



Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379

October 21, 1998

10 CFR 50.50a(a)(3)(i)

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentleman:

In the Matter of) Docket Nos. 50-327
Tennessee Valley Authority) 50-328

SEQUOYAH NUCLEAR PLANT (SQN) - REQUEST FOR APPROVAL OF RELIEF FROM AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE REQUIREMENTS - REQUEST FOR RELIEF ISI-3 - INTEGRALLY WELDED ATTACHMENTS OF SUPPORTS AND RESTRAINTS FOR AUXILIARY FEEDWATER (AFW) PIPING - NOMINAL PIPE SIZE (NPS) 1 INCH AND SMALLER.

Reference: NRC letter to TVA dated April 27, 1998, "Evaluation of the Second 10-Year Interval Inspection Program Plan and Associated Requests for Relief For Sequoyah Nuclear Plant, Units 1 and 2 (TAC Nos. M94115 and M94116)"

This letter provides a request for relief (ISI-3) for SQN Units 1 and 2. The request for relief provides a proposed alternative to the requirements contained in the 1989 Edition of the ASME Code, Section XI. The proposed alternative adopts provisions from the 1991 Addenda to the 1989 Edition of the Code that exempts visual inspection of integrally welded attachments of supports and restraints for Class 3 AFW system piping, NPS 1 inch and smaller. TVA's proposed alternative to adopt provisions of the 1991 Addenda will not reduce the level of quality and safety.

In response to the referenced letter, TVA is resubmitting ISI-3 for staff approval under the proposed alternative provisions of 10 CFR 50.55a(a)(3)(i).

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U.S. Nuclear Regulatory Commission
Page 2
October 21, 1998

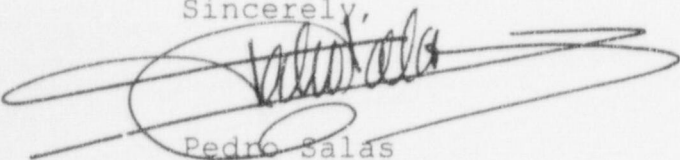
TVA is resubmitting the ISI-3 relief request following discussions with your staff, which suggested that a comparison between Code requirements from the 1989 Edition of the Code and the 1991 Addenda be provided. Specifically, the exemption for Class 3 AFW piping (NPS 1 inch and smaller) is provided in the 1991 Addenda to the 1989 Edition of ASME, Section XI Code. This exemption was previously provided by ASME Code prior to the 1980 Edition, Winter 1980 Addenda.

The ISI-3 relief request is applicable to SQN's second 10-year inservice inspection interval that began December 16, 1995. NRC review and approval of ISI-3 is requested prior to May 31, 1999. This date supports SQN's schedule for planning inservice inspections during the Cycle 10 refueling outages.

Enclosure 1 provides the Unit 1 request for relief (1-ISI-3) and Enclosure 2 provides the Unit 2 request for relief (2-ISI-3). The justification for 1-ISI-3 and 2-ISI-3 are identical. The relief requests are unit specific to reflect differences between the numbers in piping supports that are applicable to each unit.

If you have any questions regarding this response, please contact me at extension (423) 843-7071 or J. D. Smith at extension (423) 843-6672.

Sincerely,



Pedro Salas

Licensing and Industry Affairs Manager

Enclosures

cc: See page 2

U.S. Nuclear Regulatory Commission
Page 3
October 21, 1998

cc (Enclosures):

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ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2
SECOND 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. 1-ISI-3

Executive Summary:

This request for relief is associated with the visual examination requirements for integrally welded attachments of supports and restraints to Auxiliary Feedwater System (AFWS) piping with Nominal Pipe Size (NPS) 1 inch and smaller. American Society of Mechanical Engineers (ASME) Section XI Code editions and addenda prior to the 1980 Edition, Winter 1980 Addenda allowed the exemption of all system component connections, piping, and associated valves of 1-inch NPS and smaller except for steam generator tubing. The NPS exemption for the AFWS was removed in the ASME Section XI Code 1980 Edition, Winter 1980 Addenda. In the 1989 Edition, 1991 Addenda (and later addenda) of ASME Section XI Code, Paragraph IWD-1220 included a NPS 1 inch and smaller exemption for the AFWS.

