



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 23, 1993

Docket No. 50-328

Tennessee Valley Authority
ATTN: Dr. Mark O. Medford, Vice President
Technical Support
3B Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Dr. Medford:

SUBJECT: EXEMPTION TO APPENDIX J OF 10 CFR PART 50, ACCELERATED TEST
FREQUENCY REQUIREMENT FOLLOWING TYPE A TEST FAILURE -
SEQUOYAH NUCLEAR PLANT, UNIT 2 (TAC NO. M85310)

By letter dated January 7, 1993, the Tennessee Valley Authority (TVA) requested an exemption for Unit 2 from the requirements in Section III.A.6(b) of Appendix J to 10 CFR Part 50 that require an accelerated Type A test frequency if two consecutive Type A tests fail to meet the acceptance criteria. For Unit 2, the last two containment Type A tests that were performed (in 1989 and 1992) were classified as failures and, in accordance with Section III.A.6(b), TVA is required to perform Type A tests at Unit 2 during each refueling outage until two consecutive Type A tests meet the acceptance criteria, at which time the normal test frequency is resumed. The normal test frequency in Section III.D of Appendix J is three tests at approximately equal intervals during each 10-year service period. The exemption would allow TVA to continue the normal test frequency for Unit 2, with the next regularly-scheduled performance of the Type A test during the Cycle 7 refueling outage currently scheduled for April 1995.

In its letter, TVA stated that it evaluated the previous Type A test failures (in 1984, 1989, and 1992) and determined that application of the increased test frequency requirement would not be appropriate when the particular conditions that caused each test failure are considered. These test failures were the result of including the as-found local leak rate (Type C) test results of certain valves in containment penetration lines, with the results of the corresponding Type A test. TVA has described a corrective action program, which has been implemented at Sequoyah, that addresses the cause of the test failures in order to reduce the chance of recurrence. An indication of the effectiveness of the program is that the causes of the previous failures (in 1984 and 1989) were unrelated to the 1992 test failure. TVA concluded that increasing the frequency of the Type A tests at Unit 2 is not necessary to achieve the underlying purpose of the rule to demonstrate containment integrity. TVA further stated that the impact of conducting the Type A tests at the accelerated frequency would result in significant hardship and cost.

9308110350 930723
PDR ADOCK 05000328
P PDR

NRG FILE CENTER COPY

DF01
1/1
CP-1
dhe

Enclosed is the Exemption for Unit 2 from the requirement in Section III.A.6(b) of 10 CFR 50 Appendix J to increase the Type A test frequency after two consecutive Type A test failures.

Sincerely,

Original signed by

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Exemption to 10 CFR 50

cc w/enclosure:

See next page

Distribution

Docket File

NRC & Local PDRs

SQN Reading

T. Murley/F. Miraglia

J. Partlow

E. Rossi

J. Lieberman

S. Varga

G. Lainas

F. Hebdon

M. Sanders

D. LaBarge

OGC

E. Jordan

G. Hill (2)

ACRS (10)

OPA

OC/LFDCB

L. Plisco

E. Merschoff, RII

P. Fredrickson, RII

cc: Plant Service list

OFC:	PDII-4/LA	PDII-4/PM <i>PK</i>	SCSB <i>AB</i>	OGC <i>AB</i>	PDII-4YD
NAME:	MSanders <i>ms</i>	DLaBarge:as	RBarrett	<i>E HOLLER</i>	FHebdon
DATE:	5/6/93	5/6/93	7/13/93	7/20/93	7/22/93
OFC:	AD: II	DRPE			
NAME:	GLainas	SVarga			
DATE:	7/24/93	7/28/93			

DOCUMENT NAME: SQN\85310.LTR

Tennessee Valley Authority
ATTN: Dr. Mark O. Medford

cc:

Mr. W. H. Kennoy, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. R. M. Eytchison, Vice President
Nuclear Operations
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Mr. B. S. Schofield, Manager
Nuclear Licensing and Regulatory Affairs
Tennessee Valley Authority
5B Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Mr. Robert Fenech, Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, Tennessee 37379

