TENNESSEE VALLEY AUTHORITY
1101 Market Street, Chattanooga, Tennessee 37402

CNL-23-015

February 27, 2023

10 CFR 50.90

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

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating Licenses Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: Expedited Application to Modify the Watts Bar Nuclear Plant, Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-22-08)

References:
1. TVA letter to NRC, CNL-20-012, “Application to Modify the Watts Bar Nuclear Plant Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-18-16),” dated May 19, 2020 (ML20140A342)

2. TVA letter to NRC, CNL-20-091, “Response to Request for Additional Information Regarding Application to Modify the Watts Bar Nuclear Plant Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-18-16) (EPID L-2020-LLA-0114),” dated December 16, 2020 (ML20351A424)

3. NRC letter to TVA, “Watts Bar Nuclear Plant, Units 1 and 2 - Issuance of Amendment Nos. 145 and 51 for One-Time Change to Technical Specification 3.7.11 to Extend the Completion Time for Main Control Room Chiller Modifications (EPID L-2020-LLA-0114),” dated May 5, 2021 (ML21078A484)

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting a request for an amendment to Facility Operating License Nos. NPF-90 and NPF-96 for the Watts Bar Nuclear Plant (WBN), Units 1 and 2, respectively.

In References 1 and 2, TVA submitted a request for an amendment to revise WBN Units 1 and 2 Technical Specification (TS) 3.7.11 "Control Room Emergency Air Temperature Control System (CREATCS)," to add a one-time change of a footnote to the Completion Time for Required Action A.1 to allow one CREATCS train to be inoperable for up to 60 days while performing modifications to the CREATCS chillers. The proposed amendment also added a one-time change of a footnote to the Completion Time for Required Action E.1 to allow delayed entry into TS Limiting Condition for Operation (LCO) 3.0.3 for up to four days in the event that both CREATCS trains are inoperable during the modifications to the CREATCS chillers. The proposed changes were in support of modifications to the WBN Units 1 and 2 Main Control Room (MCR) CREATCS chillers. In Reference 3, the Nuclear Regulatory Commission (NRC) approved References 1 and 2.

As noted in the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, the timeframe for performing the modifications to the WBN Units 1 and 2 MCR CREATCS chillers is from May 1, 2022, to May 1, 2023. However, due to delays in the vendor delivery of the MCR CREATCS chillers, which were beyond the control of TVA, the timeframe of the above footnotes is being revised to begin no earlier than July 1, 2023, and end no later than December 31, 2024. The remaining provisions of the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1 are unchanged.

The enclosure to this submittal provides a description and technical evaluation of the proposed change, a regulatory evaluation, and a discussion of environmental considerations. Attachment 1 to the enclosure provides the existing WBN Units 1 and 2 TS pages marked up to show the proposed changes. Attachment 2 to the enclosure provides the existing WBN Units 1 and 2 TS pages retyped to show the proposed changes. Attachment 3 to the enclosure provides the existing WBN Units 1 and 2 TS Bases pages marked up to show the proposed changes. Changes to the existing TS Bases are provided for information only and will be implemented under the TS Bases Control Program.

TVA has determined that there are no significant hazards considerations associated with the proposed changes and that the TS changes qualify for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). In accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosure to the Tennessee State Department of Environment and Conservation.

TVA requests approval of the proposed license amendment on an expedited basis by June 15, 2023, with implementation within 15 days of issuance of the amendment. As noted above, TVA is unable to currently meet the current timeframe for performing the modifications to the WBN Units 1 and 2 MCR CREATCS chillers in the current date range of May 1, 2022, to May 1, 2023, primarily due to delays in the vendor delivery of the MCR CREATCS chillers. TVA has been working with the vendor to establish a firm schedule for completing the MCR Chiller replacement activity. Based on vendor input, a revised schedule was developed on January 25, 2023, which, as shown in the enclosure to this submittal, shows the start date for the B MCR chiller replacement commencing in July 2023.