TVA's relief request proposes to utilize the NPS 1 inch and smaller exemption criteria for the SQN AFWS. This approach is an alternative to the current Code of record for SQN (1989 Edition). TVA's proposed alternative is consistent with the 1989 Edition, 1991 Addenda of ASME Section XI Code. Current Code requirements, along with TVA's Inservice Inspection (ISI) Program, require the examination of the ASME Code Class 3 integrally welded attachments of supports and restraints to AFWS components and piping greater than NPS 1 inch. TVA's proposed alternative for utilizing the 1991 Addenda of ASME Section XI Code to exempt examination of integrally welded attachments of supports and restraints to AFWS piping NPS 1 inch or less, provides an acceptable level of quality and safety pursuant to 10CFR 50.55a(a)(3)(i).

Unit : 1

System: Auxiliary Feedwater - System 3

Components: Integrally Welded Attachments of Supports and Restraints to AFWS Piping NPS 1 Inch and Smaller

ASME Code Class: ASME Code Class 3 (Equivalent)

Section XI Edition: 1989 Edition

Code Subparagraph: IWD-1220.1

Code Requirement: Subparagraph IWD-1220.1 of the 1989 Edition of ASME Section XI states; "Integral attachments of supports and restraints to components that are NPS 4 and smaller within the system boundaries of Examination Categories D-A, D-B and D-C of Table IWD-2500-1 shall be exempt from the visual examination VT-3, except for PWR Auxiliary Feedwater Systems."

Code Requirement
From Which Relief
Is Requested:

TVA requests relief from the exemption criteria provided by Subparagraph IWD-1220.1 of the 1989 Edition for visual examination requirements associated with integrally welded attachments of supports and restraints to components that are NPS 1 inch and smaller in SQN's AFWS.

List Of Items
Associated with
The Relief Request:

This relief request applies to the integrally welded attachments of supports and restraints to the AFWS piping, NPS 1 inch and smaller. This piping includes drain lines, vent lines, instrument lines, sampling lines and valve leak off lines, and orifice lines within the Code Class 3 boundaries.

There are 159 supports on NPS 1 inch and smaller AFWS piping. Of these, 10 are integrally welded attachments.

Code Case N-491 is currently used for the examination of supports. Paragraph 1230 of Code Case N-491 requires supports to be examined on components not exempted. Paragraph 1230 of N-491 states that component supports exempt from the examination requirements of Paragraph 2000 are those connected to components and items exempted from examination under IWB-1220, IWC-1220, IWD-1220, and IWE-1220. In addition, portions of supports that are inaccessible by being encased in concrete, buried underground or encapsulated by guard pipe are also exempt from the examination requirements of Paragraph 2000.

Code Case N-509 is currently used for the selection and examination of Class 1, 2, and 3 integrally welded attachments. The Visual Test (VT) 1 visual examination from Table 2500-1, Examination Category

D-A (Code Case N-509), is used in lieu of the VT-3 examination of Table IWD-2500-1, Examination Categories D-A, D-B, and D-C (1989 Edition of ASME Section XI). Paragraph 1.1 of Code Case N-509 permits the exemption criteria of IWB-1220, IWC-1220, and IWD-1220 to be applied to Class 1, 2, and 3 components, respectively, with integrally welded attachments required to be examined in accordance with Table 2500-1.

Basis for Relief:

TVA's proposed request is based on the provisions of later editions of the Code. The proposed alternative adopts provisions from the 1991 Addenda to the 1989 Edition of the Code that exempts visual inspection of integrally welded attachments on Class 3 AFWS piping, NPS 1 inch and smaller. TVA's proposed use of the 1991 Addenda as an alternative to the 1989 Edition of the code, provides an acceptable level of quality and safety.

