



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

June 5, 2015

10 CFR 50.4

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

Watts Bar Nuclear Plant, Unit 2
Construction Permit No. CPPR-92
NRC Docket No. 50-391

Subject: Declaration of Readiness for Watts Bar Unit 2 Operational Readiness Assessment Team Inspection

Reference: NRC Letter to TVA, "Watts Bar Unit 2 Operational Readiness Assessment Team Inspection Prerequisites," dated May 7, 2015 [ML15127A578]

In the referenced letter, the Nuclear Regulatory Commission (NRC) provided the prerequisites that should be satisfied before the Operational Readiness Assessment Team (ORAT) inspection. The Tennessee Valley Authority (TVA) has reviewed each prerequisite, and based on our current schedule, Watts Bar Nuclear Plant (WBN) Unit 2 will be ready for the ORAT inspection on June 22, 2015.

TVA's actions to address each NRC prerequisite are provided in the enclosure. The summary contains the status of each prerequisite, along with a brief description of the manner in which each prerequisite has been or will be fulfilled.

TVA expects the current schedule to support completion of the ORAT inspection prerequisites as described herein. We will keep the NRC informed of the current status of each item through periodic communications with Robert Haag, Region II, Branch Chief, Construction Projects Branch 3.

There are no new regulatory commitments contained in this letter. If you have any questions concerning this matter, please contact Joselito O. Calle at (423) 452-4525.

Respectfully,

A handwritten signature in black ink, appearing to read "M Skaggs".

Michael D. Skaggs
Senior Vice President
Watts Bar Operations and Construction

U.S. Nuclear Regulatory Commission
Page 2
June 5, 2015

Enclosure:

Status Summary of Each Prerequisite for NRC Operational Readiness Assessment
Team (ORAT) Inspection

cc (Enclosure):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Watts Bar Nuclear Plant, Unit 2
NRC Project Manager – Watts Bar Nuclear Plant, Unit 2

U.S. Nuclear Regulatory Commission
Page 3
June 5, 2015

bcc (Enclosure):

Jessie Quichocho
U.S. Nuclear Regulatory Commission
MS 08G9A
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2738

Fred Brown, Deputy Regional Administrator for Construction
U.S. Nuclear Regulatory Commission
Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, Georgia 30303-1257

U.S. Nuclear Regulatory Commission
Page 4
June 5, 2015

JOC:JWP

bcc (Enclosure):

G. Arent
M. A. Balduzzi
G. A. Boerschig
C. R. Church
E. W. Cobey
S. M. Connors
D. M. Czufin
J. P. Grimes
G. W. Mauldin
M. W. McBrearty
E. D. Schrull
J. W. Shea
P. R. Simmons
S. A. Vance
K. T. Walsh
B. A. Wetzel
NSRB
EDMS

ENCLOSURE

STATUS SUMMARY OF EACH PREREQUISITE FOR NRC OPERATIONAL READINESS ASSESSMENT TEAM (ORAT) INSPECTION

Each NRC prerequisite is provided below as Items 1 through 5. A summary of the status of each prerequisite is provided, along with a brief description of the manner in which each prerequisite has been or will be fulfilled.

1. Declaration by the Tennessee Valley Authority [TVA] that the facility is ready for the NRC ORAT and a proposed date for the inspection.

Status:

Watts Bar Nuclear Plant (WBN) Unit 2 will be ready for the ORAT inspection on June 22, 2015.

2. Completion of system turnover to Operations under the NC-PP-37 process for the containment spray system and component cooling water system. Also for these two systems, completion of the following attachments from Procedure 0-TI-441, "Operational Readiness Process for Unit 2 Systems":

- a. 0-TI-441 Attachment 1, Functional Support Requirements
- b. 0-TI-441 Attachment 2, Operational Alignment, with the exception of Multi-System EDCRs.

Status:

System turnover to Operations under the Nuclear Construction Project Procedure (NC-PP) 37 process:

The turnover of the component cooling water and containment spray systems under the NC-PP-37 process were completed on June 1, 2015, and May 27, 2015, respectively.

Completion of Attachments 1 and 2 from Procedure 0-TI-441:

- a. 0-TI-441 Attachment 1, Functional Support Requirements for both the component cooling water and containment spray systems will be complete prior to June 22, 2015.
- b. 0-TI-441 Attachment 2, Operational Alignment, with the exception of Multi-System Engineering Document Construction Releases (EDCRs), will be complete prior to June 22, 2015, for both the component cooling water and containment spray systems with two exceptions.

