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APR 07 2004

TVA-WBN-TS-03-16

10 CFR 50.90

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

Gentlemen:

In the Matter of ) Docket No. 50-390  
Tennessee Valley Authority )

**WATTS BAR NUCLEAR PLANT (WBN) - UNIT 1 - TECHNICAL  
SPECIFICATION (TS) CHANGE TS-03-16, "REVISION OF ULTIMATE  
HEAT SINK (UHS) TEMPERATURE"**

Pursuant to 10 CFR 50.90, TVA is submitting a request for an amendment to WBN's License NPF-90 to change the Technical Specifications for Unit 1.

The proposed TS change (TS 03-16) will revise the limiting condition for operation for TS Section 3.7.9, "Ultimate Heat Sink." The maximum essential raw cooling water (ERCW) temperature limit associated with Surveillance Requirement (SR) 3.7.9.1 will be annotated with a note allowing an occasional increase from 85 degrees Fahrenheit (°F) to 88°F. This proposed change is based on recent evaluations of the ERCW system and the UHS functions and maximum temperatures that will satisfy the associated safety functions. In addition, an administrative change is proposed to clarify the maximum allowable internal containment pressure. Corresponding TS Bases changes are also included for the temperature increase for UHS and the containment pressure clarification including a minor change in the maximum calculated containment pressure resulting from the increased UHS temperature.

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TVA discussed its plans for this proposal in a meeting with NRC staff in August 2003. The meeting provided TVA the opportunity to describe the basis and key considerations for the UHS Temperature Increase evaluation. The discussion was beneficial for TVA's understanding of potential Staff questions and concerns; these items have been addressed herein.

This request is similar to the approved license amendment request by Nebraska Public Power District, Cooper Nuclear Station, Amendment No. 193, issued July 22, 2002; Consumers Energy Company, Palisades Plant, Amendment No. 202, issued June 4, 2001; and Commonwealth Edison Company, Braidwood Station, Amendment Nos. 107 and 107 for Units 1 and 2, respectively, issued June 13, 2000. These requests proposed and received NRC approval for an increase in a single maximum UHS temperature limit.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee State Department of Public Health.

Enclosure 1 to this letter provides the description and evaluation of the proposed change. This includes TVA's determination that the proposed change does not involve a significant hazards consideration, and is exempt from environmental review. An Attachment to Enclosure 1 provides TVA's detailed Engineering Report for the subject proposal. Enclosures 2 and 3 contain copies of the applicable Unit 1 TS and TS Bases pages, respectively, marked-up to show the proposed changes. Enclosure 4 lists the commitments made for this submittal.

The proposed change addresses temperature limits for the UHS function that have been challenged in late summer. Therefore, TVA requests approval of this amendment by August 1, 2004, and requests that implementation occur within 45 days of approval.

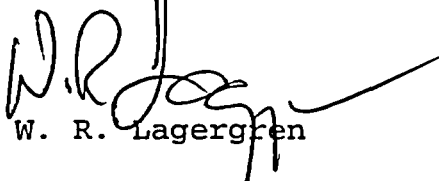
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If you have any questions about this change, please telephone  
P. L. Pace at (423) 365-1824.

I declare under penalty of perjury that the foregoing is true  
and correct. Executed on this 7th day of April, 2004.

Sincerely,



W. R. Lagergren

Enclosures:

1. TVA Description and Evaluation of the Proposed Change  
Attachment - Engineering Report, "Ultimate Heat Sink -  
88°F Maximum Operating Temperature Evaluation, Watts Bar  
Nuclear Plant, April 2, 2004, Revision 2"
2. Proposed Technical Specifications Changes (mark-up)
3. Proposed Technical Specifications Bases Changes (mark-up)
4. List of Commitments

Enclosures

cc: See Page 4

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cc (Enclosures):

