

April 21, 2004

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

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF
AMENDMENTS REGARDING REVISED REQUIREMENTS FOR
CONTAINMENT VENTILATION SYSTEM PURGE AND EXHAUST
ISOLATION VALVES (TAC NOS. MB9485 AND MB9486) (TS 03-07)

Dear Mr. Scalice:

The Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 290 to Facility Operating License No. DPR-77 and Amendment No. 280 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 June 5, 2003.

The revised Technical Specification (TS) would allow alternate methods to ensure flow path isolation from the environment consistent with the methods allowed for containment isolation valves in TS Limiting Condition of Operation 3.6.3, "Containment Isolation Valves."

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. 290 to License No. DPR-77
2. Amendment No. 280 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures: See next page

April 21, 2004

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

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 — ISSUANCE OF
AMENDMENTS REGARDING REVISED REQUIREMENTS FOR
CONTAINMENT VENTILATION SYSTEM PURGE AND EXHAUST
ISOLATION VALVES (TAC NOS. MB9485 AND MB9486) (TS 03-07)

Dear Mr. Scalice:

The Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 290 to Facility Operating License No. DPR-77 and Amendment No. 280 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 June 5, 2003.

The revised Technical Specification (TS) would allow alternate methods to ensure flow path isolation from the environment consistent with the methods allowed for containment isolation valves in TS Limiting Condition of Operation 3.6.3, "Containment Isolation Valves."

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. 290 to License No. DPR-77
2. Amendment No. 280 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures: See next page

DISTRIBUTION:

PUBLIC	RidsAcrsAcnwMailCenter	RidsOgcRp
PDII-2 R/F	RidsRgn2MailCenter (SCahill)	TBoyce
RidsNrrDlpmLpdii (EHackett)	RidsNrrDlpmDpr	RLobel
RidsDlpmLpdii-2 (WBurton)	RidsNrrLABClayton	
RidsNrrPMMarshall	GHill (4 copies)	

ADAMS Accession No. ML041120403

NRR-058

OFFICE	PDII-2/PM	PDII-2/LA	RPRP/SC (A)	OGC	PDII-2/SC (A)
NAME	MMarshall	BClayton	TBoyce	JHLewis	WBurton
DATE	4/15/04	4/15/04	4/19/04	4/20/04	4/21/04

OFFICIAL RECORD COPY

SEQUOYAH NUCLEAR PLANT

cc:

Mr. Karl W. Singer, Senior Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. James E. Maddox, Vice President
Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Richard T. Purcell
Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

General Counsel
Tennessee Valley Authority
ET 11A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. T. J. Niessen, Acting General Manager
Nuclear Assurance
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Mark J. Burzynski, Manager
Nuclear Licensing
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Pedro Salas, Manager
Licensing and Industry Affairs
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

Mr. David A. Kulisek, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

Senior Resident Inspector
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, TN 37379

Mr. Lawrence E. Nanney, Director
Division of Radiological Health
Dept. of Environment & Conservation
Third Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

County Executive
Hamilton County Courthouse
Chattanooga, TN 37402-2801

Ms. Ann P. Harris
341 Swing Loop Road
Rockwood, Tennessee 37854

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 290
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 June 5, 2003, 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 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. 290, 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 45 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 21, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 290

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

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

REMOVE

3/4 6-15

INSERT

3/4 6-15

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 280
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 June 5, 2003, 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 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. 280, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment: Changes to the Technical
Specifications

Date of Issuance: April 21, 2004

ATTACHMENT TO LICENSE AMENDMENT NO. 280

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

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

REMOVE

3/4 6-15

INSERT

3/4 6-15

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 290 TO FACILITY OPERATING LICENSE NO. DPR-77
AND AMENDMENT NO. 280 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 to the Nuclear Regulatory Commission (NRC) dated June 5, 2003, the Tennessee Valley Authority (the licensee, TVA) proposed amendments to the Technical Specifications (TS) for Sequoyah Nuclear Plant (SQN), Units 1 and 2.

