Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

March 23, 2004

TVA-SQN-TS-04-04 10 CFR 50.90

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

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - UNITS 1 AND 2 - TECHNICAL SPECIFICATIONS (TS) CHANGE 04-04, "ONE-TIME REVISION OF CONTROL ROOM AIR-CONDITIONING SYSTEM (CRACS) ACTIONS FOR BOTH TRAINS INOPERABLE"

Pursuant to 10 CFR 50.90, Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS-04-04) to Licenses DPR-77 and DPR-79 for SQN Units 1 and 2. The proposed TS change will add a footnote to Action b for Modes 1, 2, 3, or 4 of Specification 3.7.15, "Control Room Air-Conditioning System (CRACS)." Specifically, the proposed revision will allow both trains of CRACS to be inoperable for up to seven days provided control room temperatures are verified every four hours to be less than or equal to 90 degrees Fahrenheit. If this temperature limit cannot be maintained or both CRACS trains are inoperable for more than seven days, the requirements of Specification 3.0.3 will be required. The proposed TS change is consistent with the requirements in the NRC approved TSs for River Bend Nuclear Power Plant, Perry Nuclear Power Plant, and Grand Gulf Nuclear Station.

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The proposed change is requested as a one-time change and is only applicable during maintenance activities to upgrade the CRACS compressors and controls and expires on September 30, 2004.

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.

TVA has scheduled maintenance for the CRACS to replace the compressors and controls starting in late May 2004. These maintenance activities are necessary to correct unreliability issues for the CRACS trains. Therefore, TVA requests expedited approval on a one-time basis for this TS change request by May 5, 2004, and that the implementation of the revised TS be within 30 days of NRC approval. This one-time approval is requested to be effective through September 30, 2004 as indicated on the proposed TS pages.

There are no commitments contained in this submittal.

If you have any questions about this change, please contact me at 843-7170 or Jim Smith at 843-6672.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 23 day of March, 2004.

Sincerely,

Pedro Salas
Manager of Licensing
and Industry Affairs

Enclosures:
1. TVA Evaluation of the Proposed Changes
2. Proposed Technical Specifications Changes (mark-up)

cc: See page 3

Enclosures
cc (Enclosures):

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY (TVA)
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

1.0 DESCRIPTION

This letter is a request to amend Operating Licenses DPR-77 and DPR-79 for SQN Units 1 and 2. The proposed changes would revise Technical Specification (TS) 3.7.15, "Control Room Air-Conditioning System (CRACS)," as a one-time change to allow continued operation with both trains of CRACS inoperable during maintenance activities to improve the reliability of the CRACS equipment. This provision would only be allowed for up to seven days and requires control room temperatures to be maintained below 90 degrees Fahrenheit (°F). This change will provide flexibility to correct CRACS inoperability while maintaining the safety function of the system without requiring an unnecessary unit shutdown. This change is consistent with the NRC approved TS requirements for control room air-temperature control systems at the River Bend Nuclear Power Plant, Perry Nuclear Power Plant, and Grand Gulf Nuclear Station.

2.0 PROPOSED CHANGE

The proposed change will add a footnote to Action b for Modes 1, 2, 3, or 4 of TS 3.7.15. The current requirements require the immediate entry into TS 3.0.3 when both trains of the CRACS are inoperable. The proposed change will add the allowance to verify control room temperatures are less than or equal to 90°F every four hours. If this temperature requirement can be maintained, the action will allow continued unit operation for up to seven days before requiring a CRACS train to be returned to operable status. If the temperature limit cannot be satisfied or a train of CRACS cannot be restored to operable status within seven days, the requirements of TS 3.0.3 must be entered immediately.

