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

March 9, 2001

10 CFR 50.55a

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

Gentlemen:

In the Matter of	)	Docket No. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), SECTION XI, INSERVICE TESTING (IST) PROGRAM - PRIMARY CONTAINMENT VACUUM RELIEF VALVES

Pursuant to 10 CFR 50.55a(f)(4)(iv), TVA is proposing to adopt a provision of the 1995 Edition of the ASME Code for Sequoyah's IST Program. The 1995 ASME Code provision would extend the test frequency for the required open/close test for Sequoyah's primary containment vacuum relief valves. In addition, pursuant to 10 CFR 50.55a(a)(3)(i), TVA is proposing an alternative to the code leak rate test requirements for Sequoyah's primary containment vacuum relief valves.

Sequoyah's IST Program is currently based on the 1989 Edition of the ASME Code, Section XI, which endorses the ANSI/ASME test Standard OMa 1988, Part 10. The 1988 OMa, Part 10 references the 1987 OM Part 1 Standard for testing valves that function as relief devices. At Sequoyah, the primary containment vacuum relief valves function as relief devices and are tested in accordance with the 1987 OM Part 1 Standard.

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On September 22, 1999, (Federal Register, Volume 64, No. 183) the 10 CFR 50.55a was revised to endorse the use of the 1995 Edition (1996 Addenda) of the ASME Code. The 1995/96 Code includes a revision to the test frequency for primary containment vacuum relief valves (reference ASME OMa Code - 1996, Appendix I, Section 1.3.7). The revision extends the frequency of test for these valves from "every 6 month period" to "each refueling outage or every 2 years, whichever is sooner." Based on TVA review of other related portions of the ASME code, this 1995/96 revision is limited specifically to the test frequency for primary vacuum relief valves. Other related portions of the code remain unchanged. Accordingly, TVA proposes to adopt the 1995/96 test frequency in accordance with 10 CFR 50.55a(f)(4)(iv). This request is similar to a request from Commonwealth Edison Company for the LaSalle County Station dated March 4, 1998 and subsequently approved by NRC in a safety evaluation dated July 6, 1998.

In addition to the above request, TVA has enclosed a relief request (RV-7) for the subject valves that proposes an alternative leak test frequency. Current test frequency required by ASME code establishes the test frequency at 2 years. TVA's relief request proposes to test Sequoyah's primary containment vacuum relief valves in accordance with 10 CFR 50, Appendix J, Option B which allows extension of test frequencies up to 60 months (5 years) based on good performance. This alternative test frequency is submitted pursuant to 10 CFR 50.55a(a)(3)(i).

TVA's proposed requests are cost-beneficial licensing actions that reduce the burden associated with unnecessary test activities. Enclosure 1 contains TVA's request associated with 10 CFR 50.55a(f)(4)(iv) that proposes to adopt a provision of the 1995 ASME code. Enclosure 2 contains TVA's request for relief (RV-7) which is submitted in accordance with 10 CFR 50.55a(a)(3)(i) that proposes an alternative to the code for the leak test frequency of Sequoyah's primary containment vacuum relief valves.

TVA is continuing to conduct open/close tests for the subject valves on a 6-month frequency. TVA requests NRC response by October 1, 2001 to support inservice test schedules.

If you have any questions about this change, please telephone me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

Sincerely,

Pedro Salas
Licensing and Industry Affairs Manager

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ENCLOSURE 1

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 and 2

Units Affected: Units 1 & 2

System: Primary Containment Vacuum Relief Valves

Components: SQN's primary containment vacuum relief valves are 24 inch, horizontally oriented, self-actuated, swing-disc valves. The valves have an adjustable setpoint (spring adjustment) and a name plate capacity rating of 25.6 cubic feet per second at 0.20 pounds per square inch gauge standard air. The valves are categorized as relief devices and are tested in accordance with the ANSI/ASME OM-1 test standard. The valves are described in the SQN FSAR, Section 6.2.6.1.

Category: A-C Active Valves

Class: 2

Function: The subject valves perform the function of protecting the containment from excessive external pressure. The valves open in the event of inadvertent operation of plant systems that result in additional external forces on the containment vessel (FSAR 6.2.6.1). There are three identical valves located 120 degrees apart on each unit.

These valves also perform a containment isolation function.

