

August 17, 1995

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MEMORANDUM TO: Christopher I. Grimes, Chief
 Technical Specifications Branch, NRR

FROM: Robert J. Giardina, Reactor Engineer
 Technical Specifications Branch, NRR *Original Signed By*

SUBJECT: SUMMARY - AUGUST 14 - 15, 1995 MEETING WITH TVA REGARDING
 WATTS BAR TECHNICAL SPECIFICATIONS -
 FINAL DRAFT TS OPEN ITEMS

On August 14-15, 1995, NRC and TVA representatives met at the Nuclear Regulatory Commission office (One White Flint North) to discuss open issues in the final draft of the Watts Bar Nuclear Plant (WBN), Unit 1 Technical Specifications (TS). The list of participants is shown in Attachment 1.

The meeting focused on technical issues resulting from the staff review, TVA's certification, and INEL's audit of the Watts Bar Final Draft Technical Specifications (TS). The staff and TVA discussed open issues and agreed on resolution or plans that would lead to resolution of each issue. Attachment 2 describes each of the open issues discussed and the status of the issue.

Attachments: As stated

cc: P. Tam
 S. Varga
 F. Hebdon

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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LIST OF PARTICIPANTS
MEETING ON WATTS BAR UNIT 1 FINAL DRAFT TECHNICAL SPECIFICATIONS
NUCLEAR REGULATORY COMMISSION - ONE WHITE FLINT NORTH

August 14-15, 1995

<u>Name</u>	<u>Affiliation</u>
Chris Morgan	TVA Watts Bar
John Vorees	TVA Watts Bar
Fred Burrows	NRC/NRR/Electrical Engineering Branch
Michael Bugg	NRC/NRR/Project Directorate II-3
Fred Hebdon	NRC/NRR/Project Directorate II-3
Kenneth Dempsey	NRC/NRR/Materials & Chemical Engineering Branch
Robert Gramm	NRC/NRR/Quality Assurance & Maintenance Branch
Robert J. Giardina	NRC/NRR/Technical Specifications Branch
Chu Liang	NRC/NRR/Reactor Systems Branch
Mark Parrish	INEL

Attachment 1

WATTS BAR TECHNICAL SPECIFICATION (TS) REVIEW
FINAL DRAFT OPEN ITEM LIST

I Results of Staff Comments

1. SR3.8.1.7 , page 3.8-8 and associated Bases: SR3.8.1.7 requires the diesel generator (DG) be started on an actual or simulated loss-of-offsite power (LOOP), which would result in the DG picking up the loads on the bus automatically. This deviates from NUREG-1431 which requires the start from the standby condition and unloaded operation for a short duration prior to loading the diesel in accordance with SR3.8.1.3. Watts Bar needs to determine why they need to start from an actual or simulated LOOP. In addition, the Bases for SR3.8.1.7 (or SR3.8.1.2) needs to be revised to address the monitoring/trending commitment for unloaded operation contained in WOG-36.

Status: Resolved; appropriate changes to the TS were made.

2. TS5.9.6 page 5.0-33: The inclusion of the Pressure and Temperature Limits Report (PTLR) specification is dependent on the acceptability of the Westinghouse Methodology Topical Report, the Watts Bar Methodology, and any associated changes to the Watts Bar TS imposed by the staff review of these documents.

Status: Open

3. Removal of Review and Audit TS requirements from TS: The Quality Assurance and Maintenance Branch has raised a number of issues with regards to the location, or, content of, and control of the review and audit functions for Watts Bar that were previous contained in the Proof and Review version of the Wats Bar 75, that were removed in accordance with BWOG-09.

Status: Open; A separate meeting is to be held on Friday, August 18, 1995, to discuss the issues.

II Results of INEL Audit

1. Safety Limits (SLs)

<u>Technical Specification</u>	<u>FSAR Section</u>	<u>SER Section</u>
2.1.1 Reactor Core SLs	4.4	4.4.3

The reactor core safety limits of the TS (Figure 2.1.1-1) could not be found in the FSAR.

Status: Resolved; FSAR has the information.

2. Reactor Protection System (RPS) Setpoints

As there were no RPS setpoints in the FSAR, the review was done against

WCAP-13721-Westinghouse Setpoint Methodology for Protection System -
Watts Bar Units 1 and 2 Eagle 21 Version (Non-Proprietary).