Alternate Requirement:

TVA proposes to, in lieu of the Code required examination requirements from Paragraph IWD-1220.1 (1989 Edition), apply the exemption criteria of Paragraph IWD-1220 (1989 Edition, 1991 Addenda) for integrally welded attachments on SQN's AFWS piping.

Justification For The Granting Of Relief:

ASME Section XI Code 1989 Edition, 1991 Addenda and later addenda, incorporated a NPS 1 inch and smaller exemption requirement for the AFWS. Subparagraph IWD-1220 of this addenda exempts piping NPS 1 inch and smaller and also exempts vessels, pumps, and valves and their connections in piping NPS 1 inch and smaller.

SQN's Code of record (1989 Edition of ASME Section XI Code, Paragraph IWD-1220.1) does not contain a NPS 1 inch and smaller exemption for the AFWS.

The following table is a comparison of the related Code requirements:

RELATED REQUIREMENTS COMPARISON

1989 Edition	1991 Addenda	COMMENTS
IWD-1220 Items Exempt From Examination	IWD-1220 Components Exempt From Examination	
IWD-1220.1 Integral attachments of supports and restraints to components that are NPS 4 and smaller within the system boundaries of Examination Categories D-A, D-B, and D-C of Table IWD-2500-1 shall be exempt from the visual examination VT-3, except for PWR Auxiliary Feedwater Systems.	The following components or parts of components are exempted from the VT-3 visual examination requirements of IWD-2500: (a) for systems, except Auxiliary Feedwater Systems in pressurized water reactor plants: (1) piping NPS 4 and smaller (2) vessels, pumps, and valves and their connections in piping ¹ NPS 4 and smaller (b) for Auxiliary Feedwater Systems in pressurized water reactor plants: (1) piping NPS 1 and smaller (2) vessels, pumps, and valves and their connections in piping ¹ NPS 1 and smaller	The 1991 Addenda reworded the subparagraph and incorporated the Auxiliary Feedwater Systems NPS 1 inch exemption.
IWD-1220.2 Integral attachments of supports and restraints to components exceeding NPS 4 may be exempted from visual examination VT-3 of Table IWD-2500-1 provided: (a) the components are located in systems (or portions of systems) whose function is not required in support of reactor residual heat removal, containment heat removal, and emergency core cooling; and (b) the components operate at a pressure of 275 psig or less and at a temperature of 200°F or less.	(c) components that operate at a pressure of 275 psig or less and at a temperature of 200°F or less in systems (or portions of systems) whose function is not required in support of reactor residual heat removal, containment heat removal, and emergency core cooling;	The 1991 Addenda reworded the subparagraph and clarified which Class 3 systems are required to meet inservice examination requirements of Section XI.
	(d) integral attachments of supports and restraints that are inaccessible due to being encased in concrete, buried underground, or encapsulated by guard pipe.	1991 Addenda added provisions to exempt integral attachments that are inaccessible for inspection.
	Footnote 1 In piping is defined as having a cumulative inlet and a cumulative outlet pipe cross-sectional area neither of which exceeds the nominal OD cross-sectional area of the designated size.	1991 Addenda added to clarify that vessels with multiple openings are to be exempted based on the cumulative cross section area. Reference Code Inquiry file # IN95-17.

Justification
For The Granting
Of Relief
(Continued):

The design basis for SQN does not include a postulated break for pipe NPS 1 inch or less. It has been shown by analysis that the consequences from this size pipe failure does not affect the plant's ability to achieve and maintain safe shutdown conditions. This analysis is described in Section 3.6.1.2 of the SQN Updated Final Safety Analysis Report (UFSAR), Amendment 14.

