

May 7, 2002

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: ISSUANCE OF TECHNICAL SPECIFICATION AMENDMENT FOR THE
SEQUOYAH NUCLEAR PLANT, UNIT 2 — REGARDING ONE-TIME
EXTENSION OF CONTAINMENT TYPE A PRESSURE TEST (TAC NO. MB3275)
(TS 01-10)

Dear Mr. Scalice:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 265 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Unit 2 (SQN-2). This amendment is in response to the Tennessee Valley Authority application dated October 9, 2001, as supplemented by letters dated March 13, 2002, and April 11, 2002. The amendment revises the SQN-2 Technical Specification 6.8.4.h, "Containment Leakage Rate Testing Program," to extend the requirement to perform a containment integrated leak test from once every 10 years to 11.5 years for the current interval only. The test, which is currently due to be performed in May 2002, would therefore be performed in the fall of 2003. This extension is approved on the basis of past containment performance and the conclusion that deferral would have a very small effect on risk to public health and safety.

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the next Commission's biweekly *Federal Register* notice. Please direct any questions you or your staff should have to me at (301) 415-2010.

Sincerely,

/RA/

Ronald W. Hernan, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-328

Enclosures: 1. Amendment No. 265 to
License No. DPR-79
2. Safety Evaluation

cc w/enclosures: See next page

May 7, 2002

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: ISSUANCE OF TECHNICAL SPECIFICATION AMENDMENT FOR THE
SEQUOYAH NUCLEAR PLANT, UNIT 2 — REGARDING ONE-TIME
EXTENSION OF CONTAINMENT TYPE A PRESSURE TEST (TAC NO. MB3275)
(TS 01-10)

Dear Mr. Scalice:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 265 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Unit 2 (SQN-2). This amendment is in response to the Tennessee Valley Authority application dated October 9, 2001, as supplemented by letters dated March 13, 2002, and April 11, 2002. The amendment revises the SQN-2 Technical Specification 6.8.4.h, "Containment Leakage Rate Testing Program," to extend the requirement to perform a containment integrated leak test from once every 10 years to 11.5 years for the current interval only. The test, which is currently due to be performed in May 2002, would therefore be performed in the fall of 2003. This extension is approved on the basis of past containment performance and the conclusion that deferral would have a very small affect on risk to public health and safety.

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the next Commission's biweekly *Federal Register* notice. Please direct any questions you or your staff should have to me at (301) 415-2010.

Sincerely,
/RA/
Ronald W. Hernan, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-328

- Enclosures: 1. Amendment No. 265 to
License No. DPR-79
2. Safety Evaluation

cc w/enclosures: See next page

Distribution (w/enclosure):

PUBLIC G. Hill (2) H. Berkow H. Ashar
PDII-2 reading file R. Hernan (hard copy) OGC M. Snodderly
P. Fredrickson, RII R. Dennig B. Clayton (hard copy) ACRS
M. Rubin D. Cullison R. Lobel D. Terao

ADAMS Accession No. ML021280455

OFFICE	PDII-2/PM	PDII-2/LA	OGC	PDII-2/SC (A)
NAME	RHernan	BClayton	SBrock	TKoshy
DATE	5/3/02	5/3/02	5/6/02	5/7/02

OFFICIAL RECORD COPY

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 265

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 October 9, 2001, as supplemented by letters dated March 13, 2002, and April 11, 2002, 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. 265, 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/

Thomas Koshy, 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: May 7, 2002

ATTACHMENT TO LICENSE AMENDMENT NO. 265

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Revise the Appendix A Technical Specifications by removing the page identified below and inserting the enclosed page. The revised page is identified by the captioned amendment number and contains a marginal line indicating the area of change.

REMOVE

6-9

INSERT

6-9

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 265 TO FACILITY OPERATING LICENSE NO. DPR-79
ONE-TIME EXTENSION OF APPENDIX J TYPE A INTEGRATED LEAK RATE TEST
TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT, UNIT 2
DOCKET NO. 50-328

1.0 INTRODUCTION

By letter dated October 9, 2001 (Ref.1), as supplemented by letters dated March 13, 2002, and April 11, 2002 (Refs. 2 and 4), the Tennessee Valley Authority (TVA, the licensee) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) to revise the Technical Specifications (TSs), for the Sequoyah Nuclear Plant, Unit 2 (SQN-2). The proposed change, in its amended form, would revise the SQN-2 TS 6.8.4.h, "Containment Leakage Rate Testing Program," to extend the interval to perform a containment integrated leak rate test (CILRT) from the required 10 years to a test interval of 11.4 years. The original amendment application of October 9, 2001, requested an extension of the interval from 10 years to 15 years. For reasons discussed in this Safety Evaluation, the requested extension was reduced to one plant operating cycle, or an 11.4-year interval. Without an extension, the TVA would need to perform a Type A test during the spring 2002 refueling outage. The supplemental letters provided clarifying information that was within the scope of the initial *Federal Register* notice and did not change the NRC staff's initial proposed no significant hazards consideration determination published on November 14, 2001.

