

ENCLOSURE 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

SEQUOYAH NUCLEAR PLANT UNIT 2

DOCKET NO. 50-328

(TVA-SQN-TS-90-11)

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CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS

4.6.1.2 The containment leakage rates shall be demonstrated at the following test schedule and shall be determined in conformance with the criteria specified in Appendix J of 10 CFR 50 using the methods and provisions of ANSI N45.4-1972; however, the methods of ANSI/ANS 56.8-1987 for mass point data analysis may be used in lieu of the methods specified in ANSI N45.4-1972.

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- a. Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 -month intervals during shutdown at P_a , 12 psig, during each 10-year service period. ~~The third test of each set shall be conducted during the shutdown for the 10 year plant in-service inspection.~~
- b. If any periodic Type A test fails to meet $0.75 L_a$ the test schedule for subsequent Type A tests shall be reviewed and approved by the Commission. If two consecutive Type A tests fail to meet $0.75 L_a$, a Type A test shall be performed at least every 18 months until two consecutive Type A tests meet $0.75 L_a$ at which time the above test schedule may be resumed.
- c. The accuracy of each Type A test shall be verified by a supplemental test which:
 1. Confirms the accuracy of the Type A test by verifying that the difference between supplemental and Type A test data is within $0.25 L_a$,
 2. Has a duration sufficient to establish accurately the change in leakage rate between the Type A test and the supplemental test.
 3. Requires the quantity of gas injected into the containment or bled from the containment during the supplemental test to be equivalent to at least 25 percent of the total measured leakage at P_a , 12 psig.
- d. Type B and C tests shall be conducted with gas at P_a , 12 psig, at intervals no greater than 24 months except for tests involving:
 1. Air locks,
 2. Penetrations using continuous leakage monitoring systems, and

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 PRIMARY CONTAINMENT

3/4.6.1 PRIMARY CONTAINMENT

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure, P_a . As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to $0.75 L_a$ during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

The surveillance testing for measuring leakage rates are consistent with the requirements of Appendix "J" of 10 CFR 50. Due to the increased accuracy of the mass point method for containment integrated leakage testing, the mass point method referenced in ANSI/ANS 56.8-1987 can be used in lieu of the methods described in ANSI N45.4-1972.

with the following exemption; the third Type A test of each 10 year inservice interval need not be conducted when the plant is shutdown for the 10-year plant inservice inspection.

3/4.6.1.3 CONTAINMENT AIR LOCKS

The limitations on closure and leak rate for the containment air locks are required to meet the restrictions on CONTAINMENT INTEGRITY and containment leak rate. Surveillance testing of the air lock seals provide assurance that the overall air lock leakage will not become excessive due to seal damage during the intervals between air lock leakage tests.

3/4.6.1.4 INTERNAL PRESSURE

The limitations on containment internal pressure ensure that 1) the containment structure is prevented from exceeding its design negative pressure differential with respect to the annulus atmosphere of 0.5 psig and 2) the

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DESCRIPTION AND JUSTIFICATION FOR

PROPOSED CHANGE TO SURVEILLANCE REQUIREMENT 4.6.1.2.a

CONTAINMENT SYSTEMS AND BASES SECTION 3/4 6.1.2,

"CONTAINMENT LEAKAGE"

ENCLOSURE 2

Description of Change

TVA proposes to modify the Sequoyah Nuclear Plant (SQN) Unit 2 Technical Specifications (TSs) to revise Surveillance Requirement (SR) 4.6.1.2.a and the associated bases Section 3/4 6.1.2, "Containment Leakage." SR 4.6.1.2.a requires that three Type A tests (containment integrated leak rate test [CILRT]) be conducted at approximately 3-year intervals during each 10-year service period. The third test of each set is required to be conducted during shutdown for the 10-year plant in-service inspection (ISI). This TS implements the requirements of 10 CFR 50, Appendix J, Section III.D.1(a) (ISIs are required by 10 CFR 50.55.a). The proposed change would allow the third Type A test and the 10-year ISI to be uncoupled and performed during separate refueling outages.

The third Type A test of the first 10-year service period for SQN Unit 2 is presently scheduled to commence toward the end of the Unit 2 Cycle 5 refueling outage (May 1992). TVA intends to conduct the SQN Unit 2, 10-year ISI during the Unit 2 Cycle 6 refueling outage (October - November 1993). TVA extended the SQN Unit 2, 10-year ISI interval in accordance with provisions of the American Society of Mechanical Engineers (ASME) Section XI, Article IWA-2400(c). The first SQN Unit 2, 10-year ISI interval began June 1, 1982, and extends through February 21, 1995. TVA's extension of the 10-year ISI schedule was submitted to NRC by letter dated November 9, 1988.