Current Code Requirement : SQN's Second 10-year IST Program is based on the requirements of ASME Section XI Code (1989 Edition) which endorses the ANSI/ASME test standard OMa 1988, Part 10 for testing of valves. The OMa 1988, Part 10 states that relief devices shall be tested in accordance with the 1987 OM Part 1 standard. SQN's primary containment relief valves are categorized as relief devices and are tested in accordance with the 1987 OM, Part 1.

OM 1987, Part 1, Paragraph 1.3.4.3(a) provides testing requirements for primary containment vacuum relief valves as follows:

(a) Within every 6 month period operability tests shall be performed unless historical data indicates a requirement for more frequent testing.

Basis for Request:

SQN's primary containment vacuum relief valves are located at the top of the containment vessel and are accessed by entry into the annulus area. Access to the valves requires test personnel to climb a series of ladders approximately 150 feet inside the annulus area. Temporary test equipment must be transported to the valves by the test personnel. This practice presents potential personnel safety issues, and radiological dose exposure, because test activities are performed during unit operation (every 6 months).

A review of maintenance history indicates these valves are reliable, with no history of failing the ASME code open/closure test. In addition, the relief valves have exhibited good performance history for leak-rate tests. There have been no repetitive maintenance issues or problems associated with these valves.

In 1999, NRC endorsed the 1995 Edition of ASME Boiler and Pressure Vessel Codes through the 1996 Addenda. A revision provided by the 1995 Edition of the code included an extension of the test frequency for primary containment vacuum relief valves. The revision is contained in OMa 1996, Part 1, Section 1.3.7 entitled "Test Frequency, Class 2 and 3 Primary Containment Vacuum Relief Valves."

Section 1.3.7(a) states:

"(a) Tests shall be performed on all Class 2 and 3 containment relief valves at each refueling outage or every 2 years, whichever is sooner, unless historical data requires more frequent testing."

The above test frequency is associated with primary containment vacuum relief valves and does not apply to other types of valves. The test methodology for SQN's vacuum relief valves remains unchanged and is consistent with the SQN's code of record (1989 Edition). There are no other related requirements that apply to the 1995 test frequency. Accordingly, the test frequency is specific to these valves.

Proposed Test Frequency

Pursuant to the provisions of 10 CFR 50.55a(f)(4)(iv), SQN's primary containment vacuum relief valves will be tested in accordance with the frequency requirements of OMa 1996, Part 1 [Section 1.3.7(a)].

Conclusion:

SQN's primary containment vacuum relief valves are currently tested on a 6-month frequency in accordance with the 1989 Edition of the code (SQN's code of record). On September 22, 1999 (Federal Register Volume 64, No. 183), the 10 CFR 50.55a was revised to endorse use of the 1995 Edition of ASME Code through the 1996 Addenda. The 1995 code incorporates a revision to OMa 1996, Part 1 that extends the test frequency for primary containment vacuum relief valves. The extension increases the test frequency from "every 6 months" to "at each refueling outage or every 2 years whichever is sooner, unless historical data requires a requirement for more frequent testing."

The 10 CFR 50.55a(f)(4)(iv) allows the use of subsequent editions of the code (e.g., 1995 Edition) provided that all related requirements of the respective editions or addenda are met. Based on TVA review for application of the 1995 test frequency to SQN's primary containment vacuum relief valves, all related requirements are met. Other related sections of ASME code are unaffected by the 1995 code revision.

SQN's vacuum relief valves have a demonstrated history of acceptable and reliable performance. Relaxation of test frequency for these valves provides increased industrial safety and reduced radiation exposure to test personnel during performance of test activities. Based on the above reasons and the provisions of 10 CFR 50.55a(f)(4)(iv), TVA proposes to adopt the 1995 ASME Code test frequency for SQN's primary containment relief valves

ENCLOSURE 2

SEQUOYAH NUCLEAR PLANT (SQN) UNITS 1 and 2

RELIEF REQUEST RV-7

Units Affected: Units 1 & 2

System: Primary Containment Vacuum Relief Valves

Components: SQN's primary containment vacuum relief valves are 24 inch, horizontally oriented, self-actuated, swing-disc valves. The valves have an adjustable set point (spring adjustment) and a name plate capacity rating of 25.6 cubic feet per second at 0.20 pounds per square inch gauge standard air. The valves are categorized as relief devices and are tested in accordance with the ANSI/ASME OM-1 test standard. The valves are described in the SQN FSAR, Section 6.2.6.1.