There are no new regulatory commitments associated with this submittal. Please address any questions regarding this request to slrymer@tva.gov.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 27th day of February 2023.

Respectfully,

Digitally signed by Edmondson, Carla
Date: 2023.02.27 17:22:53 -05'00'

Kimberly D. Hulvey
Director, Nuclear Regulatory Affairs

Enclosure: Evaluation of Proposed Change

cc (Enclosure):

NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Watts Bar Nuclear Plant
NRC Project Manager – Watts Bar Nuclear Plant
Director, Division of Radiological Health – Tennessee State Department of Environment and Conservation

Enclosure

Evaluation of Proposed Change

Subject: Expedited Application to Modify the Watts Bar Nuclear Plant, Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-22-08)

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1.0 SUMMARY DESCRIPTION

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, "Application for amendment of license, construction permit, or early site permit," Tennessee Valley Authority (TVA) is submitting a request for an amendment to Facility Operating License Nos. NPF-90 and NPF-96 for the Watts Bar Nuclear Plant (WBN), Units 1 and 2, respectively.

In References 1 and 2, TVA submitted a request for an amendment to revise WBN Units 1 and 2 Technical Specification (TS) 3.7.11 "Control Room Emergency Air Temperature Control System (CREATCS)," to add a one-time change of a footnote to the Completion Time for Required Action A.1 to allow one CREATCS train to be inoperable for up to 60 days while performing modifications to the CREATCS chillers. The proposed amendment also added a one-time change of a footnote to the Completion Time for Required Action E.1 to allow delayed entry into TS Limiting Condition for Operation (LCO) 3.0.3 for up to 4 days in the event that both CREATCS trains are inoperable during the modifications to the CREATCS chillers. The proposed changes were in support of modifications to the WBN Units 1 and 2 Main Control Room (MCR) CREATCS chillers. In Reference 3, the Nuclear Regulatory Commission (NRC) approved References 1 and 2.

As noted in the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, the timeframe for performing the modifications to the WBN Units 1 and 2 MCR CREATCS chillers is from May 1, 2022, to May 1, 2023. However, due to delays in the vendor delivery of the MCR CREATCS chillers, which were beyond the control of TVA, the timeframe of the above footnotes is being revised to begin no earlier than July 1, 2023, and end no later than December 31, 2024. The remaining provisions of the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1 are unchanged.

2.0 DETAILED DESCRIPTION

2.1 Description of the Proposed Change

The footnote to the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Action A.1 currently states:

> “An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than May 1, 2022, and ending no later than May 1, 2023, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.”

Similarly, the footnote to the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Action E.1 currently states:

> "An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than May 1, 2022, and ending no later than May 1, 2023, provided compensatory measures are implemented as described in TVA letter CNL 20-012, dated May 19, 2020."

This license amendment request (LAR) proposes the following changes to the above footnotes to WBN Units 1 and 2 TS 3.7.11 (changes are shown in bold italics).

- The footnote to the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Action A.1 is being revised to state:

  > "An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than ***July 1, 2023***, and ending no later than ***December 31, 2024***, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020."

- The footnote to the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Action E.1 is being revised to state:

  > "An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than ***July 1, 2023***, and ending no later than ***December 31, 2024***, provided compensatory measures are implemented as described in TVA letter CNL 20-012, dated May 19, 2020."

Attachment 1 to the enclosure provides the existing WBN Units 1 and 2 TS pages marked up to show the proposed changes. Attachment 2 to the enclosure provides the existing WBN Units 1 and 2 TS pages retyped to show the proposed changes. Attachment 3 to the enclosure provides the existing WBN Units 1 and 2 TS Bases pages marked up to show the proposed changes. Changes to the existing TS Bases are provided for information only and will be implemented under the TS Bases Control Program.

