TENNESSEE VALLEY AUTHORITY

1101 Market Street, Chattanooga, Tennessee 37402

CNL-22-065

August 1, 2022

10 CFR 50.90

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: **Response to Request for Confirmation of Information and Additional Information and Second Supplement Regarding Application Requesting NRC Prior Approval of a Proposed Chilled-Water Cross-tie Modification to Support System Operability (BFN-TS-518) (EPID L-2021-LLA-0203)**

References:

1. TVA Letter to NRC, CNL-21-020, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Application Requesting NRC Prior Approval of a Proposed Chilled-Water Cross-tie Modification to Support System Operability," dated November 5, 2021 (ML21309A038)

2. TVA Letter to NRC, CNL-22-007, "Browns Ferry Nuclear Plant, Units 1, 2, and 3 - Supplement to Application Requesting NRC Prior Approval of a Proposed Chilled-Water Cross-tie Modification to Support System Operability (BFN-TS-518) (EPID L-2021-LLA-0203)," dated April 6, 2022 (ML22096A328)

3. NRC Electronic Mail to TVA, "Request for Confirmation of Information and Additional Information Related to TVA's Request to Use Control Bay Chiller Cross-Tie (EPID L-2021-LLA-0203)," dated June 17, 2022 (ML22168A080)

By letter dated November 5, 2021 (Reference 1), Tennessee Valley Authority (TVA) requested an amendment to the Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3 Renewed Facility Operating License. The amendment proposed the use of a cross-tie between the BFN Unit 3 chilled water system and the BFN Units 1 and 2 chilled water system supplying the electrical board room air handling units. In Reference 2, TVA submitted a supplement to the Reference 1 license amendment request (LAR). In Reference 3, the Nuclear Regulatory Commission (NRC) issued a request for confirmation of information (RCI) and additional information (RAI) and requested TVA response by August 1, 2022.

The Enclosure to this submittal provides the TVA response to the RCI and RAI. Revised supplemental pages to Attachments 1, 2, and 3 from Reference 2 are provided on a page replacement basis, as a result of the RAI responses.

TVA has reviewed the information supporting the no significant hazards consideration and the environmental consideration that was previously provided to the NRC in the referenced LAR. The additional information provided in this RCI and RAI response does not impact the conclusion that the proposed license amendment does not involve a significant hazards consideration. The additional information also does not impact the conclusion that there is no need for environmental assessment to be prepared in support of the proposed amendment.

In accordance with Title 10 of the *Code of Federal Regulations* 50.91, "Notice for Public Comment; State Consultation," a copy of this letter is being provided to the Alabama Department of Public Health.

There are no new regulatory commitments contained in this letter. If you have any questions regarding this submittal, please contact Stuart L. Rymer, Senior Manager, Fleet Licensing at slrymer@nrc.gov.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 1st day of August 2022.

Respectfully,

James Barstow
Vice President, Nuclear Regulatory Affairs & Support Services

Enclosure

Response to Request for Confirmation of Information and Additional Information and LAR Supplement

cc:

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Browns Ferry Nuclear Plant
NRC Project Manager – Browns Ferry Nuclear Plant
State Health Officer, Alabama Department of Public Health

Enclosure

Response to Request for Confirmation of Information and Additional Information
and LAR Supplement

The Nuclear Regulatory Commission (NRC) Request for Confirmation of Information (RCI) and Additional Information (RAI) is italicized. The TVA response is provided in unitalicized font.

Introduction:

By letter dated November 5, 2021 (ADAMS Accession No. ML21309A038), as supplemented by letter dated April 6, 2022 (ADAMS Accession No. ML22096A328), the Tennessee Valley Authority (TVA) submitted a license amendment request (LAR) to the U.S. Nuclear Regulatory Commission (NRC) requesting one-time changes to the Browns Ferry Nuclear Plant Technical Specifications (TS) 3.8.7, "Distribution Systems - Operating," to allow for the use of cross-tie modification between Unit 3 control bay (CB) chilled water system and the Units 1/2 CB chilled water system supplying the electric board room (EBR) air handling units (AHUs). Specifically, TVA requested the addition of Conditions I (Unit 1) and J (Units 2 and 3) with Completion Times of 9 days, and conforming changes all other Conditions for Units 1 and 2, except C (Unit 1) and D (Unit 2), and conforming changes to Unit 3 Conditions G and H so that cross-tie can be installed and tested. Additionally, TVA proposed to revise Browns Ferry Updated Final Safety Analysis Report, section 10.12, "HVAC Systems," and Appendix F, "Unit Sharing and Interactions," to reflect the design modification and to incorporate licensing basis changes describing the Unit 3 CB chilled water system as both a shared system and as an alternate chilled-water source for Unit 1 and Unit 2 EBR AHUs.