<u>Technical Specifications</u>	<u>FSAR Section</u>	<u>SER Section</u>
3.3.1 RTS Instrumentation	7.2	7.1.3.1,7.2

Observed differences were as follows:

- a. The value for Pressurizer Pressure listed in Table 3-22, page 51, of WCAP-13721 disagrees with the value for P' (nominal RCS operating pressure) used in Table 3.3.1-1 in TS. WCAP-13721 used a value of " ≥ 2235 psig - indicated uncertainties." A value of " ≤ 2235 psig" is used in TS. Allowing a value less than 2235 psig for P' would be non-conservative. For example, if a value of 2220 psig was used for P' then only pressurizer pressure values less than 2220 psig would result in a decrease in the overtemperature ΔT setpoint. FSAR section 7.2.1.1.12 on page 7.2-4 states that P' , (Nominal RCS Operating Pressure) will be " $= 2235$ psig."

Status: Resolved; TS to be modified to conform to setpoint methodology.

- b. The value given for K_6 listed in Table 3-22, page 51, of WCAP-13721 disagrees with the value for K_6 used in Table 3.3.1-1 in TS. WCAP-13721 provides only one value of 0.00126 and TS provides for a value of 0.00127 if $T > T''$ and 0 if $\leq T''$.

Status: Open; TS to be changed to conform to setpoint methodology. TVA needs to address why 2 values for k_6 .

- c. Function 16, Reactor Trip System Interlocks, item "b.Low Power Reactor Trips Block, P-7" does not have an allowable value or trip setpoint listed in Table 3.3.1.1 of TS. FSAR section 7.2.1.1.3, Reactor Trip System Interlocks, identifies a value of "below approximately 10% of full power."

Status: Resolved, INEL closure.

- d. FSAR section 7.2.1.1.2 on pages 7.2-4 through 7.2-6, indicate specific values for the time constants T_1 through T_5 but the TS provides values of greater than or equal to or less than or equal to for each of the time constants. Also, values for K_1 , K_2 , K_4 , K_5 , and K_6 are represented in WCAP-13721 and FSAR as specific values. Technical Specifications provide values of "greater than or equal to" or "less than or equal to for each value."

Status: Open; TVA to provide additional information from Westinghouse.

- e. WCAP-13721 indicates a ΔI value of $\leq 10\% \Delta I$, but the TS indicates that the band for $f_1(\Delta)$ where gain is zero is from -32RTP to +10RTP.

Also, WCAP-13721 indicates the ΔI gain is 1.22% but TS indicates that if ΔI is less than -32 the gain is 1.34.

Status: Open; TVA to provide additional information from Westinghouse.

The following items were not verified because of the reason listed:

- f. The allowable value for Underfrequency RCPs because WCAP-13721 said that it was determined by a TVA Calculation.

Status: Resolved; TVA stated that calculation is documented and available for review. Document specifically identified.

- g. A trip setpoint for Undervoltage RCPs of 90V was provided in WCAP-13721, pages 68 and 69, however, the value provided in TS was ≥ 4734 V.

Status: Resolved; same as 2f above.

- h. The allowable value for Undervoltage RCPs was not verified because WCAP-13721 said that it was determined by a TVA Calculation.

Status: Resolved; same as 2f above.

- i. Time delays associated with SG Water Level Low Low were not included in WCAP-13721.

Status: Resolved; same as 2f above.

- j. Trip setpoints and allowable values associated with Turbine Trips were not included in WCAP-13721.

Status: Open; TVA needs input from Westinghouse to resolve concern.

- k. Allowable value and trip setpoint provided in Table 3.3.1-1 of TS for Intermediate Range Neutron Flux, P-6 was not included in the FSAR or WCAP-13721.

Status: Resolved; same as 2f above.

- l. Allowable values and trip setpoints for Intermediate Range Neutron Flux and Source Range Neutron Flux were not included in WCAP-13721.

Status: Resolved; same as 2f above.

3. Engineered Safety Feature Actuation System (ESFAS) Setpoints

As there were no ESFAS setpoints in the FSAR, the review was done against Westinghouse Setpoint Methodology for Protection System for Watts Bar 1 and 2.

<u>Technical Specifications</u>	<u>FSAR Section</u>	<u>SER Section</u>
3.3.2 ESFAS Instrumentation	7.3	7.1.3.1, 7.3

Observed differences were as follows:

- a. Values for North and South MSV Vault Room Water Level - High were not included in WCAP-13721. Section 10.2.2 of the FSAR does not state that these signals will trip the Turbine.