TVA Representative
Tennessee Valley Authority
11921 Rockville Pike
Suite 402
Rockville, Maryland 20852

Mr. Ralph Shell, Site Licensing Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, Tennessee 37379

Mr. Michael H. Mobley, Director
Division of Radiological Health
3rd Floor, L and C Annex
401 Church Street
Nashville, Tennessee 37243-1532

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

Sequoyah Nuclear Plant

County Judge
Hamilton County Courthouse
Chattanooga, Tennessee 37402

Regional Administrator
U.S.N.R.C. Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Mr. William E. Holland
Senior Resident Inspector
Sequoyah Nuclear Plant
U.S.N.R.C.
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

NUCLEAR REGULATORY COMMISSION

In the Matter of)
TENNESSEE VALLEY AUTHORITY) Docket No. 50-328
(Sequoyah Nuclear Plant, Unit 2))

EXEMPTION

I.

The Tennessee Valley Authority (TVA) is the holder of Facility Operating License No. DPR-79, which authorizes operation of the Sequoyah Nuclear Plant, Unit 2 (the facility, Unit 2). The facility consists of a pressurized water reactor located on TVA's Sequoyah site in Hamilton County, Tennessee. The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

II.

Section III.A.6(b) of Appendix J to 10 CFR Part 50 requires that if two consecutive Type A tests fail to meet the applicable acceptance criteria, a Type A test shall be conducted at each refueling outage. This increased testing frequency would continue until two consecutive Type A tests meet the acceptance criteria, after which time the normal retest frequency of three Type A tests at approximately equal intervals within each 10-year service period would resume. The approximately equal intervals are defined in

Surveillance Requirement 4.6.1.2.a of the Sequoyah Technical Specifications (TSs) as 40 ± 10 months. Type A tests are tests of the primary reactor containment to measure the expected overall integrated leakage rate of the containment for the loss-of-coolant accident conditions.

The action would exempt the licensee from the provisions in Section III.A.6(b) of Appendix J with respect to the requirement to accelerate the Type A frequency if there have been two consecutive failures of Appendix J containment Type A tests. If two consecutive Type A tests fail to meet the acceptance criteria of $0.75 L_a$, a Type A test must be performed at each refueling outage until two consecutive Type A tests meet the acceptance criteria. Thereafter, the test frequency in Section III.D of Appendix J, which requires performing three Type A tests at approximately equal intervals during each 10-year service period, may resume. The exemption would relax the acceleration of the Type A test frequency and the requirement to perform a Type A test during the Unit 2 Cycle 6 refueling outage scheduled for fall of 1993. If this exemption is granted, the next scheduled Type A test would be performed during the Cycle 7 refueling outage currently scheduled for April 1995.

The applicable acceptance criteria per 10 CFR 50, Appendix J, Section III.A.5.(b)(2) is 0.75 times the allowable leakage (L_a), which results in a limit of 0.1875 percent-per-day. At Unit 2, the licensee conducted Type A tests during the pre-operational testing in 1981, and refueling outages in November 1984 (Cycle 2), March 1989 (Cycle 3), and April 1992 (Cycle 5). The cause of the Cycle 2 and Cycle 3 Type A leak tests exceeding the acceptance criteria of $0.75 L_a$ was packing leakage from two outboard root valves on two

containment pressure sensing lines. Repairs were performed and, after due consideration, the staff granted an exemption from performing a test during Cycle 4 by letter dated August 27, 1990.

As a result of the Type A test performed during the Cycle 5 refueling outage, the measured leakage rate was again found to exceed the acceptance criteria of 0.75 La. This failure resulted when the leakage from the local leak rate test of valve 2-FCV-61-191 (which is attached to glycol Penetration X-47A) was added into the result of the Type A test that was performed during the outage. The leakage was caused by a small nut that was found under the valve stem nut on the outboard valve, which prevented the valve from going fully closed. (The nut was from unrelated work in the vicinity of the valve). Following removal of the loose nut, lubrication of the valve stem, and cycling of the valve several times, the local leak test was re-performed. No measured leakage was found. It could not be determined which action, removal of the foreign material that prevented full valve closure or sticking of the valve stem (or both), corrected the problem. Corrective measures that have been adopted to prevent recurrence of the problem include a monthly inspection of the glycol valves for foreign material and monthly lubrication of the valve stems.