Section A discusses program/component/systems alignment. The applicable program/component/systems alignment will be completed for the component cooling

water and containment spray systems except for one program as follows:

ASME In-service Testing (IST)/Augmented IST program. The items that are specifically preventing this program turnover for both the component cooling water and containment spray systems are the completion of design basis documents and implementing procedures, program databases, baseline testing and resulting equipment margin issues, and completed reference value worksheets/acceptance criteria. These are associated with Items 4, 5, 6, 7 and 8, respectively, of 0-TI-441, Appendix A (Boundary Health Indicator Worksheet). The required documentation and baseline testing will not be completed until after the proposed ORAT inspection. However, most of the documentation associated with the design basis documents, implementing procedures and program databases will be available for review. The other items in Appendix A have been evaluated as acceptable for program health for the ASME IST/Augmented IST program and will be available for NRC review during the ORAT inspection. There are 22 programs applicable to the component cooling water system and 22 programs applicable to the containment spray system.

Section C discusses surveillance instructions and department level procedures. The applicable instructions and procedures will be issued for the containment spray system. The applicable instructions and procedures for the component cooling water system will be issued with the exception of five maintenance instructions. The five maintenance instructions have been placed on "Administrative Hold" due to outstanding design change notices (DCNs) associated with a turnover deferral under NC-PP-37. The instructions will be revised with updated data following completion of the DCNs. However, there are more than 40 applicable instructions and procedures for the component cooling water system which have been issued and are available for NRC review during the ORAT inspection.

3. For the auxiliary feedwater system, provide verification that the following attachments from the system turnover process have been substantially completed:
 - a. NC-PP-37 Attachment 1, Turnover Boundary Definition
 - b. NC-PP-37 Attachment 2, Functional Support Requirements Completion Checklist and Required Drawing Index
 - c. NC-PP-37 Attachment 5, Design Engineering Complete & Design Authority Transfer
 - d. 0-TI-441 Attachment 1, Functional Support Requirements, with the exception of Critical Components PMs
 - e. 0-TI-441 Attachment 2, Operational Alignment, with the exception of Programs and Multi-System EDCRs

Status:

The auxiliary feedwater system will not be turned over to Operations under the NC-PP-37 process prior to June 22, 2015. However, various activities associated with system turnover will be complete to the fullest extent possible as discussed below.

- a. NC-PP-37 Attachment 1, Turnover Boundary Definition:

This attachment will be complete prior to June 22, 2015.
- b. NC-PP-37 Attachment 2, Functional Support Requirements Completion Checklist and

Required Drawing Index:

Critical and Primary drawings (37 total), listed in the drawing index of Attachment 2, will not be issued "as-constructed" prior to the ORAT inspection. These drawings have been issued as Category 4-1 construction drawings and are ready to be issued "as-constructed" following completion of startup testing and closure of open design engineering change packages prior to system turnover. However, these drawings are available for NRC review.

The Master Equipment List (MEL) has been verified for the applicable data fields. However, the Unique Identifiers (UNIDs) will not be designated as "Operating" since this occurs at system turnover under NC-PP-37.

The auxiliary feedwater system has been N-stamped in compliance with ASME Section III.

c. NC-PP-37 Attachment 5, Design Engineering Complete & Design Authority Transfer:

Essential calculations will be complete and available for review with the exception of several Appendix R and Equipment Qualification (EQ) calculations. There are currently 145 essential calculations for the auxiliary feedwater system, with 7 of those being Appendix R related and 2 being EQ related that will not be complete.

The dual unit system description documents (SDDs) for the auxiliary feedwater system have been developed.

Engineering Problem Evaluation Reports (PERs) and/or Watts Bar Integrated Task and Equipment List (WITEL) items required for system turnover with the exception of testing activities, known at the time of this letter, will be closed prior to the ORAT inspection.

Unit 1 UFSAR/Unit 2 FSAR Change Packages have been issued to Licensing.

Impacted vendor manuals have been revised and/or issued for closed EDCRs.

At the time of this letter, 33 of the 44 DCNs/DCN stages affecting the system boundary have been returned to operability or closed, and additional DCNs/DCN stages are expected to be complete by the ORAT inspection.

There are currently a total of 104 EDCRs for the auxiliary feedwater system. Thirty-five EDCRs are closed, with additional ones expected to be closed by the time of the ORAT inspection. There is only one open EDCR that is single system.

d. 0-TI-441 Attachment 1, Functional Support Requirements, with the exception of Critical Components PMs:

Attachment 1 will be complete EXCEPT for:

Attachment 1 [1] The applicable activities for the required Preventive Maintenance (PMs) (non-critical and critical) will be complete with the exception of the final signature from the Nuclear Power Group (NPG) Work Control Manager signifying that the PMs are active. The PMs will not go active until system turnover under NC-PP-37.