TVA's proposed use of Paragraph IWD-1220 of the 1989 Edition, 1991 Addenda of the ASME Section XI Code exemption for the components and piping NPS 1 inch and smaller in SQN's AFWS does not decrease the level of quality or safety. SQN's performance of examinations on the ASME Code Class 3 integrally welded attachments of supports and restraints to AFWS components and piping greater than NPS 1 inch, as required by the ASME Section XI Code, will constitute a representative sample of the system's integrity and will provide reasonable assurance of an acceptable level of quality and safety.

Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that relief be granted.

Implementation Schedule:

This request for relief is applicable to the second inspection interval for SQN Unit 1.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNITS 1 AND 2
SECOND 10-YEAR INTERVAL
REQUEST FOR RELIEF NO. 2-ISI-3

Executive Summary:

This request for relief is associated with the visual examination requirements for integrally welded attachments of supports and restraints to Auxiliary Feedwater System (AFWS) piping with Nominal Pipe Size (NPS) 1 inch and smaller. ASME Section XI Code editions and addenda prior to the 1980 Edition, Winter 1980 Addenda allowed the exemption of all system component connections, piping, and associated valves of 1-inch NPS and smaller except for steam generator tubing. The NPS exemption for the AFWS was removed in the ASME Section XI Code 1980 Edition, Winter 1980 Addenda. In the 1989 Edition, 1991 Addenda (and later addenda) of ASME Section XI Code, Paragraph IWD-1220 included a NPS 1 inch and smaller exemption for the AFWS.

TVA's relief request proposes to utilize the NPS 1 inch and smaller exemption criteria for the SQN AFWS. This approach is an alternative to the current Code of record for SQN (1989 Edition). TVA's proposed alternative is consistent with the 1989 Edition, 1991 Addenda of ASME Section XI Code. Current Code requirements, along with TVA's Inservice Inspection (ISI) Program, require the examination of the ASME Code Class 3 integrally welded attachments of supports and restraints to AFWS components and piping greater than NPS 1 inch. TVA's proposed alternative for utilizing the 1991 Addenda of ASME Section XI Code to exempt examination of integrally welded attachments of supports and restraints to AFWS piping NPS 1 inch or less, provides an acceptable level of quality and safety pursuant to 10CFR 50.55a(a)(3)(i).

Unit:

2

System:

Auxiliary Feedwater - System 3

Components:

Integrally Welded Attachments of Supports and Restraints to AFWS Piping NPS 1 Inch and Smaller

ASME Code Class:

ASME Code Class 3 (Equivalent)

Section XI Edition: 1989 Edition

Code Subparagraph: IWD-1220.1

Code Requirement: Subparagraph IWD-1220.1 of the 1989 Edition of ASME Section XI states; "Integral attachments of supports and restraints to components that are NPS 4 and smaller within the system boundaries of Examination Categories D-A, D-B and D-C of Table IWD-2500-1 shall be exempt from the visual examination VT-3, except for PWR Auxiliary Feedwater Systems."

Code Requirement
From Which Relief
Is Requested:

TVA requests relief from the exemption criteria provided by Subparagraph IWD-1220.1 of the 1989 Edition, for visual examination requirements associated with integrally welded attachments of supports and restraints to components that are NPS 1 inch and smaller in SQN's AFWS.

List Of Items
Associated with
The Relief Request:

This relief request applies to the integrally welded attachments of supports and restraints to the AFWS piping, NPS 1 inch and smaller. This piping includes drain lines, vent lines, instrument lines, sampling lines and valve leak off lines, and orifice lines within the Code Class 3 boundaries.

There are 153 supports on NPS 1 inch and smaller AFWS piping. Of these, there are 10 integrally welded attachments.

Code Case N-491 is currently being used for the examination of supports. Paragraph 1230 of Code Case N-491 requires supports to be examined on components not exempted. Paragraph 1230 of N-491 states that component supports exempt from the examination requirements of Paragraph 2000 are those connected to components and items exempted from examination under IWB-1220, IWC-1220, IWD-1220, and IWE-1220. In addition, portions of supports that are inaccessible by being encased in concrete, buried underground or encapsulated by guard pipe are also exempt from the examination requirements of Paragraph 2000.