2.2 Reason for the Proposed Change

Due to unforeseen supplier chain issues, TVA is unable to meet the current end date of May 1, 2023, for the MCR chiller replacement as required by the existing footnotes to the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1. As shown in Table 1, the new MCR chillers have not yet been received and are not scheduled to be installed until the third quarter 2023. TVA has received confirmation from the supplier vendor that they can currently meet the below delivery dates for the MCR chillers. The proposed completion date of December 31, 2024, as discussed in Section 2.1 of this enclosure, provides a margin for any potential further schedule delays and also minimizes the risks from any further potential vendor delays.

Table 1
Revised WBN MCR Chiller Replacement Timeline

Activity	Date
U1R18 Outage	4/14/2023 – 5/13/2023
Qualification of MCR Chillers	4/28/2023
New MCR B Chiller at WBN	5/3/2023
New MCR A Chiller at WBN	5/9/2023
Replace existing MCR B chiller	7/17/2023 – 8/24/2023
U2R5 Outage	11/3/2023 – 12/2/2023
Replace existing MCR A chiller	1/29/2024 – 3/24/2024
U1R19 Outage	11/1/2024 – 12/13/2024

3.0 TECHNICAL EVALUATION

3.1 System Description

See Section 3.1 to Reference 1 and the TVA response to EMIB-RAI-1 in Reference 2.

3.2 MCR Temporary Chilled Water Equipment Description

See Section 3.1 to Reference 1, the TVA response to EMIB-RAI-1 in Reference 2, and Reference 4.

Differences between the currently planned MCR temporary chiller equipment description and the MCR temporary chiller equipment description in Section 3.1 to Reference 1 and the NRC Regulatory Audit Summary (Reference 4) are provided in Tables 2 and 3, respectively. Also, a revised Figure 1 provides an update to Figure 1 from Reference 1 regarding the Temporary Non-Safety Related Chiller System. There are no changes to the MCR temporary chiller equipment description in Reference 2.

Table 2				
Item No.	**Description in LAR (Reference 1)**	**Currently Planned Installation**	**Reason for Change**	**Significance**
1.	Page E6 of 24, paragraph 1 describes, "The chilled water piping inlet and outlet to the AHU is removed and replaced with temporary piping for the temporary chiller system."	Permanent modifications have installed branch connections on the air handling unit (AHU) inlet and outlet piping, eliminating the need to remove the piping at the AHUs. Each branch connection (a tee in the piping) includes an isolation valve and blind flange. The new branch connection piping, valve and blind flange meet the design requirements of the piping system. The installation of the branch connections does not adversely impact the conclusions of the moderate energy line break flooding study. When the temporary cooling equipment is to be removed, the isolation valve is closed and the blind flange is installed.	To allow more efficient (less time) transition between the temporary and permanent chillers which will be advantageous during the post modification test (PMT) window.	This new configuration is functionally equivalent to the configuration described in Reference 1 and is expected to benefit the project by reducing the time in the TS Required Action Completion Time.

Table 2				
Item No.	**Description in LAR (Reference 1)**	**Currently Planned Installation**	**Reason for Change**	**Significance**
2.	Page E6 of 24, Section 3.2 describes major equipment and includes “Chilled water Pump.”	The temporary chiller installation may have as many as three pumps. Additionally, one “major equipment” item that was not included in the Reference 1 description is a transfer switch, to allow transfer between plant power and the diesel generator (DG) for the temporary chiller.	The temporary chiller installation includes multiple pumps to meet necessary hydraulic conditions. The temporary chiller installation includes a transfer switch.	These items were included for completeness of information.
3.	Page E6 of 24, Section 3.2.1 refers to a 320kW DG. Section 3.2.4 also refers to the 320kW DG.	The DG referred to in Reference 1 (a rented Aggreko chiller) is rated at 320kW at 50Hz. The rating of the currently planned DG is 300kW at 60Hz, which is adequate for the temporary/rented Aggreko chiller equipment. A Caterpillar (CAT) generator and Carrier chiller have also been purchased by the site to reduce reliance on rented equipment. The ratings (tons and kW) of the CAT/Carrier equipment exceed the ratings of the rented Aggreko equipment.	Clarification on the rating of the Aggreko DG and also to include reference to the CAT generator which the site has purchased, along with a Carrier chiller.	Both the rented Aggreko equipment and the Carrier/CAT equipment have adequate electrical and cooling capacity to meet the requirements for the temporary chiller system.