Reason for Change

SQN Unit 2 was shut down by TVA on August 21, 1985. SQN Unit 2 remained in a cold shutdown condition (Mode 5) over a 3-year period. Unit 2 returned to full power operation on May 31, 1988. The 3-year shutdown period resulted in adjustments to the Unit 2, 10-year ISI interval in accordance with the provisions of ASME Section XI, Article IWA-2400(c). The adjustment in the 10-year ISI interval imposed separate timeframes for the scheduled performance of the Unit 2 CILRT and the scheduled 10-year ISI. To account for this separation, TVA is submitting the enclosed request that would allow the third Unit 2 CILRT and the 10-year ISI to be uncoupled and performed in separate refueling outages.

Justification for Change

The TS requirement for performing the third Type A test during the 10-year ISI outage appears to have provided a concurrent milestone when 10 CFR 50, Appendix J, was adopted. This concurrent milestone is of secondary importance to the required test and inspection frequency for each of these two programs (Appendix J test program and ASME Section XI inspection program). The purpose of the Appendix J test program is to ensure that leakage through the primary reactor containment and systems and the components penetrating primary containment does not exceed allowable

leakage rate values as specified in the TS or associated bases. This purpose is accomplished in part by performance of three Type A tests conducted at approximately equal intervals during each 10-year service period. The purpose of the ASME Section XI inspection program is to ensure that structural integrity of Class 1, 2, and 3 components is maintained in accordance with the requirements of ASME Section XI. Inspection intervals for this program are provided in the 1977-78 edition of ASME Section XI code (paragraph IWA-2420). The unrelated nature of these two programs provides justification for TVA's proposed TS change to uncouple the third Type A test from the 10-year ISI. In addition, pending revisions to Appendix J (51 FR 39538) would eliminate the requirement to perform the third Type A test during the 10-year ISI.

The requirements currently contained in TS 4.6.1.2.a cannot be met unless the SQN Unit 2, 10-year ISI is rescheduled to coincide with the Unit 2 Cycle 5 refueling outage. This option would impose undue hardship and cost to TVA with little or no compensating increase in the level of quality and safety. Consequently, TVA requests that SQN Unit 2 TS 4.6.1.2.a be revised to allow the third Type A test and the 10-year ISI to be uncoupled and performed in separate refueling outages.

Environmental Impact Evaluation

The proposed change request does not involve an unreviewed environmental question because operation of SQN Unit 2 in accordance with this change would not alter any assumptions or information contained in the "Final Environmental Statement" for SQN Units 1 and 2 dated February 13, 1974.

ENCLOSURE 3

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DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

ENCLOSURE 3

Significant Hazards Evaluation

TVA has evaluated the proposed technical specification (TS) change and has determined that it does not represent a significant hazards consideration based on criteria established in 10 CFR 50.92(c). Operation of Sequoyah Nuclear Plant (SQN) in accordance with the proposed amendment will not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The uncoupling of the third Type A test schedule from the 10-year in-service inspection (ISI) schedule does not involve a change in the test and inspection methodology or acceptance criteria from those previously analyzed in the SQN Final Safety Analysis Report. The proposed change does not involve a change to the facility or modifications to equipment, components, or hardware; therefore, the probability or consequences of an accident previously evaluated have not increased.

- (2) Create the possibility of a new or different kind of accident from any previously analyzed.

The proposed change would allow separate timeframes for the required performance of the third Type A test and the scheduled 10-year ISI. This separation does not introduce any new type of accident or malfunction since the surveillance test frequency, acceptance criteria, and test and inspection methods remain unchanged. Conducting the third Type A test in a separate outage from the 10-year ISI will not result in any design or hardware changes and therefore does not create the possibility for a new or different kind of accident from any previously analyzed.

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

The proposed change will not reduce the margin of safety as defined in the bases of SQN TS. The bases for TS 3/4 6.1.2, "Containment Leakage," states, "The surveillance testing for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR 50." Compliance with the 10 CFR 50, Appendix J, requirements would continue to be maintained with the single exception that allows the third Type A test and the 10-year ISI not to be performed during a common unit outage. This uncoupling causes no reduction in the margin of safety since no changes were made to the containment test frequency or the containment leakage limits assumed in the accident analysis.

ENCLOSURE 4

SEQUOYAH NUCLEAR PLANT UNIT 2

REQUEST FOR EXEMPTION FROM 10 CFR 50,

APPENDIX J, SECTION III.D.1.(a) REGARDING

TYPE A TESTING AND 10-YEAR IN-SERVICE INSPECTION

ENCLOSURE 4

10 CFR 50, Appendix J, Exemption Request

Pursuant to 10 CFR 50.12, TVA requests an exemption from 10 CFR 50, Appendix J, Section III.D.1(a). TVA has reviewed the criteria of 50.12(a)(2) and has determined that special circumstances are present, thereby supporting the granting of this exemption.