The requested changes would revise the required actions in TS 3.6.1.9 when a containment purge or exhaust isolation valve is found inoperable as a result of leakage in excess of the limit. The proposed changes allow alternate methods to ensure flow path isolation to the environment consistent with the methods allowed for containment isolation valves in TS 3.6.3, "Containment Isolation Valves." If the alternate methods for ensuring isolation are not achievable, shutdown of the affected unit will continue to be required. The proposed changes are consistent with the Improved Standard Technical Specifications (ISTSS) for Westinghouse-designed reactors (NUREG-1431, Revision 2).

The proposed changes revise Action b of SQN TS 3.6.1.9, "Containment Ventilation System" to allow an alternative to returning the inoperable containment purge supply or exhaust valve to operable conditions for continued operation. Action b currently states:

With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of $0.05L_a$, restore the inoperable valve to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The licensee proposes to change Action b to state (revised words in italics):

With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of $0.05L_a$, restore the inoperable valve to OPERABLE status *or isolate the affected penetration flow path by use of at least one closed and de-activated automatic valve, closed manual valve, or blind flange* within 24 hours. *Verify** the affected penetration flow path is isolated once per 31 days for isolation devices outside containment and prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment.* Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

The provisions of Specification 3.0.4 do not apply.

*** Isolation devices in high radiation areas may be verified by use of administrative means.*

Isolation devices that are locked, sealed, or otherwise secured may be verified by use of administrative means.

The reactor building purge and ventilation system is described in Section 9.4.7 of the SQN Final Safety Analysis Report (FSAR). The system is designed to maintain the environment in the primary and secondary containment within acceptable limits for equipment operation and personnel access during normal operation, shutdown and refueling operations. The system supplies fresh air for breathing and contamination control. Containment venting is automatically terminated on a Phase A isolation signal and may be manually terminated following detection of high radiation during venting. The primary containment penetrations for the ventilation supply and exhaust subsystems are designed to primary containment requirements which are described in Section 6.2.4 of the SQN FSAR

2.0 EVALUATION

2.1 Regulatory Evaluation

It is stated in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, General Design Criterion 16, "Containment design" that a reactor containment and associated systems be provided to establish an essentially leak tight barrier against the uncontrolled release of radioactivity to the environment.

It is stated in 10 CFR Part 50, Appendix A, General Design Criterion 50, "Containment design basis," that the reactor containment structure, including penetrations, be designed to accommodate, without exceeding the maximum allowable leakage rate, L_a , the pressure and temperature conditions of a loss-of-coolant accident.

It is stated in 10 CFR 50.54(o) that primary reactor containments for water cooled power reactors, such as SQN, Units 1 and 2, shall be subject to the requirements set forth in Appendix J to Part 50.

Appendix J requires the primary reactor containment and its individual penetrations be tested at specified frequencies to ensure that the containment satisfies specified leakage rate criteria.

Standard Review Plan Section 6.2.4, "Containment Isolation System," provides guidance for the review of light water reactor primary containment isolation features.

The ISTSs for Westinghouse-designed reactors, NUREG-1431, Revision 2, specifies model requirements for primary containment purge and ventilation isolation valves. In particular, the leakage rate and surveillance test intervals are specified.

The SQN TSs specify requirements for the leakage rate limit and surveillance test interval for the SQN primary containment purge and ventilation system containment isolation valves. The proposed technical specification change would modify the SQN primary containment purge and

ventilation system containment isolation valve actions to be consistent with those of the ISTSs when the required leakage rate cannot be achieved. This would continue to ensure that the primary containment remains essentially leak tight, that is, the containment purge and ventilation system containment isolation valve specified leakage rate limit will not be exceeded and, therefore, L_a will not be exceeded.

2.2 Technical Evaluation

The safety function which is affected is the isolation of the primary containment penetrations in the reactor building purge ventilation system. The intent of this change is to provide another barrier which will provide the same safety function as the inoperable isolation valves was intended to provide.

