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Robert A. Fenech
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January 7, 1993

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

Gentlemen:

In the Matter of)
Tennessee Valley Authority)

Docket No. 50-328

SEQUOYAH NUCLEAR PLANT (SQN) - UNIT 2 - 10 CFR 50, APPENDIX J, EXEMPTION REQUEST

TVA is requesting an exemption from the requirements of 10 CFR 50, Appendix J, Section III.A.6.(b) for SQN Unit 2. The exemption is associated with the 18-month test frequency for Type A testing if two consecutive Type A tests fail to meet 0.75 allowable leakage (L_a). TVA's proposed exemption from 10 CFR 50, Appendix J is being submitted in accordance with 10 CFR 50.12. In conjunction with the proposed exemption, TVA plans to submit a technical specification (TS) change in January 1993 to delete the detail requirements of 10 CFR 50, Appendix J currently contained in the TS, consistent with the information provided in NUREG-1431, "Standard Technical Specifications Westinghouse Plants." This TS change will eliminate the need to revise the TS for this and any future exemptions to Appendix J.

NRC approval of the proposed exemption from 10 CFR 50, Appendix J is needed to support the Unit 2 Cycle 6 refueling outage scheduling effort. The Unit 2 Cycle 6 refueling outage is presently scheduled to begin on September 17, 1993.

Enclosed is the justification and conclusion that the exemption from the requirements of 10 CFR 50, Appendix J is justified pursuant to 10 CFR 50.12(a)(2)(ii), 10 CFR 50.12(a)(2)(iii), and 10 CFR 50.12(a)(2)(v). Also included is an environmental assessment that concludes that there would be no significant environmental impact associated with the proposed exemption.

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Please direct questions concerning this issue to D. V. Goodin at (615) 843-7734.

Sincerely,

Robert A. Fenech

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Enclosure
cc (Enclosure):

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ENCLOSURE

Section III.A.6.(b) of Appendix J to 10 CFR 50 states, "If two consecutive periodic Type A tests fail to meet the applicable acceptance criteria in III.A.5(b), notwithstanding the periodic retest schedule of III.D., a Type A test shall be performed at each plant shutdown for refueling or approximately every 18 months, whichever occurs first, until two consecutive Type A tests meet the acceptance criteria in III.A.5(b), after which time the retest schedule specified in III.D. may be resumed."

TVA is requesting an exemption from the accelerated frequency requirement of Section III.A.6.(b) for SQN Unit 2. TVA's proposed exemption is related to a Type A test performed on SQN Unit 2 during the Unit 2 Cycle 5 refueling outage (April 1992). The "as-found" leak rate measured during the Type A test failed to meet the acceptance criteria of Appendix J. The applicable acceptance criteria for SQN is given in Appendix J, Section III.A.5.(b)(2) and is 0.75 allowable leakage (L_a) or 0.1875 percent-per-day. TVA has evaluated the SQN Unit 2 Type A test results and the particular conditions that caused the test failure and has determined that increased frequency would be inappropriate. TVA's exemption from the accelerated frequency requirement for Type A testing is requested in accordance with 10 CFR 50.12(a)(2)(ii), 10 CFR 50.12(a)(2)(iii), and 10 CFR 50.12(a)(2)(v).

JUSTIFICATION

10 CFR 50.12(a)(2)(ii)

TVA considers the proposed exemption to be justified based on the provisions of 10 CFR 50.12(a)(2)(ii); i.e., application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. In summary, corrective actions taken on the two previous containment integrated leak rate test (CILRT) failures on Unit 2 have been effective and are unrelated to the leakage experienced through the single Penetration X-47A during performance of the local leak rate tests (LLRTs). The contributing factors that caused the excessive leakage through Penetration X-47A have been fully addressed. Performing future CILRTs on an accelerated schedule would serve no technical purpose.

The following provides a complete historical summary of the Type A test results for SQN Unit 2.