Regulatory Basis:

Section 50.36(b) of Title 10 of the Code of Federal Regulations (10 CFR) states, in part, "The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 50.34."

Section 50.36(c)(2)(i) of 10 CFR states, in part, "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met."

As stated in the LAR, during the construction permit licensing process, each of the three Browns Ferry units was evaluated against the then-current draft of the Atomic Energy Commission (AEC) Proposed General Design Criteria. Units 1 and 2 were evaluated against the AEC-27 Criteria, while Unit 3 was evaluated against the AEC-70 Criteria.

TVA stated that based on its understanding of the intent of the proposed criteria current at the time of operating license application, TVA concluded that each Browns Ferry unit conforms to the intent of the AEC General Design Criteria for Nuclear Power Plant Construction Permits.

> *Criterion 5—Sharing of structures, systems, and components. Structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of accident in one unit, an orderly shutdown and cooldown of the remaining units.*

Requests:

The following information is needed so the NRC staff can make a conclusion as to whether the NRC staff's understanding of the proposed changes is correct and that the proposed changes are supported by the justifications provided by TVA in the LAR.

STSB RCI 1

In Attachment 2 to the supplement, TVA proposes to add conditional phrase ", for reasons other than Condition I (Unit 1) and ", for reasons other than Condition J" (Units 2 and 3) to Conditions A, B, C (Units 2 and 3), D (Unit 1), E, F, G, H (Unit 1), and I (Units 2 and 3).

Confirm that the proposed language being added to the NOTE for Conditions I (Unit 1) and J (Units 2 and 3) means that if the compensatory actions of TVA letter CNL-21-020 are not taken (or found to be not taken) during installation of the Unit 3 control bay chiller cross-tie, then the associated Conditions, Required Actions and Completion Times for the applicable Conditions would apply.

TVA Response

TVA confirms that the proposed language being added to the NOTE for Conditions I (Browns Ferry Nuclear Plant (BFN) Unit 1) and J (BFN Units 2 and 3), as modified by Attachment 2 of this letter, means that if the compensatory actions of TVA letter CNL-21-020 are not taken (or found to be not taken) during installation of the Unit 3 control bay chiller cross-tie, then the associated Conditions, Required Actions, and Completion Times for the applicable Conditions would apply.

STSB RAI 1

Proposed Condition I (Unit 1) and Condition J (Units 2 and 3) contain one Required Action that is applicable when the compensatory actions of TVA letter CNL-21-020 are taken. Explain how these compensatory actions will be implemented and how they will be maintained in place during the installation and testing of the cross-tie.

TVA Response

Operations will verify implementation of the required compensatory actions by generating a temporary Operating Instruction that ensures: 1) that the compensatory actions are in place prior to the release of the Control Bay Chill Water system for work to install the cross-tie, and 2) that the compensatory actions are verified to be in place at least once every shift (12 hours) via Station Operator rounds. Verification of the required compensatory actions will be documented using a method such as the Enterprise Shift Operations Management Systems (eSOMS) narrative logs. Affected EBR temperatures will be recorded at least twice per shift.

STSB RAI 2

Page E-7 of the LAR contains a description of the cross-tie installation. Condition H (Unit 1) and Condition I (Units 2 and 3) are stated as "Two or more electrical power distribution subsystems inoperable that result in a loss of function." In the supplement, TVA proposed to add the phrase ", for reasons other than Condition I" to Condition H (Unit 1) and ", for reasons

other than Condition J" to Condition I (Unit 2). However, the phrase is not proposed to be added to Condition I for Unit 3.

The current Bases for the Condition description states:

> *Condition H [I for Units 2 and 3] corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost [emphasis added]. When more than one AC or DC electrical power distribution subsystem is lost, and this results in the loss of a required function [emphasis added], the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.*

a. *Discuss whether a loss of safety function could occur during cross-tie installation and/or testing, including which safety functions on which units could be lost and the potential duration of each loss. Alternatively, revise the TS markups to reflect when Condition H (Unit 1) and Condition I (Unit 2) would apply during the installation and/or testing.*

b. *Explain why the proposed addition to Condition H (Unit 1) and Condition I (Unit 2) was not proposed for Unit 3 Condition I.*

TVA Response

Response to Part a

For the case modeling a non-accident condition (a loss of Unit 1 and 2 EBR air conditioning, with Unit 1 and 2 EBR normal heat loads, reactor building at 75°F, and outdoor ambient and wall conditions at 75°F), the limiting EBR reaches a temperature of 100.22°F after 1000 hours. Thus, exceeding the design limit of 104°F during the installation of the cross-tie is not considered to be credible.