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1  
DOCKET NO. 390

PROPOSED LICENSE AMENDMENT REQUEST WBN-TS-03-16 - REVISION OF  
ULTIMATE HEAT SINK (UHS) TEMPERATURE

DESCRIPTION AND EVALUATION OF PROPOSED CHANGE

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1.0 DESCRIPTION

The purpose of this letter is to request an amendment to the Operating License NPF-90 and Technical Specifications (TS) for Watts Bar Nuclear Plant Unit 1. The proposed TS change will revise the limiting condition for operation (LCO) for TS Section 3.7.9, "Ultimate Heat Sink." The change will increase the maximum allowed essential raw cooling water (ERCW) temperature from 85 degrees Fahrenheit (°F) to 88°F for Surveillance Requirement (SR) 3.7.9.1 for short durations due to seasonal variations. The proposed change is based on recent evaluations of the ERCW system and the UHS functions and maximum temperatures and minimum river elevations that will satisfy the associated safety functions. The proposed change satisfies TVA's intent to propose a permanent TS change that will reduce the challenges to the UHS limit. In addition, an administrative change is proposed to clarify the maximum allowable internal containment pressure. Corresponding TS Bases changes are included for the temperature increase for UHS and the containment pressure clarification including a minor change in the maximum calculated containment pressure resulting from the increased UHS temperature.

2.0 PROPOSED CHANGE

The proposed change will revise WBN TS Section 3.7.9, "Ultimate Heat Sink," specifically, Surveillance Requirement (SR) 3.7.9.1. A footnote has been added to the SR which would allow an increase in the ERCW temperature limit from 85°F to 88°F for short durations due to seasonal variations. An administrative change is proposed to clarify the maximum allowable internal containment pressure consistent with the current TS Bases. Corresponding TS Bases changes are also proposed. The TS and TS Bases changes affect the following sections and are illustrated by marked-up pages provided in Enclosures 2 and 3:

## Technical Specification

- 1) SR 3.7.9.1 (Page 3.7-21) is revised to add the following footnote:

"(\*) UHS average water temperature  $> 85^{\circ}\text{F}$  and  $\leq 88^{\circ}\text{F}$  is acceptable for short durations due to seasonal variations."

- 2) TS 5.7.2.19 (Page 5.0-28), second paragraph is revised *from:*

"The peak calculated containment internal pressure for the design basis loss of coolant accident, Pa, is 15.0 psig."

*to:*

"The maximum allowable containment internal pressure, Pa, is 15.0 psig, which bounds the peak calculated containment internal pressure resulting from the design basis LOCA."

## Technical Specification Bases

Corresponding TS Bases changes are included for the temperature increase to  $88^{\circ}\text{F}$  for UHS. The TS Bases are also revised to reflect the revised peak containment pressure resulting from the containment pressure reanalysis using the increased ERCW temperature of  $88^{\circ}\text{F}$ , and to clarify the maximum allowable internal containment pressure. Refer to the markups provided in Enclosure 3.

In particular, as discussed in Section 4 of this report, the proposed revisions to the TS Bases include a discussion of contingency measures considered prudent if UHS temperature should exceed  $85^{\circ}\text{F}$ . The following change is proposed:

- 5) Section B 3.7.9, SR 3.7.9.1 (Page B 3.7-50):

**Insert:**

"A note indicates UHS average water temperature  $> 85^{\circ}\text{F}$  and  $\leq 88^{\circ}\text{F}$  is acceptable for short durations and is based on the engineering evaluation provided in Reference 4. If surveillance performance indicates the average water temperature of UHS will exceed  $85^{\circ}\text{F}$ , site procedures/documents require the following contingency actions:

Perform an engineering evaluation and appropriate risk-management actions (1) To confirm UHS operability for existing ERCW equipment problems that would remain concurrent with UHS temperature above  $85^{\circ}\text{F}$ , and (2) Prior to initiating an elective work activity that would render an ERCW component required by LCO 3.7.8 inoperable.

