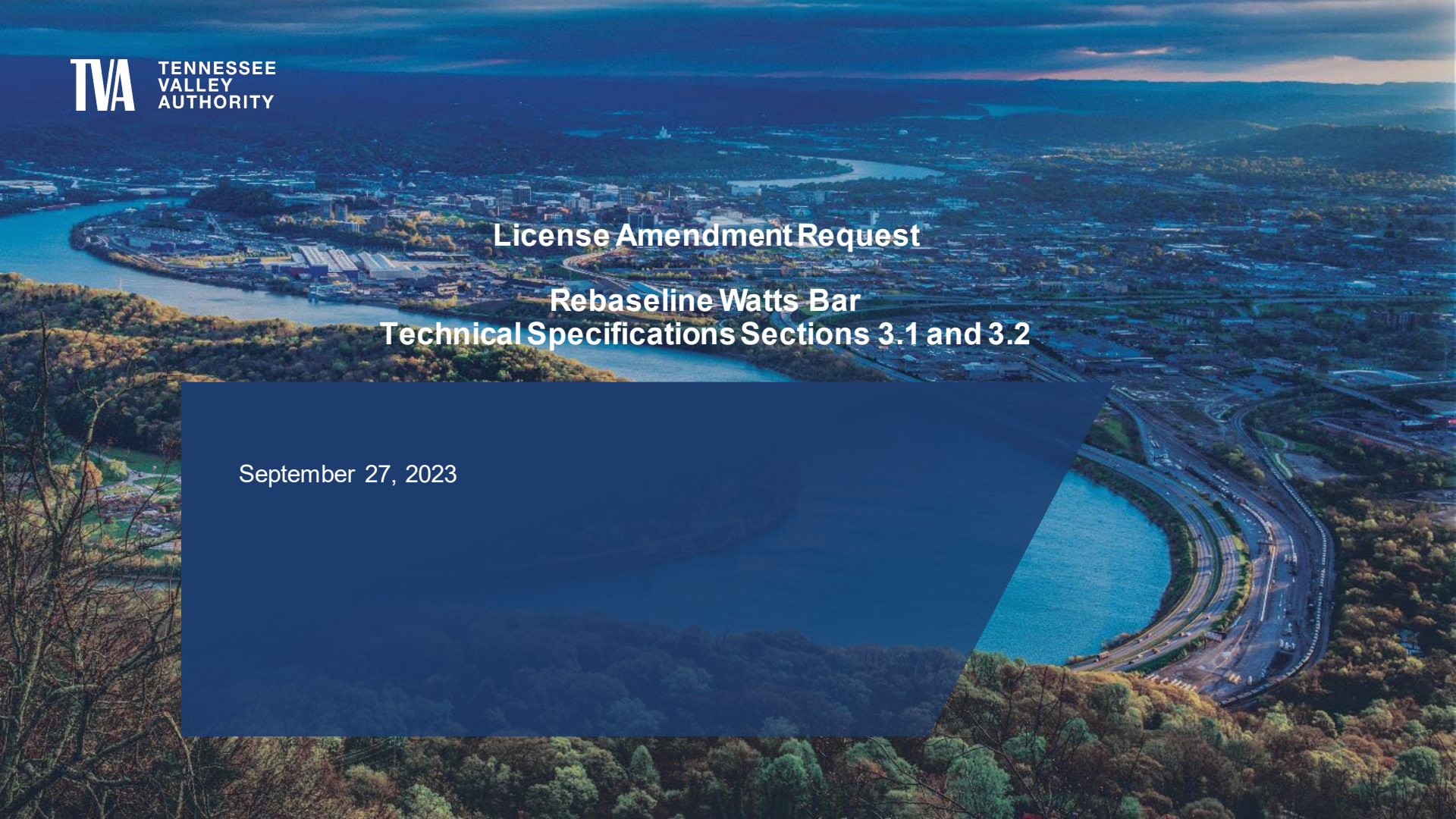

TENNESSEE VALLEY AUTHORITY

License Amendment Request

Rebaseline Watts Bar Technical Specifications Sections 3.1 and 3.2

September 27, 2023

Agenda

- Background
- Solution
- TS Section 3.1 & 3.2 Rebaseline
- LAR Schedule
- Summary
- Questions/Comments?

Background

- Watts Bar Unit 1 received its Operating License on 2/7/1996.
- Watts Bar Unit 2 received its Operating License on 10/22/2015
- Both unit Technical Specifications (TS) are based on NUREG-1431 Revision 0, issued on 9/28/1992
- Few TSTF travelers were adopted for Unit 1 to maintain TS consistency with eventual licensing of Unit 2.
- Current backlog of unadopted TSTF travelers is approximately 90.

Solution

To reduce the backlog of unadopted TSTF travelers, TVA proposes a strategy to “rebaseline” discrete sections of the TS:

- Multiple travelers affecting common sections of the TS will be included in a bundled License Amendment Request (LAR).
- Each traveler will have its own section in the LAR with identical subsections.
- TS markups will be color coded for the effects of each traveler.
- TVA will assess the success of this approach with the pilot LAR and make adjustments as needed for future rebaseline LARs.

TS Section 3.1 & 3.2 Rebaseline

The pilot LAR for this approach will be the rebaseline of TS Sections 3.1 and 3.2, and will adopt twelve travelers:

- TSTF-5-A, Revision 1, “Delete Safety Limit Violation Notification Requirements”
- TSTF-9-A, Revision 1, “Relocate value for shutdown margin to COLR”
- TSTF-12-A, Revision 1, “Delete LCO 3.1.9 and 3.1.11 (Physics Tests Exceptions)”
- TSTF-13-A, Revision 1, “Move SR for 300 ppm MTC measurement to Frequency Note of SR 3.1.4.3”
- TSTF-14-A, Revision 4, “Add an LCO item and SR to Mode 2 Physics Tests Exceptions to verify that Thermal Power <= 5% RTP.