For the case modeling the accident condition (a loss of Unit 1 and 2 EBR air conditioning, with the EBR doors closed, and reactor building at 127°F), the limiting EBR reaches the design temperature of 104°F after 23.27 hours. As described in the LAR, the piping to the EBR AHUs will be open to the atmosphere for approximately 16 hours and available for use within 20 to 22 hours after opening the system (this includes connecting both the supply and return lines to the cross-tie). This is less than the analyzed time to reach the 104°F when no action is taken to provide cooling to the rooms.

Notwithstanding the above analyses, TVA recognizes that the wording of proposed Condition I (Unit 1) and Condition J (Unit 2) allows deferral of entering Technical Specification (TS) 3.0.3 for up to 9 days even if the 104°F EBR design temperature is exceeded. This was not TVA's intent, and so the Notes to Conditions I and J have been modified to include not exceeding the 104°F EBR design temperature as a pre-condition for its use (see Attachment 2). In this manner, if the 104°F EBR design temperature is exceeded, the exceptions for Condition I and J will no longer apply for Conditions H (Unit 1) and I (Unit 2) and TS 3.0.3 will immediately be entered.

Response to Part b

For conditions relating to implementation and testing of the Unit 3 Cross-tie, relief from Unit 3 Distribution Systems – Operating, limiting conditions for operation (LCO) 3.8.7 subsystems a through f, are not necessary. Heating, ventilation, and air conditioning (HVAC) for the associated Unit 3 EBRs is independent of the Unit 3 Control Bay Chiller. Accordingly, including the exception of Condition J is unnecessary for Conditions A, B, C, D, E, and F. However, installation of the cross-tie will render inoperable subsystem g (Unit 1 and 2 AC and DC Boards needed to support equipment required to be Operable by LCO 3.6.4.3, "Standby Gas Treatment (SGT) System," and LCO 3.7.3, "Condition Room Emergency Ventilation (CREV) System.") For this reason, the Condition J exception to Condition G is required to avoid declaring the affected SGT or CREV subsystem inoperable during the installation of the cross-tie resulting from the loss of the support cooling function. Condition I is designed for the cascading inoperability of the Unit 3 subsystems a through f leading to entering Conditions A through F, when redundant inoperable subsystems result in a loss of function. Entering Condition G does not require concurrently entering Condition I for the inoperability of the Unit 1 or 2 AC or DC Boards. Accordingly, the exception of Condition J does not need to be applied to Condition I.

SCPB RAI 1

The following information is needed to ensure that the sharing of chiller systems will not significantly impair their ability to perform their safety functions during installation.

The LAR indicates that Browns Ferry will take compensatory actions during installation of the Unit 3 CB chilled water cross-tie to reduce risk.

One of the compensatory actions indicates:

> *Monitor the ambient air temperature in the 1A, 1B, 2A, and 2B EBRs and their associated 480V shutdown board rooms twice per shift and document the temperatures in the narrative logs. If the temperatures in these board rooms exceed 100°F [degrees Fahrenheit], open the associated board room doors and install fans to assist in maintaining the associated temperatures below 100°F. Do not block open the electric board room doors unless their ambient air temperature exceeds 100°F.*

The ventilation capability and efficiency of using open doors and fans is unclear, including the effect of the reactor building at 127 °F and/or elevated outdoor ambient air temperature conditions. Provide a discussion on the open doors' and fans' ability to keep the room below the 104 °F design operating limit during cross-tie installation. In event that ventilation using open escribe any additional mitigating or recovery actions that may be taken prior to and if the temperature exceeds 104 °F limit.

TVA Response

The described compensatory action of opening EBR doors and installing temporary fans is a risk management activity established for defense-in-depth during the installation of the cross-tie. These actions are not credited in the post-loss-of-coolant accident (LOCA) GOTHIC heatup analysis, and have not been specifically analyzed. However, it is reasonable to conclude that opening the door to the limiting EBR to cooler air, as assisted by temporary fan forced

circulation, additional margin to reaching the 104°F design limit would result. Because the analysis is that the 104°F limit will not be exceeded during the installation of the cross-tie, additional mitigating or recovery actions are not considered to be needed. As described in the response to STSB RAI 2 Part a, the Notes to Condition I and J have been revised to make these exceptions to entering TS 3.0.3 conditional on not exceeding the EBR design temperature. Thus, if the 104°F limit should be exceeded, plant shutdown is now required.

