Docket

Docket No. 50-328

August 21, 1990

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Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR AN EXEMPTION FROM APPENDIX J TO 10 CFR PART 50 (TAC 76846) - SEQUOYAH NUCLEAR PLANT, UNIT 2

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" related to your request for an exemption from Section III.A.6(b) to Appendix J of 10 CFR Part 50 for Sequoyah Nuclear Plant, Unit 2. This pertains to the requirements in Appendix J for an accelerated test frequency for Type A testing if two consecutive Type A tests fail to meet the acceptance criteria. You have requested an exemption to the accelerated Type A test frequency for Unit 2 for the test failures in the Unit 2 Cycle 2 and Unit 2 Cycle 3 refueling outages. The Environmental Assessment has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by

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

Enclosure:
As stated

cc w/enclosure:
See next page

*SEE PREVIOUS CONCURRENCE

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UNITED STATES NUCLEAR REGULATORY COMMISSION

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

ENVIRONMENTAL ASSESSMENT AND

FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an exemption from the requirements of Section III.A.6(b) of Appendix J to 10 CFR Part 50 to the Tennessee Valley Authority (the licensee) for the Sequoyah Nuclear Plant, Unit 2. The unit is located at the licensee's site in Hamilton County, Tennessee. The exemption was requested by the licensee in its letter dated May 21, 1990.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

The exemption would allow the licensee relief from the provisions in Section III.A.6(b) of Appendix J with respect to the requirement that upon two consecutive failures of Appendix J containment Type A tests there is an acceleration of the test frequency. If two consecutive Type A tests fail to meet the acceptance criteria of 0.75La, a Type A test shall be performed at each refueling outage until two consecutive Type A tests meet the acceptance criteria. After this, the test frequency in Section III.D of Appendix J, which is performing three Type A tests at approximately equal intervals during each 10-year service period, may resume. The relief would relax the acceleration of the Type A test frequency and the requirement to conduct a Type A test at Unit 2 in the Unit 2 Cycle 4 refueling outage scheduled for the fall of 1990.

At Unit 2, the licensee conducted Type A tests during the preoperational testing in 1981, the Unit 2 Cycle 2 refueling outage in November 1984, and the Unit 2 Cycle 3 refueling outage in March 1989. Had the last two Type A tests not been classified as failures, the next Type A test at Unit 2 would be conducted in the Unit 2 Cycle 5 refueling outage in 1992 to complete the three tests in a 10-year service period. With two consecutive failures, the licensee is required to conduct a Type A test in each refueling outage until the unit passes two consecutive Type A tests. The first refueling outage that would be affected is the Unit 2 Cycle 4 refueling outage. The Unit 2 Cycle 5 refueling outage is not affected by this relief because this outage is scheduled for the third Type A test of the 10-year service period.

The history of the Type A tests conducted at Unit 2 is noted below:

Type A Tests performed	As-found leak rate (% per day)	0.75La limit (% per day)	1.0La limit (% per day)	Status
Preoperational test (1981)	0.14	0.1875	0.25	pass
Test 1 (1984)	0.22	0.1875	0.25	failure
Test 2 (1989)	0.20	0.1875	0.25	failure

The last two Type A test results exceeded the acceptable limit of 0.75La required by Appendix J but did not exceed the maximum allowable rate of La. La is the leakage rate assumed for the containment during a loss-of-coolant accident. The licensee stated that the root cause of the Cycle 2 Type A test failure was determined to be packing leakage from two outboard root valves on two containment pressure sensing lines. The licensee performed maintenance on the pressure sensing lines during Cycle 2 refueling outage and repaired the root valves which resulted in an immediate reduction in the measured leak rate

to below the acceptance criteria. The licensee also implemented corrective actions to prevent the pressure sensing line leakage. These actions include:

(1) Programmatic review of the instrument maintenance and operation activities to identify potential impacts on containment integrity, and

(2) Expansion of the local leak rate test (LLRT) program to require an LLRT following any maintenance performed on the pressure sensing lines. Post-maintenance leak rate testing is required and added to the Surveillance Instruction (SI) 159.1, "Leak Rate Test on Containment Pressure Instrumentation."