The history of the results of Type A tests conducted at Unit 2 is summarized as follows:

Type A Tests Performed	As-found Leak Rate (% per day)	0.75 La Limit (% per day)	1.0 La Limit (% per day)	Status
Preop Test	0.14	0.1875	0.25	pass
Cycle 2 (1984)	0.22	0.1875	0.25	fail
Cycle 3 (1989)	0.22	0.1875	0.25	fail
Cycle 5 (1992)	0.42	0.1875	0.25	fail

The staff has reviewed the licensee's submittal and agrees with the licensee that the root cause of the previous Type A test failures was excessive leakage from a single component in the pressurization boundary, and that a general containment leakage problem does not exist. Once the component was repaired, the retest confirmed the adequacy of the repair. In addition, corrective actions have been implemented to prevent future test failures, and the corrective actions taken on the two previous Type A test failures have been effective since they are unrelated to the leakage through Penetration X-47A. The staff agrees with the licensee that failures of this type are random and that the leakage that caused the 1992 test failure can best be addressed through the alternative corrective actions rather than increasing the frequency of performing a Type A test.

Therefore, the staff concludes that performing future Type A testing on an accelerated schedule would serve no technical purpose and the requested exemption has no significant impact on containment integrity. Pursuant to 10 CFR 50.12(a)(2)(ii), the staff agrees that application of the regulation is not necessary to achieve the underlying purpose of the rule and that the requested exemption should be granted.

III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), this exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. The Commission further determines that special circumstances, as provided in 10 CFR 50.12(a)(2)(ii), are present justifying the exemption; namely, that the application of the regulation in the particular circumstances for Unit 2 in the Cycle 6 refueling outage would not serve, and is not

necessary, to achieve the underlying purpose of the rule. The application of the regulation is not necessary to assure the integrity of the containment in the event of a postulated design basis loss-of-coolant accident.

Accordingly, the Commission hereby grants an exemption from Section III.A.6(b) of Appendix J to 10 CFR Part 50 for Sequoyah Unit 2.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this Exemption will have no significant impact on the environment (55 FR 21602).

For further details with respect to this action, see the request for exemption dated January 7, 1993, which is available for public inspection at the Commission's Public Document Room, Gelman Building, 2120 L Street, N.W., Washington, D.C., and at the Chattanooga-Hamilton County Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "Steven A. Varga", is written over the typed name and title.

Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 23rd day of July 1993

necessary, to achieve the underlying purpose of the rule. The application of the regulation is not necessary to assure the integrity of the containment in the event of a postulated design basis loss-of-coolant accident.

Accordingly, the Commission hereby grants an exemption from Section III.A.6(b) of Appendix J to 10 CFR Part 50 for Sequoyah Unit 2.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this Exemption will have no significant impact on the environment (55 FR 21602).

For further details with respect to this action, see the request for exemption dated January 7, 1993, which is available for public inspection at the Commission's Public Document Room, Gelman Building, 2120 L Street, N.W., Washington, D.C., and at the Chattanooga-Hamilton County Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

original signed by:

Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 23rd day of July 1993

OGC on Letter Only

OFFICE	PDII-4/LA	PDII-4/PM	PDII-4/D	AD RII	DRPE:D
NAME	MSanders <i>ms</i>	DLaBarge <i>DL</i>	FHeaton <i>FH</i>	GLarnas <i>GL</i>	SVarga <i>SV</i>
DATE	5/6/93	5/6/93	7/22/93	7/12/93	7/23/93

DOCUMENT NAME: SQN\85310.LTR