NRR-PMDAPEm Resource

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Subject: Watts Bar 1_RAI-clarifying call.docx
Attachments: Watts Bar 1_RAI-clarifying call.docx

Attached are draft RAIs to be discussed during the clarification call on Wed 5/7.

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REQUEST FOR ADDITIONAL INFORMATION
REGARDING WATTS NUCLEAR PLANT, UNIT 1 LICENSE AMENDMENT REQUEST TO MODIFY TECHNICAL SPECIFICATIONS (TS) 3.8.4, TS 3.8.5, AND TS 3.8.6
TAC NO. MF2699
DOCKET NO. 50-390

The Nuclear Regulatory Commission (NRC) staff has determined that the following additional information is needed to complete its review of the license amendment request (LAR) dated August 28, 2013:

1- In the LAR, the licensee stated that the proposed TS changes are based on those TSTF-360, Revision 1 and TSTF-500, Revision 2 changes that are appropriate to the WBN Unit 1 design because the DC electrical power distribution system design referenced in TSTF-500 is significantly different from that which exists at Watts Bar. WBN Unit 1 125V DC Vital Control Power Systems consists of four redundant channels that are shared with WBN Unit 2 while the DC system referenced in TSTF-500 consists of two independent and redundant DC power trains per unit.

TSTF-360, Revision 1 was revised and superseded by TSTF-500, Revision 2 due to deficiencies identified in TSTF-360, Revision 1. The NRC staff stopped accepting license amendment requesting adoption of TSTF-360 when the deficiencies were identified. After reviewing the LAR, the EEEB staff notes that some of the proposed changes that would be in TSTF-360, Revision 1 were imbedded in TSTF-500, Revision 2. To facilitate the staff understanding of the proposed LAR:

a- Identify the proposed changes that are solely based on TSTF-360, Revision 1.

b- Explain how the significant WBN specific DC system differences warrant the proposed changes based on TSTF-360, Revision 1.

c- Identify the requirements in TSTF-500, Revision 2 that are considered outside the scope of WBN Units 1 and 2 DC systems.

TS 3.8.4

2- New Actions A and E
The licensee proposed certain Completion times (CTs) for new Required Actions (RAs) A.2, A.3, E.2, and E.3 consistent with TSTF-500, Action RA A.2 and A.3. These CTs are bracketed values in TSTF-500.

Explain how these values are applicable to WBN-1.

3- New Action B:
The licensee proposed new Action B for the vital battery and Action F for the DG battery with a 2-hour CT consistent with TSTF-500, Action B. The CTs for the proposed Actions C for the vital DC channel and Action G for the DG DC subsystem are also 2 hours. Per the reviewer's notes in the TSTF-500 Bases, Action B is included only if Actions B and C would have different CTs.

Provide justification for adopting Action B and F.

4- New SR 3.8.4.5:
The licensee proposed in new SR 3.8.4.5 an alternate criterion which states : "Verify each vital battery charger can recharge the battery to the fully charged state within 24 hours while supplying the larges combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state." WBN UFSAR, Section 8.3.2.1.1, the licensee states: "Normal recharging of the battery form the design discharged condition can be accomplished in 12 hours (with accident loads being supplied) following a 30 minute alternating current power outage and in approximately 36 hours (with normal loads being supplied) following a 4-hour ac power outage. "

Explain how 24 hours is applicable to the vital batteries.

5- New SR 3.8.4.6:
The licensee proposed new SR 3.8.4.6, which states: "Verify that each DG battery charger supplies ≥ 20 amps at greater than or equal to the minimum established float voltage for ≥ 4hours OR Verify each DG battery charger can recharge the battery to the fully charged state within 24 hours while supplying the larges combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state."

a) Provide the technical basis for the 4 hours.

b) Explain how 24 hours is applicable to the DG batteries.

6- New SR 3.8.4.7(Existing SR 3.8.4.13):
The licensee proposed to delete in SR 3.8.4.7 Note 2 restriction "This Surveillance is not performed in Mode 1, 2, 3, or 4 for required vital batteries."

Provide justification for deleting this restriction in SR 3.8.4.7.