EEEB RAI 1

In Section 2.2 of the LAR, TVA explained that the installation is expected to last 43 hours based on the estimated work steps required to install and leak check the prepared piping spool sections at the Units 1 and 2 chilled water piping. TVA further stated:

> *An additional 7 days is also requested for flow-balancing the system with the Unit 3 chiller cross-tie aligned to the Unit 1 and Unit 2 EBR AHUs. During this time, the Unit 1 and Unit 2 EBR AHUs and the aligned Unit 3 CB chilled water system train will be available but will not be OPERABLE. The standby Unit 3 CB chilled water system train and both Unit 1/2 CB chilled water system trains remain OPERABLE. Because the limiting EBR takes approximately 24 hours to reach 104°F, there is ample time to realign the systems to their normal configurations before cooling is needed. Therefore, the requested time to complete the installation and testing and to restore the affected electrical power distribution subsystems to OPERABLE status is 9 days, 2 days for installation and 7 days for testing.*

No explanation or justification was provided for the 7-day testing/flow-balancing period.

Provide a justification for the 7-day completion time for testing/flow-balancing the cross-tie.

TVA Response

The 7-day completion time for testing/flow-balancing was chosen based on engineering judgment and has been vetted through several levels of Engineering management. The 7-day completion time will allow adequate time to perform several iterations of flow-balancing and correct any equipment issues that may arise (e.g., flow-balancing valves).

Specifically, following the completion of the cross-tie modification, the Unit 1 and Unit 2 EBR AHUs will be aligned to the Unit 3 Control Bay Chillers to perform flow-balancing of each train (A and B). These will have to be balanced with existing Unit 3 Control Bay Chiller loads (Unit 3 Main Control Room and El 593 AHUs). Currently, there are two procedures (Surveillances - 3-SR-3.7.4.1(CW 3A) and 3-SR-3.7.4.1(CW 3B)) that will require completion to ensure both Unit 3 trains have adequate flow to support cooling of the heat loads. These surveillances require multiple valve manipulations. In addition to performing the Unit 3 procedures, the Unit 1 and 2 EBR AHUs in the cross-tie configuration will have to be tested, resulting in more required valve manipulations for each circuit setup. It is unlikely that adequate flows will be achieved after one iteration. Several iterations per train will likely be required to achieve the required flow rate for each AHU.

Additionally, the flow-balancing valves are not normally moved significantly from their positions. Should it become necessary to replace one of these valves due to sticking, breakage, etc., the proposed completion time will allow for these repairs.

EEEB RAI 2

In the supplement, for the TS Bases for Required Action I.1 associated with new Condition I, the following is stated:

> *In this Condition the equipment in the Unit 1 and Unit 2 electrical board rooms are considered not OPERABLE because chilled water will be isolated from the air handling units in those rooms. Without chilled water to those air handling units during a design basis accident, the temperature in the Unit 1 and Unit 2 electrical board rooms would eventually increase above design limits.*
>
> *While not OPERABLE, the electrical power distribution subsystems are able to perform their safety function until the temperature in the Unit 1 and Unit 2 electrical board rooms exceed the design limits. At that point, the expected service life of equipment in those rooms are shortened by the increased temperatures. Given the most limiting boardroom reaches the design-limit temperature in approximately 24 hours with no mitigating actions taken, there is sufficient time during installation to restore the chilled water to the Unit 1 and Unit 2 electrical board room air handling units to prevent the temperature in the Unit 1 and Unit 2 electrical board rooms from reaching the design limits.*

a. *Although the Bases are not part of the TSs, 10 CFR 10 CFR 50.36(b), states that the TSs are derived from the analyses and evaluation included in safety analysis report. The NRC staff could not locate the basis for 104 °F design temperature limit for the EBRs in the Browns Ferry Updated Final Safety Analysis Report (UFSAR).*

   Provide the basis for the design limit temperature of 104°F for the EBRs.

b. *In the LAR on Page E7, the following is stated: "Current analysis indicates that the Unit 1 and Unit 2 EBRs will not reach the design operating limit of 104 °F for approximately 24 hours during a design-basis accident when no cooling is provided to the EBRs, the doors are closed, and the reactor building is already at 127°F."*

   Provide the temperature at which the EBR electrical equipment is declared inoperable. Also, briefly describe the assumptions and conservatisms used in the GOTHIC analysis.

TVA Response

<u>Response to Part a</u>

The 104°F EBR design temperature is referenced in BFN Environmental Data Sheets (which are design outputs for use by the site), and is specifically described in the BFN Technical Requirements Manual (TRM) Bases for Technical Requirement (TR) 3.7.6, "Electric Board Room AC System." This TRM TR and Bases was provided to the NRC in a letter dated September 4, 2003 (ML032580134).

