

May 21, 2004

Mr. J. A. Scalice  
Chief Nuclear Officer and  
Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF  
AMENDMENTS REGARDING ONE-TIME TEMPORARY REVISION OF  
CONTROL ROOM AIR-CONDITIONING SYSTEM (TAC NOS. MC2464 AND  
MC2462) (TSC 04-04)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 292 to Facility Operating License No. DPR-77 and Amendment No. 282 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Units 1 and 2, respectively. These amendments are in response to your application dated March 23, 2004, as supplemented on April 30, 2004, requesting a one-time change to the required action if both trains of the control room air conditioning system were to become inoperable. The amendments will allow both trains of control room air-conditioning system (CRACS) to be inoperable for up to 7 days, provided control room temperatures are verified every 4 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 7 days, requirements of Technical Specification Section 3.0.3 will be required. The license condition and associated regulatory commitment provide reasonable assurance that safety can be maintained.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

**/RA/**

Michael L. Marshall, Jr., Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures: 1. Amendment No. 292 to  
License No. DPR-77  
2. Amendment No. 282 to  
License No. DPR-79  
3. Safety Evaluation

cc w/enclosures: See next page

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OFFICE	PDII-2/SC			
NAME	WBurton			
DATE	5/21/04			

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SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF AMENDMENTS REGARDING  
ONE-TIME TEMPORARY REVISION OF CONTROL ROOM AIR-CONDITIONING SYSTEM  
TECHNICAL SPECIFICATION (TAC NOS. MC2464 AND MC2462) (TSC 04-04)

Dated: May 21, 2004

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Mr. J. A. Scalice  
Tennessee Valley Authority

**SEQUOYAH NUCLEAR PLANT**

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 292  
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated March 23, 2004, as supplemented on April 30, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Operating License and Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 292, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance, to be implemented no later than 30 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA by Kahtan Jabbour for William H. Burton/***

William H. Burton, Acting Chief, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Operating License  
and Technical Specifications

Date of Issuance: May 21, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 292

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace page 12 of the Operating License No. DPR-77 with the attached page.

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by an amendment number and contains marginal lines indicating the areas of change.

REMOVE

7-44

INSERT

7-44

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 282  
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated March 23, 2004, as supplemented on April 30, 2004, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Operating License and Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 282, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance, to be implemented no later than 30 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA by Kahtan Jabbour for William H. Burton/***

William H. Burton, Acting Chief, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Operating License  
and Technical Specifications

Date of Issuance: May 21, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 282

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace pages 11 and 12 of the Operating License No. DPR-79 with the attached pages.

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by an amendment number and contains marginal lines indicating the areas of change.

REMOVE

7-55

INSERT

7-55

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 292 TO FACILITY OPERATING LICENSE NO. DPR-77  
AND AMENDMENT NO. 282 TO FACILITY OPERATING LICENSE NO. DPR-79  
TENNESSEE VALLEY AUTHORITY  
SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2  
DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By application dated March 23, 2004 as supplemented April 30, 2004, the Tennessee Valley Authority (TVA, the licensee) proposed amendments to the Technical Specifications (TSs) for Sequoyah Nuclear Plant (SQN) Units 1 and 2. The requested changes would allow both trains of control room air-conditioning system (CRACS) to be inoperable for up to 7 days, provided control room temperatures are verified every 4 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 7 days, the requirements of TS Section 3.0.3 must be implemented. The April 30, 2004, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

Specification 3.0.3 states, "when a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within one hour action shall be initiated to place the unit in a MODE in which the Specification does not apply by placing it, as applicable, in:

1. At least HOT STANDBY within the next 6 hours,
2. At least HOT SHUTDOWN within the following 6 hours, and
3. At least COLD SHUTDOWN within the subsequent 24 hours."

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 provides 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 degrees Fahrenheit (°F) for equipment and instrumentation. The CRACS is capable of removing sensible and latent heat loads from the control room, which includes consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment operability.

## 2.0 EVALUATION

### 2.1 Regulatory

The TS requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 36 (10 CFR 50.36), "Technical Specifications," include, in part, the following categories: (1) safety limits, limiting safety systems settings and limiting control settings, (2) limiting conditions for operation (LCOs), (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." In addition, pursuant to 10 CFR 50.90, "Application for Amendment of License or Construction Permit," a licensee is required to submit a license amendment if a change to the TSs is required.

