TENNESSEE VALLEY AUTHORITY	EXAMINATION SUMMARY AND RESOLUTION SHEET	REPORT NUMBER: R.P0304

PROJECT: *WBN* UNIT: *2*	CYCLE *00*		COMPONENT ID: *SIF-D197-03*		
EXAMINATION METHOD			SYSTEM: SIS	ISI DWG NO: *ISI-2063-W-06* REV 0	
MT ☐	PT ☐	UT ☑	VT ☐	CONFIGURATION:	CATEGORY
PROCEDURE: *N-UT-84*	REV Ø	TC: N/A		*VLV* TO *P*	*B-J*
EXAMINER: Jason Nisson	EXAMINER: N	EXAMINER: N	EXAMINER: N		
LEVEL: II	LEVEL: A	LEVEL: A	LEVEL: 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.

No recordable indications observed.

75% examination volume achieved due to valve.

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.

RESOLUTION BY:	REVIEWED BY:	ANII:
Jason Nisson	Darlene Dealoy	DATE: 5/13/09
LEVEL II DATE: 4-28-09	LEVEL: III DATE: 4-30-09	Page: 1 OF 7

ACCESS: FORMS DATABASE R-10/04/01

DD-5-26-09

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: R-P0304

PROJECT: WBN UNIT 2 CYCLE: 0	CALIBRATION DATE: 4-28-09
PROC.: N-UT-84 REV: 0 TC: N/A	CALIBRATION BLOCK NO.: WB 83 TEMP: 71.7°F
INSTR. MFG: ~~KRAUTKRAMER~~ GEIT DUE DATE: 8-06-09	SIMULATOR BLOCK NO: N/A
MODEL/TYPE: PHASOR XS M & TE ID: E41821	THERMOMTER S/N: 558271 DUE DATE: 06/24/09
SOFTWARE REVISION: 1.2	COUPLANT Ultragel II BATCH: 06225F
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	1.500	N/A	5.2 / 80%	45° / 2.172	24.0 dB
CIRCUMFERENTAIL	1.500	N/A	5.2 / 80%	45° / 2.172	30.0 dB

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 24.0

PROBE DATA

PROBE MFG: GEIT	MODEL: 115-000-441
S/N: 01RLFK	APERTURE SIZE: .630
ELEMENTS: 16	PITCH: .040
FREQ: 1.5	ELEVATION: .472
CONFIGURATION: ARRAY	SHAPE: RECTANGLE

SCAN DATA

ELECTRONIC	SCAN PATTERN
TYPE: SECTOR	ANGLE START: 25°
FOCAL POINT: unfocused	ANGLE STOP: 70°
WAVE TYPE: Shear	ANGLE STEP: 1.0
RL FOCAL LAW: N/A	
LEG: 1.0	MATERIAL THICKNESS: 1.500"

WEDGE DATA

PROBE CHECK: ☒ PRE-EXAM	☒ POST EXAM
WEDGE MFG: GEIT	VELOCITY: .0920
MODEL: 360-141-162	X OFFSET: .472
WEDGE ANGLE: 38°	Z OFFSET: .512
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END

APERTURE

NUMBER OF STEPS: 1	FIRST ELEMENT: 1
APERTURE SIZE: 16	APERTURE STEP: 1

DISPLAY DATA — ANGLE CORRECTION ☒ ON ☐ OFF

PART DATA

MATERIAL: Stainless Steel	VELOCITY: .1220

UT DATA

BASE	PULSER	RECIEVER	NRM/TCG
DELAY: 0.0	VOLT: 150	FREQ: BB 0.6-6.5	CYC GAIN CNTL 0.0
	WIDTH: 330	ASCAN RECT: Fullwave	
MATERIAL: Stainless Steel	PRF VALUE: AH		

CALIBRATION TIMES

INITIAL TIME: 0815	FINAL TIME: 1505

VERF. TIMES 1255 N/A 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-D197-03

EXAMINER:	EXAMINER: Eddie Reed	REVIEWER:	ANII:
[signature]	[signature]	[signature]	DATE: 5/13/09
LEVEL: II	LEVEL: I	LEVEL: III DATE: 4-30-09	PG. 2 OF 6 7

