Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

WBL-19-048

September 12, 2019

10 CFR 50.9(a)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: **Response to Apparent Violation in NRC Inspection Report 05000390/2019013 and 05000391/2019013, EA-19-042**

On August 19, 2019, the Nuclear Regulatory Commission (NRC) issued Inspection Report 05000390/2019013 and 05000391/2019013 (ML19231A179), detailing an apparent violation (AV) of NRC requirements for Tennessee Valley Authority's (TVA) failure to provide complete and accurate information in all material respects, as required by 10 Code of Federal Regulations (CFR) 50.9(a).

On August 27, 2019, TVA informed the NRC that it would submit a written response to the AV by September 18, 2019.

TVA does not dispute that the violation occurred, and hereby submits its response to the subject AV. The AV was a failure to provide complete and accurate information in all material respects on multiple occasions as part of the Licensing of Watts Bar (WBN) Unit 2 from 2010 through 2013, and subsequently as part of a license amendment for WBN Unit 1 in 2015. TVA submitted inaccurate information that was material for an NRC licensing decision regarding the adequacy of the offsite electric power system.

Specifically, the analysis performed in the qualification of the Common Station System Transformer (CSST) A and B as a Technical Specification (TS) offsite power source was incomplete because it did not consider the voltage transient that would occur as a result of the transfer from the Unit Station Service Transformer to either CSST A or B, contrary to General Design Criteria – 17 of 10 CFR 50, Appendix A.

TVA performed a Cause and Effect Analysis and determined the apparent cause for the incomplete analysis was a bad mental model created by an analysis performed at a sister plant and a corresponding misunderstanding of WBN alignments. The analysis performed was based upon previous calculations from a sister plant where no transfer was required.

Unaware of WBN's difference with the sister plant, personnel performed similar analysis without fully understanding the difference in plant alignments.

Upon discovery, TVA took immediate action to restore compliance through interim corrective actions to place caution cards on the 6.9 KV maintenance hand switches[A1] identifying to the operations staff that CSST A or B should not be aligned for this TS compliant configuration until further evaluation could be completed. The NRC was also informed of this condition and noncompliance in accordance with 10 CFR 50.9(b). There were no actual safety consequences of this unanalyzed condition, as the station had not been in the prohibited lineup.

In addition to placing caution cards, TVA completed the following actions:

- Operations procedures were updated to prevent crediting CSST A or B as offsite sources for TS compliance when the associated 6.9 kV unit board is originally powered from the USST.

- The TVA supplemental user guide for Electrical Transient and Analysis Program (ETAP) was updated to include guidance on voltage recovery analysis via motor starting analysis. Gap training was provided for TVA and non-TVA personnel on recognizing the limitations of the applicability of previous ETAP analysis.

- The relevant calculation was revised that performs the auxiliary power systems analysis to demonstrate that CSST A and/or B are able to supply power for both units only within specified limits as the GDC-17 compliant immediate offsite power source for either CSST C or D.

- The plant loading tables were updated and included in a memorandum submitted to Transmission Planning. The purpose of this memorandum is to provide the formal transmittal of updated Watts Bar Nuclear Plant loading, event scenarios, and acceptance criteria to use in determining the grid's ability to provide qualified offsite power to the Watts Bar Nuclear Generating Station.

As an aggregate response to this and unrelated submittal corrective actions, TVA's procedure for corresponding with the NRC was revised several times since the submittals resulting in the AV, including multiple changes to the validation process for NRC submittals. The maturation of the validation process could prevent similar issues in the future.

Full compliance will be restored for this AV following NRC approval and station implementation of a license amendment, which corrects the previous inaccuracies introduced from 2010 – 2015. A pre-submittal meeting was held with the NRC on September 12, 2019, and the license amendment request is expected to be submitted by November 2019. The timeline to restore full compliance has no safety consequences, since the station maintained implementation of the above interim corrective actions restricting

entrance into the unanalyzed lineup.

This document contains no regulatory commitments.

Please direct any questions concerning this matter to Tony Brown, WBN Licensing Manager, at (423) 365-7720.

Respectfully,

Anthony L. Williams, IV
Site Vice President
Watts Bar Nuclear Plant

cc:

NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRC Project Manager - Watts Bar Nuclear Plant