



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

ENCLOSURE

SAFETY EVALUATION REPORT BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM, REVISION 13

AND FOURTEEN ASSOCIATED REQUESTS FOR RELIEF

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-328

1.0 INTRODUCTION

Technical Specification 4.0.5 for the Sequoyah Nuclear Plant, Unit 2 states that the surveillance requirements for inservice inspection and testing of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code) Class 1, 2, and 3 components shall be applicable as follows: Inservice Inspection of 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 a specific written request for relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i) or 10 CFR 50.55a(a)(3)(i).

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 Code, Section XI, of editions and addenda that become effective in the future, to the extent practical within the limits of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components shall comply with the requirements in the latest edition and addenda of Section XI of the 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.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the Code is not practical for its facility, information shall be submitted to the Commission in support of the determination(s) and a request made for relief from the Code requirement. After evaluation of the determination(s), pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that will not endanger life or 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.

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Pursuant to 10 CFR 50.55a(a)(3), if the licensee determines that an alternative to the ASME Code requirements would provide an acceptable level of quality and safety, information shall be submitted to the Commission in support of the determination(s) and a request made for relief from the Code requirements. After evaluation of the determinations, pursuant to 10 CFR 50.55a(a)(3)(i), the Commission may grant relief from the Code.

The licensee, Tennessee Valley Authority, (TVA) has prepared the Sequoyah Nuclear Plant, Unit 2, first 10-Year Interval Inservice Inspection (ISI) Program, Revision 13, to meet the requirements of the 1977 Edition, Summer 1978 Addenda of Section XI of the Code with the following exception: the extent of examination for Code Class 1 piping welds have been determined by the 1974 Edition through Summer 1975 Addenda as required by 10 CFR 50.55a(b).

The staff, with technical assistance from its contractor, Science Applications International Corporation (SAIC), had evaluated the first 10-year interval ISI Program, Revision 13, including additional information related to the plan, for Unit 2 and the requests for relief from certain ASME Code requirements which were determined to be impractical at Unit 2 during the first inspection interval. This Program was described in the TVA submittal dated November 9, 1988 for Revision 13 and the response dated May 5, 1989 to the staff's questions. TVA submitted Revision 14 of the Unit 2 ISI Program in its letter dated June 12, 1989 but the changes to the program were not significant.

2.0 EVALUATION

The ISI Program has been evaluated for (a) application of the correct Section XI Code edition and addenda, (b) compliance with examination and test requirements of Section XI, (c) acceptability of the examination sample, (d) compliance with prior ISI commitments made by TVA, (e) correctness of the application of system or component examination exclusion criteria, and (f) adequate information to support requests for relief from Section XI Code requirements. The information provided by the licensee in support of requests for relief from impractical requirements or for alternative requirements providing acceptable levels of quality and safety has been evaluated and the bases for granting relief from those requirements are documented in the attached SAIC Technical Evaluation Report (TER) SAIC-89-1473. A list of all the applicable TVA submittals is given in the TER. The NRC staff concurs with and adopts the findings and recommendations contained in the TER.

Table 1 presents a summary and status of the relief requests as determined by the staff. The 14 relief requests have been reviewed and all are acceptable except for ISI-2, ISI-7, ISI-11, and ISI-12. One relief request was withdrawn (ISI-11), one request is not needed (ISI-12), and two requests are not needed at this time and are postponed (ISI-2 and ISI-7). The table lists the restrictions, if any, on each relief request that is acceptable. Where the relief request status is "Granted with augmented requirements", the augmented requirements are as recommended in the SAIC TER. The granting of these relief requests by the Commission, as specified in Table 1, is contingent upon all other requirements of Section XI being met for inservice tests and system pressure tests of the components affected by these relief requests.

Of the ten relief requests which are acceptable, two requests provide alternative requirements which give an acceptable level of quality and safety at Unit 2. These are requests ISI-9 and ISI-14. Of the remaining eight requests, ISI-1, ISI-3 to ISI-6, ISI-8, ISI-10 and ISI-13, the Code requirements are impractical to perform at Unit 2 and the alternative requirements will not endanger life or property, or the common defense and security, and are in the public interest considering the burden that could result on TVA if the Code requirements were imposed on Unit 2. The acceptability of the alternate requirements and the burden on TVA if the Code requirements were imposed on Unit 2 are discussed in the attached TER.

3.0 CONCLUSION

The staff concludes that the Sequoyah Nuclear Plant, Unit 2 first 10-Year Interval Inservice Inspection Program, Revision 13, with the additional information provided and the specific written reliefs constitute the basis of the program's compliance with 10 CFR 50.55a(g) and the Unit 2 Technical Specification 4.0.5 and is, therefore, acceptable.