These contingency measures are not required for UHS operability and are not credited in the safety analyses/evaluations of Reference 4. However, they are intended to minimize the impact of operation above 85°F, since such operation may exceed the original design parameters for ERCW supplied components. Because margin above design has been utilized to validate such operation, the contingency measures are considered prudent to maintain defense-in-depth."

### 3.0 BACKGROUND AND SUMMARY

On August 2, 2002, the UHS temperature at WBN approached the Technical Specification limit of 85°F. If this limit had been exceeded it could have resulted in an unnecessary unit shutdown to comply with Technical Specification LCO 3.7.9. Multipurpose river operation coupled with hotter than normal summers and below normal river flows has prompted resolution of this critical operating condition. Past efforts by TVA to address this condition have included temporary manipulation of the Tennessee River system, including upstream reservoirs, in order to maintain acceptable temperature in the Chickamauga Reservoir pool. These special operations can involve significant operating expenses and coordination difficulties with unpredictable results and limited success.

Therefore, TVA proposes that the maximum ERCW temperature limit in SR 3.7.9.1 will be increased from 85°F to 88°F. The proposed change is based on recent evaluations of the ERCW system, UHS functions, and maximum temperatures utilizing existing margins in the ERCW design basis in proving acceptable plant operation and safety performance for a short duration and infrequent event. The proposed change satisfies TVA's intent to incorporate a permanent TS change that will reduce challenges to the UHS limit.

### 4.0 TECHNICAL ANALYSIS

The methodology and results of TVA's evaluation of the proposed UHS temperature increase of up to 3°F above the existing design basis value of 85°F to 88°F are discussed in detail in the attached report, "Ultimate Heat Sink - 88°F Maximum Temperature Evaluation, Engineering Report, Watts Bar Nuclear Plant, April 2, 2004, Revision 2," (Reference 1). A description of the ERCW and UHS Systems is provided in the WBN Updated Final Safety Analysis Report (UFSAR) Sections 9.2.1 and 9.2.5, respectively.

The effects of the proposed temperature increase have been examined in detail on equipment, components, systems, and safety analyses and have been found to be acceptable. An extensive review was performed of existing calculations, procedures, design criteria, system descriptions and the UFSAR. The evaluation included several new

heat transfer calculations, a new UHS drawdown calculation resulting from postulated breach of the Chickamauga Dam, a revised Residual Heat Removal (RHR) design basis cooldown analysis, and a revised design basis containment pressure response calculation for a postulated loss of coolant accident (LOCA) occurring with UHS/ERCW intake water temperature of 88°F. As discussed in the attached Engineering Report (ER), the methods of evaluation varied and included sensitivity evaluations, bounding analyses, and design basis re-analysis (e.g., for the containment pressure analysis) to demonstrate that the cooling water requirements for the most demanding accident, shutdown, and cooldown have been met.

Margin exists in many areas within the ERCW design basis analyses. ERCW flow rates, cooled medium (water and air) flow rates, heat exchanger fouling, heat exchanger tube plugging, equipment and room heat loads, heat load losses to ambient, assumed lake levels, and margin inherent in structural Codes (piping and supports) all offer various amounts of margin in the analyses. In most cases, only ERCW flow rate margin was utilized, and in some cases, heat load margins were used to evaluate acceptable ERCW system performance at 88°F. Some specific systems, structures and/or components required a more in-depth evaluation to determine acceptability of minimum required performance. More limiting input assumptions were utilized in some evaluations such that additional margins were created, for example, use of a higher ERCW flow rate for a component supported by preoperational test data. The attached ER discusses when such techniques or different methods were used for the evaluations. With the exception of these ERCW component evaluations and the RHR cooldown analysis discussed below, no other changes in assumptions or methodologies were credited for the evaluation of the revised UHS temperature change.