Attachment 1 [4] System Operating Instruction (SOI) valve/power lineup checklist will be configured to support testing still in progress. Commodities within the system boundary will be incorporated into the operating environment and included in the handheld device for Assistant Unit Operator (AUO) rounds but will not be activated for auxiliary feedwater until system turnover. However, the applicable procedures will be ready and available for review.

Attachment 1 [5] NPG ownership barriers will have been identified but will not be in place because NPG will not yet own the system per the NC-PP-37 turnover process.

Attachment 1 [6] Lockout/tagout clearances will be reviewed and those that do not directly apply to the remaining work/testing prior to system turnover under NC-PP-37 will be removed.

Attachment 1 [7] The Site Quality Assurance (QA) manager will not be notified of pending system turnover for QA to assume sole oversight responsibilities since system turnover will be after the ORAT inspection.

Attachment 1 [8] MEL data will not be designated as "Operating" status at this point since the system will not have been turned over under NC-PP-37.

Attachment 1 [9] 2-TI-440 "blue dots" in the Main Control Room will not be removed because the system will not have been turned over to Operations under NC-PP-37.

- e. 0-TI-441 Attachment 2, Operational Alignment, with the exception of Programs and Multi-System EDCRs:

Section A discusses program/component/systems alignment. The applicable program/component/systems alignment activities will be completed for the auxiliary feedwater system except for the following:

EQ program. The item that is specifically preventing this program turnover for the auxiliary feedwater system is the completion of program-related documentation such as the EQ Information Releases (EQIRs). This is Item 8 of 0-TI-441 Appendix A (Boundary Health Indicator Worksheet). Completion of all the program-related documentation will not occur in time to support the ORAT inspection. However, many of the EQ program-related documentation such as the EQ Change Supplements (EQCS) are complete, and most of the documentation associated with the EQIRs will be available for review. The other items in Appendix A have been evaluated as acceptable for program health for the EQ program and will be available for NRC review during the ORAT inspection.

ASME IST/Augmented IST program. The items that are specifically preventing this program turnover for the auxiliary feedwater system are the completion of design basis documents and implementing procedures, program databases, baseline testing and resulting equipment margin issues, and completed reference value worksheets/acceptance criteria. These are associated with Items 4, 5, 6, 7 and 8, respectively, of 0-TI-441, Appendix A. The required documentation and baseline testing will not be completed until after the proposed ORAT inspection. However, most of the documentation associated with the design basis documents, implementing procedures

and program databases will be available for review. The other items in Appendix A have been evaluated as acceptable for program health for the ASME IST/Augmented IST program and will be available for NRC review during the ORAT inspection.

In-service Inspection (ISI) Program. The items that are specifically preventing this program turnover for the auxiliary feedwater system are the completion of preservice examinations related to the system supports at temperatures above 200 degrees(F) and the resulting examination reports. These are associated with Items 6 and 8, respectively, of 0-TI-441, Appendix A. These inspections will not be completed until after the proposed ORAT inspection. The other preservice examinations and other items in Appendix A will be completed and available for NRC review.

Component programs. There are four applicable component categories for the auxiliary feedwater system that have not been completely turned over to the site as a program. These are air-operated valves, motor-operated valves, safety/relief valves and snubbers. Of these, the snubbers component category is planned to be complete by June 22, 2015. Completion of the remaining three component categories requires activities that involve related regulatory requirements, preoperational testing, component performance margins as well as reference values listed as Items 1, 6, 7 and 8, respectively, of 0-TI-441 Appendix A. The other items in Appendix A have been evaluated as acceptable for component health for the air-operated valves, motor-operated valves and safety/relief valves component categories and will be available for NRC review during the ORAT inspection. The program documents will be available for review that show the requirements and process. The completion of data collection is pending in some cases.

Maintenance Rule. The maintenance rule determination will not be complete for the auxiliary feedwater system by the time of the ORAT inspection. Testing of the level control valves, pressure control valves and the turbine-driven auxiliary feedwater pumps is required and will not be performed until after the ORAT inspection. Based on the testing yet to be performed, not enough data will be available to complete the applicable 0-TI-441 Appendix A worksheet. However, other aspects of the maintenance rule determination in Appendix A with respect to WBN Unit 1 counterpart maintenance rule status and performance history have been evaluated and will be available for NRC review.

Section D discusses outstanding work items associated with approved deferrals from the NC-PP-37 turnover process. This will not be completed since the auxiliary feedwater system will not be turned over to Operations at the time of the ORAT inspection.

