TENNESSEE VALLEY AUTHORITY	EXAMINATION SUMMARY AND RESOLUTION SHEET	REPORT NUMBER: R-P0486

PROJECT: *WBN* UNIT: *2* CYCLE *00*				COMPONENT ID: *SIF-D196-06*	
EXAMINATION METHOD				SYSTEM: SIS	ISI DWG NO: *ISI-2063-W-09* REV. 0
MT ☐	PT ☐	UT ☑	VT ☐	CONFIGURATION:	CATEGORY
PROCEDURE: *N-UT-84*		REV Ø	TC: N/A	*VLV* TO *TEE*	*B-J*

EXAMINER:	EXAMINER:	EXAMINER:	EXAMINER:
Jason Nissen	N	N	N
LEVEL: II	A	A	A

Total coverage calculated to be approximately 75 %

A single sided phased array ultrasonic examination was performed to meet the requirements of ASME Section XI preservice inspection.

A phased array 1.5 MHz, 16 element probe with a 25°-70° shear wave sector scan display was utilized to perform the examination.

A phased array 1.5 MHz, dual 15 element probe with a 40°-70° refracted longitudinal wave sector scan display was also utilized to perform the examination.

No recordable indications observed.

75% examination volume achieved due to valve.

RESOLUTION BY:	REVIEWED BY:	ANII:
Jason Nissen		DATE: 7/2/09
LEVEL II DATE: 6-16-09	LEVEL: III DATE: 6-18-09	Page: 1 OF 6

ACCESS: FORMS DATABASE R-10/04/01

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: R-P0486

PROJECT: WBN UNIT 2 CYCLE: Ø	CALIBRATION DATE: 6-15-09
PROC.: N-UT-84 REV: Ø TC: N/A	CALIBRATION BLOCK NO.: WB 83 TEMP: 73.1°F
INSTR. MFG: GEIT DUE DATE: 8-6-09	SIMULATOR BLOCK NO: N/A
MODEL/TYPE: PHASOR XS M & TE ID: E41821	THERMOMTER S/N: 562776 DUE DATE: 12/22/09
SOFTWARE REVISION: 1.2	COUPLANT Ultragel II BATCH: 06225 F
EXAM TYPE: SHEAR☐ LONG☐ RL☒	EXAM: ISI☐ PSI☒ LIMITATIONS: Y☒ N☐
CABLE TYPE: 2D LENGTH: 2M #CNT: Ø	

ANGLE VERIFICATION

BLOCK TYPE: ROMPAS	S/N: 790390		NOMINAL ANGLE		ACTUAL ANGLE	
REFLECTOR			LOW: 40° HIGH: 70°		LOW: 40° HIGH: 70°	
SCAN DIRECTION	NOTCH DEPTH	SDH. DEPTH	REF. SENS/AMPL	ANGLE / METAL PATH	EXAM SENS.	
AXIAL	2.00	N/A	19.4 / 80	47° / 2.906	26.0	
CIRCUMFERENTAIL	N/A	N/A	N/A	N/A	N/A	

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 26.0

PROBE DATA		SCAN DATA	
		ELECTRONIC	*SCAN PATTERN*
PROBE MFG: GEIT	MODEL: 115-000-481	TYPE: Sector	ANGLE START: 40°
S/N: 01TCT6	APERTURE SIZE: .748	FOCAL POINT: 2.00	ANGLE STOP: 70°
ELEMENTS: 2 (3 x 5)	PITCH: 4 x .150	WAVE TYPE: Longitudinal	ANGLE STEP: 1°
FREQ: 1.5	ELEVATION: 2 x .472	RL FOCAL LAW: D07F200	
CONFIGURATION: ARRAY	SHAPE: RECTANGLE	LEG: 1.3	MATERIAL THICKNESS: 2.00

WEDGE DATA		APERTURE	
PROBE CHECK: ☒ PRE-EXAM ☒ POST EXAM			
WEDGE MFG: GEIT	VELOCITY: .0920	NUMBER OF STEPS: 1	FIRST ELEMENT: 1
MODEL: 360-151-028	X OFFSET: .591	APERTURE SIZE: 10	APERTURE STEP: 1
WEDGE ANGLE: 18°	Z OFFSET: .472	DISPLAY DATA / ANGLE CORRECTION	☒ON ☐OFF
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END	UT DATA	

