



**Tennessee Valley Authority**, Post Office Box 2000, Soddy-Daisy, Tennessee 37384-2000

December 21, 2006

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

Gentlemen:

In the Matter )  
Tennessee Valley Authority )

Docket No. 50-328

**SEQUOYAH NUCLEAR PLANT (SQN) - UNIT 2 - PRESSURIZER WELD OVERLAY  
EXAMINATION RESULTS TO RELIEF REQUEST G-RR-1**

- References:
1. Letter from Tennessee Valley Authority to Nuclear Regulatory Commission "Sequoyah Nuclear Plant (SQN) Units 1 and 2 and Watts Bar Nuclear Plant (WBN) Unit 1 - American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI - Preemptive Weld Overlays on Alloy 600 Pressurizer Nozzle-To-Pipe Welds and Associated Alternative Repair Techniques - Generic Request for Relief G-RR-1," dated June 16, 2006
  2. Letter from Tennessee Valley Authority to Nuclear Regulatory Commission "Sequoyah Nuclear Plant (SQN) Units 1 and 2 and Watts Bar Nuclear Plant (WBN) Unit 1 - Preemptive Weld Overlays on Alloy 600 Pressurizer Nozzle-To-Pipe Welds and Associated Alternative Repair Techniques - Generic Request for Relief G-RR-1 - TVA Response to NRC'S Request for Additional Information (RAI) (MD2381, MD2382, MD2383)," dated October 20, 2006
  3. Letter from Tennessee Valley Authority to Nuclear Regulatory Commission "Sequoyah Nuclear Plant (SQN) Units 1 and 2 - Preemptive Weld Overlays (PWOL) on Alloy 600 Pressurizer Nozzle-To-Pipe Welds and Associated Alternative Repair Techniques - Generic Request for Relief G-RR-1 - Supplemental Information (TAC NOS. MD2381 & MD2382)," dated November 21, 2006
  4. Letter from Tennessee Valley Authority to Nuclear Regulatory Commission "Sequoyah Nuclear Plant (SQN) Units 1 and 2 - Preemptive Weld Overlays (PWOL) on Alloy 600 Pressurizer Nozzle-To-Pipe Welds and Associated Alternative Repair Techniques - Generic Request for Relief G-RR-1 - Supplement 2 (TAC NOS. MD2381 & MD2382)," dated November 30, 2006

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Reference 1 proposed an alternative (i.e., Relief Request G-RR-1), in accordance with 10 CFR 50.55a(a)(3)(i), to the repair/replacement requirement of the American Society of Mechanical Engineering Boiler and Pressure Vessel Code (ASME Code), Section XI, 2001 Edition, through 2003 Addenda, IWA-4000, for the structural weld overlays on the SQN Unit 2 pressurizer spray, relief, safety and surge nozzle safe ends. References 2, 3 and 4 provide additional information in the support of the proposed alternative.

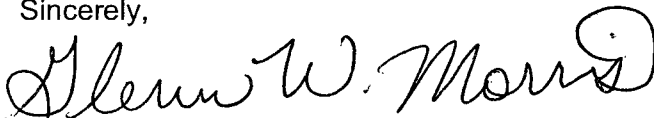
In References 2 and 3, TVA committed to provide the details of the ultrasonic examination results of the structural weld overlays on the SQN Unit 2 pressurizer spray, relief, safety and surge nozzle safe ends to the NRC within 14 days of the completion of the final ultrasonic examination. After receipt of the Reference 2 submittal, the NRC granted verbal approval of Relief Request G-RR-1 for SQN as stated in Reference 3.

In accordance with Reference 2 and 3, TVA is providing the details of the ultrasonic examination (UT) results of the structural weld overlay on the SQN Unit 2 pressurizer spray, relief, safety, and surge nozzles. The final weld overlay UT conducted during SQN Unit 2 Cycle 14 refueling outage was completed on December 17, 2006.

The enclosure provides the detailed results of the initial UT inspections performed on the aforementioned pressurizer nozzles following the weld overlay.

There are no commitments contained in this submittal. If you have any questions about this change, please contact me at (423) 843-7170.

