



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

ENCLOSURE

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE FIRST 10-YEAR INTERVAL INSERVICE INSPECTION
PROGRAM FOR THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2
THROUGH REVISIONS 20 (UNIT 1) AND 19 (UNIT 2)
TENNESSEE VALLEY AUTHORITY
DOCKET NUMBERS 50-327 AND 50-328

1.0 INTRODUCTION

The Technical Specifications for Sequoyah Nuclear Plant, Units 1 and 2, state that the inservice inspection (ISI) and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2 and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the date of issuance of the operating license, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Sequoyah Nuclear Plant, Units 1 and 2, first 10-year inservice inspection (ISI) interval is the 1977 Edition, through Summer 1978 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME

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Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

By letter dated June 15, 1992, the Tennessee Valley Authority (licensee or TVA), submitted Revisions 17 (for Unit 1) and 16 (for Unit 2) of the Sequoyah Nuclear Plant First 10-Year Interval ISI Programs. Subsequently, TVA submitted Revisions 20 (for Unit 1) and 19 (for Unit 2) by letter dated January 28, 1993. Intermediate revisions to the ISI Program were not submitted for staff review. Additional information that was required to complete the evaluation was requested from the licensee in a staff request for additional information (RAI) dated May 12, 1993. TVA responded to the RAI by letter dated July 9, 1993. Evaluation of the program and responses was performed by the NRC contractor, the Idaho National Engineering Laboratory (INEL).

2.0 EVALUATION OF THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2, FIRST 10-YEAR INTERVAL ISI PROGRAMS, THROUGH REVISIONS 20 AND 19, RESPECTIVELY

The staff evaluation, with technical assistance from its contractor, has evaluated the information provided by the licensee regarding the First 10-Year ISI Program Plan, through Revisions 20 (for Unit 1) and 19 (for Unit 2) as follows:

- (1) **Schedule Change for RPV Nozzle Examinations:** The Program has been revised to reflect a schedule change for Examination Category B-D, RPV nozzle-to-vessel welds, nozzle inside radii, and nozzle-to-safe end welds from the first inspection period to the third inspection period. This schedule change was reviewed and approved in the NRC Safety Evaluation Reports (SERs) on Requests for Relief 1-ISI-14 (dated January 6, 1993) and 2-ISI-15 (dated April 29, 1993), provided that the first period examinations were repeated in the third period of the first 10-year interval. This change is intended to alter the schedule of RPV nozzle welds so that examination of the nozzle welds can be performed with the rest of the RPV examination during the second 10-year ISI interval. Based on the previous evaluations, incorporation of this scheduling change into the Program is acceptable.
- (2) **Applicable Code:** The 1986 Edition of the Code was used to prepare NDE examination procedures. This upgrade was evaluated and approved in an NRC SER dated April 24, 1993. Based on the previous evaluation, upgrading NDE examination procedures to the 1986 Code is acceptable.

- (3) **Class 2 Piping Systems:** Exemption criteria for the Sequoyah Units 1 and 2 first 10-year ISI interval should be based on Paragraph IWC-1220, "Components Exempt From Examination," of the Summer 1978 Addenda of the Code.

Review of the Program indicates that examinations of Class 2 piping systems does not contain a representative sample of welds. For Unit 1, 26 Class 2 welds are receiving surface and volumetric examinations, and 52 welds are receiving surface examinations during the first 10-year interval. For Unit 2, 24 Class 2 circumferential welds are receiving surface and volumetric examinations and 44 welds are receiving surface examinations during the first 10-year interval. These examination samples are significantly smaller than those taken at other similar plants.

The NRC staff has consistently conducted reviews and evaluations of ISI programs to determine if the licensee's programs contained a representative sample of welds to be examined in the safety systems cited in the regulations. The staff has decided not to pursue this issue further. This decision is based on the following considerations: (1) the systems and components will be (and should have been) subject to pressure tests and visual inspections each period (40 months) of the interval as required (unambiguously) by Section XI of the ASME Code, thereby providing a measure of assurance of structural integrity; (2) the later editions of the ASME Code have incorporated requirements that address the exemptions and have eliminated the criteria that permitted the interpretation to eliminate the systems and components from examination; (3) the relatively short period of time remaining in the first interval before the Sequoyah programs are required to be updated (September 1995 for both units) to a later edition when this issue will no longer exist; and (4) the time and resources that would be expended in pursuing the issue versus the time remaining in the interval. The staff, therefore, has concluded that pursuing the issue with the licensee is impractical.

- (4) There have been numerous editorial and non-technical changes made since the last review of the program. Since these changes do not affect the technical content of the program, they are acceptable.

3.0 CONCLUSION

Based on the information provided, the staff determined that the Program Plans through Revisions 20 and 19, for Sequoyah Units 1 and 2 first 10-year ISI interval, are within the Code requirements with the possible exception of the sample size of Class 2 components. However, as stated above the staff has decided not to pursue this issue. Therefore, the staff finds the ISI Program for Sequoyah Units 1 and 2 acceptable.

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Dated: April 15, 1994