2.0 BACKGROUND

The SQN-2 primary containment is a Westinghouse ice-condenser type containment. It consists of a freestanding steel cylinder vessel (SCV) with an ice condenser and a secondary reinforced concrete shield building. The primary containment vessel consists of a cylindrical wall, a hemispherical dome, and a bottom liner plate embedded in concrete. The SCV and the shield building are separated by a minimum annular space of 4 feet. The SCV is penetrated by access penetrations, and other process piping and electrical penetrations. Figure 3.8.2-1 in the SQN Updated Final Safety Analysis Report (UFSAR) shows the outline and configuration of the containment vessel. Section 6.2.1 of the SQN UFSAR describes SQN's containment design features.

Sequoyah Unit 2 is the first ice condenser plant to request an extension to the CILRT 10-year

test interval. In its October 9, 2001, letter, the licensee requested a 5-year extension to the 10-year test interval. Based on discussions with the staff, the licensee changed its request to an extension of one operating cycle instead of a 5-year extension in a letter dated April 11, 2002. The staff determined that additional review was needed in order to approve a 5-year extension.

Title 10 of the *Code of Federal Regulations*, Part 50 (10 CFR 50), Section 50.54(o) and 10 CFR 50, Appendix J, Option B (Appendix J) require that a Type A test be conducted at a periodic interval based on historical performance of the overall containment system. Sequoyah Unit 2 TS 6.8.4.h requires that a program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR Part 50, Appendix J, Option B, as modified by approved exemptions. The TS further requires that this program shall be in accordance with the guidelines contained in Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, as modified by exceptions set forth in the site implementing instructions. This RG endorses, with certain exceptions, Nuclear Energy Institute (NEI) document NEI 94-01, Revision 0, "Industry Guideline for Implementing Performance-Based Option of 10 CFR Part 50, Appendix J," dated July 26, 1995.

A Type A test is an overall (integrated) leak rate test of the containment structure. NEI 94-01 specifies an initial test interval of 48 months, but allows an extended interval of 10 years, based upon two consecutive successful tests. There is also a provision for extending the test interval an additional 15 months in certain circumstances.

The most recent two Type A tests at Sequoyah Unit 2 have been successful, so their current interval requirement is 10 years.

The licensee is requesting an addition to TS 6.8.4.h, "Containment Leakage Rate Testing Program," which would indicate that they are allowed to take an exception from the guidelines of RG 1.163 regarding the Type A test interval. Specifically, the proposed TS states that the first Type A test performed after the April 1992 Type A test shall be performed no later than fall 2003. This would make the interval 11.4 years between tests.

3.0 EVALUATION

3.1 Mechanical Engineering Assessment

The integrity of the SQN-2 containment penetrations and isolation valves is verified through Type B and Type C local leak rate tests (LLRTs) as required by 10 CFR 50, Appendix J, and the overall leak-tight integrity of the containment is verified through a CILRT. These tests are performed to verify the essentially leak-tight characteristics of the containment at the design basis accident pressure. The last CILRT for SQN-2 was performed in April 1992 and the proposed TS change request commits to perform the next CILRT no later than fall of 2003. As the CILRTs, the LLRTs, and inservice inspection (ISI) of the containment collectively ensure the leak-tight and structural integrity of the containment, the staff requested additional information regarding the licensee's program for managing the containment degradation through ISI. Some of the ISI-related information was provided in Reference 1. The staff requested additional information (Ref. 5) related to the potential areas of weakness in SQN-2's containment that might not be apparent in the risk assessment. The following is a discussion of the licensee's responses to the staff's questions (Refs. 2, 3).

The licensee is using the 1992 Edition and the 1992 Addenda of Subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (the Code) for conducting the ISI of the SQN-2 containment with approved relief from certain Code requirements. The start date for the current containment ISI 10-year interval was September 9, 1996, and the end date is September 8, 2008 (Ref. 2).