In accordance with 10 CFR 50.12(a)(2)(ii), compliance with 10 CFR 50, Appendix J, Section III.D.1(a), to perform a Type A test and the 10-year in-service inspection (ISI) during the same outage does not serve the underlying purpose of the rule and is not necessary to achieve the underlying purpose of the rule. The introductory section of 10 CFR Part 50, Appendix J, states, "The purposes of the tests are to assure that (a) leakage through the primary reactor containment and systems and components penetrating primary containment shall not exceed allowable leakage rate values as specified in the TSs or associated bases . . ." Performing the third Type A test at the same time as the 10-year ISI required by 10 CFR 50.55a does not enhance the purpose or provide further assurance of containment integrity above that which has already been demonstrated. Pending revisions to Appendix J would eliminate the requirement to perform the third Type A test during the 10-year ISI. The third Sequoyah Nuclear Plant (SQN) Unit 2 Type A test is currently scheduled for the Unit 2 Cycle 5 refueling outage. This test schedule will provide assurance that primary containment integrity has not been compromised and that the purpose of 10 CFR 50, Appendix J, is met.

In accordance with 10 CFR 50.12(a)(2)(iii), compliance with 10 CFR 50, Appendix J, Section III.D.1(a), would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted. It appears that, when the regulation was adopted, the end of the 10-year service period and the 10-year ISI outage were assumed to occur at the same time. The activities however are unrelated. For TVA to meet this requirement, TVA would be required to reschedule the 10-year ISI to coincide with the Unit 2 Cycle 5 refueling outage. This option would result in significant excess cost to TVA because of the increased outage time. Early performance of the 10-year ISI with the associated hardships and cost was not intended by the regulation when originally adopted.

Based on the above, TVA requests an exemption from the requirements of 10 CFR 50, Appendix J, Section III.D.1(a). This exemption is consistent with NRC's proposed revision to 10 CFR 50, Appendix J, referenced above.

Environmental Assessment

In addition to the above exemption request, TVA is providing the following environmental assessment and finding of no significant impact.

SQN Technical Specification (TS) 4.6.1.2.a states, "Three Type A tests (Overall Integrated Containment Leakage Rate) shall be conducted at 40 ± 10 -month intervals during shutdown at P_a , 12 psig; during each 10-year service period. The third test of each set shall be conducted during the shutdown for the 10-year plant inservice inspection."

This TS implements the requirement contained in 10 CFR 50, Appendix J, Section III.D.1.(a), which states, "The third test of each set shall be conducted when the plant is shutdown for the 10-year plant inservice inspections." TVA's proposed change would allow the third Type A test and the 10-year ISI for Unit 2 to be uncoupled and performed in separate refueling outages. The third Unit 2, Type A test is scheduled for the Unit 2 Cycle 5 refueling outage (April - May 1992). TVA intends to conduct the Unit 2, 10-year ISI during the Unit 2 Cycle 6 refueling outage (October - November 1993).

The Need for the Proposed Action

The proposed change is needed to support TVA's current schedule for conducting the third Unit 2, Type A test and the 10-year ISI. SQN Unit 2 shutdown on August 21, 1985, and returned to full power operation on May 31, 1988. This 3-year, Unit 2 shutdown period resulted in adjustments to the Unit 2, 10-year ISI schedule. This adjustment imposed separate timeframes for the required performance of these two refueling outage activities. To account for this separation, TVA proposes to uncouple the third Unit 2, Type A test and the 10-year ISI to allow performance in separate refueling outages.

Environmental Impact of the Proposed Action

The proposed change to uncouple the third Type A test from the 10-year ISI is recognized by the proposed revision to 10 CFR 50, Appendix J (51 FR 39538, October 29, 1986). The purpose of the Appendix J test program is to ensure that leakage through the primary reactor containment and systems and the components penetrating primary containment does not exceed allowable leakage rate values as specified in the TSs. The purpose of the ASME Section XI inspection program is to ensure that structural integrity of Class 1, 2, and 3 components is maintained in accordance with code requirements. The concurrent performance of these two programs within the same refueling outage is of secondary importance to the overall purpose. Therefore, the proposed separation has no safety or environmental impact or consequences.

Alternative to the Proposed Action

The alternative to the proposed change to uncouple the Type A testing from the 10-year ISI would be to reschedule the Unit 2, 10-year ISI to coincide with the Unit 2 Cycle 5 refueling outage. This alternative would impose undue hardship and cost to TVA with little or no compensating increase in the level of quality or safety.

Alternate Use of Resources

The uncoupling of the Type A test interval and the 10-year ISI for SQN Unit 2 does not involve the use of resources previously considered in the "Final Environmental Statement" for SQN Units 1 and 2 dated February 13, 1974.

Finding of No Significant Impact

TVA finds no basis for preparing an environmental impact statement for the proposed exemption to uncouple the Type A test interval from the 10-year ISI for SQN Unit 2. Based on the above environmental assessment, we conclude that the proposed change will not have a significant effect on the quality of the human environment.