The impact of the proposed change on shutdown and removal of residual heat, including time requirements for achieving a safe shutdown conditions were evaluated in Section 3.16 (RHR Impact). The analysis concluded that acceptable system performance during normal plant cooldowns at 88°F would be obtained. For the case of single train cooldown, in which TS compliance with the 36 hours to cold shutdown is dependent on single train availability of RHR, the cooldown time period could be achieved by limiting isolation of spent fuel pool cooling for up to 5 hours and assurance that the remaining reactor coolant pump be secured no later than 25 hours after shutdown. Securing the last pump at 25 hours is consistent with and bounded by operational practices that would occur during a loss of offsite power event, where all power is provided by the emergency diesel generators (EDGs), since the reactor coolant pumps (RCPs) are not loaded on the emergency shut down electric boards.

As discussed in the attached ER, Section 3.18, TVA River Systems Operation and Engineering performed a re-analysis of the postulated effects of a non-flood failure of Chickamauga Dam (downstream of WBN). The TVA River model discussion is attached to the ER as well as performance graphs for several failure scenarios, and operating



guides for Chickamauga and Watts Bar reservoirs. Although the analysis of UHS and ERCW performance at 88°F did not quantitatively credit this analysis, the results indicate a higher minimum river water pool elevation (approximately seven feet greater than assumed for the original ERCW flow balance), thus providing additional flow margins to ERCW components.

TVA notes that a revised river plan is under consideration. The new plan, if adopted, would not impact the conclusions of the ER for the increased UHS temperature for WBN. The expected frequency of extreme river temperature events (exceedances of 85°F) would continue to be consistent with assumptions of the ER, that is, infrequent and of short duration. The river plan would impact the attached reservoir operating guides, however, these curves are not utilized as input for any evaluations performed in support of increased UHS temperature at WBN. They have been included to provide the reviewer a better understanding of TVA's ability to exercise control of UHS levels. Key reservoir levels used as design input parameters to plant specific analyses include minimum lake level from a loss of downstream dam, which is primarily influenced by upstream dam releases during such an event, and maximum flood levels, which do not challenge the plant from a UHS temperature basis. These key design parameters are not shown on the normal operating guide graphs and are not impacted by the revised river plan.

The UHS temperature increase to 88°F resulted in a minor increase in the maximum calculated containment pressure due to a design basis LOCA. This change from 10.64 psig to 10.90 psig remains below the ASME Code design internal pressure of 13.5 psig. The containment accident reanalysis is discussed in the attached ER, Section 3.4. The containment functional design is discussed in UFSAR Section 6.2.1.

TVA's evaluation concluded that there is not a significant increase in the risk or consequences of normal operation, shutdown, or accident mitigation or danger to the public, equipment, or site personnel because adequate margins exist in the critical systems, structures and/or components. The evaluation concluded that a Technical Specification change to allow continued plant operation up to 88°F is acceptable.

#### Design Bases Control

As discussed in the ER (Section 3.32), the WBN Design Basis will be revised to reflect a UHS limit of 88°F for two analyses, (1) Containment Pressurization and Temperature Response Analysis, and (2) Residual Heat Removal Cool-down Analysis. However, due to the short duration and infrequent nature of the UHS heat-up event, the design basis for the ERCW and UHS Systems will continue to reflect a UHS limit of 85°F while utilizing existing margins in the ERCW design in proving acceptable plant operation. This approach will

eliminate the need for extensive and cost-prohibitive revisions to all design basis documents (e.g., calculations, design drawings, etc.) to fully capture a new design basis temperature of 88°F in all plant documents. Further, this approach will allow retention of margin that exists in many areas within the ERCW design basis. It is desired to avoid the consumption of this existing plant operational margin within the design basis for an infrequent event since, should it occur, the event would only last for a few days. Reserving such margin limits operational flexibility through much of the year in evaluating other conditions that may arise in which taking credit for lower ERCW temperatures and existing flow margins would prove beneficial.