Table 2				
Item No.	**Description in LAR (Reference 1)**	**Currently Planned Installation**	**Reason for Change**	**Significance**
4.	Page E6 of 24, Section 3.2.1, second paragraph states, “Connection to the AHU coils will be made by isolating the chilled water piping, removing the flex hoses between the AHU coils and the chilled water piping and then connecting the temporary chilled water supply and return hoses to the AHU coils using existing flange connections.”	Permanent branch connections have been added to the AHU piping. Therefore, it is more accurate to state "Connection to the AHU coils is made via permanent flanged branch connections with an isolation valve,” which were added as part of the chiller replacement project subsequent to the submittal of Reference 1.	To allow a more efficient (less time) transition between the temporary and permanent chillers, which will be advantageous during the PMT window.	This new configuration is functionally equivalent to the configuration described in Reference 1 and is expected to benefit the project by reducing the time in the TS Required Action Completion Time.
5.	Page E7 of 24, Section 3.2.2 refers to 2.5 inch (“) diameter supply and return hoses.	Hose sizes used in the temporary chilled water system are of various sizes (3”, 4” and 6”).	Final configuration to meet hydraulic requirements.	Larger hose sizes meet hydraulic requirements and offer less resistance compared to smaller hose sizes.
6.	Page E7 of 24, Section 3.2.3 states, “The equipment associated with the temporary chiller system will be located in the yard west of the Auxiliary Building and in the Control Building (Elevation 729.0 feet).”	As noted in Reference 4, "The two potential locations with respect to assumed plant north are (a) due west of the Auxiliary Building or (b) northwest of the Unit 1 Containment."	Provide flexibility in chiller locations and align Reference 1 with Reference 4.	Both locations are a similar distance (hose run). Both locations are also sufficiently distant from the plant air intakes, which were reviewed by the NRC in Reference 4.

Table 2				
Item No.	**Description in LAR (Reference 1)**	**Currently Planned Installation**	**Reason for Change**	**Significance**
7.	Page E7 of 24, Section 3.2.3 states, “the temporary chiller system will be protected from freezing.”	This statement is intended to mean “as required.” The design package states that if the chiller is deployed during winter months, steps should be taken to avoid freezing (e.g., draining lines when not in use, use of heat tape and insulation).	Clarification.	Clarification.

Table 3				
Item No.	**Description in NRC Audit Report (Reference 4)**	**Currently Planned Installation**	**Reason for Change**	**Significance**
1.	Page 4 of 7 of the Audit Report states, “Connection to the AHU coils will be made by isolating the plant chilled water piping, removing the flex hoses between the AHU coils and the permanent plant chilled water piping, and then connecting the temporary chilled water supply and return hoses to the AHU coils using the existing flange connections.”	Permanent branch connections have been added to the AHU piping; therefore, a current statement would be, "Connection to the AHU coils is made via permanent flanged branch connections with an isolation valve, which were added as part of the chiller replacement project subsequent to the submittal of the LAR."	To allow more efficient (less time) transition between the temporary and permanent chillers which will be advantageous during the PMT window.	This new configuration is functionally equivalent to the configuration described in Reference 1 and is expected to benefit the project by reducing the time in the TS Required Action Completion Time.
2.	Page 5 of 7 of the Audit Report states, “The temporary chiller skid diesel generator (DG) fuel oil tank’s capacity provides a 12-hour run time for the chiller skid without fuel oil replenishment, which allows the licensee time for replenishing measures.”	The CAT DG has a 300-gallon tank, which provides a 24-hour run time.	To reflect the capacity of the CAT DG which would be used with the Carrier chiller.	The run time for the CAT DG is longer than the run time for the Aggreko DG, which is conservative to what is described in the Audit Report.