	As-Found Leak Rate (% Per Day)	0.75 L_a Limit (% Per Day)	1.0 L_a Limit (% Per Day)
Preoperational test (1981)	0.14	0.1875	0.25
Test 1 (1984)	0.22	0.1875	0.25
Test 2 (1989)	0.22	0.1875	0.25
Test 3 (1992)	0.42	0.1875	0.25

NRC staff evaluated the Test 1 (1984) and Test 2 (1989) failures and granted an exemption from the accelerated CILRT frequency. The staff's exemption was provided to TVA by letter dated August 27, 1990.

The Test 3 (1992) failure resulted from the as-found local leak rate test failure of a single glycol Penetration X-47A. Statements from the local leak rate test personnel indicate that a small nut (approximately 1/4 inch) was found under the valve stem nut on the outboard valve (2-FCV-61-191) that prevented the valve from going fully closed. This appears to have come from unrelated work in the immediate vicinity of the valve. There was not a leakage test performed on the valve after the nut was removed. The only maintenance performed following removal of the nut was the lubrication of the stem on both inboard and outboard Containment Isolation Valves FCV-61-192 and FCV-61-191, respectively. It cannot be ascertained if the leakage on Valve 2-FCV-61-191 was caused solely by the small nut or if stem lubrication was also a problem. Both flow control valves were stroked a number of times and were subsequently leak tested. There was no measured leakage through Valves FCV-61-191 or FCV-61-192. Based on these observations, it is concluded that there are two contributing factors that caused the failure of Penetration X-47A; the first was foreign material that prevented the outboard valve from fully closing, and the second was hardware related (e.g., valve stem sticking). TVA has taken corrective measures to prevent recurrence. Preventative maintenance (PM) instructions (PMs 020061000 and 02072000) have been revised to include a monthly visual inspection of the glycol valves for foreign material. In addition to the visual inspection, these PMs now include monthly lubrication of the valve stems.

Historical data on leakage through Penetration X-47A and penetrations employing "like valves" demonstrates that failure of these isolation valves to fully close was a random occurrence. Corrective action has been implemented to reduce the chance of recurrence.

The intent of Appendix J is to establish a maximum leakage limit (1.0 L_a) that would preclude exceeding offsite dose limits postaccident. To ensure that this limit would not be exceeded during operational intervals between regularly scheduled Type A tests, a 25 percent margin for containment leakage degradation was imposed on the acceptable leakage limit (0.75 L_a). A proposed rule change to Appendix J (refer to Federal Register, Volume 51, No. 209 dated October 29, 1986) clarifies the intent to measure, record, and report as-found and as-left leakage rates and the appropriate acceptance criteria for each condition. Section III.A.7(b) of the proposed rule states that the as-found leakage rate must not exceed 1.0 L_a and the as-left leakage rate must not exceed 0.75 L_a. This is consistent with the philosophy of having a 25 percent margin for deterioration of containment integrity during the interval between normally scheduled Type A tests. The SQN Unit 2 containment demonstrated its leak-tight integrity during the CILRT with a reportable total time leak rate of 0.1515 percent-per-day. The addition of "leakage savings," excluding the leakage contribution from Penetration X-47A, resulted in an as-found containment leak rate of 0.1872 percent-per-day, which is within the 0.75 L_a limit.

In conclusion, corrective actions taken on the two previous CILRT failures on Unit 2 have been effective and are unrelated to the leakage experienced through the single Penetration X-47A during performance of the LLRTs. The contributing factors that caused the excessive leakage through Penetration X-47A have been fully addressed. Performing future CILRTs on an accelerated schedule would serve no technical purpose.