Response to Part b

EBR Electrical Equipment Inoperability

As stated above in the response to Part a, the 104°F EBR design temperature is described in the Bases to TR 3.7.6, specifically in the Background and LCO sections. The LCO section states: "Equipment in the room is declared inoperable whenever the temperature in the room exceeds 104°F." This is an incorrect statement stemming from an earlier TRM change that should have caused its deletion and has been entered into the BFN Corrective Action Program. TVA declares the electric equipment in the EBRs inoperable in accordance with TRM TR 3.7.6 Condition B without regard to the temperature of the EBRs. This is consistent with the definition of Operability, which requires support systems to be capable of performing their related support functions.

GOTHIC Analysis Assumptions and Conservatisms

Case 1: GOTHIC analysis for BFN Unit 1 EBR heat-up to 104°F assumes Unit 1 LOCA, total loss of EBR HVAC, up to 132.6°F Reactor Building boundary condition, all doors closed, and 95°F outside ambient. Adjacent areas are at their abnormal or normal maximum temperatures.

Case 6: GOTHIC analysis for BFN Unit 2 EBR heat-up to 104°F assumes Unit 2 LOCA, total loss of EBR HVAC, up to 127°F Reactor Building boundary condition, all doors closed, and 95°F outside ambient. Adjacent areas are at their abnormal or normal maximum temperatures.

At the conditions outlined above, the most limiting room heat-up (Unit 1 EBR 1D) is 23.27 hours. Its most limiting designation is due to the influence of a seasonal-maximum radiant heat via its exposed west-facing wall; no other EBRs incur this same influence. The next most limiting room heat-up is 37.4 hours.

Attachment 1

Supplement to the Proposed Technical Specification Bases Changes for Unit 1
Provided in CNL-22-007

(Markups)

BASES

ACTIONS (continued)

G.1 and G.2

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the associated Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

H.1

for reasons other than Condition I,

Condition H corresponds to a level of degradation in the electrical distribution system that causes a required safety function to be lost. When more than one AC or DC electrical power distribution subsystem is lost, and this results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

INSERT 1

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

This Surveillance verifies that the AC and DC electrical power distribution subsystem is functioning properly, with the buses energized. The verification of proper voltage availability on the buses ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these buses. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

INSERT 1

, electric board room temperatures are maintained ≤ 104°F,

I.1

Condition I is preceded by a note stating that the Condition is only applicable when the compensatory actions of Section 3 of the enclosure to Reference 5 are taken and on a one-time basis for installation and testing of the Unit 3 Control Bay Chiller Cross-tie before October 1, 2025. This Condition, where two or more electrical power distribution subsystems are inoperable due to installation and testing of the Unit 3 Control Bay Chiller Cross-tie, provides 9 days to restore the affected electrical power distribution subsystems to OPERABLE status. In this Condition the equipment in the Unit 1 and Unit 2 electrical board rooms are considered not OPERABLE because chilled water will be isolated from the air handling units in those rooms. Without chilled water to those air handling units during a design basis accident, the temperature in the Unit 1 and Unit 2 electrical board rooms would eventually increase above design limits.

104°F

While not OPERABLE, the electrical power distribution subsystems are able to perform their safety function until the temperature in the Unit 1 and Unit 2 electrical board rooms exceed the design limits. At that point, the expected service life of equipment in those rooms are shortened by the increased temperatures. Given the most limiting boardroom reaches the design-limit temperature in approximately 24 hours with no mitigating actions taken, there is sufficient time during installation to restore the chilled water to the Unit 1 and Unit 2 electrical board room air handling units to prevent the temperature in the Unit 1 and Unit 2 electrical board rooms from reaching the design limits. Likewise, during testing and flow balancing of Unit 3 Control Bay Chiller Cross-tie, there is ample time to restore Unit 1/2 chilled water to the Unit 1 and Unit 2 electrical board room air handling units to prevent temperatures in the Unit 1 and Unit 2 electrical board rooms from reaching design limits.

Compensatory measures listed in TVA letter CNL-21-020 will be taken during installation and testing to reduce the risk of plant transients and the loss of offsite power.