The proposed change will maintain the control room temperature below the limit where equipment operability could be impacted. By maintaining the control room temperatures at or below 90°F the functionality of safety-related equipment in the control room envelope is not impacted. This temperature, along with the four-hour monitoring provision,

provides sufficient margin to the equipment temperature limit of 104°F and ensures enough time to perform a controlled shutdown of both units before safety-related equipment would be adversely affected. This change is acceptable because of the low probability of an accident that would impact control room habitability and the availability of alternate cooling methods that would replace the safety function of the CRACS. If the proposed provisions cannot be satisfied, the units must be placed in a lower mode of operation where the CRACS function is not required in accordance with TS 3.0.3.

In summary, the proposed change will allow both trains of CRACS to be inoperable for up to seven days provided the control room can be maintained at a temperature that will ensure safety functions or the ability to perform controlled unit shutdowns before unacceptable temperatures are reached. If these limitations cannot be maintained, the unit must be taken to a lower mode of operation where the CRACS in not required in accordance with TS 3.0.3.

3.0 BACKGROUND

The CRACS provides temperature control for the control room during normal operation and following isolation of the control room. The Unit 1 and Unit 2 control room is a common room served by a shared CRACS. The CRACS consists of two independent and redundant trains that provide cooling of recirculated control room air. Each train consists of a chiller package, cooling coils, air handling unit, instrumentation, and controls to provide for control room temperature control. The CRACS is a normal and emergency system. A single train will provide the required temperature control. During normal and emergency operation, the CRACS maintains the control room temperature at or below the continuous duty rating of 104°F for equipment and instrumentation. The CRACS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment operability. The CRACS operation in maintaining the control room temperature is discussed in SQN's Updated Final Safety Analysis Report (UFSAR), Sections 6.4 and 9.4.1.

Prior to February 2002, SQN did not have specific requirements for CRACS. This function was treated as an attendant equipment function to the control room emergency ventilation system (CREVS). At that time the only air conditioning requirement was that the control room must be at or below 104°F as monitored on a 12-hour interval. This was

the sole requirement that related to the CRACS functions at that time. On February 27, 2002, NRC issued SQN Amendments 273 and 262 for SQN Units 1 and 2, respectively. These amendments removed the 104°F requirement from the CREVS TS requirements and added Specification 3.7.15 for CRACS. The requirements for CRACS have not changed since the incorporation of these amendments.

The control room chillers that support the CRACS function have experienced reliability problems over the years. These problems have placed these components in maintenance rule category (a)(1) status in accordance with 10 CFR 50.65. In order to regain system reliability, TVA is planning the replacement of the compressors and controls for each train of the CRACS. Each of these maintenance activities for each train will require out-of-service durations from 7 to 12 days when working two 12-hour shifts a day, seven days a week. Since these activities will leave both units with only a single train of CRACS to support plant operation and the reliability of these systems have not been the most desirable, there is a potential that the operating CRACS could fail and result in the immediate entry into TS 3.0.3 in accordance with Action b of TS 3.7.15. This would require the shutdown of both SQN units even if control room temperatures could be maintained well below the equipment operability temperature limit. The proposed change is needed to provide a reasonable alternative to this shutdown action that will continue to provide the safety function until repairs or planned maintenance can be completed. This change will implement requirements for the loss of both trains of CRACS using a temperature limit more conservative than the TS requirements prior to the addition of the CRACS specification.

4.0 TECHNICAL ANALYSIS

The proposed change replaces a requirement to shut down the SQN units when both trains of CRACS are inoperable with an allowance to utilize alternate cooling methods to maintain the control room temperatures well below the threshold for equipment operability limits. By maintaining the control room temperature at or below 90°F, the operability requirements for safety-related functions provided by equipment and instrumentation in the control room, as well as habitability needs for operating personnel, is satisfied. The temperature limit for control room equipment operability is 104°F. Utilizing a 90°F limit and monitoring this value on a four-hour basis ensures that the 104°F limit is not exceeded. TVA has performed an analysis of control room

temperature changes as a result of loss of cooling assuming the worst-case heat loads that were determined to occur during accident scenarios. These evaluations have determined that the control room temperature rise from 90°F in the main control room takes approximately 12 hours to reach 104°F in the highest temperature location in the control room envelope without cooling functions. With four-hour temperature monitoring, a degraded condition would be identified well before temperature limits were reached and unit shutdown activities would be initiated. Additionally, with operators continually stationed in the control room, temperature increases of this magnitude would most likely be identified before the four-hour monitoring requirement.