D052609

TENNESSEE VALLEY AUTHORITY	PHASED ARRAY ULTRASONIC CALIBRATION DATA SHEET	REPORT NUMBER: RP0304

PROJECT: WBN UNIT 2 CYCLE: Ø	CALIBRATION DATE: 5-21-08
PROC.: N-UT-84 REV: Ø TC: N/A	CALIBRATION BLOCK NO.: WB 83 TEMP: 73.6F
INSTR. MFG: GEIT DUE DATE: 8-6-09	SIMULATOR BLOCK NO: N/A
MODEL/TYPE: PHASOR XS M & TE ID: E41821	THERMOMTER S/N: 562773 DUE DATE: 6-20-09
SOFTWARE REVISION: 1.2	COUPLANT ultragel II BATCH: 06225F
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	1.500	N/A	22.0 dB / 80%	50° / 2.363	28.0 dB
CIRCUMFERENTAIL	N/A	N/A	N/A	N/A	N/A

INSTRUMENT SETTINGS

GAIN TOGGLE:	dBD: Ø	dBA: 28.0

PROBE DATA

PROBE MFG: GEIT	MODEL: 115-000-481		
S/N: 01TCT6	APERTURE SIZE: .748		
ELEMENTS: 2 (3 x 5)	PITCH: 4 x .150		
FREQ: 1.5	ELEVATION: 2 x .472		
CONFIGURATION: ARRAY	SHAPE: RECTANGLE		

WEDGE DATA

PROBE CHECK: ☒ PRE-EXAM	☒ POST EXAM		
WEDGE MFG: GEIT	VELOCITY: .0920		
MODEL: 360-151-028	X OFFSET: .591		
WEDGE ANGLE: 18°	Z OFFSET: .472		
CONTOUR: FLAT	ELEMENT 1 POSITION: LOW END		

PART DATA

MATERIAL: Custom	VELOCITY: .2283

CALIBRATION TIMES

INITIAL TIME: 0840	FINAL TIME: 1140			
VERF. TIMES	1013	1104	N/A	N/A

SCAN DATA

ELECTRONIC		SCAN PATTERN	
TYPE: Sector		ANGLE START: 40°	
FOCAL POINT: 1.000		ANGLE STOP: 70°	
WAVE TYPE: Longitudinal		ANGLE STEP: 1°	
RL FOCAL LAW: D07F100			
LEG: 1.2	MATERIAL THICKNESS: 1.000		

APERTURE

NUMBER OF STEPS: 1		FIRST ELEMENT: 1	
APERTURE SIZE: 10		APERTURE STEP: 1	
DISPLAY DATA	ANGLE CORRECTION	☒ON	☐OFF

UT DATA

BASE	PULSER	RECIEVER	NRM/TCG
DELAY: 0.0	VOLT: 150	FREQ: 0.6-6.5	CYC GAIN CNTL 0.0
	WIDTH: 330	ASCAN RECT: Fullwave	
MATERIAL: Custom	PRF VALUE: AH		

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
			46	20		80		80

COMMENTS:	WELDS/ITEMS EXAMINED:
	SIF-D199-05
	SIF-D199-06
	SIF-D197-03

EXAMINER:	EXAMINER:	REVIEWER:	ANII:
	N/A		DATE: 6/1/09
LEVEL: II	LEVEL:	LEVEL: II DATE: 5-26-09	PG. 3 OF 7

TENNESSEE VALLEY AUTHORITY	MANUAL ULTRASONIC PIPING EXAMINATION DATA SHEET	REPORT NUMBER R.P0304

PROJECT: WBN UNIT/CYCLE 2/00
SYSTEM: SIS
WELD I.D.: SIF-D197-03
CONFIG.: VLV TO P
FLOW

PROCEDURE: N-UT-84 REV: 0 TC: N/A
Wo REFERENCE: WELD ℄
Lo REFERENCE: TDC

EXAMINATION DATE 4-28-09
START TIME: 1420 END TIME: 1439
EXAM SURFACE ☐ID ☒OD
MATERIAL TYPE: ☐CS ☒SS ☐CSCL ☐CCSS
SURFACE TEMP.: 78.6 PYRO NO. 558271