The importance of maintaining the design basis configuration is recognized. Furthermore, the importance of maintaining the approach and methodology that allowed the conclusion that safe operation is achievable even at 88°F UHS temperatures is acknowledged. For this reason, the UFSAR, System Descriptions, Design Criteria, and other key design documents will be revised to ensure that 88°F is considered in future procurements, specifications, analyses, and evaluations. NRC approval of the proposed UHS Tech Spec change will establish a licensing basis value for continued operation up to 88°F ERCW temperature. The design basis value will continue to be 85°F. However, the conclusions of the Engineering Report will not be invalidated since future analyses will include a 3°F margin over the current design basis value of 85°F.

#### Recommendations/Contingency Actions

The attached Engineering Report identifies several requirements and recommendations which should be satisfied in order take advantage of the higher temperature allowance for the UHS. These issues will be implemented through the design change and TS change implementation processes and are discussed below.

- 1) (ER - Page 24) The Shutdown Board Room (SDBR) chiller was found to have a potential performance deficiency above 85°F based on discussions with the component vendor. The chiller compressor's thermodynamic design point indicated 85°F was the maximum recommended operational value for cooling water (ERCW). For this reason, WBN initiated a vendor recommended change to re-gear the compressor to assure acceptable thermodynamic operation of the chiller unit at the higher UHS temperature of 88°F. Prior to implementation of the proposed TS, TVA will implement this modification to re-gear the compressors for SDBR chillers A-A and B-B by August 1, 2004.
- 2) (ER - Page 24) The Emergency Diesel Generator's jacket water heat exchangers were also shown to be marginal in their performance capabilities at 88°F UHS temperature if design fouling conditions were assumed. The evaluation concluded that

expected actual fouling rates of the EDG heat exchanger would provide acceptable EDG cooling provided tube cleaning was performed annually during the spring time-frame, assuring relatively clean EDG coolers during the late summer time period of maximum UHS temperatures. The "once a year during spring" allows exceeding the 365 days between cleanings, since lower ERCW temperatures during the spring can compensate for higher fouling. Therefore, TVA will revise the UFSAR to require EDG jacket water heat exchangers to be cleaned once a year during spring, within a time frame no earlier than March 1st but no later than June 30th. A one time exception to this cleaning interval for the 2A-A EDG is acceptable to support cleaning of its heat exchangers which were recently completed in February 2004.

- 3) (ER - Page 18) As discussed above, procedure changes will be necessary to address RHR shutdown cooling assumptions. TVA will revise the UFSAR to address single-train RHR cooldown restrictions for ERCW temperature of 88°F which consist of a five hour limitation on spent fuel pool (SFP) cooling isolation and a requirement to secure the remaining reactor coolant pump within 25 hours after shutdown.
- 4) (ER - Page 32) In Section 5.0 of the ER, several Recommendations are provided for the UHS Temperature Evaluation project. The following summarizes several of the more important recommendations:

Recommendation 5.4 - Revise UFSAR, System Descriptions, Design Criteria, and other key design documents to ensure that 88°F is considered in future procurements, specifications, analyses, and evaluations.

This recommendation addresses the future design change control requirements for the UHS temperature change (Reference ER Section 3.32) and is necessary because the ERCW design basis temperature will remain at 85°F.

Recommendation 5.6 - Revise UFSAR and System Description to require Diesel Generator Heat Exchangers be cleaned once a year during spring, within a time frame no earlier than March 1st but no later than June 30th.

This recommendation is discussed in greater detail in Item 2 above.

Recommendation 5.7 - Revise appropriate procedures to require Engineering to initiate reviews of open items associated with ERCW temperature, such as GL 91-18 issues, temporary alterations (TACFs), etc., prior to reaching the ERCW design temperature of 85°F. (Refer to discussion below)

Recommendation 5.8 - Revise the Technical Specifications Bases (and appropriate procedures) to address contingency actions in 5.7 above for plant operation at UHS temperature exceeding 85°F. These actions require performance of an engineering evaluation and appropriate risk-management actions:

- (1) To confirm UHS operability for existing ERCW equipment problems that would remain concurrent with UHS temperature above 85°F, and,
- (2) Prior to initiating an elective work activity that would render an ERCW component required by LCO 3.7.8 inoperable.