Control room heat loads are in excess of ambient cooling effects and will always require a cooling system to maintain acceptable temperatures. For the proposed change to be usable, an alternate cooling method must be available. SQN has evaluated the use of a portable chiller package and an air handling unit. This method would place the portable chiller outside the control building and use temporary piping through qualified penetrations into the control building to supply a temporary air handling unit. This system would have sufficient cooling capacity to maintain control room temperatures below the proposed 90°F limit for worst-case heat load conditions. The installation and operation of this system would be evaluated by the 10 CFR 50.59 process and designed to minimize impacts to plant features. This alternate cooling method would have to be in place and ready for timely actuation to accommodate the control room temperature increase should both trains of CRACS become inoperable. The time to 90°F is approximately two hours and this system would be capable of being started within that time period. This time to 90°F assumes an initial control room temperature of 75°F and outside air temperatures based on typical summertime temperature profiles for Chattanooga, Tennessee. This is the alternate cooling method for the maintenance activities planned in 2004.

Maintaining control room temperatures at or below 90°F will ensure that the safety-related functions are operable and provide sufficient time before reaching equipment operability limits to take necessary plant actions. The seven day limit for the use of this provision minimizes the length of time these temporary cooling methods can be used to satisfy the CRACS function. Since this proposed change maintains the CRACS function for a limited period of time and supports plant safety functions, there is no adverse impact to nuclear safety. By maintaining control room temperatures

in this manner, the consequence of the loss of the alternate cooling is no more severe than a total loss of CRACS. The proposed change will allow both units to continue power operation and not be subjected to an unnecessary shutdown when sufficient cooling capability is available to maintain an acceptable control room environment. Additionally, this is a one-time provision that will only be used to support maintenance activities to improve the reliability of a required plant safety function. It is most likely that this provision will not be utilized and it will expire on September 30, 2004. Further, the improvement to the risk profile from the CRACS upgrade will offset any increase in risk as a result of this one-time only allowed outage time addition.

5.0 REGULATORY SAFETY ANALYSIS

This letter is a request to amend Operating Licenses DPR-77 and DPR-79 for Sequoyah Nuclear Plant (SQN) Units 1 and 2. The proposed changes would revise Technical Specification (TS) 3.7.15, "Control Room Air-Conditioning System (CRACS)," as a one-time change to allow continued operation with both trains of CRACS inoperable during maintenance activities to improve the reliability of the CRACS equipment. This provision would only be allowed for up to seven days and requires control room temperatures to be maintained below 90 degrees Fahrenheit (°F). This change will provide flexibility to correct CRACS inoperability while maintaining the safety function of the system without requiring an unnecessary unit shutdown.

5.1 No Significant Hazards Consideration

TVA has 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 change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No.

   The proposed change will allow the use of alternate cooling methods in the event both trains of the CRACS are inoperable. The CRACS is used to

maintain an acceptable environment for control room equipment and personnel during normal and emergency conditions. This system does not have the potential to create a design basis accident as it only provides control room cooling and does not directly mitigate postulated accidents. Temporary cooling devices will be designed in accordance with appropriate design controls, sized to ensure adequate cooling capability, and located such that safety-related features would not be prevented from performing their safety function. Since the CRACS does not contribute to the initiators of postulated accidents, the probability of an accident is not significantly increased by the proposed change.