Attachment 2

Supplement to the Proposed Technical Specification Pages
Provided in CNL-22-007

(Markups)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 1 and 2 4.16 kV Shutdown Board inoperable~~,~~	----------NOTE---------- Enter applicable Conditions and Required Actions of Condition B, C, and F when Condition A results in no power source to a required 480 volt board. ----------	
, for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~	A.1 Restore the Unit 1 and 2 4.16 kV Shutdown Board to OPERABLE status.	5 days AND 12 days from discovery of failure to meet LCO
Condition I.	AND	
	A.2 Declare associated diesel generator inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Unit 1 480 V Shutdown Board inoperable. OR 480 V RMOV Board 1A inoperable. OR 480 V RMOV Board 1B inoperable.	B.1 Restore Board to OPERABLE status. , for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition I.	8 hours AND 12 days from discovery of failure to meet LCO
C. One Unit 1 and 2 DG Auxiliary Board inoperable.	C.1 Restore Unit 1 and 2 DG Auxiliary Board to OPERABLE status.	5 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Unit DC Board inoperable. OR One Unit 1 and 2 Shutdown Board DC Distribution Panel inoperable. OR 250 V DC RMOV Board 1A inoperable. OR 250 V DC RMOV Board 1B inoperable. OR 250 V DC RMOV Board 1C inoperable.	D.1 Restore required Board or Shutdown Board DC Distribution Panel to OPERABLE status. , for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition I.	7 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Unit 1 and 2 4.16kV Shutdown Board A and B inoperable. OR Unit 1 and 2 4.16 kV Shutdown Board C and D inoperable.	----------NOTE---------- Enter applicable conditions and required actions of Condition B, C, and F when Condition E results in no power source to a required 480 volt board. ---------- E.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
F. One or more required Unit 2 or 3 AC or DC Boards inoperable.	F.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
G. Required Action and associated Completion Time of Condition A, B, C, D, or E not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	12 hours 36 hours
H. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	H.1 Enter LCO 3.0.3.	Immediately

, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.

Condition I.

, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.

Condition I.

E, or I not met.

, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.

Condition I.

Insert 1

INSERT 1

, electric board room temperatures are maintained ≤ 104°F,

----------NOTE---------- Only applicable on a one-time basis for installation and testing the Unit 3 Control Bay Chiller Cross-tie. ----------	I.1 Restore affected electrical power distribution subsystems to OPERABLE status. when the compensatory actions for TVA letter CNL-21-020 are taken and before October 1, 2025. and testing	9 days
I. Two or more electrical power distribution subsystems inoperable due to installation of the Unit 3 Control Bay Chiller Cross-tie ~~when the compensatory actions of TVA letter CNL-21-020 are taken.~~		

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 1 and 2 4.16 kV Shutdown Board inoperable~~:~~ ~~, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition J.	——————NOTE—————— Enter applicable Conditions and Required Actions of Condition B, C, D, and G when Condition A results in no power source to a required 480 volt board. A.1 Restore the Unit 1 and 2 4.16 kV Shutdown Board to OPERABLE status. AND A.2 Declare associated diesel generator inoperable.	5 days AND 12 days from discovery of failure to meet LCO Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Unit 2 480 V Shutdown Board inoperable. OR 480 V RMOV Board 2A inoperable. OR 480 V RMOV Board 2B inoperable.	----------NOTE---------- Enter Condition C when Condition B results in no power source to 480 volt RMOV board 2D or 2E. --- B.1 Restore Board to OPERABLE status. , for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition J.	8 hours AND 12 days from discovery of failure to meet LCO
C. Unit 2 480 V RMOV Board 2D inoperable. OR Unit 2 480 V RMOV Board 2E inoperable.	C.1 Declare the affected RHR subsystem inoperable. , for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition J.	Immediately
D. One Unit 1 and 2 DG Auxiliary Board inoperable.	D.1 Restore Unit 1 and 2 DG Auxiliary Board to OPERABLE status.	5 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One Unit DC Board inoperable. OR One Unit 1 and 2 Shutdown Board DC Distribution Panel inoperable. OR 250 V DC RMOV Board 2A inoperable. OR 250 V DC RMOV Board 2B inoperable. OR 250 V DC RMOV Board 2C inoperable.	E.1 Restore required Board or Shutdown Board DC Distribution Panel to OPERABLE status.	7 days AND 12 days from discovery of failure to meet LCO

, for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~

Condition J.

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Unit 1 and 2 4.16 kV Shutdown Board A and B inoperable. OR Unit 1 and 2 4.16 kV Shutdown Board C and D inoperable.	----------NOTE---------- Enter applicable conditions and required actions of Condition B, C, D, and G when Condition F results in no power source to a required 480 volt board. ---------- F.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
G. One or more required Unit 1 or 3 AC or DC Boards inoperable.	G.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
H. Required Action and associated Completion Time of Condition A, B, D, E, or F not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 36 hours
I. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	I.1 Enter LCO 3.0.3.	Immediately

, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.
Condition J.

, for reasons other than installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.
Condition J.

F, or J not met.

, for reasons other than installation of the U3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.
Condition J.

