December 23, 1982

Docket Nos: 50-327
and 50-328

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

Subject: Sequoyah Nuclear Plant Units 1 and 2 - Hydrostatic Pressure Test Relief Request for the Essential Raw Cooling Water System

By letter dated October 13, 1982, TVA requested relief from the Section XI Code hydrostatic test requirements following replacement of portions of carbon steel piping in the Sequoyah Nuclear Plant Essential Raw Cooling Water (ERCW) System. The NRC staff has reviewed the request and supporting information provided in the letter as well as subsequent revisions made after conference calls with TVA staff members. We have determined that the Code requirement is impractical to perform at this time and relief is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee if such relief were not granted. We have, therefore, granted relief from the requirement until January 1986. A safety evaluation supporting our determination and conclusion is enclosed. Also enclosed is a copy of a related Federal Register Notice which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

S/ A. Schwencer

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

Enclosures:
As stated

cc: See next page

*NOTE: SEE PREVIOUS WHITE FOR CONCURRENCE

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DATE	12/23/82	12/23/82	12/23/82	12/23/82	12/23/82	12/23/82	

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SEQUOYAH

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U.S. Environmental Protection
Agency
ATTN: EIS Coordinator
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Atlanta, Georgia 30308

Honorable Don Moore, Jr.
County Judge
Hamilton County Courthouse
Chattanooga, Tennessee 37402

Regional Administrator
Nuclear Regulatory Commission,
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

SAFETY EVALUATION REPORT/REQUEST FOR RELIEF FROM REQUIREMENT OF HYDROSTATIC TESTING AFTER WELDING SEQUOYAH NUCLEAR PLANT, UNITS 1 & 2 (Docket Nos. 50-327 & 50-328)

BACKGROUND

By letter dated October 13, 1982, the Tennessee Valley Authority (TVA) informed the NRC of its plans to replace portions of the carbon steel piping in the Essential Raw Cooling Water (ERCW) System in Sequoyah Units 1 and 2. The carbon steel piping will be replaced with stainless steel to reduce corrosion buildup in the systems. TVA is required to perform the piping replacement to the rules of the 1977 Edition through Summer 1978 Addenda of Section XI of the ASME Code. Section XI requires a hydrostatic test of piping to be performed after welding. TVA has determined that a hydrostatic test of the portions of piping replaced is impractical to perform until the scheduled ten-year system hydrostatic test and has requested relief from the requirement.

Through conference calls on November 8 and November 15, 1982, the planned replacements and requests were discussed with TVA staff members. The discussions resulted in revisions to the original requests, and these revisions were subsequently transmitted by letters of November 18 and December 3, 1982. An additional planned replacement of a small section of two-inch discharge piping from a relief valve was transmitted along with a request for relief from the hydrostatic test for this piping.

REQUEST FOR RELIEF

Relief from hydrostatically testing portions of the Essential Raw Cooling Water (ERCW) Systems Piping after welding is requested.

PIPING FOR WHICH RELIEF IS REQUESTED

1. The supply piping for the auxiliary control air compressor 2B from the 6-inch supply header 2B to and including the 2-inch to 1-inch reducer and to and including valve 2-67-680.

2. The discharge piping for the auxiliary control air compressor 2B from and including valve 2-67-683 to and including the 2-inch to 1-inch reducer to the 4-inch to 6-inch reducer.

3. The supply piping for the auxiliary control air compressor 1A from the 3-inch supply piping (header 1A) to and including valve 1-67-680.

4. The discharge piping from the auxiliary control air compressor 1A from and including valve 1-67-683 to the 3-inch discharge piping.

5. The two-inch discharge piping associated with safety relief valve 0-67-550B in the ERCW system.

Class

TVA Safety Class C, ANSI B31.7; C1.3.

Inspection Requirement

Subarticles IWD-7200, IWA-4600, IWA-4400, and Paragraphs IWA-5214 and IWD-5223 of ASME Section XI, 1977 Edition, Summer 1978 Addenda, require that replacement piping greater than 1 inch n.p.s. which is installed by welding be hydrostatically pressure tested before resumption of service at 1.10 times the system pressure, P_{sv}, for systems with design temperature of 200°F or less.

TVA Basis for Relief

The replacement of carbon steel piping with stainless steel piping will improve the ERCW system and reduce the possibility of flow reducing corrosion buildup. TVA proposes to defer the system hydrostatic pressure test until after the completion of a number of the replacements. A system hydrostatic pressure test will be performed on the then completed replacements by the end of the unit 1 cycle 3 outage.