The CRACS does ensure a suitable environment for safety-related equipment and personnel during an accident. The temperature limit placed on the proposed action ensures that the control room temperature will remain at acceptable levels to support plant evolutions in response to postulated accidents. Safety functions that are necessary to maintain acceptable offsite dose limits will not be degraded by the proposed change. Alternate cooling methods that will maintain the control room well within the equipment temperature limits will ensure these safety functions. With the control room cooling requirements satisfied, the offsite dose impact is not affected. 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 change will continue to ensure that the control room temperatures will not exceed operability limits for equipment or personnel. The temperature control functions for the control room are not postulated to create an accident and since the proposed change continues to maintain acceptable temperatures, there are no new accident initiators created. The alternate cooling methods to be used will utilize appropriate design,

sizing, and location considerations. Implementation of temporary cooling methods will be designed such that safety-related features would not be prevented from performing their safety function and in compliance with 10 CFR 50.59 requirements. Plant operation during the use of such alternate cooling methods will continue to comply with applicable TS requirements. 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 change will continue to maintain control room temperatures at acceptable levels to ensure the availability of equipment necessary for safety functions. Sufficient margin to temperature limits will be maintained to ensure response to accident conditions can be managed adequately and temperatures will remain at acceptable levels to complete necessary accident mitigation actions. Plant components and their setpoints will not be altered by the proposed change that would impact the ability to respond to accident conditions. The installation of temporary cooling devices will be designed such that safety-related features would not be prevented from performing their safety function. 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

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The Commission's regulatory requirements related to the content of the TSs are contained in Title 10, Code of Federal Regulations (10 CFR), Section 50.36. The TS

requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety systems settings and control settings, (2) limiting conditions for operation (LCO), (3) surveillance requirements, (4) design features, and (5) administrative controls. The requirements for the CRACS are included in the TSs in accordance with 10 CFR 50.36(c)(2), "Limiting Conditions for Operation."

As stated in 10 CFR 50.59(c)(1)(i), a licensee is required to submit a license amendment pursuant to 10 CFR 50.90 if a change to the TSs is required. Furthermore, the requirements of 10 CFR 50.59 necessitate that the U.S. Nuclear Regulatory Commission (NRC) approve the TS changes before the TS changes are implemented. TVA's submittal meets the requirements of 10 CFR 50.59(c)(1)(i) and 10 CFR 50.90.

Standard Technical Specification - Westinghouse Plants (NUREG-1431) Revision 2 provides the recommendations for TS requirements associated with the Westinghouse Electric Company designed plants. These recommendations are modified by NRC approved technical specification task force (TSTF) changes that will be incorporated in the next revision of NUREG-1431. The NUREG-1431 recommendations for control room air conditioning specifications, NUREG-1431, Revision 2, Specification 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," uses an immediate entry into Specification 3.0.3 if both trains of the function are inoperable. The proposed change differs from this recommendation by allowing the safety function of the control room cooling system to be maintained by alternate means for an interim period of time before requiring the immediate shutdown provisions of Specification 3.0.3. While the proposed change provides a short-term delay in the NUREG-1431 recommended action, it does continue to ensure the safety function of the CRACS is satisfied during this time and therefore, will continue to support the intent of the requirements for control room temperature control.

General Design Criteria (GDC) 5, "Sharing of Structures, Systems, and Components," provides the requirements for shared systems such that they are not allowed unless it can be shown that safety functions can be reasonably maintained. The proposed change affects the CRACS that provides cooling to both SQN unit control rooms. The change does not alter the

ability of the CRACS to perform it shared function and provides the same level of safety function to the shared control room in the event of loss of both CRACS trains. Therefore, the provisions of GDC-5 continue to be satisfied when the CRACS is operable as well as during the interval when alternate cooling of the shared control room can adequately maintain acceptable temperatures.

GDC-19, "Control Room" provides requirements for a control room that supports the ability to perform controlled shutdowns of the nuclear units and the ability to maintain safe shutdown conditions. The CRACS is applicable to this GDC by providing cooling of the control room to ensure that equipment and personnel can perform the required functions. The proposed change continues to ensure that acceptable temperatures are maintained with both trains of the CRACS inoperable for an interim period of time. If such temperatures cannot be maintained then an immediate unit shutdown in accordance with TS 3.0.3 will be required. By providing requirements that ensure suitable environmental conditions for the control room equipment and personnel, the requirements of GDC-19 continue to be satisfied.