The change proposed by the licensee would provide an alternative to shutdown of the reactor in the affected containment. This alternative is to isolate the flow path by an alternative means. The alternative means are specified in the proposed TS. These are at least one closed and deactivated automatic valve, closed manual valve, or a blind flange. These are isolation barriers which cannot be adversely affected by an active single failure.

A reviewer's note in the Bases of the ISTSs, NUREG-1431, Revision 2, states that this provision applies only when both isolation valves in the penetration can be separately leak tested. If the penetration is leak tested by pressurizing the volume between the inboard and outboard containment isolation valves, it is not possible to determine which valve is inoperable. The licensee's June 5, 2003, letter states that, for SQN, the normal test configuration is to test each pair of containment purge valves simultaneously by pressurizing the test volume between the two valves. However, the system can be manually configured to test the valves separately should the leakage exceed the allowed limit. This will enable the identification of the excessively leaking valve so that a "device with acceptable isolation capability" can be closed to comply with the TS action statement. Thus, SQN has the capability to comply with the NUREG-1431, Revision 2 reviewer's note. The proposed TSs would also require that if these manual actions cannot be completed within the 24 hour action completion time, a shutdown of the affected unit will be initiated.

The proposed change will require verification of flow path with a surveillance frequency of 31 days. This frequency is consistent with NUREG-1431, Revision 2. The NUREG-1431, Revision 2 Bases state that this surveillance interval is appropriate since the valves are operated under administrative controls and the probability of their misalignment is low. This conclusion is applicable to SQN.

This verification may be done administratively, depending on the location of the device. If the device is outside containment and is not in a high-radiation area, the verification will be performed by visually inspecting (the NUREG-1431, Revision 2 Bases specify verification through system walkdown) the isolation device while the purge exhaust valve is inoperable. If the device is located in a high radiation area outside containment, the licensee proposes administrative verification. This is consistent with ALARA (the as low as reasonably achievable criterion of Appendix I to 10 CFR Part 50) and is acceptable since access is limited and it is unlikely that the position of the device would be changed, if unauthorized.

If the device is inside containment, verification will be made prior to entering MODE 4 unless it has been verified within the previous 92 days. This time period is consistent with NUREG-1431, Revision 2. The licensee states that 92 days is acceptable because of the limited access to containment and the unlikelihood that the device would be altered from its isolation configuration. The staff concurs. The 92-day interval is also consistent with ALARA.

The licensee also proposes that isolation devices used in lieu of the inoperable isolation valve that are locked, sealed, or otherwise secured may be verified by administrative means. This is consistent with NUREG-1431, Revision 2. The NUREG-1431, Revision 2 Bases (TS 3.6.3, Note 2 to Required Action A.2) states that this is acceptable since the function of locking, sealing, or securing components is to ensure that these devices are not inadvertently repositioned.

The current TS 3.6.1.9 does not provide for indefinite continued operation. Limiting Condition for Operation (LCO) 3.0.4 therefore applies. LCO 3.0.4 states that entry into an operational mode shall not be made unless the conditions for the LCO are met without reliance on the provisions of the action requirements. The proposed change to TS 3.6.1.9 would change this by allowing indefinite operation with an alternative isolation of the penetration. Since this is acceptable for the reasons given above, that is, the safety function continues to be accomplished, the licensee's proposed note: "The provisions of Specification 3.0.4 do not apply" is acceptable.

The licensee has proposed to modify the TS action requirements for an inoperable containment purge supply or exhaust containment isolation valve to allow continued operation or entry into MODE 4 from MODE 5 if alternative isolation of the penetration is effected. This proposed revision is consistent with the applicable ISTSs (NUREG-1431, Revision 2), continues to satisfy the containment isolation safety function, is consistent with ALARA, and satisfies the applicable regulations cited in Section 2, Regulatory Evaluation. The staff, therefore, finds the proposed revisions to TS 3.6.1.9 to be acceptable.

3.0 STATE CONSULTATION

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

4.0 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 (68 FR 40719). 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.

5.0 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: Richard Lobel

Dated: April 21, 2004