7- Existing SRs 3.8.4.1, 3.8.4.2, 3.8.4.3, and 3.8.4.4 and New SRs 3.8.4.5, 3.8.4.6, and 3.8.4.7
The licensee did not add the word "required" to these SRs. So, the staff assume that all vital and DG batteries and chargers including the spare batteries and chargers are required to meet all SRs 3.8.4.1 – 3.8.4.7 in the LAR. TS LCO 3.8.4 requires four channels of vital DC and four Diesel Generators (DGs) DC electrical power subsystems to be operable.

a) Per TS B 3.8.4, an operable vital DC electrical power subsystem requires all <u>required</u> batteries and respective chargers to be operating and connected to the associated DC buses. TS B 3.8.4 does not provide the requirement for an operable DG DC electrical power subsystem. Clarify the requirement for an operable DG DC electrical power subsystem.

b) Per SR 3.0.1 "Failure to meet a surveillance, whether such failure is experience during the performance of the surveillance or between performances of the

surveillance, shall be failure to meet the LCO." Clarify the applicable ACTIONS in TS 3.8.4 when the spare batteries and chargers fail to meet the applicable SRs.

c) If SRs 3.8.4.1 – 3.8.4.7 are not required for the spare batteries and chargers, explain how they are maintained.

TS 3.8.6

8- LCO 3.8.6 Note:
The licensee proposed to delete the term "bank" from the Actions Note because WBN Unit 1 does not have battery "banks". However, battery "bank" is mentioned in Section 2.0 of the LAR and also in the current WBN-1TS Bases.

Clarify this apparent discrepancy.

9- New Actions A and C, SR 3.8.6.3, and SR 3.8.6.6
The licensee proposed a battery cell float voltage limit of greater than or equal to 2.07 V in TS 3.8.6 Actions A and C, SR 3.8.6.3, and SR 3.8.6.6. This 2.07-V is bracketed in TSTF-500.

a) Explain how the 2.07 V cell float voltage limit is applicable to WBN.

b) Current TS Table 3.8.6-1, "Battery Cell Surveillance Requirements," Category C float voltage allowable limits for each connected cell is > 2.07 V. Explain the change from > 2.07 V to ≥ 2.07 V.

10- New Actions B and D
The licensee proposed new Actions B and D to address the batteries state of charge. The completion times (CTs) for required actions B.2 and D.2 are 12 hours. This 12-hr CT is bracketed in TSTF-500.

Explain how this CT is applicable to WBN-1.

11- New Action E
The licensee proposed a new Action E to address the electrolyte level in a battery cell consistent with TSTF-500, TS 3.8.6, Action C. The licensee did not adopt the note for Condition C, which states, "Required Action C.2 shall be completed if electrolyte level was below the top of plates."

Provide justification for this deviation.

12- New Action H
Clarify if the RA for Condition H is H.1 or B.1.

13- New SRs 3.8.6.1, 3.8.6.2, and 3.8.6.7:
SRs 3.8.6.1, 3.8.6.2, and 3.8.6.7 are applicable to any vital and DG battery. LCO 3.8.6 requires battery parameters for <u>required</u> 125 V vital and DG batteries to be within limits.

a- Clarify if SRs 3.8.6.1, 3.8.6.2, and 3.8.6.7 are only applicable to <u>required</u> vital and DG batteries.

b- The licensee proposed to revise existing SR 3.8.4.14 by deleting the restriction "This Surveillance is not performed in Mode 1, 2, 3, or 4 for required vital batteries" from the note and relocate the revised SR to SR 3.8.6.7. The markup for SR 3.8.6.7 in Attachment 1 does not show the restriction being deleted from existing SR 3.8.6.14. Provide a revised markup of SR 3.8.6.7 that shows the deleted restriction in the note.

TS 5.7.2.21

14- The licensee proposed battery cells float voltage limit of 2.13 V in the Battery monitoring and Maintenance Program. This limit is bracketed in TSTF-500, Rev. 2.

Explain how 2.13 V cell float voltage limit is applicable to WBN-1.

Regulatory Evaluation (LAR Section 4)

15- The licensee proposed to add a new TS 5.7.2.21, Battery Monitoring and Maintenance Program, that shall be in accordance with the IEEE Std. 450-2002, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," as endorsed in RG 1.129, Revision 2, "Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Nuclear power Plants," with RG exceptions and program provisions as identified in the program. In Section 4.1 of the LAR, the licensee listed RG 1.129, Revision 1 as an applicable regulatory guidance document.

Clarify this apparent discrepancy.

Enclosure 2

16- Regulatory commitment 6 states: "TVA will ensure that plant procedures will require verification of the selection of the pilot cell or cells when performing SR 3.8.6.5." SR 3.8.6.5 requires verification of each required vital and DG battery pilot cell temperature to be greater than or equal to minimum established design limits. In section 3.1.5 of the LAR, the licensee stated that the pilot cells will be selected from those that represent the lowest voltage cells in the battery.

Clarify how the selection of the pilot cells, which will represent the lowest voltage cells in the battery, will be verified during the performance of SR 3.8.6.5.