Status: Part 1 resolved; same as 2f above, Part 2 open; TVA needs to provide FSAR reference.

- b. Function 7.b of Table 3.3.2-1 in the TS should reflect that all three signals are required simultaneously by inserting "and" after Refueling Water Storage Tank -Low Low.

Status: Resolved; Bases states that signals are simultaneous.

The following items were not verified because of the reason listed:

- c. Time delays associated with SG Water Level Low Low were not included in WCAP-13721.

Status: Resolved; same as 2f above, however, document needs to be specified.

- d. Trip setpoints and allowable values for the following functions on page 3.3-38 of TS because values were not provided in WCAP-13721.

- 6.e, Trip of all Main Feedwater pumps- Status: Open; TVA needs Westinghouse input.
- 6.f, Motor-Driven Auxiliary Feedwater Pumps Train A and B Suction Transfer on Suction Pressure - Low - Status: Resolved; same as 2f above.
- 6.g, Turbine-driven AFW Pump Suction Train A and B Transfer on Suction Pressure - Low - Status: Resolved; same as 2f above.
- e. Allowable values and trip setpoints were not verified for the following items listed on page 3.3-39 of TS because WCAP-13721 provided values in percent of span and TS uses inches from a specific reference:

- 7.b, Refueling Water Storage Tank (RWST) Level - Low Low
- 7.b, Containment Sump Level - High

Status: Resolved; same as 3c above.

- f. Trip setpoints and allowable values for 8.b Pressurizer Pressure on page 3.3-39 because values were not provided in WCAP-13721.

Status: Resolved; same as 3c above.

4. Reactor Coolant System Pressure Boundary Isolation Values (PIVs)

<u>Technical Specifications</u>	<u>FSAR Section</u>	<u>SER Section</u>
3.4.14 RCS Boundary Isolation Valves	3.9.3.2.1 Table 3.9-17	3.9.6

The bases discussion for LCO 3.4.14, page B3.4-82, states that the valves covered by the LCO are listed in the FSAR table 3.9-17 therefore, a list of PIVs is not contained in the Technical Specifications. Section 3.9.3.2.1, page 3.9-31, of the FSAR indicates that Table 3.9-17 is a list of active valves for primary fluid systems in the Westinghouse scope of supply. Two concerns exist with Table 3.9-17 being the list of PIVs: 1) The active list of valves will contain valves other than PIVs because section 3.9.3.2.1 of the FSAR identifies that being a Reactor Coolant Pressure Boundary Valve is only one of four rules for inclusion as an active valve. Therefore, valves other than PIVs are included in Table 3.9-17. Table 3.9-17 only includes valves that are in the Westinghouse scope of supply. Table 3.9-27 includes valves that are within the TVA scope of supply. Valves on this list may be required to be identified as PIVs.

Status: Open

5. Combustible Gas Control System LCOs

<u>Technical Specifications</u>	<u>FSAR Section</u>	<u>SER Section</u>
3.6.7 Hydrogen Recombiners	6.2.5	6.2.5

Section 6.2.5.2, page 6.2.5-3, of the FSAR specifies that the hydrogen recombiners heat air to 1150 to 1400°F, where recombination of hydrogen and oxygen occurs. The Bases discussion for SR3.6.7.1, page B3.6-47, only requires that a temperature of 700°F be achieved by the surveillance. While the SR does require power to be increased to maximum, the SR does not verify that temperature is increased to a value that would result in recombination.

Status: Resolved; FSAR to be revised to conform to TS.

6. Ice Condenser LCOs

<u>Technical Specifications</u>	<u>FSAR Section</u>	<u>SER Section</u>
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3.6.11 Ice Bed

6.7
6.2.1

6.2.11

The following differences were observed:

- a. TS SR 3.6.11.4, page 3.6-29, specifies that the accumulation of ice or frost on structural members comprising flow channels through the ice condenser is $\leq .38$ inches thick. The Bases discussion for TS SR 3.6.11.4, page B 3.6-71, identifies that the value is based on the analysis of containment response to a DBA with partial flow blockage. The comparative audit was unable to locate the value used in TS in the FSAR.

Status: Open: TVA needs to verify and/or include WCAP analysis is in FSAR.

- b. SER section 6.1.3, page 6-3, states that the ice in the ice condenser contains sodium tetraborate equivalent to a concentration of 2000 ppm as boron. TS SR 3.6.11.5, page 3.6-30, requires boron concentration to be ≥ 1800 ppm.