The design Code of Record for the piping in question is ANSI B31.7, 1969 Edition through S'70 Addenda. This code references ANSI B31.1 for Class 3 piping fabrication and installation requirements. Therefore, the fabrication and installation Code of Record for the subject piping is ANSI B31.1, 1967 Edition through S'70 Addenda. TVA proposes to install the replacements in accordance with the 1977 Edition of ANSI B31.1, which is permissible under IWA-7110(C) of ASME Section XI, 1977 Edition through S'78 Addenda. The 1977 Edition of ANSI B31.1 requires that the installation welds in question be visually examined, and permits an initial service leak test at nominal operating pressure when a hydrostatic pressure test is not practical. However, TVA will perform a liquid penetrant examination of the installation welds as well as performing an initial service leak test at nominal operating pressure. Because TVA will perform a more stringent NDE than that required by the installation code, the integrity of the replacement welds is equal to or better than that required by the installation code.

The difference in pressure between a system hydrostatic pressure test (176 psig) and the system functional test (approximately 115 psig) is not significant when the design temperature (less than 200°F) and the strength of this schedule 40 piping are considered.

TVA is presently in the process of replacing all 4-inch and smaller carbon steel piping and associated valves in the ERCW system with stainless steel piping. Section XI requires TVA to perform system hydrostatic pressure tests following each replacement. The pressure isolation boundary of each of these system hydrostatic pressure tests is identical.

Requiring redundant system hydrostatic pressure tests over the same piping and valves is highly impractical when, each time only a small percentage of piping is the replacement.

Proposed Alternate Inspection

A system functional test will be performed after each replacement at normal operating pressure of approximately 115 psig and in accordance with IWD-5222. A weld inspection (liquid penetrant inspection) will be performed at each weld. A hydrostatic pressure test will be performed by the end of the unit 1 cycle 3 refueling outage (currently scheduled for August 1985 through January 1986).

STAFF EVALUATION

Replacing the small (one- to two-inch diameter) portions of carbon steel piping with stainless steel will prevent possible blockage of cooling water in the Essential Raw Cooling Water System. In order to comply fully with the Code requirements for nondestructive testing of piping after welding, the licensee would have to subject long runs of larger diameter piping to the hydrostatic pressure because of the inability to isolate the relatively small sections of replacement piping. The licensee has committed to perform a system functional test at 115 psig versus 176 psig required by Code and to perform a liquid penetrant examination on each weld. The Code-required hydrostatic test will be performed by the end of the Unit 1 Cycle 3 refueling outage which is currently scheduled to be completed by January 1986 concurrent with completion of piping replacements.

The staff has determined that the Code-required hydrostatic test is impractical considering the licensee's proposed alternate test and weld examinations versus the gain in safety if the requirement were imposed. The system functional test at 115 psig and the liquid penetrant examination of each weld will provide a high degree of certainty of structural integrity of the replacement piping. Based on these facts, the staff concludes that relief from the Code hydrostatic test requirement may be granted until January 1986.

ENVIRONMENTAL CONSIDERATION

We have determined that the granting relief does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the relief involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this relief.

OFFICE ▶	.....	.....	.....	.....	.....	.....	.....
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CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because granting the relief does not involve a significant increase in the probability or consequences of accidents previously considered, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant decrease in a safety margin, the relief does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this relief will not be inimical to the common defense and security or to the health and safety of the public.

Dated: December 23, 1982

Principal Contributor: Melanie Miller, Licensing Branch No. 4, DOL
Carl Stahle, Licensing Branch No. 4, DOL
~~John Knox, Power Systems Branch, DSI~~
G Johnson, Materials Engineering Branch, DE

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UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NOS. 50-327 AND 50-328

TENNESSEE VALLEY AUTHORITY

NOTICE OF GRANTING OF RELIEF FROM CERTAIN REQUIREMENTS
OF ASME CODE SECTION XI INSERVICE (TESTING) REQUIREMENTS

The U.S. Nuclear Regulatory Commission (the Commission) has granted relief from certain requirements of the ASME Code, Section XI, "Rules and Inservice Inspection of Nuclear Power Plant Components" to the Tennessee Valley Authority (the licensee). The relief relates to the preservice hydrostatic tests for the Sequoyah Nuclear Plant, Units 1 and 2 (the facilities) located in Hamilton County, Tennessee. The ASME Code requirements are incorporated by reference into the Commission's rules and regulations in 10 CFR Part 50. The relief is effective as of its date of issuance.

The relief relates to certain inservice examination requirements, pursuant to the Commission's regulations in 10 CFR 50.55a(g)(6)(i). The licensee will perform a system functional test at 115 psig versus 176 psig as required by the code and will perform a liquid penetrant examination on each weld.

The requests for relief comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter 1.

The Commission has determined that the granting of relief will not result in any significant environmental impact and that pursuant to 10 CFR 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this action.

For further details with respect to this action, see (1) the licensee's letters dated October 13, November 18, and December 3, 1982, (2) the Commission's letter to the licensee dated December 23, 1982 and, (3) the Commission's related Safety Evaluation Report. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D. C. 20555 and at the Chattanooga-Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 23 day of December 1982.

FOR THE NUCLEAR REGULATORY COMMISSION

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

OK with changes in cover letter and SER

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