3.3 Compensatory Measures

The compensatory measures listed in References 1 and 3 remain unchanged.

3.4 Conclusion

The proposed revision to the footnotes in the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, is administrative in nature to reflect the revision to the scheduled completion time for the modification activities planned for the upgrade of the MCR chillers.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements and Criteria

See Section 4.1 to Reference 1.

4.2 Precedent

As noted in Section 1.0 to this enclosure, in Reference 3, the NRC approved References 1 and 2, which added the current footnotes to the Completion Time for Required Actions A.1 and E.1. The proposed change revises the start date for these footnotes from May 1, 2022, to July 1, 2023, and the expiration date from May 1, 2023, until December 31, 2024.

4.3 No Significant Hazards Considerations Analysis

TVA is requesting an amendment to Facility Operating Licenses NPF-90 and NPF-96 for the WBN Units 1 and 2, respectively. As noted in the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, the timeframe for performing the modifications to the WBN Units 1 and 2 MCR CREATCS chillers is from May 1, 2022, to May 1, 2023. However, due to delays in the vendor delivery of the MCR CREATCS chillers, which were beyond the control of TVA, the timeframe of the above footnotes is being revised to begin no earlier than July 1, 2023, and end no later than December 31, 2024. The remaining provisions of the footnotes to the Completion Times for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1 are unchanged.

TVA evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. *Does the proposed amendment involve a significant increase in the probability or consequence of an accident previously evaluated?*

   Response: No.

   The proposed revision to the footnotes in the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, is administrative in nature to reflect the revision to the scheduled completion time for the modification activities planned for the upgrade of the MCR chillers. The compensatory measures listed in References 1 and 3 remain unchanged.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. *Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?*

   Response: No.

   The proposed revision to the footnotes in the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, is administrative in nature to reflect the revision to the scheduled completion time for the modification activities planned for the upgrade of the MCR chillers. The compensatory measures listed in References 1 and 3 remain unchanged.

   Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed revision to the footnotes in the Completion Time for WBN Units 1 and 2 TS 3.7.11, Required Actions A.1 and E.1, is administrative in nature to reflect the revision to the scheduled completion time for the modification activities planned for the upgrade of the MCR chillers. The compensatory measures listed in References 1 and 3 remain unchanged.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