TS Section 3.1 & 3.2 Rebaseline (continued)

- TSTF-110-A, Revision 2, “Delete SR Frequencies Based on Inoperable Alarms”
- TSTF-135-A, Revision 3, “RPS and ESFAS Instrumentation”
- TSTF-136-A, “Combine LCO 3.1.1 and 3.1.2”
- TSTF-142-A, “Increase the Completion Time When the Core Reactivity Balance is Not Within Limit”
- TSTF-241-A, Revision 4, “Allow Time for Stabilization After Reducing Power Due to QPTR Out-of-Limit”
- TSTF-256-A, “Modify MODE 2 STE Applicability”
- TSTF-339-A, Revision 2, “Relocate TS Parameters to COLR”

Red - TSTF-9

Green = TSTF-12

Orange = TSTF-14

Black = TSTF-256

3.1 REACTIVITY CONTROL SYSTEMS

3.1.10 PHYSICS TESTS Exceptions—MODE 2

LCO 3.1.10 During the performance of PHYSICS TESTS, the requirements of

LCO 3.1.4, "Moderator Temperature Coefficient (MTC)";
LCO 3.1.5, "Rod Group Alignment Limits";
LCO 3.1.6, "Shutdown Bank Insertion Limits";
LCO 3.1.7, "Control Bank Insertion Limits"; and
LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended, and the number of required channels for LCO 3.3.1, "RTS Instrumentation," Functions 2, 3, 6, and 16.e, may be reduced to "3" required channels provided:

a. RCS lowest loop average temperature is ≥ 541°F; and

b. SDM is ~~≥ 1.6% Δk/k~~. within the limits specified in the COLR; and

D

c. THERMAL POWER is ≤ 5% RTP.

APPLICABILITY: ~~MODE 2~~ during PHYSICS TESTS initiated in MODE 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit.	15 minutes
	AND	
	A.2 Suspend PHYSICS TESTS exceptions.	1 hour
B. THERMAL POWER not within limit.	B.1 Open reactor trip breakers.	Immediately

(continued)

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3.1 REACTIVITY CONTROL SYSTEMS

3.1.10 PHYSICS TESTS Exceptions—MODE 2

LCO 3.1.10 During the performance of PHYSICS TESTS, the requirements of

LCO 3.1.4, "Moderator Temperature Coefficient (MTC)";
LCO 3.1.5, "Rod Group Alignment Limits";
LCO 3.1.6, "Shutdown Bank Insertion Limits";
LCO 3.1.7, "Control Bank Insertion Limits"; and
LCO 3.4.2, "RCS Minimum Temperature for Criticality"

may be suspended, and the number of required channels for LCO 3.3.1, “RTS Instrumentation,” Functions 2, 3, 6, and 16.e, may be reduced to “3” required channels provided:

a. RCS lowest loop average temperature is ≥ 541°F;

b. SDM is within the limits specified in the COLR; and

c. THERMAL POWER is ≤ 5% RTP.

APPLICABILITY: During PHYSICS TESTS initiated in MODE 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SDM not within limit.	A.1 Initiate boration to restore SDM to within limit. AND A.2 Suspend PHYSICS TESTS exceptions.	15 minutes 1 hour
B. THERMAL POWER not within limit.	B.1 Open reactor trip breakers.	Immediately

(continued)

TS Section 3.1 & 3.2 Rebaseline (continued)

Subsections for each traveler:

- Description of Proposed Change
- Differences Between the Proposed Change and the Approved Traveler
- Summary of the Approved Traveler Justification
- Differences Between the Plant-Specific Justification and the Approved Traveler Justification
- NRC Approval
- List of Affected Pages
- Regulatory Analysis

TS Section 3.1 & 3.2 Rebaseline (continued)

LAR will affect the following TS:

- TS 2.1 Safety Limits
- TS 2.2 Safety Limit Violations
- LCO 3.0.7
- TS 3.1.1 Shutdown Margin – Tavg >200°F
- TS 3.1.2 Shutdown Margin – Tavg ≤200°F
- TS 3.1.3 Core Reactivity
- TS 3.1.4 Moderator Temperature Coefficient
- TS 3.1.5 Group Rod Alignment Limits
- TS 3.1.7 Control Bank Insertion Limits

TS Section 3.1 & 3.2 Rebaseline (continued)

- TS 3.1.9 Physics Tests Exceptions – MODE 1
- TS 3.1.10 Physics Tests Exceptions – Mode 2
- TS 3.2.3 Axial Flux Difference
- TS 3.2.4 Quadrant Power Tilt Ratio
- TS 3.3.1 Reactor Trip System Instrumentation
- TS 3.3.2 ESFAS Instrumentation
- TS 3.4.1 RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling Limits
- TS 5.9.5 Core Operating Limits Report

LAR Schedule

- Projected submittal by middle of November 2023 with a requested approval within one year
- A 180-day implementation period is proposed

Summary

- TVA plans to submit bundled TSTF traveler LARs that focus on specific TS sections to reduce the backlog of unadopted travelers for Watts Bar
- The pilot LAR Rebaselines TS Sections 3.1 & 3.2 with adoption of twelve travelers
- Submittal planned for the middle of November 2023, with one-year NRC review, and 180-day implementation period
- TVA will assess the success of the pilot for future bundled traveler submittals of this type

Questions/ Comments

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