PART DATA		BASE	PULSER	RECIEVER	NRM/TCG
MATERIAL: SS	VELOCITY: .2283	DELAY: 0.0	VOLT: 150	FREQ: BB 0.6-6.5	CYC GAIN CNTL 0.0
CALIBRATION TIMES			WIDTH: 330	ASCAN RECT: Fullwave	
INITIAL TIME: 1330	FINAL TIME: 1600	MATERIAL: Custom	PRF VALUE: Fullwave		

VERF. TIMES	1455	1506	N/A	N/A

LINEARITY CHECK

VERTICAL											
SIGNAL 1	100	90	80	70	60	50	40	30	20	10	
SIGNAL 2	50	45	40	35	30	25	20	15	10	5	

ATTENUATOR								
GAIN	SET	-6 dB	-12 dB	SET	+12	SET	+6
AMP	80	32-48	16-24	20	64-96	40	64-96
		40	20		80		80

COMMENTS:	WELDS/ITEMS EXAMINED:
	SIF - D196-06

EXAMINER:	EXAMINER:	REVIEWER:	ANII:
	N/A		DATE: 7/2/09
LEVEL: II	LEVEL:	LEVEL: III DATE: 6-18-09	PG. 2 OF 6

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: R-P0486

PROJECT: WBN UNIT 2 CYCLE: Ø	CALIBRATION DATE: 6-15-09
PROC.: N-UT-84 REV: Ø TC: N/A	CALIBRATION BLOCK NO.: WB 83 TEMP: 73.1 °F
INSTR. MFG: GEIT DUE DATE: 8-6-09	SIMULATOR BLOCK NO: N/A
MODEL/TYPE: PHASOR XS M & TE ID: E41821	THERMOMTER S/N: 562776 DUE DATE: 12/22/09
SOFTWARE REVISION: 1.2	COUPLANT Ultragel II BATCH: 06225 F
EXAM TYPE: SHEAR☒ LONG☐ RL☐	EXAM: ISI☐ PSI☒ LIMITATIONS: Y☒ N☐
CABLE TYPE: 1D LENGTH: 2M #CNT: Ø	

ANGLE VERIFICATION

BLOCK TYPE: Rompas	S/N: 790390		NOMINAL ANGLE		ACTUAL ANGLE
REFLECTOR			LOW: 25° HIGH: 70°		LOW: 25° HIGH: 70°
SCAN DIRECTION	NOTCH DEPTH	SDH. DEPTH	REF. SENS/AMPL	ANGLE / METAL PATH	EXAM SENS.
AXIAL	2.00	N/A	4.8 / 80%	45°/2.898	24.0
CIRCUMFERENTAIL	2.00	N/A	4.8 / 80%	45°/2.898	28.0

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 24.0

PROBE DATA		SCAN DATA	
		ELECTRONIC	*SCAN PATTERN*
PROBE MFG: GEIT	MODEL: 115-000-441	TYPE: Sector	ANGLE START: 25°
S/N: 01RLFK	APERTURE SIZE: .630	FOCAL POINT: unfocused	ANGLE STOP: 70°
ELEMENTS: 16	PITCH: .040	WAVE TYPE: shear	ANGLE STEP: 1°
FREQ: 1.5	ELEVATION: .472	RL FOCAL LAW: N/A	
CONFIGURATION: ARRAY	SHAPE: RECTANGLE	LEG: 1.0	MATERIAL THICKNESS: 2.00

WEDGE DATA		APERTURE	
PROBE CHECK: ☒ PRE-EXAM ☒ POST EXAM			
WEDGE MFG: GEIT	VELOCITY: .0920	NUMBER OF STEPS: 1	FIRST ELEMENT: 1
MODEL: 360-141-162	X OFFSET: .472	APERTURE SIZE: 16	APERTURE STEP: 1
WEDGE ANGLE: 38°	Z OFFSET: .512	DISPLAY DATA / ANGLE CORRECTION	☒ON ~~☒OFF~~ DK 6-18-09
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END		