Recommendations 5.7 and 5.8 address contingency measures to be taken for plant operation at UHS temperature exceeding 85°F. These actions are intended to provide a confirmation that any existing ERCW degradation issues would not impact the assumptions or validity of the UHS Temperature Evaluation project. Such items may include operability issues, temporary alterations, or degraded plant conditions (i.e., Generic Letter 91-18 issues) sensitive to ERCW/UHS cooling requirements. WBN procedures will require performance of appropriate engineering evaluations and/or the use of risk-management actions to address these issues with UHS temperature in excess of 85°F.

A discussion of these measures has been incorporated into the proposed TS Bases 3.7.9, (Section 2.0, of this Enclosure). These contingency actions are not required for UHS operability and are not credited in the safety analyses or evaluations of this ER, since the evaluation demonstrated acceptable plant operation at the higher 88°F temperature based on available margins within the ERCW design basis. However, they will minimize the impact of operation above 85°F, since such operation may exceed the original design parameters for ERCW supplied components. Because margin above design has been utilized to validate such operation, the contingency measures are considered prudent to maintain defense-in-depth.

## 5.0 REGULATORY SAFETY ANALYSIS

The proposed technical specification (TS) change will revise the limiting condition for operation for the Ultimate Heat Sink. The essential raw cooling water (ERCW) temperature limit will be increased from 85 degrees Fahrenheit (°F) to 88°F. These proposed changes are based on recent evaluations of the ERCW system and the Ultimate Heat Sink (UHS) functions and maximum temperatures and minimum river elevations that will satisfy the associated safety functions. The proposed changes will minimize the likelihood of a required unit shutdown as a result of high river temperatures in the summer. In addition, a change is proposed to clarify the maximum allowable internal containment pressure. Corresponding TS Bases

changes are also included for the temperature increase for UHS and the containment pressure clarification including a minor change in the maximum calculated containment pressure resulting from the increased UHS temperature.

### 5.1 No Significant Hazards Consideration

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

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change to increase the UHS maximum temperature will not adversely alter the function, design, or operating practices for plant systems or components. The UHS is utilized to remove heat loads from plant systems during normal and accident conditions. This function is not expected or postulated to result in the generation of any accident and continues to adequately satisfy the associated safety functions with the proposed changes. Therefore, the probability of an accident presently evaluated in the safety analyses will not be increased. With the exception of re-gearing the shutdown board room chiller compressors, no other plant equipment must be altered as a result of this change. Re-gearing of the shutdown board room chillers will ensure their continued performance in accordance with design concurrent with the increased UHS temperature. The heat loads that the UHS is designed to accommodate have been evaluated for functionality with the higher temperature limits. The result of these evaluations is that there is existing margin associated with the systems that utilize the UHS for normal and accident conditions. These margins are sufficient to accommodate the postulated normal and accident heat loads with the proposed changes to the UHS. Since the safety functions of the UHS are maintained, the systems that ensure acceptable offsite dose consequences will continue to operate as designed. The change in the maximum calculated containment pressure associated with the design basis loss of coolant accident remains below the ASME Code design internal pressure. The change to clarify the maximum allowable internal containment pressure is administrative consistent with present wording in the TS Bases. Therefore, the consequence of any accident will be the same as those previously analyzed.