In response to the staff's question on the examination of the primary containment pressure boundary seals, gaskets and bolts, the licensee stated the following:

- a. SQN has 14 containment penetrations that have gaskets or seals. These penetrations are all Type B tested under Appendix J (Option B), as a minimum once every five years. In addition, Type B tests are performed prior to disassembly, and after reassembly.
- b. The VT-1 visual examinations required by Item No. E8.10 or Examination Category E-G (of Subsection IWE of the Code) will continue to be performed for bolts in the pressure retaining penetrations.

The staff considers the performance tests (Type B tests) and the VT-1 visual examination performed by the licensee acceptable for detecting degradation of pressure retaining seals, gaskets, and bolts because, in the past, an overwhelming majority of containment boundary leaks has been detected by these tests and not by the Type A tests.

In response to the question related to the effects of degradations in uninspectable areas of the SCV shell, the licensee incorporated the consequences of such an occurrence in the risk assessment by considering the large pre-existing leak as 100 L_a (i.e., 100 times the acceptable leakage rate during CILRT). For SQN-2, the 100 L_a leakage rate is approximately equivalent to a 1-square-inch hole in the uninspectable area of the primary containment. This is a very conservative assumption.

The staff finds the method used by the licensee in its analysis to be acceptable because TVA routinely (once each operating cycle) performs visual inspections of the outside surface of the SCV from the annular space between the SCV and shield building. A through-wall defect in the SCV would be detected by these inspections.

Based on the licensee's procedures discussed above to preclude excessive degradation of the primary containment components, and incorporation of certain degradation in the risk analysis, the staff finds that granting the requested CILRT extension will not adversely affect the leak-tight integrity of the primary containment. The staff notes that Subarticle IWE-5000 of the ASME Code, Section XI, requires leak rate testing following repair, modification, or replacement of containment components. A CILRT might be required to confirm that these activities are adequate and that further degradation does not exist in other areas of the containment. The licensee is required to report serious degradation of the containment pressure boundary pursuant to 10 CFR 50.72 and 10 CFR 50.73.

3.2 Risk Assessment

The licensee has performed a risk impact assessment of extending the Type A test interval to 15 years. The assessment was provided to the staff in an October 9, 2001, letter from the licensee. Additional analysis and information were provided by the licensee in a letter dated March 13, 2002. Following discussions with the NRC staff, TVA amended its license amendment application in a letter dated April 11, 2002, to defer performance of the Type A test for one operating cycle (approximately 1.4 years) rather than for 5 years. In performing the risk assessment, TVA considered the guidelines of NEI 94-01, the methodology used in Electric Power Research Institute (EPRI) document EPRI TR-104285, "Risk Impact Assessment of Revised Containment Leak Rate Testing," and RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis."

The basis for the current 10-year test interval is provided in Section 11.0 of NEI 94-01, Revision 0, and was established in 1995 during development of the performance-based Option B to Appendix J. Section 11.0 of NEI 94-01 states that NUREG-1493, "Performance-Based Containment Leak-Test Program," September 1995, provided the technical basis to support rulemaking to revise leakage rate testing requirements contained in Option B to Appendix J. The basis consisted of qualitative and quantitative assessments of the risk impact (in terms of increased public dose) associated with a range of extended leakage rate test intervals. To supplement the NRC's rulemaking basis, NEI undertook a similar study. The results of that study are documented in EPRI Research Project Report TR-104285.

The EPRI study used an analytical approach similar to that presented in NUREG-1493 for evaluating the incremental risk associated with increasing the interval for Type A tests. The EPRI study estimated that relaxing the test frequency from three in 10 years to one in 10 years, will increase the average time that a leak detectable only by a Type A test goes undetected from 18 to 60 months. Since Type A tests only detect about 3 percent of leaks (the rest are identified during local leak rate tests based on industry leakage rate data gathered from 1987 to 1993), this results in a 10-percent increase in the overall probability of leakage. This increase in the probability of leakage results in an increase in the contribution of pre-existing leaks to the predicted person-rem per year frequency. The risk contribution of pre-existing leakage, in percent of person-rem per year, for the pressurized-water reactor and boiling-water reactor representative plants confirmed the NUREG-1493 conclusion that a reduction in the frequency of Type A tests from three per 10 years to one per 10 years leads to an "imperceptible" increase in risk ranging from 0.02 to 0.14 percent.