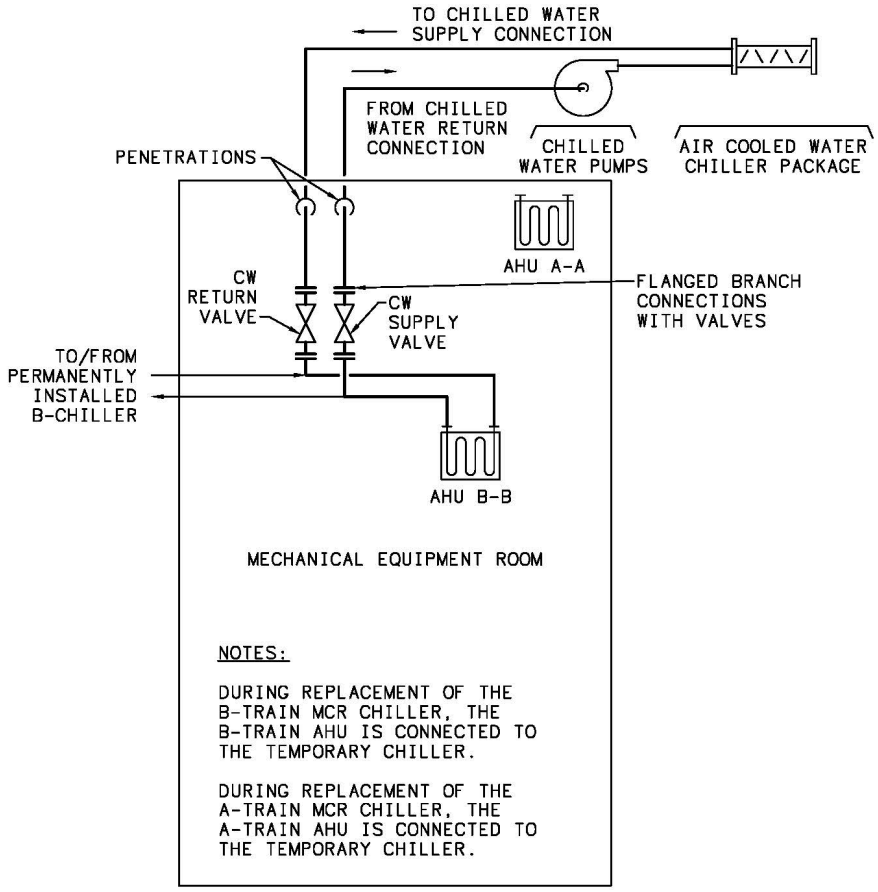
5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any radioactive effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. TVA letter to NRC, CNL-20-012, “Application to Modify the Watts Bar Nuclear Plant Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-18-16),” dated May 19, 2020 (ML20140A342)
2. TVA letter to NRC, CNL-20-091, “Response to Request for Additional Information Regarding Application to Modify the Watts Bar Nuclear Plant Unit 1 and Unit 2 Technical Specifications for Main Control Room Chiller Completion Time Extension (WBN-TS-18-16) (EPID L-2020-LLA-0114),” dated December 16, 2020 (ML20351A424)
3. NRC letter to TVA, “Watts Bar Nuclear Plant, Units 1 and 2 - Issuance of Amendment Nos. 145 and 51 for One-Time Change to Technical Specification 3.7.11 to Extend the Completion Time for Main Control Room Chiller Modifications (EPID L-2020-LLA-0114),” dated May 5, 2021 (ML21078A484)
4. NRC letter to TVA, “Watts Bar Nuclear Plant, Units 1 and 2 – Regulatory Audit Summary Related to Request to Technical Specification 3.7.11, ‘Control Room Emergency Air Temperature Control System (CREATCS)’ (EPID L-2020-LLA-0114),” dated January 26, 2021 (ML21012A084)

Revised Figure 1
Temporary Non-Safety Related Chiller System



Enclosure

Attachment 1

Proposed TS Changes (Mark-Ups) for WBN Units 1 and 2

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days*
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	C.1 Place OPERABLE CREATCS train in operation. OR C.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately

(continued)

* An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July~~May~~ 1, 202~~2~~3, and ending no later than December~~May~~ 31, 202~~3~~4, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CREATCS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

** An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July ~~May~~ 1, 202~~2~~3, and ending no later than December ~~May~~ 31, 202~~3~~4, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREATCS train inoperable.	A.1	Restore CREATCS train to OPERABLE status.	30 days*
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	C.1 OR C.2	Place OPERABLE CREATCS train in operation. Suspend movement of irradiated fuel assemblies.	Immediately Immediately
D. Two CREATCS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1	Suspend movement of irradiated fuel assemblies	Immediately

* An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July~~May~~ 1,~~-~~ 202~~2~~3, and ending no later than December~~May~~ 31, 202~~3~~4, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

** An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July~~May~~ 1, 202~~2~~3, and ending no later than December ~~May~~ 31, 202~~3~~4, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

Enclosure

Attachment 2

Proposed TS Changes (Final Typed) for WBN Units 1 and 2

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days*
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	C.1 Place OPERABLE CREATCS train in operation. OR C.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately

(continued)

* An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July 1, 2023, and ending no later than December 31, 2024, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two CREATCS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1 Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

** An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July 1, 2023, and ending no later than December 31, 2024, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One CREATCS train inoperable.	A.1	Restore CREATCS train to OPERABLE status.	30 days*
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies.	C.1 OR C.2	Place OPERABLE CREATCS train in operation. Suspend movement of irradiated fuel assemblies.	Immediately Immediately
D. Two CREATCS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies.	D.1	Suspend movement of irradiated fuel assemblies	Immediately