As stated in 10 CFR 50, Appendix A, General Design Criterion 5 (GDC 5) "Sharing of Structures, Systems, and Components," structures, systems, and components important to safety shall not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform safety functions, including, in the event of an accident in one unit, an orderly shutdown and cooldown of the remaining units. The NRC staff understands (1) that the proposed change affects the CRACS that provides cooling to both SQN units control room, (2) that the change does not alter the ability of the CRACS to perform its shared function and provide the same level of safety to the shared control room in the event of loss of both CRACS trains. Consequently the staff finds that GDC 5 continues to be met.

As required per 10 CFR Part 50, Appendix A, GDC 19, "Control Room," a control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. The proposed change continues to provide for acceptable temperatures to be maintained with both trains of the CRACS inoperable for a reasonably short period of time (up to 7 days). If such temperatures cannot be maintained, an immediate unit shutdown, in accordance with the provisions of TS 3.0.3, will be required.

The licensee stated that the recommendations of Regulatory Guide 1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," are not altered by this request.

### 2.2 Technical

As stated in the licensee's submittal, the CRACS provides temperature control for the control room during normal operation and following isolation of the control room. Units 1 and 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 includes consideration of equipment heat loads and personnel occupancy requirements, to insure equipment operability.

The NRC staff assessment of the requested change included a review of the SQN Updated Final Safety Analysis Report sections 6.4 and 9.4.1 and all the information provided in the licensee's

submittals dated March 23, and April 30, 2004. The staff's review found, in accordance with the ACTION statement of SQN TS 3.7.15, in MODES 1, 2, 3 or 4 with one CRACS inoperable, the inoperable system must be restored to operable status within 30 days. With both CRACSs inoperable, the licensee is required to immediately enter LCO 3.0.3. TVA has scheduled maintenance for the CRACS to replace the compressors and controls of both trains. In the event both trains of CRACS becomes inoperable during the scheduled maintenance activity, the proposed change is for an allowance to monitor control room temperature every 4 hours and verify that the temperature is less than or equal to 90 °F for up to 7 days, in lieu of the immediate entry into LCO 3.0.3. To support this request, SQN has completed an evaluation and has made the following regulatory commitment to use a portable chiller package and air-handling unit as an alternate cooling method.

TVA commits to the use of a portable chiller package and air unit to provide alternate cooling if both trains of the control room air condition system become inoperable during the maintenance activities to upgrade the compressors and controls of these units or immediately enter Technical Specification 3.0.3.

This alternate cooling method will 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 has sufficient cooling capacity to maintain control room temperatures below the proposed 90 °F limit for worst-case heat load conditions. The license intends to complete the scheduled maintenance on one train before maintenance begins on the redundant train. The alternate cooling method will be in place and ready for timely actuation to accommodate the control room temperature increase should both trains of CRACS become inoperable. Also, the licensee may conduct a functional test of the portable chiller package and air-handling unit after its installation.

The licensee stated in its submittal that the proposed change will maintain the control room temperature below the limit where equipment operability could be impacted. By maintaining the control room temperature at or below 90 °F, the functionality of safety-related equipment in the control room envelope is not impacted. The licensee will measure bulk temperature in the main control room envelope at a sufficient number of locations to verify temperature is at or below 90 °F. The NRC staff finds that maintaining the control room temperature at or below 90 °F, along with the proposed 4-hour monitoring provision, provides sufficient margin to the equipment temperature limit of 104 °F and enough time is provided to perform a controlled shutdown of both units before safety-related equipment would be adversely affected.

Based on the review as discussed above, the NRC staff concludes that reasonable assurance of safety can be maintained with the proposed change and, therefore, finds this change acceptable with the regulatory commitment made by the licensee.

### 3.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92(c) state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or,
- (2) Create the possibility of a new or different kind of accident from any previously evaluated; or,

- (3) Involve a significant reduction in a margin of safety.

The following analysis was provided by the licensee in its March 23, 2004, letter.

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

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?

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?

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.

The NRC staff agrees with the aforementioned analysis and finds no significant hazards exist, if the facility is operated in accordance with the amendment.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendments. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (69 FR 19880). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (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.

Principal Contributor: Harold Walker

Dated: May 21, 2004