PART DATA		UT DATA			
		BASE	*PULSER*	*RECIEVER*	*NRM/TCG*
MATERIAL: STAINLESS STEEL	VELOCITY: .1220	DELAY: 0.0	VOLT: 150	FREQ: BB 0.6-6.5	CYC GAIN CNTL 0.0
CALIBRATION TIMES			WIDTH: 330	ASCAN RECT: Fullwave	
INITIAL TIME: 1310	FINAL TIME: 1604	MATERIAL: STAINLESS STEEL	PRF VALUE: AH		
VERF. TIMES 1426	1447 N/A N/A				

LINEARITY CHECK

VERTICAL											
SIGNAL 1	100	90	80	70	60	50	40	30	20	10	
SIGNAL 2	50	45	40	35	30	25	20	15	10	5	

ATTENUATOR								
GAIN	SET	-6 dB	-12 dB	SET	+12	SET	+6	
AMP	80	32-48	16-24	20	64-96	40	64-96	
		40	20		80		80	

COMMENTS:	WELDS/ITEMS EXAMINED:
	SIF-D196-06

EXAMINER:	EXAMINER:	REVIEWER:	ANII:
	N		DATE: 7/2/09
LEVEL: II	LEVEL: A	LEVEL: III DATE: 6-18-09	PG. 3 OF 6

TENNESSEE VALLEY AUTHORITY	MANUAL ULTRASONIC PIPING EXAMINATION DATA SHEET	REPORT NUMBER R-P0486

PROJECT: WBN UNIT/CYCLE 2/00
SYSTEM: SIS
WELD I.D.: SIF-D196-06
CONFIG.: VLV TO TEE
FLOW →

PROCEDURE: N-UT-84 REV: Ø TC: N/A
Wo REFERENCE: Weld 4
Lo REFERENCE: TDC

EXAMINATION DATE 6-15-09
START TIME: 1426 END TIME: 1506
EXAM SURFACE ☐ ID ☒ OD
MATERIAL TYPE: ☐ CS ☒ SS ☐ CSCL ☐ CCSS
SURFACE TEMP.: 77.6 PYRO NO. 562776

EXAMINATION ANGLE	25°/70° DEG.	40°/70° RL DEG.
AXIAL SCAN SENSITIVITY	35°/70° 24.9 dB	26.0 dB
CIRC. SCAN SENSITIVITY	25°/70° 28.0 dB	N/A dB

IND NO.	L (in) FROM REF. L1	L Max	L2	AT MAX AMP W MAX	MP MAX	D MAX	MAX AMP % DAC	EXAM NO. 3-14	NOM. ANG.	NRI	INDICATION INFORMATION: TYPE, DAMPING, ETC.
								4	40°/70° RL	☒	
								4	35°/70°	☒	
								5	25°/70°	☒	
								6	25°/70°	☒	
										☐	
										☐	

REMARKS/LIMITATIONS Examination scans performed maintaining 5-20% I.D. Roll. Exam was one sided due to valve.

EXAMINER: [signature] LEVEL: II
EXAMINER: N/A LEVEL: N/A
REVIEWED BY: [signature] LEVEL: III DATE: 6-18-09