Building upon the methodology of the EPRI study, the licensee assessed the change in the predicted person-rem/year frequency. The licensee quantified the risk from sequences that have the potential to result in large releases if a pre-existing leak were present. Based on the licensee's submittal and confirmatory calculations by the staff, the increase in risk in terms of person-rem/year in going from the original three in 10-year test interval to the current one in 10-year test interval was 0.25 percent. The staff finds this value comparable to the upper range of that estimated in NUREG-1493.

After the Option B rulemaking in 1995, the NRC staff issued RG 1.174 on the use of probabilistic risk assessment in risk-informed changes to a plant's licensing basis. The licensee has proposed using RG 1.174 to assess the acceptability of extending the Type A test interval

beyond that established during the Option B rulemaking. RG 1.174 defines very small changes in the risk-acceptance guidelines as increases in core damage frequency (CDF) less than 10^{-6} per reactor year and increases in large early release frequency (LERF) less than 10^{-7} per reactor year. Since the Type A test does not impact CDF the relevant criterion is the change in LERF. The licensee has estimated the change in LERF for the proposed change and the cumulative change from the original three in 10-year interval. RG 1.174 also discusses defense-in-depth and encourages the use of risk analysis techniques to help ensure and show that key principles, such as the defense-in-depth philosophy, are met. The licensee has provided information for estimating the change in the conditional containment failure probability for the proposed change to demonstrate that the defense-in-depth philosophy is met.

The licensee provided an analysis with methodology consistent with, or more conservative than, previously approved similar requests. The following conclusions associated with extending the Type A test frequency can be drawn from the licensee's submittal and confirmatory calculations by the staff:

1. An increase in risk is predicted when compared to that estimated from current requirements. Given the change from a 10-year test interval to a 15-year test interval, the increase in the total integrated plant risk is estimated to be 0.12 percent. The increase in the total integrated plant risk, given the change from a three in 10-year test interval to a 15-year test interval, is 0.37 percent. The increase in total integrated plant risk, given the change from a three in 10-year test interval to the current one in 10-year test interval, is 0.25 percent. This is comparable to the increase in risk estimated in NUREG-1493 in reducing the frequency of tests from three per 10 years to one per 10 years. Because the licensee proposed extending the interval by only one operating cycle (i.e., once every 10 years to once in 11.4 years), the increase in the total integrated plant risk for the proposed change is considered small (less than either of the above values) and is supportive of the proposed change.
2. The increase in LERF is very small for the requested change to defer performance of the Type A test for one operating cycle. RG 1.174 provides guidance for determining the risk impact of plant-specific changes to the licensing basis. RG 1.174 defines very small changes in the risk-acceptance guidelines as increases in CDF less than 10^{-6} per reactor year and increases in LERF less than 10^{-7} per reactor year. Since the Type A test does not impact CDF, the relevant criterion is LERF. The increase in LERF resulting from a change in the Type A test interval from one in 10 years to one in 15 years is estimated to be 8.8×10^{-8} /year. The increase in LERF resulting from a change in the Type A test interval from the original three in 10 years to one in 15 years is estimated to be 2.0×10^{-7} /year.

As stated before, increases in LERF of less than 10^{-7} per reactor year are considered very small; increases in LERF between 10^{-7} and 10^{-6} per reactor year are considered small. Under the guidance of RG 1.174, changes that result in small increases in LERF are generally judged to be acceptable if the plant baseline total LERF is less than 10^{-5} per reactor year. The licensee's analysis considered internal events but not external events. The licensee has considered the impact of external events on the plant's design as part of the Individual Plant Examination of External Events (IPEEE) program. In response to Generic Letter (GL) 88-20, the licensee did not provide an estimate of the CDF due to external events. Instead the licensee performed a seismic

margin analysis, an analysis that each fire area had a CDF less than 10^{-6} per reactor year, and, consistent with the guidance in NUREG-1407, addressed severe weather events by compliance with 1975 Standard Review Plan criteria or by a bounding assessment resulting in a value below 10^{-6} per reactor year. The staff in its evaluation of the licensee's IPEEE results concluded that the licensee's IPEEE process is capable of identifying the most likely severe accident vulnerabilities and met the intent of Supplement 4 to GL 88-20.

Because the licensee has not explicitly quantified the LERF from external events, it is difficult to conclude that total LERF is less than 10^{-5} per reactor year. This is not to say that the staff believes that the total LERF is greater than 10^{-5} per reactor year. The staff's position is only that the licensee has not demonstrated at this time a case for supporting a 15-year Type A test interval. In the absence of such a quantification, the licensee has amended their request to defer performance of the Type A test for one operating cycle. The staff estimates that the increase in LERF resulting from a change in the Type A test interval from the original three in 10 years to one in 11.4 years is less than 10^{-7} /year and is considered to be a very small change in LERF when using the guidelines of RG 1.174.