Status: Resolved; SER to be corrected to conform to FSAR.

- c. SER section 6.1.3.3, page 6.1-5, indicates that sodium tetraborate is an additive in the ice stored in the ice condenser to maintain containment sump pH of at least 8.1 after all the ice has melted. SER section 6.1.3, page 6-3, states that the melted ice also drains to the containment sump and, after mixing, will raise the sump water pH to ≥ 7.0 .

Status: Resolved; SER may need to be corrected.

7. TS Requirements which are documented in the Plant SER and SSERs

- a. SER Section 2.4.3, Flood Potential, on page 2-18 states:

To ensure that the necessary emergency shutdown procedures are in place before severe flood conditions could affect safety-related facilities, the applicant will use a flood warning system and Technical Specification requirements that vary, depending on the time of year. For the October 1 through April 15 winter season, shutdown procedures are to begin when the river is forecasted to reach elevation 714.5ft msl. The April 16 to September 30 summer level for initiation of shutdown procedures is 726.5 ft msl.

SER Section 2.4.10, Flooding, on page 2-22 states:

A detailed discussion of the emergency plan is provided in Section 2.4.14 of the FSAR. In summary, the applicant has documented his ability to provide, through flood forecasting procedures, a minimum of 27 hours of preparation time, divided into two stages (Stage I-10 hours and Stage II-17 hours) for any Tennessee River flood that could inundate the Watts Bar plant site. Specific details of the plan-- such as target river levels, initiation of Stage I and Stage II shutdown, communications-- are incorporated in a Technical

Specification and limiting condition for operation.

TRM Section: 3.7.2 pages 3.7-3 through 3.7-9.

This requirement was located in the TRM instead of the TS as part of the adoption of the Improved Technical Specifications (ITS).

The SER in section 2.4.3 indicates that shutdown procedures will begin at a specific river level but the TRM indicates that shutdown procedures will begin based at specific flood stage. The documents provided did not provide sufficient data to determine if the river levels specified in SER section 3.4.3 are consistent with the flood stages specified in TS.

Status: Resolved; FSAR delineates correlation between stages and flood level.

b. SSER 14 Section 10.4.7, Condensate and Feedwater, on page 10-1 states:

During its review of FSAR Amendment 82, the staff noted an unrelated error in the SER. In the SER, the staff stated that the main feedwater regulation valves will close within 5 seconds of receipt of a feedwater isolation signal and that the main feedwater isolation valves will close within 6.5 seconds of receipt of the isolation signal. According to the FSAR, both the feedwater regulation valves and feedwater isolation valves will close within 6.5 seconds of initiation of the feedwater isolation signal. The staff could not determine the actual origin of this discrepancy, but assumes that it was probably related to actual valve stroke times versus time to close after generation of a feedwater isolation signal. The accident and containment analyses are based on a closure time 6.5 seconds from the initiation of the feedwater isolation signal. Therefore, the staff concludes that 6.5 seconds is acceptable for both valves and considers this a matter of clarification of the original SER. The conclusions reached in Section 10.4.7 of the original SER are, therefore, still valid.

TS Section: 3.3.2 and 3.7.3

TRM Section: 3.3.2

TRM Table 3.3.2.1 provides a response time limit of ≤ 8 seconds for feedwater isolation which is nonconservative to the value given in FSAR for closure times from the receipt of an initiation signal. In addition, the valve closure time of the 6.5 seconds specified in SR3.7.3.1 is non-conservative with respect to the requirements of the SR, which only consider the valve closure time from receipt of the signal at the valve.

Status: Resolved; FSAR and SER need to be changed to conform to TS and TRM.

1. TVA Change Package 94-028: This package involves changes to SR3.8.1.18, page 3.8-14 and associated Bases, that was approved by the staff. The certification letter did not include the changes.

Status: Resolved; staff approved changes incorporated into TS.

2. TVA Change Package 95-018: This package involves changes to Table 3.3.4-1 "Remote Shutdown System Instrumentation and Controls" page 3.3-48 and associated Bases, page B3.3.-141 to B3.3-142, that was approved by the staff. The certification letter did not include these changes.

Status: Open; TVA considering additional changes.