Insert 2

INSERT 2

, electric board room temperatures are maintained ≤ 104°F,

----------NOTE---------- Only applicable on a one-time basis for installation and testing the Unit 3 Control Bay Chiller Cross-tie ----------	J.1 Restore affected electrical power distribution subsystems to OPERABLE status. when the compensatory actions for TVA letter CNL-21-020 are taken and before October 1, 2025. and testing	9 days
J. Two or more electrical power distribution subsystems inoperable due to installation of the Unit 3 Control Bay Chiller Cross-tie. ~~when the compensatory actions of TVA letter CNL-21-020 are taken.~~		

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Unit 3 4.16 kV Shutdown Board 3EA and 3EB inoperable. OR Unit 3 4.16 kV Shutdown Board 3EC and 3ED inoperable. , for reasons other than ~~installation of the Unit 3 Control Bay Chiller Cross-tie when the compensatory actions of TVA letter CNL-21-020 are taken.~~ Condition J.	~~NOTE~~ Enter applicable ~~conditions~~ and required actions of Condition B, C, D, and G when Condition F results in no power source to a required 480 volt board. F.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
G. One or more required Unit 1 or 2 AC or DC Boards inoperable.	G.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
H. Required Action and associated Completion Time of Condition A, B, D, E, ~~or F not met.~~ F, or J not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 36 hours
I. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	I.1 Enter LCO 3.0.3.	Immediately

INSERT 3

INSERT 3

----------NOTE---------- Only applicable on a one-time basis for installation and testing the Unit 3 Control Bay Chiller Cross-tie. ---------- J. Two or more electrical power distribution subsystems inoperable due to installation of the Unit 3 Control Bay Chiller Cross-tie. ~~when the compensatory actions of TVA letter CNL-21-020 are taken.~~	J.1 Restore affected electrical power distribution subsystems to OPERABLE status. when the compensatory actions for TVA letter CNL-21-020 are taken and before October 1, 2025. and testing	9 days

, electric board room temperatures are maintained ≤ 104°F,

Attachment 3

Supplement to the Proposed Technical Specification Pages
Provided in CNL-22-007

(Retyped)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 1 and 2 4.16 kV Shutdown Board inoperable, for reasons other than Condition I.	----------NOTE---------- Enter applicable Conditions and Required Actions of Condition B, C, and F when Condition A results in no power source to a required 480 volt board. ----------	
	A.1 Restore the Unit 1 and 2 4.16 kV Shutdown Board to OPERABLE status.	5 days <u>AND</u> 12 days from discovery of failure to meet LCO
	<u>AND</u>	
	A.2 Declare associated diesel generator inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Unit 1 480 V Shutdown Board inoperable, for reasons other than Condition I. OR 480 V RMOV Board 1A inoperable, for reasons other than Condition I. OR 480 V RMOV Board 1B inoperable, for reasons other than Condition I.	B.1 Restore Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
C. One Unit 1 and 2 DG Auxiliary Board inoperable.	C.1 Restore Unit 1 and 2 DG Auxiliary Board to OPERABLE status.	5 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One Unit DC Board inoperable, for reasons other than Condition I. OR One Unit 1 and 2 Shutdown Board DC Distribution Panel inoperable, for reasons other than Condition I. OR 250 V DC RMOV Board 1A inoperable, for reasons other than Condition I. OR 250 V DC RMOV Board 1B inoperable, for reasons other than Condition I. OR 250 V DC RMOV Board 1C inoperable, for reasons other than Condition I.	D.1 Restore required Board or Shutdown Board DC Distribution Panel to OPERABLE status.	7 days AND 12 days from discovery of failure to meet LCO

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Unit 1 and 2 4.16 kV Shutdown Board A and B inoperable, for reasons other than Condition I. OR Unit 1 and 2 4.16 kV Shutdown Board C and D inoperable, for reasons other than Condition I.	----------NOTE---------- Enter applicable conditions and required actions of Condition B, C, and F when Condition E results in no power source to a required 480 volt board. ---------- E.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
F. One or more required Unit 2 or 3 AC or DC Boards inoperable, for reasons other than Condition I.	F.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or I not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 4.	12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Two or more electrical power distribution subsystems inoperable that result in a loss of function, for reasons other than Condition I.	H.1 Enter LCO 3.0.3.	Immediately
----------NOTE---------- Only applicable when the compensatory actions for TVA letter CNL-21-020 are taken, electric board room temperatures are maintained ≤ 104°F, and on a one-time basis for installation and testing of the Unit 3 Control Bay Chiller Cross-tie before October 1, 2025. ---------- I. Two or more electrical power distribution subsystems inoperable due to installation and testing of the Unit 3 Control Bay Chiller Cross-tie.	I.1 Restore affected electrical power distribution subsystems to OPERABLE status.	9 days