3. RG 1.174 also encourages the use of risk analysis techniques to help ensure and show that the proposed change is consistent with the defense-in-depth philosophy. Consistency with the defense-in-depth philosophy is maintained if a reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation. Based on information provided in the licensee's original submittal, the staff estimates the change in the conditional containment failure probability to increase by 0.0010 for the proposed change and 0.0031 for the cumulative change of going from a test interval of three in 10 years to one in 15 years. The staff finds that the defense-in-depth philosophy is maintained based on the change in the conditional containment failure probability for the proposed amendment, especially since the requested interval extension is only for 1.4 years rather than 5 years.

Based on these conclusions, the staff finds that the increase in predicted risk due to the proposed change is within the acceptance guidelines while maintaining the defense-in-depth philosophy of RG 1.174 and, therefore, is acceptable.

4.0 CONCLUSION

Based on its review, the staff finds that the licensee has adequate procedures to examine and monitor potential age-related and environmental degradations of the pressure retaining components of the SQN-2 primary containment. For the cases where the degradations could occur in the uninspectable portions of the containment, the licensee has factored in such conditions into its risk assessment. Based on the foregoing evaluation, the staff finds that the interval until the next Type A test at SQN may be deferred for one operating cycle, and that the proposed changes to TS 6.8.4.h are acceptable.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (66 FR 57127, dated November 14, 2001). 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 amendment.

7.0 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.

8.0 REFERENCES

1. Letter from P. Salas (TVA) to NRC, "Sequoyah Nuclear Plant - Unit 2 (SQN-2) - Technical Specification Change No. 01-10: One-time Frequency Extension for Type A Test (Containment Integrity Leak Rate Test [CILRT])," October 9, 2001.
2. Letter from P. Salas (TVA) to NRC, "Response to Request for Additional Information Regarding SQN-2 Technical Specification Change No. 01-10: One-time Frequency Extension for Type A Test (Containment Integrity Leak Rate Test [CILRT])," March 13, 2002.
3. Memo to File from R. Hernan (NRC), "Sequoyah TSC [Technical Specification Change No.] 01-10 - TVA Response to RAI [Request for Additional Information]," April 9, 2002.
4. Letter from P. Salas (TVA) to NRC, "Response to Request for Additional Information Regarding SQN-2 Technical Specification Change No. 01-10: One-time Frequency Extension for Type A Test (Containment Integrity Leak Rate Test [CILRT])," April 11, 2002.
5. Letter from R. Hernan (NRC) to J. Scalice (TVA), "Sequoyah Nuclear Plant, Unit 2 - Request for Additional Information Regarding SQN-2 Technical Specification Change No. 01-10: One-time Frequency Extension for Type A Test (Containment Integrity Leak Rate Test [CILRT])," February 14, 2002.

Principal Contributors: Michael Snodderly, NRR
David Cullison, NRR
Hans Ashar, NRR

Dated: May 7, 2002

Mr. J. A. Scalice
Tennessee Valley Authority

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

Mr. Jon R. Rupert, Vice President (Acting)
Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. D. L. Koehl, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

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

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

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

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

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

County Executive
Hamilton County Courthouse
Chattanooga, TN 37402-2801

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

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

6.8.4 f. Radioactive Effluent Controls Program (Cont.)

of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,

- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas at or beyond the SITE BOUNDARY SHALL BE LIMITED to the following:
 1. For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
 2. For Iodine-131, Iodine-133, tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/year to any organ.
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

g. Radiological Environmental Monitoring Program (DELETED)

h. Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50 Appendix J, Option B, as modified by approved exemptions. Visual examination and testing, including test intervals and extensions, shall be in accordance with Regulatory Guide (RG) 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995 with exceptions provided in the site implementing instructions. Performance of the spring 2002 containment integrated leakage rate (Type A) test may be deferred up to one cycle but no later than fall 2003.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a , is 12.0 psig.

The maximum allowable containment leakage rate, L_a , at P_a , is 0.25% of the primary containment air weight per day.

Leakage rate acceptance criteria are:

- a. Containment overall leakage rate acceptance criteria is $\leq 1.0 L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60 L_a$ for the combined Type B and Type C tests, and $\leq 0.75 L_a$ for Type A tests;