Code Case N-509 is currently used for the selection and examination of Class 1, 2, and 3 integrally welded attachments. The VT-1 visual examination from Table 2500-1, Examination Category D-A (Code

Case N-509), is used in lieu of the VT-3 examination of Table IWD-2500-1, Examination Categories D-A, D-B, and D-C (1989 Edition of ASME Section XI). Paragraph 1.1 of Code Case N-509 permits the exemption criteria of IWB-1220, IWC-1220, and IWD-1220 to be applied to Class 1, 2, and 3 components, respectively, with integrally welded attachments required to be examined in accordance with Table 2500-1.

Basis for Relief:

TVA's proposed request is based on the provisions of later editions of the Code. The proposed alternative adopts provisions from the 1991 Addenda to the 1989 Edition of the Code that exempts visual inspection of integrally welded attachments on Class 3 AFWS piping, NPS 1 inch and smaller. TVA's proposed use of the 1991 Addenda as an alternative to the 1989 Edition of the Code, provides an acceptable level of quality and safety.

Alternate Requirement:

TVA proposes to, in lieu of the Code required examination requirements from Paragraph IWD-1220.1 (1989 Edition), apply the exemption criteria of Paragraph IWD-1220 (1989 Edition, 1991 Addenda) for integrally welded attachments on SQN's AFWS piping.

Justification For The Granting Of Relief:

ASME Section XI Code 1989 Edition, 1991 Addenda and later addenda, incorporated a NPS 1 inch and smaller exemption requirement for the AFWS. Subparagraph IWD-1220 of this addenda exempts piping NPS 1 inch and smaller and also exempts vessels, pumps, and valves and their connections in piping NPS 1 inch and smaller.

SQN's Code of record (1989 Edition of ASME Section XI Code, Paragraph IWD-1220.1) does not contain a NPS 1 inch and smaller exemption for the AFWS.

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IWD-1220.2 Integral attachments of supports and restraints to components exceeding NPS 4 may be exempted from visual examination VT-3 of Table IWD-2500-1 provided: (a) the components are located in systems (or portions of systems) whose function is not required in support of reactor residual heat removal, containment heat removal, and emergency core cooling; and (b) the components operate at a pressure of 275 psig or less and at a temperature of 200°F or less.	(c) components that operate at a pressure of 275 psig or less and at a temperature of 200°F or less in systems (or portions of systems) whose function is not required in support of reactor residual heat removal, containment heat removal, and emergency core cooling;	The 1991 Addenda reworded the subparagraph and clarified which Class 3 systems are required to meet inservice examination requirements of Section XI.
	(d) integral attachments of supports and restraints that are inaccessible due to being encased in concrete, buried underground, or encapsulated by guard pipe	1991 Addenda added provisions to exempt integral attachments that are inaccessible for inspection.
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Justification For
The Granting Of
Relief
(Continued):

The design basis for SQN does not include a postulated break for pipe NPS 1 inch or less. It has been shown by analysis that the consequences from this size pipe failure does not affect the plant's ability to achieve and maintain safe shutdown conditions. This analysis is described in Section 3.6.1.2 of the SQN UFSAR, Amendment 14.

TVA's proposed use of Paragraph IWD-1220 of the 1989 Edition, 1991 Addenda of the ASME Section XI Code exemption for the components and piping NPS 1 inch and smaller in SQN's AFWS does not decrease the level of quality or safety. SQN's performance of examinations on the ASME Code Class 3 integrally welded attachments of supports and restraints to AFWS components and piping greater than NPS 1 inch, as required by the ASME Section XI Code, will constitute a representative sample of the system's integrity and will provide reasonable assurance of an acceptable level of quality and safety.

Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that relief be granted.

Implementation Schedule:

This request for relief is applicable to the second inspection interval for SQN Unit 2.