* An allowance is permitted for one CREATCS train to be inoperable for up to 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July 1, 2023, and ending no later than December 31, 2024, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CREATCS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each CREATCS train has the capability to remove the assumed heat load.	In accordance with the Surveillance Frequency Control Program

** An allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July 1, 2023, and ending no later than December 31, 2024, provided compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

Enclosure

Attachment 3

Proposed TS Bases Page Changes (Mark-Ups) for WBN Units 1 and 2 (For Information Only)

ACTIONS (continued)

A1 (continued)

The Completion Time is modified by a footnote that states an allowance is permitted for one CREATCS train to be inoperable for 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July~~May~~ 1, 202~~2~~3, and ending no later than December ~~May 3~~1, 202~~3~~4, provided the following compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

- A temporary, non-safety related chiller system with a temporary DG to provide power to the temporary chiller system will be installed and operated as described in the LAR.
- Instructions for operation of the temporary cooling equipment will be provided.
- During replacement of the CREATCS chillers, TVA will employ a graded approach to defense-in-depth and protected equipment strategies based on the operating status of the affected unit. The risk of the activity will be assessed and managed, including the use of physical barriers as needed. Additionally, TVA procedures preclude work on or near protected equipment and limit access to the area to emergency situations and non-intrusive monitoring of running equipment per operator rounds.
- During replacement of the CREATCS chillers, no elective maintenance will be performed on TS related support equipment for the Operable CREATCS chiller except for any required TS SRs.

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be placed in a MODE that minimizes the risk. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

C.1 and C.2

In MODE 5 or 6, or during movement of irradiated fuel, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREATCS train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that active failures will be readily detected.

(continued)

ACTIONS (continued)

C.1 and C.2 (continued)

An alternative to Required Action C.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

D.1

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with two CREATCS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

E.1

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4 the CREATCS may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately. The Completion Time is modified by a footnote that states an allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July ~~May~~ 1, 202~~2~~3, and ending no later than December ~~May~~ 31, 202~~3~~4, provided the following compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

- A temporary, non-safety related chiller system with a temporary DG to provide power to the temporary chiller system will be installed and operated as described in the LAR.
- Instructions for operation of the temporary cooling equipment will be provided.
- During replacement of the CREATCS chillers, TVA will employ a graded approach to defense-in-depth and protected equipment strategies based on the operating status of the affected unit. The risk of the activity will be assessed and managed, including the use of physical barriers as needed. Additionally, TVA procedures preclude work on or near protected equipment and limit access to the area to emergency situations and non-intrusive monitoring of running equipment per operator rounds.

(continued)

BASES

ACTIONS (continued)

E1 (continued)

- During replacement of the CREATCS chillers, no elective maintenance will be performed on TS related support equipment for the Operable CREATCS chiller except for any required TS SRs.

The purpose of the footnote is to ensure the MCR temperature is being controlled. The specified temperature limit of 90°F is above the normal operating temperature of the MCR (approximately 75°F), providing operational flexibility when implementing the mitigating actions. This temperature does not impact the operability of equipment or habitability of the MCR. The limit of 90°F maintains margin below the lowest specification for the MCR equipment cabinets of 104°F. Subsequent to immediate MCR temperature verification, the one-hour frequency is adequate given the indications available in the MCR. Main control room temperature data is measured and displayed from readily available equipment in the MCR and operators will have awareness of temperature trending relative to the 90°F limit.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the sizing calculations in the control room. This SR consists of a combination of testing and calculations. This is accomplished by verifying that the system has not degraded. The only measurable parameters that could degrade undetected during normal operation are the system air flow and chilled water flow rate. Verification of these two flow rates will provide assurance that the heat removal capacity of the system is still adequate. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. Watts Bar FSAR, Section 9.4.1, "Control Room Area Ventilation System."