For the Unit 2 ISI Program, TVA submitted 14 requests for relief from the requirements of the Code: ISI-1 to ISI-14. As discussed above, the staff has determined that these requests are acceptable except for the following four requests: ISI-2, ISI-7, ISI-11, and ISI-12. Granting relief from Code requirements is authorized by law where (1) the proposed alternative would provide an acceptable level of quality and safety (pursuant to 10 CFR 50.55a(a)(3)(i)) and (2) the Code requirement is impractical and the alternative requirement will not endanger life or property, or the common defense and security, and is in the public interest (pursuant to 10 CFR 50.55a(g)(6)(i)). For two requests, ISI-9 and ISI-14, the staff concludes that the proposed alternatives to the Code requirements will provide an acceptable level of quality and safety at Unit 2. For the remaining eight requests, ISI-1, ISI-3 to ISI-6, ISI-8, ISI-10, and ISI-13, the staff concludes that the Code requirements are impractical to perform at Unit 2 and the alternative requirements will not endanger life or property, or the common defense and security, and are in the public interest considering the burden that could result on TVA if the Code requirements were imposed on Unit 2.

Therefore, pursuant to 10 CFR 50.55a(a)(3)(i) and 10 CFR 50.55a(g)(6)(i) of the Commission's regulations, TVA should be granted the following requested relief from the Code: requests for relief ISI-1, ISI-3 to ISI-6, ISI-8 to ISI-10, ISI-13, and ISI-14. Where the relief request status is "Granted with augmented requirements", the augmented requirements are as recommended in the attached TER. The granting of these relief requests is contingent upon all other requirements of Section XI being met for inservice tests and system pressure tests of the components affected by these relief requests.

The staff also concludes that the Sequoyah Unit 2 Inservice Inspection Program, Revision 13, with the additional information in the May 5, 1989 letter and the reliefs granted constitute part of the basis for TVA meeting the requirements of 10 CFR 50.55a and the Unit 2 Technical Specifications at Unit 2. With reliefs granted, the staff concludes that Unit 2 is in compliance with the Code of record for Unit 2, cited above in Section 1.0.

4.0 REFERENCE

1. Science Applications International Corporation, "First Interval Inservice Inspection Program, Sequoyah Nuclear Station Unit 2", Technical Evaluation Report SAIC-89/1473, Idaho Falls, Idaho, July 1989.
2. Letter from R. Gridley (TVA) to NRC, Subject: Augmented and Accelerated In-Service Inspection Program for Unit 2, dated November 9, 1988.
3. Letter from C. H. Fox (TVA) to NRC, Subject: Response to NRC Request for Additional Information, dated May 5, 1989.

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Dated:

TABLE 1

SUMMARY OF RELIEF REQUESTS (SYSTEM/COMPONENTS)

<u>Relief Request Number</u>	<u>Item No.</u>	<u>Exam. Cat.</u>	<u>System or Component</u>	<u>Volume or Area to be Examined</u>	<u>Required Method</u>	<u>Licensee Proposed Alternative</u>	<u>Relief Request Status</u>
<u>10 CFR 50.55a(g)(6)(i) Requests</u>							
ISI-1	B12.20	B-L-2	Pumps	Internal Pressure Boundary Surfaces	Visual	Visual exam of surfaces if pump opened for maint. If not, UT thickness from exterior	Granted with augmented requirements
ISI-2	B12.40	B-M-2	Valves	Internal Pressure Boundary Surfaces	Visual	None	Postponed until specific relief requests are presented towards end of interval
ISI-3	B5.50	B-F	Bimetal Welds	Pressure retaining bimetallic welds in piping	Surface Volumetric	Inspect to extent possible	Granted with augmented requirements
	B9.10 B9.20 B9.30	B-J	Welds	Pressure retaining welds in piping	Surface Volumetric	Inspect to extent possible	Granted with augmented requirements
ISI-4	C1-10	C-A	Steam Generator	Class 2 Circum. shell welds	Volumetric	Inspect to extent possible	Granted with augmented requirements
ISI-5	B1.21	B-A	Reactor Vessel	Bottom head Circum. weld	Volumetric	Inspect to extent possible	Granted with augmented requirements

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ISI-6	B1.140	B-D	Steam generator	Nozzle inside radium section	Volumetric	Postpone until next interval	Granted with augmented requirements
ISI-7	B9.10	B-J	Piping	Reactor coolant loop piping welds	Volumetric	None	Postponed until fourth interval
ISI-8	B12.10	B-L-1	Pumps	Pressure retaining welds on pump casings	Surface Volumetric	Surface exam only	Granted with augmented requirements
ISI-10	B1.30	B-A	Reactor vessel	Flange to upper shell weld	Volumetric at Table IWB-2412-1 frequency	Delay volumetric to end of interval	Granted
ISI-11							Withdrawn
ISI-12	C1.10 C1.20 C1.30 C3.10	C-A C-C C-C C-E	Pressure vessels	Shell weld at structural discontinuities and attachments	Volumetric Volumetric Volumetric Surface	None	Relief not required
ISI-13	C2.20	C-B	Pressure vessels	RHR HTEX nozzle to vessel welds	Surface Volumetric	Surface exam only	Granted

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<u>10 CFR 50.55a(a)(3)(i) Requests</u>				
ISI-9	UT calibration block	Use of 5-percent notches in lieu of side-drilled holes	Continue use of existing blocks	Granting provided existing blocks meet applicable Code requirements
ISI-14	Exam. schedule	Table IWB-2412-1 and IWC-2412-1 for piping welds and supports and major component supports	Accelerated inspections change the schedule	Granted