Regulatory Guide 1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," provides guidance on methods for maintaining the habitability of control rooms. These guidelines do not include any provisions for control room cooling as they focus solely on potential inleakage of hazardous materials. Since this regulatory guide does not address control room temperatures and the proposed change does not affect the integrity of the control room boundary, the recommendations of Regulatory Guide 1.78 are not altered by this request.

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

1. Letter to Entergy Operations, Inc., River Bend Station, dated July 20, 1995, "River Bend Station, Unit 1 - Amendment No. 81 to Facility Operating License No. NPF-47 (TAC No. M88314)"

2. Letter to Centerior Service Company, dated June 23, 1995, "Amendment No. 69 to Facility Operating License No. NPF-58 - Perry Nuclear Power Plant, Unit No. 1 (TAC No. M88400)"

3. Letter to Entergy Operations, Inc., dated February 21, 1995, "Issuance of Amendment No. 120 to Facility Operating License No. NPF-29 - Grand Gulf Nuclear Station, Unit 1 (TAC No. M88101)"

4. 10 CFR Part 50, Appendix A, General Design Criterion 5, "Sharing of Structures, Systems, and Components."

5. 10 CFR Part 50, Appendix A, General Design Criterion 19, "Control Room."

6. Regulatory Guide 1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release."

7. NUREG-1431, Revisions 2, dated April 2001, "Standard Technical Specifications - Westinghouse Plants."

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2

Proposed Technical Specification Changes (mark-up)

I. AFFECTED PAGE LIST

Unit 1

3/4 7-44

Unit 2

3/4 7-55

II. MARKED PAGES

See attached.

3/4.7.15 CONTROL ROOM AIR-CONDITIONING SYSTEM (CRACS)

LIMITING CONDITION FOR OPERATION

3.7.15 Two independent control room air-conditioning systems (CRACS) shall be OPERABLE.

APPLICABILITY: ALL MODES and during movement of irradiated fuel assemblies

ACTION:

MODES 1, 2, 3, or 4

a. With one CRACS inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours .

b. With both CRACS inoperable, immediately enter LCO 3.0.3.*

MODES 5 or 6, or during movement of irradiated fuel assemblies

a. With one CRACS inoperable, restore the inoperable system to OPERABLE status within 30 days or initiate and maintain operation of the OPERABLE CRACS
or
suspend movement of irradiated fuel assemblies.

b. With both CRACS inoperable, suspend movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.15 Each CRACS shall be demonstrated OPERABLE:

a. At least once per 18 months by verifying each CRACS train has the capability to remove the assumed heat load.

* An allowance to monitor control temperature every four hours and verify less than or equal to 90 degrees Fahrenheit is permitted for up to seven days in lieu of the immediate entry into LCO 3.0.3. If control room temperature exceeds 90 degrees Fahrenheit or the duration without a train of CRACS being OPERABLE exceeds seven days, the immediate entry into LCO 3.0.3 will be required. This provision is only applicable during maintenance activities planned for the upgrade of the CRACS compressors and controls and expires on September 30, 2004.

3/4.7.15 CONTROL ROOM AIR-CONDITIONING SYSTEM (CRACS)

LIMITING CONDITION FOR OPERATION

3.7.15 Two independent control room air-conditioning systems (CRACS) shall be OPERABLE.

APPLICABILITY: ALL MODES and during movement of irradiated fuel assemblies

ACTION:

MODES 1, 2, 3, or 4

a. With one CRACS inoperable, restore the inoperable system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With both CRACS inoperable, immediately enter LCO 3.0.3.*

MODES 5 or 6, or during movement of irradiated fuel assemblies

a. With one CRACS inoperable, restore the inoperable system to OPERABLE status within 30 days or initiate and maintain operation of the OPERABLE CRACS
or
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b. With both CRACS inoperable, suspend movement of irradiated fuel assemblies.

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