The primary cause of the Cycle 3 Type A failure was due to excessive leakage through Penetration X-59. The root cause was personnel error in connecting the hose from the test equipment to the test connection for the valves associated with Penetration X-59. Another factor that contributed to the excessive leakage through Penetration X-59 involved a maintenance sequence that occurred when the outboard containment isolation valve (FCV-67-88) was previously disassembled, cleaned, and reassembled during the outage. The licensee has implemented corrective actions for the root causes of excessive leakage from Penetration X-59. These actions include:

(1) Revision of the LLRT program (SI-158.1) to include instructional steps that require the test hoses to be visually inspected to ensure that no restrictions or crimped conditions exist, and

(2) Revision of the Maintenance Instructions (0-MI-MVV-000-008.0) to ensure that when soft-seated butterfly valves without internal disc stops are removed from the piping, the valve operator limits are set with the valve body attached to ensure that valve position is established prior to reinstallation.

The staff has reviewed the licensee's submittal and agrees with the licensee that the root cause of each of the last two Type A test failures was due to excessive leakage of a single component or penetration in the containment boundary. Even with the leakage, the Type A test results were found still within the maximum allowable leak rate of 1.0La. The licensee has corrected and repaired the components that caused the Type A test failures and implemented corrective actions to prevent future test failures. Additionally, the current Appendix J leak rate limit for Type A tests contain a 25% safety margin between the leak rate acceptance criteria and the leak rate assumed during the loss-of-coolant accident. A proposed revision to Appendix J currently under consideration would remove this margin. With the above corrective actions and the fact that the last two Type A test failures were below the maximum allowable leak rate of 1.0La, the staff concludes that the requested exemption has no significant impact on containment integrity and no benefit would be gained by requiring the licensee to perform Type A tests on an accelerated test frequency.

The Need for the Proposed Action:

The proposed exemption is required to relieve the licensee from the requirement to conduct a Type A test of its Unit 2 containment in the Unit 2 Cycle 4 refueling outage scheduled for the fall of 1990.

Environmental Impacts of the Proposed Action:

With respect to the requested exemption, the relief from the above requirement would allow the licensee to avoid conducting an unnecessary Type A test at Unit 2 in the upcoming Unit 2 Cycle 4 refueling outage. The test is not needed to assure the integrity of the containment during an accident which is the purpose of the test. Consequently, neither the probability of accidents

nor the radiological releases from accidents will be increased. With regard to other potential radiological environmental impacts, the proposed exemption does not increase the radiological effluents from the facility and does not increase the occupational exposure at the facility. Therefore, the Commission concludes that there are no significant radiological impacts associated with the proposed exemption.

With regard to potential nonradiological environmental impacts, the proposed exemption involves systems located within the restricted areas as defined in 10 CFR Part 20. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed exemption.

Therefore, the proposed exemption does not significantly change the conclusions in the licensee's "Final Environmental Statement Related to the Operation of Sequoyah Nuclear Plant Units 1 and 2," (FES) dated February 21, 1974. The Commission concluded that operation of the Sequoyah units will not result in any environmental impacts other than those evaluated in the FES in its letter to the licensee dated September 15, 1981 which granted the facility operating license DPR-79 for Unit 2.

Alternative to the Proposed Action:

Because the staff has concluded that there is no measurable environmental impact associated with the proposed exemption, any alternative to this exemption will have either no significantly different environmental impact or greater environmental impact.

The principal alternative would be to deny the requested exemption. This would not reduce environmental impacts as a result of plant operations.

Alternative Use Of Resources:

This action does not involve the use of resources not previously considered in connection with the "Final Environmental Statement Related to the Operation of the Sequoyah Nuclear Plant, Units 1 and 2," dated February 21, 1974.

Agencies and Persons Consulted:

The NRC staff has reviewed the licensee's request and the licensee's supplemental letters that support the proposed exemption. The NRC staff did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed exemption.

Based upon the foregoing environmental assessment, we conclude that the proposed action will not have a significant effect on the quality of the human environment.

For details with respect to this action, see the licensee's request for an exemption dated May 21, 1990 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 Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

Dated at Rockville, Maryland, this 21st day of August 1990.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon

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

Mr. Oliver D. Kingsley, Jr.

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