ANII: [signature]
DATE: 7/2/09

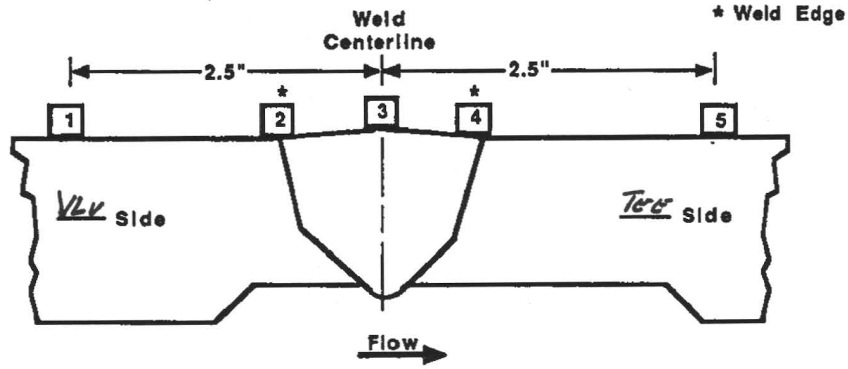
TVA	WALL THICKNESS PROFILE SHEET	REPORT NO: R-P0486

PROJECT: WATTS BAR NUCLEAR
UNIT: 2

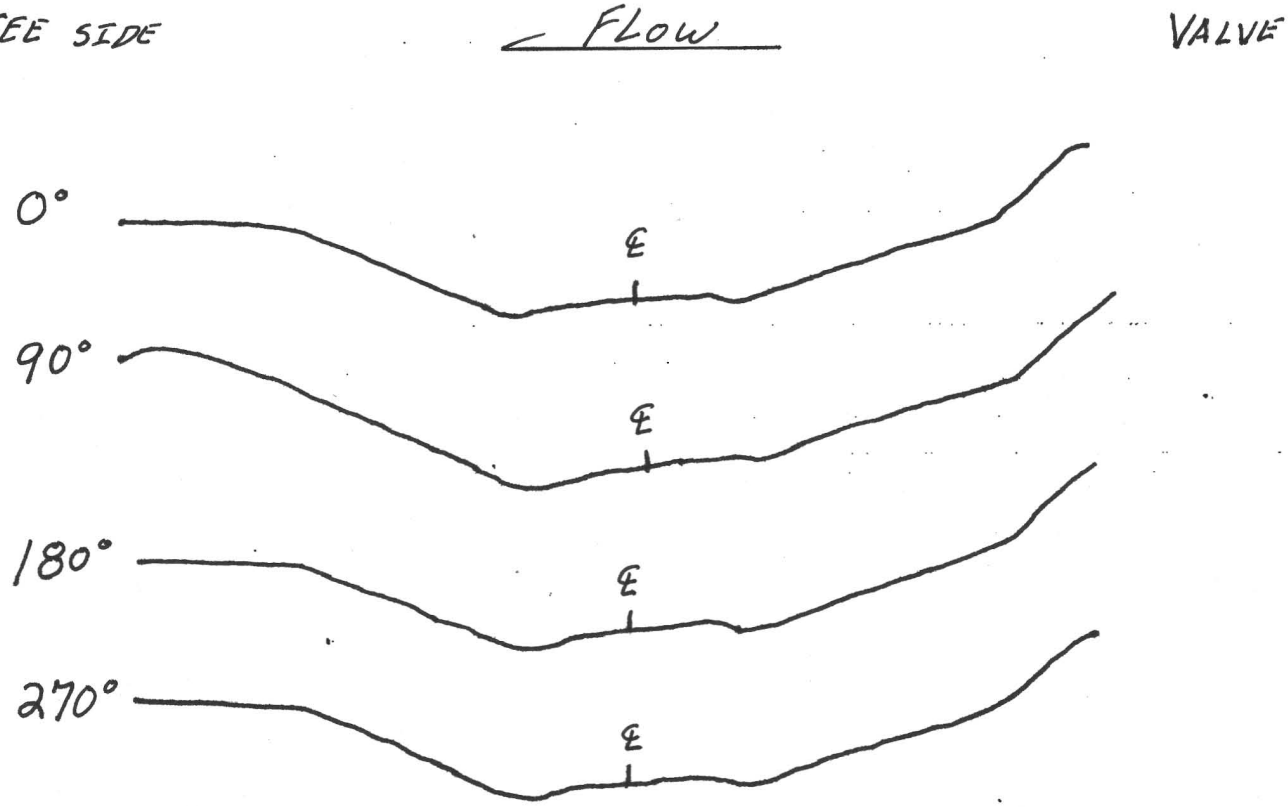
WELD NO: SIF-D196-06
SYSTEM: SIS

Record Thickness Measurements As Indicated, Including Weld Width, Edge-To-Edge At 0°

Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	1.492	1.492	1.526	1.536
3	1.365	1.255	1.258	1.318
4	1.317	1.371	1.310	1.238
5	1.557	1.788	1.588	1.661



CROWN HEIGHT: 0.0625
DIAMETER: 10.0
CROWN WIDTH: 1.0
WELD LENGTH: 35.250



EXAMINER: [signature]
LEVEL: II
DATE: 06-10-09

REVIEWED BY: [signature]
LEVEL: III
DATE: 6-18-09

ANII: [signature]
DATE: 7/12/09

PAGE 5 OF 6

TVA 19668 (NP-5-89)