Therefore, since the UHS safety function will continue to meet accident mitigation requirements and limit dose

consequences to acceptable levels, TVA has concluded that the proposed TS change does not involve a significant increase 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 UHS function provides accident mitigation capabilities and serves as a heat sink for normal and upset plant conditions; the UHS is not an initiator of any accident. By allowing the proposed change in the UHS temperature requirements, only the parameters for UHS operation are changed while the safety functions of the UHS and systems that transfer the heat sink capability continue to be maintained. The proposed change does not impact the response of the systems and components assumed in the safety analysis. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change has been evaluated for systems that are needed to support accident mitigation functions as well as normal operational evolutions. Operational margins were found to exist in the systems that utilize the UHS capabilities such that these proposed changes will not result in the loss of any safety function necessary for normal or accident conditions. The ERCW system has excess flow margins that will accommodate the increased flows necessary for the proposed temperature increase. While operating margins have been reduced by the proposed changes, safety margins have been maintained as assumed in the accident analyses for postulated events. The proposed change results in an increase in the maximum calculated containment peak pressure. However, the change in the maximum calculated containment peak pressure associated with the design basis LOCA is a small percentage of the margin between the current maximum calculated containment peak pressure and the ASME Code design internal pressure. The change to clarify the maximum allowable internal containment pressure is administrative. This aspect of the proposed change does not involve a significant reduction in a margin of safety. Additionally, the proposed changes do not require any further modification (the shutdown board room chiller will be re-gearred) of component setpoints or operating provisions that are

necessary to maintain margins of safety established by the WBN design. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed amendment(s) present no 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.

## 5.2 Applicable Regulatory Requirements/Criteria

The Commission's regulatory requirements related to the content of the TS are contained in Title 10, Code of Federal Regulations (10 CFR), Section 50.36. The Ultimate Heat Sink (UHS) temperature satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) and is therefore included in TS 3.7.9. The proposed change does not relocate the UHS temperature from TS 3.7.9 and therefore the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii) continue to be met.

General Design Criterion 44, "Cooling Water," of Appendix A, "General Design Criteria," to 10 CFR Part 50, provides design considerations for the UHS. Regulatory Guide 1.27 provides an acceptable approach for satisfying this criterion. The discussion below regarding Regulatory Guide 1.27 compliance demonstrates the ability to meet the recommendations of the regulatory guide and therefore satisfies the requirements of General Design Criterion 44.

As discussed in WBN UFSAR Section 9.2.5, UHS, Regulatory Guide 1.27 provides an acceptable approach for the design of the UHS. This guidance provides four criteria for an acceptable UHS function. These criteria include recommendations for sufficient cooling capability, integrity during postulated events, function availability and redundancy, and control by the TSs. TVA has evaluated the proposed changes and their impact on the UHS design based on the criteria in Regulatory Guide 1.27 and has determined that these recommendations continue to be met. The cooling ability of the UHS, with the proposed increase in temperature, has been evaluated and verified to satisfy the recommendations for heat removal considerations. The integrity and availability recommendations have not been affected by the proposed changes as the features are not being altered physically. The TS provisions are proposed to be changed but continue to meet the recommendation to provide actions in the event the function of the UHS cannot be satisfied. Therefore, operation of the WBN unit with the proposed TS change will not result in a deviation from the recommendations of Regulatory Guide 1.27.

Appendix A to 10 CFR 50, General Design Criteria (GDC) 16, "Containment design," GDC 38, "Containment heat removal," and

GDC 50, "Containment design basis," continue to be met with the proposed change.

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.

## 6.0 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 effluent 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 50.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## 7.0 REFERENCES

Refer to Reference 1 (Attached Engineering Report), Section 6, for the complete listing of References. In addition, the following references are included.

1. Engineering Report, "Ultimate Heat Sink - 88°F Maximum Temperature Evaluation, Watts Bar Nuclear Plant, April 2, 2004, Revision 2."
2. Nebraska Public Power District, Cooper Nuclear Station, Amendment No. 193, issued July 22, 2002.
3. Consumers Energy Company, Palisades Plant, Amendment No. 202, issued June 4, 2001.
4. Commonwealth Edison Company, Braidwood Station, Amendment Nos. 107 and 107 for Units 1 and 2, respectively, issued June 13, 2000.