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 1 and 2 4.16 kV Shutdown Board inoperable, for reasons other than Condition J.	----------NOTE---------- Enter applicable Conditions and Required Actions of Condition B, C, D, and G when Condition A results in no power source to a required 480 volt board. ----------	
	A.1 Restore the Unit 1 and 2 4.16 kV Shutdown Board to OPERABLE status.	5 days <u>AND</u> 12 days from discovery of failure to meet LCO
	<u>AND</u>	
	A.2 Declare associated diesel generator inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One Unit 2 480 V Shutdown Board inoperable, for reasons other than Condition J. OR 480 V RMOV Board 2A inoperable, for reasons other than Condition J. OR 480 V RMOV Board 2B inoperable, for reasons other than Condition J.	----------NOTE---------- Enter Condition C when Condition B results in no power source to 480 volt RMOV board 2D or 2E. ---------- B.1 Restore Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Unit 2 480 V RMOV Board 2D inoperable, for reasons other than Condition J. OR Unit 2 480 V RMOV Board 2E inoperable, for reasons other than Condition J.	C.1 Declare the affected RHR subsystem inoperable.	Immediately
D. One Unit 1 and 2 DG Auxiliary Board inoperable.	D.1 Restore Unit 1 and 2 DG Auxiliary Board to OPERABLE status.	5 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. One Unit DC Board inoperable, for reasons other than Condition J. OR One Unit 1 and 2 Shutdown Board DC Distribution Panel inoperable, for reasons other than Condition J. OR 250 V DC RMOV Board 2A inoperable, for reasons other than Condition J. OR 250 V DC RMOV Board 2B inoperable, for reasons other than Condition J. OR 250 V DC RMOV Board 2C inoperable, for reasons other than Condition J.	E.1 Restore required Board or Shutdown Board DC Distribution Panel to OPERABLE status.	7 days AND 12 days from discovery of failure to meet LCO

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Unit 1 and 2 4.16 kV Shutdown Board A and B inoperable, for reasons other than Condition J. OR Unit 1 and 2 4.16 kV Shutdown Board C and D inoperable, for reasons other than Condition J.	----------NOTE---------- Enter applicable conditions and required actions of Condition B, C, D, and G when Condition F results in no power source to a required 480 volt board. ---------- F.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
G. One or more required Unit 1 or 3 AC or DC Boards inoperable, for reasons other than Condition J.	G.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
H. Required Action and associated Completion Time of Condition A, B, D, E, F or J not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 36 hours
I. Two or more electrical power distribution subsystems inoperable that result in a loss of function, for reasons other than Condition J.	I.1 Enter LCO 3.0.3.	Immediately

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------NOTE---------- Only applicable when the compensatory actions for TVA letter CNL-21-020 are taken, electric board room temperatures are maintained ≤ 104°F, and on a one-time basis for installation and testing of the Unit 3 Control Bay Chiller Cross-tie before October 1, 2025. ---------- J. Two or more electrical power distribution subsystems inoperable due to installation and testing of the Unit 3 Control Bay Chiller Cross-tie.	J.1 Restore affected electrical power distribution subsystems to OPERABLE status.	9 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Unit 3 4.16 kV Shutdown Board 3EA and 3EB inoperable. OR Unit 3 4.16 kV Shutdown Board 3EC and 3ED inoperable.	----------NOTE---------- Enter applicable conditions and required actions of Condition B, C, D, and G when Condition F results in no power source to a required 480 volt board. ---------- F.1 Restore one 4.16 kV Shutdown Board to OPERABLE status.	8 hours AND 12 days from discovery of failure to meet LCO
G. One or more required Unit 1 or 2 AC or DC Boards inoperable, for reasons other than Condition J.	G.1 Declare the affected SGT or CREV subsystem inoperable.	Immediately
H. Required Action and associated Completion Time of Condition A, B, D, E, F, or J not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 4.	12 hours 36 hours
I. Two or more electrical power distribution subsystems inoperable that result in a loss of function.	I.1 Enter LCO 3.0.3.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
----------NOTE---------- Only applicable when the compensatory actions for TVA letter CNL-21-020 are taken, electric board room temperatures are maintained ≤ 104°F, and on a one-time basis for installation and testing of the Unit 3 Control Bay Chiller Cross-tie before October 1, 2025. ---------- J. Two or more electrical power distributions subsystems inoperable due to installation of the Unit 3 Control Bay Chiller Cross-tie.	J.1 Restore affected electrical power distribution subsystems to OPERABLE status.	9 days