Sincerely,



Glenn W. Morris  
Manager, Site Licensing and  
Industry Affairs

Enclosure

cc (Enclosure):

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## Enclosure

The attached table provides the detailed results of the initial ultrasonic examination (UT) inspections performed on the pressurizer nozzles following the weld overlay. The following is a summary of these results:

Nozzle	Number of Flaw Indications	Flaw Indications Assessment Summary
SPRAY RCF-23A-OL (RCW-24-SE)	No Recordable Indications	N/A
SAFETY RCF-36A-OL (RCW-26-SE)	1 Laminar  1 Axial	1) Laminar – Spot Indication at base-metal/overlay interface.  2) Axial – Spot Indication at base-metal/overlay interface. No through-wall dimension.
SAFETY RCF-42A-OL (RCW-25-SE)	No Recordable Indications	N/A
SAFETY RCF-45A-OL (RCW-28-SE)	No Recordable Indications	N/A
RELIEF RCF-24H-OL (RCW-27-SE)	No Recordable Indications	N/A
SURGE RC-35C-OL (RCW-29-SE)	No Recordable Indications	N/A

As indicated above, the safety nozzle (RCF-36A-OL) was the only nozzle where indications were recorded. The laminar and the axial were spot indications located at the base-metal/overlay interface. These reflectors have no through-wall dimension and do not create an un-inspectable volume of the required PSI/ISI area. There were no repairs required as a result of these examinations.

TABLE

INDICATIONS FOR SQN UNIT 2 PRESSURIZER WELD OVERLAYS (AFTER OVERLAYS DEPOSITED - NO WELD REPAIRS)