2. Watts Bar FSAR, Section 3.7.3.18, “Seismic Qualification of Main Control Room Suspended Ceiling and Air Delivery Components.”

3. NRC Safety Evaluation dated February 12, 2004, for License Amendment 50.

(continued)

BASES

ACTIONS (continued)

A1 (continued)

The Completion Time is modified by a footnote that states an allowance is permitted for one CREATCS train to be inoperable for 60 days. This TS provision is only authorized for one entry per train during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July~~May~~ 1, 202~~2~~3, and ending no later than December ~~May~~ 31, 202~~3~~4, provided the following compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

- A temporary, non-safety related chiller system with a temporary DG to provide power to the temporary chiller system will be installed and operated as described in the LAR.
- Instructions for operation of the temporary cooling equipment will be provided.
- During replacement of the CREATCS chillers, TVA will employ a graded approach to defense-in-depth and protected equipment strategies based on the operating status of the affected unit. The risk of the activity will be assessed and managed, including the use of physical barriers as needed. Additionally, TVA procedures preclude work on or near protected equipment and limit access to the area to emergency situations and non-intrusive monitoring of running equipment per operator rounds.
- During replacement of the CREATCS chillers, no elective maintenance will be performed on TS related support equipment for the Operable CREATCS chiller except for any required TS SRs.

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the plant must be placed in a MODE that minimizes the risk. To achieve this status, the plant must be placed in at least MODE 3 within 6 hours, and in MODE 5 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.

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

In MODE 5 or 6, or during movement of irradiated fuel, if the inoperable CREATCS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREATCS train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that active failures will be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

D.1

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with two CREATCS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

E.1

If both CREATCS trains are inoperable in MODE 1, 2, 3, or 4, the CREATCS may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately. The Completion Time is modified by a footnote that states an allowance to monitor the main control room temperature every hour and verify the main control room temperature is less than or equal to 90°F is permitted for up to four days in lieu of the immediate entry into LCO 3.0.3. If the main control room temperature exceeds 90°F, or the duration without a train of CREATCS being OPERABLE exceeds four days, immediate entry into LCO 3.0.3 is required. This provision is only applicable during modification activities planned for the upgrade of the main control room chillers beginning no earlier than July ~~May~~ 1, 202~~2~~3, and ending no later than December ~~May~~ 31, 202~~3~~4, provided the following compensatory measures are implemented as described in TVA letter CNL-20-012, dated May 19, 2020.

BASES

ACTIONS (continued)

E.1 (continued)

- A temporary, non-safety related chiller system with a temporary DG to provide power to the temporary chiller system will be installed and operated as described in the LAR.
- Instructions for operation of the temporary cooling equipment will be provided.
- During replacement of the CREATCS chillers, TVA will employ a graded approach to defense-in-depth and protected equipment strategies based on the operating status of the affected unit. The risk of the activity will be assessed and managed, including the use of physical barriers as needed. Additionally, TVA procedures preclude work on or near protected equipment and limit access to the area to emergency situations and non-intrusive monitoring of running equipment per operator rounds.

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The purpose of the footnote is to ensure the MCR temperature is being controlled. The specified temperature limit of 90°F is above the normal operating temperature of the MCR (approximately 75°F), providing operational flexibility when implementing the mitigating actions. This temperature does not impact the operability of equipment or habitability of the MCR. The limit of 90°F maintains margin below the lowest specification for the MCR equipment cabinets of 104°F. Subsequent to immediate MCR temperature verification, the one-hour frequency is adequate given the indications available in the MCR. Main control room temperature data is measured and displayed from readily available equipment in the MCR and operastors will have awareness of temperature trending relative to the 90°F limit.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the sizing calculations in the control room. This SR consists of a combination of testing and calculations. This is accomplished by verifying that the system has not degraded. The only measurable parameters that could degrade undetected during normal operation are the system air flow and chilled water flow rate. Verification of these two flow rates will provide assurance that the heat removal capacity of the system is still adequate. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.