TVA's investigation into the cause and nature of the Test 3 (1992) failure concludes that a general containment leakage problem does not exist. SQN's PM program was reviewed, expanded, and improved to address the specific problem areas. TVA concludes that the identified leakage problems that caused the Test 3 (1992) failure can best be addressed through TVA's alternative corrective actions rather than increasing the frequency of Type A tests. This is consistent with the philosophy provided in Section III.A.8.(a) of the proposed rule change to Appendix J. Accordingly, TVA proposes to continue the normal test schedule for SQN Unit 2. The next regularly scheduled performance is during the Cycle 7 refueling outage currently scheduled for April 1995.

10 CFR 50.12(a)(2)(iii)

TVA considers the proposed exemption to be justified based on the provisions of 10 CFR 50.12(a)(2)(iii); i.e., compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted or that are significantly in excess of those incurred by others similarly situated.

Application of the accelerated Type A test frequency requires that TVA conduct two consecutive successful Type A tests during the Unit 2 Cycle 6 and Cycle 7 refueling outages. TVA has evaluated the hardships and cost associated with performing Type A tests on an increased frequency. TVA estimates the cost for setup, testing, and recovery to be approximately $250,000 for each test. This does not include the replacement power cost associated with the three to four days of additional downtime for each test. Consequently, TVA considers the proposed exemption from accelerated frequency to be justified based on the hardship and cost.

10 CFR 50.12(a)(2)(v)

TVA considers the proposed exemption to be justified based on the provisions of 10 CFR 50.12(a)(2)(v); i.e., exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation.

TVA's proposed exemption from the accelerated test frequency is considered by TVA to be temporary relief and is solely related to the failures that occurred during the Cycle 5 test (1992). As discussed previously, TVA has implemented corrective actions that directly address the condition that resulted in the Type A test failure. SQN's PM program was reviewed, expanded, and improved to address the specific problem areas. Based on these efforts, TVA concludes that the identified leakage problem that caused the Type A test failures can be addressed through TVA's alternative corrective actions rather than increasing the frequency of Type A tests.

Environmental Assessment

1. Identification of Proposed Action

   The proposed exemption would provide temporary relief from the accelerated frequency requirement of 10 CFR 50, Appendix J,

Section III.6.(b) following the 1992 Cycle 5, Type A test failure on SQN Unit 2. TVA evaluated the acceptability of the measured leakage from this test failure. TVA also identified the contributing factors that caused the Type A test failures and has taken correct action to address the specific problem areas to prevent recurrence. TVA's evaluation concludes that a general containment integrity problem on SQN Unit 2 does not exist and that the test failure can best be addressed through TVA's alternative actions rather than increasing the frequency of Type A tests.

2. Need for the Proposed Action

TVA's proposed exemption has been evaluated with regard to the hardship and impact of performing increased frequency testing. TVA estimates the cost for setup, testing, and recovery to be $250,000 per test. This does not include replacement power cost for the three to four days of additional downtime. TVA's proposed exemption would preclude the hardships associated with performing Type A tests on an increased frequency schedule.

3. Environmental Impact of the Proposed Action

The proposed exemption has no environmental impact because no changes are being made to the plant safety limits for containment leak rates. Consequently, no offsite radiation exposure limits were exceeded during periods of power operation. Radiological releases will not be greater than previously determined, and the proposed exemption does not otherwise affect radiological plant effluent. There are no potential nonradiological environmental impacts associated with the proposed exemption.

4. Alternative to the Proposed Action

The alternative to the proposed exemption would be to perform two consecutive Type A tests on Unit 2 during the Cycle 6 and Cycle 7 refueling outages. Since the problems associated with test failure did not indicate the existence of general containment leakage problem, TVA concludes that this test failure can best be addressed through alternative corrective actions in lieu of increased frequency.

5. Alternative Use of Resource

The proposed exemption does not involve the use of additional resources over those previously considered in the final environmental statement related to the operation of SQN Units 1 and 2 dated July 1974.

6. Findings of No Significant Impact

TVA finds no basis for preparing an environmental impact statement for the proposed exemption. Based on the above environmental assessment, TVA concludes that there will be no effect on the quality of the human environment.