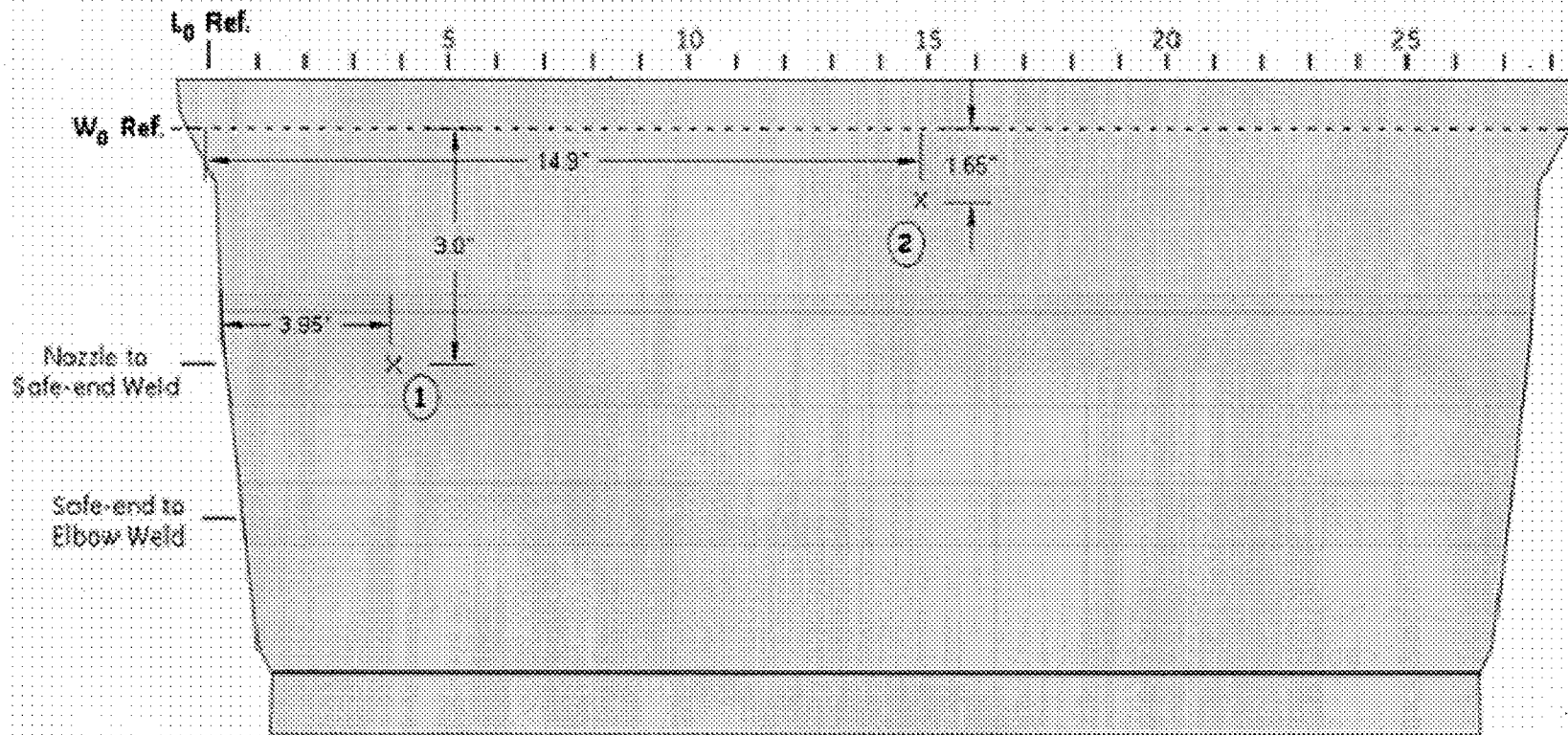
NOZZLE ID (Note 2)	INDICATION NUMBER	INDICATION TYPE	UT MEASURED DEPTH FROM OUTSIDE SURFACE TO CENTER OF FLAW IND.	UT MEASURED LENGTH OF FLAW INDICATION MEASURED ON OD	UT MEASURED POSITION OF FLAW INDICATION FROM REFERENCE MARK (As marked on sketches)	UT MEASURED CIRCUMFERENTIAL POSITION OF FLAW INDICATION IN INCHES FROM 0 REFERENCE POINT (Note 1)	UT MEASURED HEIGHT OF FLAW INDICATION	AVERAGE THICKNESS OF OVERLAY IN LOCATION OF FLAW INDICATION (Note 3)	UT MEASURED WIDTH OF LAMINAR FLAW INDICATION	INDICATION DISPOSITION						FLAW INDICATION INCLUDED IN REPAIR EXCAVATION AREA	REMARKS
										TABLE IWB-3514-3 (Square inches)	<10% REDUCTION IN COVERAGE  PER APPENDIX Q Q-4100 (2)  (Note 4)	IWB-3514-2 INSERVICE EXAMINATION FOR ASSUMED FLAWS	IWB-3514-2 PRESERVICE EXAMINATION	FLAW PROPAGATION IN OUTER 25% OF UNDERLYING WELD/BASE METAL PER APPENDIX Q Q-4200(a)	IWB-3640 EVALUATION FOR ASSUMED FLAW PER APPENDIX Q Q-4100(a)		
SPRAY RCF-23A-OL (RCW-24-SE)	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	
SAFETY RCF-36A-OL (RCW-26-SE)	1	Laminar	.55"	None (Spot)	3.0"	3.95"	None	.55"	None (Spot)	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	(Spot) No Dimension
	2	Axial	.6"	.6" (Note 5)	1.65"	14.9"	None	.65"	N/A	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	(Spot) No Through-wall Dimension
SAFETY RCF-42A-OL (RCW-25-SE)	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	
SAFETY RCF-45A-OL (RCW-28-SE)	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	
RELIEF RCF-24H-OL (RCW-27-SE)	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	
SURGE RC-35C-OL (RCW-29-SE)	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	No Indications	N/A	N/A	N/A	N/A	No Indications Found In Outer 25%	N/A	N/A	
Notes: 1. Zero reference point for circumferential dimensions are top dead center of weld for Relief and Safety. 2. The nominal diameters of the component are as follows: Safeties/Relief: 6.0"; Spray: 4.0" and Surge: 14.0". 3. Measured from the weld overlay OD surface perpendicular to the pipe axis to the weld overlay/base metal interface using the nearest cross section profile. 4. Reduction in coverage shows the total reduction for both the nozzle to safe end and safe end to pipe welds. Reduction in coverage for axial and circumferential direction is calculated separately per the requirements of EPRI MRP-139 paragraph 5.1.5 5. PDI-UT-8, Rev F, is not qualified to length size axial flaws (Ref. Paragraph 1.7). This value is a best effort estimate.																	

## ATTACHMENT

### Safety (RCF-36A-OL) Nozzle – Indication Map

#### Sequoyah, Unit 2 - Cycle 14

#### Pressurizer Weld RCF-36A-OL UT Exam Results



① Laminar Indication - Spot at Overlay/Base Metal Interface

② Axial Indication - Spot at Overlay/Base Metal Interface. No tip signals observed.