1-108-999-44

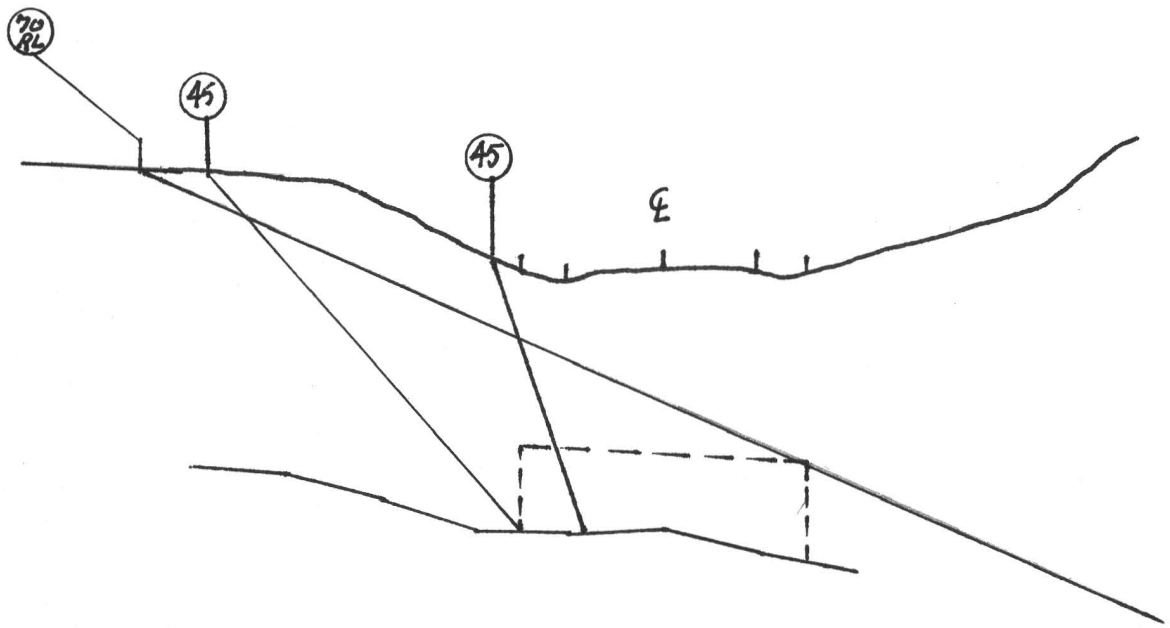
TVA Office of Nuclear Power	PROJECT: WATTS BAR NUCLEAR SYSTEM: SIS UNIT: 2 WELD NO: SIF-D196-06	REPORT NO.: R-P0486

FLOW

TEE SIDE

VALVE SIDE

0°



Plot shown represents primary angle of 45° phased array angles used 25°-70°, RL Angles used 40°-70°

BY: Jose Alejandro LEVEL: II DATE: 06-10-09 PAGE 6 OF 6

R-P0486

TVA Procedure
N-GP-31

Attachment 3

SIF-D196-06

Item 1	Required examination Volume in sq. in. **(width x height)**	0.5	1.5	0.75	sq. in.
Item 2	Number of **scan directions**			4	directions
Item 3	Total Scan **volume** in sq. in.			3	sq. in.
Item 4	Total **length** of weld			35.25	inches
Item 5	Total required **exam volume** in cubic inches			105.75	cu. in.
Item 6	**Exam volume achieved** (sq. in.) in direction 1 X **length of weld achieved**	0	0	0	cu. In.
Item 7	**Exam volume achieved** (sq. in.) in direction 2 X **length of weld achieved**	0.75	35.25	26.4375	cu. In.
Item 8	**Exam volume achieved** (sq. in.) in direction 3 X **length of weld achieved**	0.75	35.25	26.4375	cu. In.
Item 9	**Exam volume achieved** (sq. in.) in direction 4 X **length of weld achieved**	0.75	35.25	26.4375	cu. In.
Item 10	Determined the **achivied exam volume** add 6, 7, 8 & 9			79.3125	cu. In.
Item 11	Exam **volume percentage** item 10/item 5 x 100			75	%

JPN
6-16-09

Limited due to valve.
one sided

INFORMATION ONLY