4. For any portions of the Attachments listed in Item 3 above that will not be complete by the proposed inspection date, provide a description of the remaining actions and potential impact to the NRC ORAT inspection.

Status:

As stated in the "Status" portion of Item 3 above and expanded upon in this section, the verifications of system turnover for the auxiliary feedwater system within NC-PP-37 and 0-TI-441 will not be fully complete. However, TVA expects a sampling of commodities will be available for review for the majority of the verifications. The remaining items of the

system verifications should not impact the ORAT inspection and should provide the NRC insights on how the turnover processes are being executed.

NC-PP-37 Attachment 2:

Critical and Primary drawings (37 total), listed in the drawing index of Attachment 2, will not be issued "as-constructed" prior to the ORAT inspection. These drawings have been issued as Category 4-1 construction drawings and are ready to be issued "as-constructed" following completion of startup testing and closure of any open design engineering change packages prior to system turnover. This will have minimal impact to the ORAT inspection since these drawings are issued and available for NRC review.

The MEL has been verified for the applicable data fields. However, the UNIDs will not be designated as "Operating" since this occurs at system turnover under NC-PP-37. This will have minimal impact to the ORAT inspection since changing the designation for the UNIDs is but one data point in the MEL. The other applicable data fields are available for NRC review.

NC-PP-37 Attachment 5:

Essential calculations will be complete with the exception of several Appendix R and EQ calculations. There are currently 145 essential calculations for the auxiliary feedwater system, with 7 of those being Appendix R related and 2 being EQ related that will not be complete. This will have minimal impact to the ORAT inspection since the essential calculations other than the 7 Appendix R and 2 EQ related ones will be available for NRC review.

Engineering PERs and/or WITEL items required for system turnover with the exception of testing activities, known at the time of this letter, will be closed prior to the ORAT inspection. This will have minimal impact on the ORAT inspection since the remaining items associated with testing activities are a small part of the system turnover effort.

At the time of this letter, 33 of the 44 DCNs/DCN stages affecting the system boundary have been processed, and more are expected by the ORAT inspection. This will have minimal impact on the ORAT inspection since a majority of the DCNs/DCN stages will be available for NRC review.

There are currently a total of 104 EDCRs for the auxiliary feedwater system. Thirty-five EDCRs are closed, with additional ones expected to be closed by the time of the ORAT inspection. There is only one open EDCR that is single system. This will not have a significant impact on the ORAT inspection since approximately half of the applicable EDCRs will be available for NRC review.

O-TI-441 Attachment 1:

Attachment 1 will be complete EXCEPT for:

Attachment 1 [1] The applicable activities for the required PMs (non-critical and critical) will be complete with the exception of the final signature from the NPG Work Control Manager signifying that the PMs are active. The PMs will not go active until system turnover under NC-PP-37.

Attachment 1 [4] SOI valve/power lineup checklist will be configured to support testing still in progress. Commodities within the system boundary will be incorporated into the operating environment and included in the handheld device for AUO rounds but will not be activated for auxiliary feedwater until system turnover. However, the applicable procedures will be ready and available for review.

Attachment 1 [5] NPG ownership barriers will have been identified but will not be in place because NPG will not yet own the system per the NC-PP-37 turnover process.

Attachment 1 [6] Lockout/tagout clearances will be reviewed and those that do not directly apply to the remaining work/testing prior to system turnover under NC-PP-37 will be removed.

Attachment 1 [7] The Site QA manager will not be notified of pending system turnover for QA to assume sole oversight responsibilities since system turnover will be after the ORAT inspection.

Attachment 1 [8] MEL data will not be designated as "Operating" status at this point since the system has not been turned over under NC-PP-37.

Attachment 1 [9] 2-TI-440 "blue dots" in the Main Control Room will not be removed because the system will not have been turned over to Operations under NC-PP-37.

The remaining activities required to complete 0-TI-441 Attachment 1, discussed above, involve the actual turnover of the auxiliary feedwater system under NC-PP-37. These remaining activities are performed within 24-48 hours of the actual system turnover. This has minimal impact to the ORAT inspection since the majority of the applicable documentation, PMs, Operating Procedures and MEL data associated with Attachment 1 will be available for NRC review.

