho, Jessie  
**Subject:** Final RAI's MF2549 WBN, U1 CSST License Amendment Request  
**Attachments:** REQUEST FOR ADDITIONAL INFORMATION CSST MF2549 (4-15-2015).docx

Mr. Arent

By letter dated August 1, 2013, the Tennessee Valley Authority (TVA) submitted an application for license amendment to revise the Technical Specifications for Watts Bar Nuclear Plant (WBN) Unit 1. These changes to the WBN Unit 1 Technical Specifications, would revise the Limiting Conditions for Operation related to alternating current sources while operating. You supplemented this request as recently as January 29, 2015.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is attached to this e-mail. The proposed questions were provided to your staff on March 31, 2015, and TVA has agreed to provide a response to this information by April 30, 2015.

Thank you for your time and attention in this matter,

Anthony Minarik  
301-415-6185

Office of Nuclear Reactor Regulation (NRR)  
Division of Operating Reactor Licensing (DORL)  
Watts Bar Special Projects Branch (LPWB)

Normal Hours:  
0600-1545: Mon-Fri

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**Subject:** Final RAI's MF2549 WBN, U1 CSST License Amendment Request  
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**Received Date:** 4/15/2015 3:17:00 PM  
**From:** Minarik, Anthony

**Created By:** Anthony.Minarik@nrc.gov

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**Post Office:**

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**REQUEST FOR ADDITIONAL INFORMATION REGARDING**  
**OFFSITE POWER AVAILABILITY REQUIREMENTS**  
**WATTS BAR NUCLEAR PLANT UNIT 1**  
**TAC NO. MF2549**

The following questions were developed as a result of the staff's review of the licensee's revised license amendment request (LAR) submitted by letter dated January 29, 2015. The revised LAR proposes to change Technical Specification (TS) Surveillance Requirement (SR) 3.8.1.8 and modify the current licensing basis as described in the Updated Final Safety Analysis Report (UFSAR). This would allow the licensee to use Common Station Service Transformers (CSSTs) A and B as offsite power source for an indefinite time in lieu of CSST C or D.

1. The current licensing basis of the plant has the offsite power sources with the capability to power each of the Shutdown Boards 1A-A and 1B-B from CSSTs C and D. For compliance with General Design Criterion 17, each shutdown board has an immediately available normal source, CSST C for 1 A-A and CSST D for 1 B-B and an automatic transfer to the alternate source CSST D for 1A-A and CSST C for 1 B-B. CSSTs A or B, when used as offsite power circuits for extended duration, do not have similar flexibility or capability. 10CFR 50.36 requires *Limiting conditions for operation (LCO) to be specified when remedial actions are permitted by the TS to restore the plant to full compliance.* In view of the reduction in defense in depth from the current TS (i.e., when CSST A or B is used as a GDC 17 power source), please provide details on proposed duration (LCO) when using the maintenance feeds through CSSTs A or B in lieu of CSSTs C or D.
2. In case of a loss of offsite power (LOOP) event, the onsite power sources are required to connect to the safety busses. In order to recover from a LOOP or a station blackout (SBO) event, the offsite power sources have to be restored to the safety busses. The current TS surveillances validate the capability to parallel the onsite and offsite sources for successful transfer between the two sources through CSSTs C and D. To demonstrate operability of a power source, the licensee has to perform periodic surveillances in their required power source alignment to comply with the requirements of 10 CFR 50.36. The current TS proposal to use CSST A or B as GDC 17 sources does not appear to have TS surveillances to validate a similar capability. Please provide information on surveillances that will be performed to demonstrate the operability of the circuits between the switchyard and the safety busses through CSST A or B.
3. Please confirm that the components in the circuits associated with CSSTs A and B, 161kV switchyard and the safety busses will be subjected to the requirements of the Maintenance Rule as applicable under 10CFR50.65 "Requirements for monitoring the effectiveness of maintenance at nuclear power plants."
4. Assuming that CSST A or B is being used as an offsite power source for the safety buses with both WBN units operating at full power, the sequence of events following an accident signal in one unit could be reactor trip, turbine trip and a delayed generator trip depending on the coast down time of the generator. The safety buses will have accident loads block loaded while the generator in coast down. After the generator trip, the safety busses will be

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transferred to the CSST A or depending on the selected source. Please provide the following information:

- i. A summary of analyses performed to demonstrate the consequences of this sequence of events on the accident analyses.
  - ii. Details or referenced information in the licensing basis documenting the adequacy of this design as related to accident analyses.
  - iii. Summary of electrical system analyses performed with the grid at minimum allowable voltage and simultaneous restart or reacceleration of all safety related and non-safety related loads, assuming a design basis accident in one unit and simultaneous orderly shutdown of the other unit.
5. Since the operation of non-safety related circuit breakers related with offsite power sources is critical for separation and restoration of power from the switchyard, plant designs incorporate redundant trip coils and closing coils powered from reliable DC sources. Please confirm if the circuit breakers associated with CSSTs A and B and offsite power source have similar design features.