Category: A-C Active Valves

Class: 2

Function: The subject valves perform the function of protecting the containment from excessive external pressure. The valves open in the event of inadvertent operation of plant systems that result in additional external forces on the containment vessel (FSAR 6.2.6.1). There are three identical valves located 120 degrees apart on each unit.

These valves also perform a containment isolation function.

Current Code Requirement : SQN's Second 10-year IST Program is based on the requirements of ASME Section XI Code (1989 Edition) which endorses the ANSI/ASME test standard OMa 1988, Part 10. The OMa 1988, Part 10 states that relief devices shall be tested in accordance with the 1987 OM, Part 1 standard. SQN's primary containment relief valves are categorized as relief devices and are tested in accordance with the 1987 OM, Part 1.

OM 1987, Part 1, Paragraph 1.3.4.3(b) provides testing requirements for primary containment vacuum relief valves as follows:

(b) Leak tests shall be performed every 2 years unless historical data indicates a requirement for more frequent testing.

Basis for Relief:

SQN's IST program is based on the 1989 Edition of ASME Section XI Code. The 1989 ASME code endorses the ANSI/ASME test standard OMa 1988, Part 10 for testing of valves. The OMa 1988, Part 10 states that relief devices shall be tested in accordance with the 1987 OM Part 1 Standard. SQN's primary containment vacuum relief valves are categorized as relief devices and thus tested in accordance with the 1987 OM, Part 1 Standard.

Paragraph 1.3.4.3(b) of the 1987 OM, Part 1 Standard reads as follows:

"(b) Leak tests shall be performed every 2 years unless historical data indicates a requirement for more frequent testing."

TVA proposes an alternative test frequency from the ASME code that is based on the provisions of 10 CFR 50, Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors." A review of test and maintenance history indicates that SQN's valves exhibit good performance history for leakage and have no repetitive maintenance issues or problems associated with these valves. Based on good performance history, TVA requests relief from the ASME code test frequency for SQN's primary containment vacuum relief valves.

Proposed Alternative Test Frequency

Pursuant to the provisions of 10 CFR 50.55a(a)(3)(i), TVA proposes to test SQN's primary containment vacuum relief valves in accordance with SQN's Containment Leakage Rate Testing Program (reference SQN Technical Specification 6.8.4.h). SQN's Containment Leakage Rate Program follows the testing requirements of 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B as modified by approved exemptions. The provisions of 10 CFR 50, Appendix J, Option B establish test frequencies based on performance history. Option B provides for extension of test frequencies up to 60 months (5 years) if all the criteria below are met and actions taken:

<u>Component Performance</u> - The component passes two consecutive "As-Found" tests. The elapsed time between these test shall be at least either 24 months or the nominal test interval.

<u>Service</u> - The environment and use of the component must be evaluated. Components used in severe environments or applications must have their general performance history examined.

<u>Design</u> - The component's design must be considered. Any vendor recommendations for service life shall be accounted for. Plant

and/or industry experience with the component's basic design shall be reviewed.

Safety Impact - The potential impacts associated with this component's failure, relative to limiting releases from containment and ensuring the safety function of containment, shall be evaluated.

TVA's proposed alternative for testing SQN's primary containment vacuum relief valves at a frequency consistent with Appendix J, Option B is justified based on good performance. A review of valve test and maintenance history indicates minimal leakage and no maintenance issues/problems for these valves for the past 5 years. This test and maintenance history demonstrate that TVA's proposed alternative would continue to provide an acceptable level of quality and safety.

Conclusion:

SQN's primary containment vacuum relief valves have a demonstrated history of acceptable and reliable leak rate performance. TVA's proposed alternative to test SQN's valves in accordance with 10 CFR 50 Appendix J, Option B in lieu of current 2-year code frequency does not adversely affect the level of quality and safety. Based on the above reasons and the provisions of 10 CFR 50.55a(a)(3)(i), TVA requests relief from the test frequency of ASME Code (Paragraph 1.3.4.3(b) of the 1987 OM, Part 1) for these valves.