0-TI-441 Attachment 2:

Section A discusses program/component/systems alignment. The applicable program/component/systems alignment activities will be completed for the auxiliary feedwater system except for the following:

EQ program. The item that is specifically preventing this program turnover for the auxiliary feedwater system is the completion of program related documentation such as the EQIRs. This is item 8 of 0-TI-441 Appendix A (Boundary Health Indicator Worksheet). Completion of all the program-related documentation will not occur in time to support the ORAT inspection. However, many of the EQ program-related documentation, such as the EQCS, are complete and most of the documentation associated with the EQIRs will be available for review. In addition, the other items in Appendix A have been evaluated as acceptable for program health for the EQ program and will be available for NRC review during the ORAT inspection.

ASME IST/Augmented IST program. The items that are specifically preventing this program turnover for the auxiliary feedwater system are the completion of design basis documents and implementing procedures, program databases, baseline testing and resulting equipment margin issues, and completed reference value worksheets/acceptance

criteria. These are associated with Items 4, 5, 6, 7 and 8, respectively, of 0-TI-441, Appendix A. The required documentation and baseline testing will not be completed until after the proposed ORAT inspection. However, most of the documentation associated with the design basis documents, implementing procedures and program databases will be available for review. The other items in Appendix A have been evaluated as acceptable for program health for the ASME IST/Augmented IST program and will be available for NRC review during the ORAT inspection.

ISI Program. The items that are specifically preventing this program turnover for the auxiliary feedwater system are the completion of preservice examinations related to the system supports at temperatures above 200 degrees(F) and the resulting examination reports. These are associated with Items 6 and 8, respectively, of 0-TI-441, Appendix A. These inspections will not be completed until after the proposed ORAT inspection. The other preservice examinations and other items in Appendix A will be completed and available for NRC review.

There are 20 programs applicable to the auxiliary feedwater system, and the other applicable site programs will be completed prior to the ORAT inspection. This will have minimal impact to the ORAT inspection since the exceptions for the EQ, ASME IST/Augmented IST and ISI programs are a small part of the overall program scope of activities.

Component programs. There are four applicable component categories for the auxiliary feedwater system that have not been completely turned over to the site as a program. These are air-operated valves, motor-operated valves, safety/relief valves and snubbers. Of these, the snubbers component category is planned to be complete by June 22, 2015. Completion of the remaining three component categories requires activities that involve related regulatory requirements, preoperational testing, component performance margins as well as reference values listed as Items 1, 6, 7 and 8, respectively, of 0-TI-441 Appendix A. The other items in Appendix A have been evaluated as acceptable for component health for the air-operated valves, motor-operated valves and safety/relief valves component categories and will be available for NRC review during the ORAT inspection. The program documents will be available for review that show the requirements and process. The completion of data collection is pending in some cases. There are nine component programs applicable to the auxiliary feedwater system. This will have minimal impact to the ORAT inspection since a majority of the documentation associated with component health for the auxiliary feedwater system will be available for NRC review.

Maintenance Rule. The maintenance rule determination will not be complete for the auxiliary feedwater system by the time of the ORAT inspection. Testing of the level control valves, pressure control valves and the turbine-driven auxiliary feedwater pumps is required and will not be performed until after the ORAT inspection. Based on the testing yet to be performed, not enough data will be available to complete the applicable 0-TI-441 Appendix A worksheet. However, other aspects of the maintenance rule determination in Appendix A with respect to WBN Unit 1 counterpart maintenance rule status and performance history have been evaluated and are available for NRC review. This will have minimal impact on the ORAT inspection since there are minimal differences between the WBN Unit 1 and Unit 2 components and the implementation of the maintenance rule can be reviewed.

Section D discusses verification that approved deferrals from the NC-PP-37 turnover process have been completed or are being tracked under the NPG corrective action

program. This will not be completed since the auxiliary feedwater system will not be turned over to Operations at the time of the ORAT inspection. This will have no impact on the ORAT inspection since the auxiliary feedwater system was not required to be turned over under NC-PP-37 to support the ORAT inspection.

5. Please provide us [NRC] with a list of all safety-related/risk-significant systems that are scheduled to be turned over to Operations in accordance with Procedure NC-PP-37, "System Turnover to Operations," prior to the proposed onsite inspection start date of June 22, 2015.

Status:

Below is the list of safety-related/risk significant systems or systems with safety-related components that will have been turned over to Operations in accordance with NC-PP-37 prior to June 22, 2015:

- Auxiliary Building Isolation Control Room Isolation Actuation
- Upper Compartment Coolers
- Flood Mode Boration
- Primary Makeup Water
- Service Air
- Demineralized Water and Cask Decontamination
- Ice Condenser System
- Component Cooling Water
- Containment Spray

TVA believes that the above described outstanding items will not impact the ability to demonstrate that TVA is ready to safely operate WBN Unit 2, and that the NRC ORAT inspection can proceed as discussed in Item 1.