3. TVA Change Package 95-038: This package involved changes to the Notes in SR3.3.2.10, SR3.7.5.2 and SR3.7.5.4 to clarify when the SR is to be performed. TVA is reevaluating the change and its effect on other similar Notes within the Watts Bar TS.

Status: Open; TVA considering additional changes.

4. TVA Change Package 95-046: This package involves changes due to the Watts Bar electrical system design to the surveillances associated with starting the DG on an actual or simulated safety injection signal and associated bases. It also made changes to the Bases for DG fuel oil testing. Even though the proposed changes have been found acceptable by the staff, the package was incomplete in that it did not address the modifications required for SR3.8.1.13, page 3.8.12 and its associated Bases.

Status: Open; TVA considering additional staff proposed changes (SR3.8.1.17).

5. TVA Change Package 95-053: This change package involves changes to the Bases for SR3.8.4.5, SR3.8.4.6, SR3.8.4.9 and SR3.8.4.10, page B3.8-61 and B3.8-62. The change would delete the statement on how the battery connection resistance limits were established. The staff found the change unacceptable. TVA is reevaluating the proposed change.

Status: Open; staff rejected proposed change; TVA reevaluating.

6. TVA Change Package 95-055: This change package involves changes to SR3.8.4.13, page 3.8-28 and description of the modified performance discharge test described in the Bases for SR3.8.4.13 and SR3.8.4.14, page B3.8-65 and B3.8-66. The staff has rejected the proposed Bases changes as not being in accordance with the staff interpretation of the modified performance discharge test described in IEEE-450. TVA is reevaluating the proposed change.

Status: Resolved; change withdrawn.

7. TVA Change Package 95-064: This change package involves changes to the Bases for LC03.4.15 "RCS Leakage Detection Instrumentation." The change

to the Bases for SR3.4.15.2 "Channel Operational Test (COT)" was proposed because TVA believed that the STS wording was ambiguous with regard to the instrumentation involved in the accuracy check. The staff has reviewed the proposed change and finds that the STS wording is not ambiguous when it is compared to the definition of COT and the Bases description for COT in other instrument LCO/SRs.

Status: Resolved; change withdrawn.

8. TVA Change Package 95-066: This change package involves various changes to the Watts Bar TS as a result of staff comments on the Final Draft TS. The staff requested changes to SR3.8.2.1, page 3.8-20 and its associated Bases. The list of SRs in the Note and the SR need to be reevaluated for Watts Bar. SR3.8.1.21 needs to be added to the surveillance. Watts Bar needs to determine whether SR3.8.1.18 needs to be added to the Note on SRs not required to be performed, and whether SR3.8.1.20 needs to be performed for this SR.

Status: Open; TVA to provide justification for change.

9. TVA Change Package 95-067: This change package involves changes to the Bases of TR3.7.3 "Snubbers" as a result of staff comments on the Final Draft TS. TVA is evaluating the proposed changes.

Status: Open; TVA to provide additional information on deviations from OM-4.

10. TVA Change Package 95-069: This change package involves changes to SR3.6.3.3, page 3.6-12 and associated Bases to clarify the testing frequency of containment isolation valves in the annulus. The certification letter classifies this item as open. The staff has not received the change package; however, based on preliminary discussions with the applicant, the staff has tentatively found the change acceptable.

Status: Open; change package not provided.

11. TVA Change Package 95-070: This change package involves changes to the Bases for LC03.7.5 "Auxiliary Feedwater System (AFW)" to clarify the AFW design pressure and to bring it into conformance with the FSAR. The certification letter classifies this item as open. The staff has not received the change package.

Status: Resolved; staff approved changes.

12. TVA Change Package 95-071: This change package involves changes to the Bases for SR3.4.12.1, SR3.4.12.2, and SR3.4.12.3, page B3.4-69 and B3.4-70. The change would describe additional alternate methods for low temperature overpressure protection. The certification letter classifies this item as open. The staff has not receive the change package; however, based on preliminary discussions with the applicant,

the staff has tentatively found the change acceptable.

Status: Open; TVA to provide additional changes based on staff comments.

13. TVA Change Package 95-072: This change package involves changes to the Bases of LC03.4.14, page B3.4-81 to B3.4-86 to clarify how to include Pressure Isolation Valve Leakage in the leakage addressed in LC03.4.13 "RCS Operational Leakage." The certification letter classifies this item as open. The staff has not received the change package; however, based on preliminary discussions with the applicant, the staff has tentatively found the change acceptable.

Status: Open; change package not provided.