EXAMINATION ANGLE	25°/70° DEG.	~~40°/70° RL~~ DEG. NA
AXIAL SCAN SENSITIVITY	35°/70° 24.0dB	26.0 dB
CIRC. SCAN SENSITIVITY	25°/70° 30.0dB	N/A dB

5-26-09

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.
							NA	~~4~~	~~40°/70° RL~~	☑	
								4	35°/70°	☑	
								5	25°/70°	☑	
								6	25°/70°	☑	
										☐	
										☐	

REMARKS/LIMITATIONS Examination scans performed maintaing 5-20% ID. Roll. scanned across the weld / Exam was One sided due to valve.

EXAMINER: [signature] LEVEL: II
EXAMINER: [signature] LEVEL: I
REVIEWED BY: [signature] LEVEL: III DATE: 4-30-09

ANII: [signature]
DATE: 5/13/09
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ACCESS: FORMS DATABASE 10/18/01

5-26-09

TENNESSEE VALLEY AUTHORITY	MANUAL ULTRASONIC PIPING EXAMINATION DATA SHEET	REPORT NUMBER R.P0304

PROJECT: WBN UNIT/CYCLE 2/00
SYSTEM: SIS
WELD I.D.: SIF-D197-03
CONFIG.: VLV TO P
FLOW →

EXAMINATION DATE 5-21-09
START TIME: 1106 END TIME: 1112
EXAM SURFACE ☐ID ☒OD
MATERIAL TYPE: ☐CS ☒SS ☐CSCL ☐CCSS
SURFACE TEMP.: 81.2 PYRO NO. 562773

PROCEDURE: N-UT-84 REV: Ø TC: N/A
Wo REFERENCE: WELD ℄
Lo REFERENCE: TDC

EXAMINATION ANGLE	40/70 RL DEG.	N/A DEG.
AXIAL SCAN SENSITIVITY	28.0 dB	N/A dB
CIRC. SCAN SENSITIVITY	N/A dB	N/A dB

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

REMARKS/LIMITATIONS Examination scan performed maintaining 5-20% ID Roll /Exam was one sided due to Valve

EXAMINER: [signature] LEVEL: II
EXAMINER: N/A LEVEL: N/A
REVIEWED BY: [signature] LEVEL: III DATE: 5-6-09

ANII: [signature]
DATE: 6/1/09
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ACCESS: FORMS DATABASE 10/18/01

TVA	WALL THICKNESS PROFILE SHEET	REPORT NO: R.P0304

PROJECT: WATTS BAR NUCLEAR

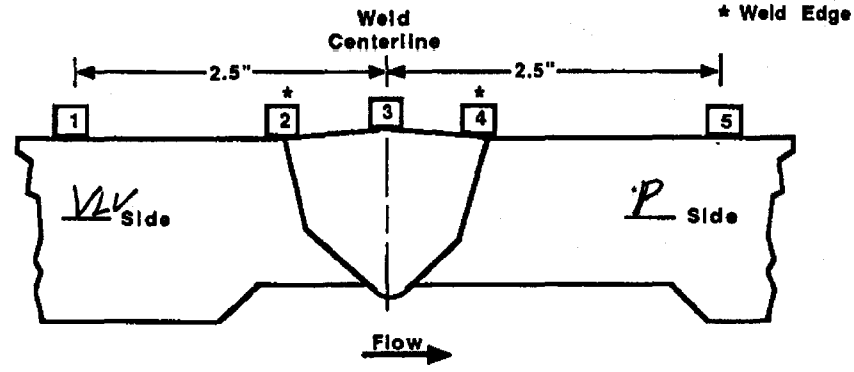
UNIT: 2

WELD NO: ~~SIS~~ SIF-D197-03

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	1.446	1.472	1.456	1.479
3	1.291	1.228	1.221	1.226
4	.917	.939	.950	.935
5	.987	.996	.985	.979

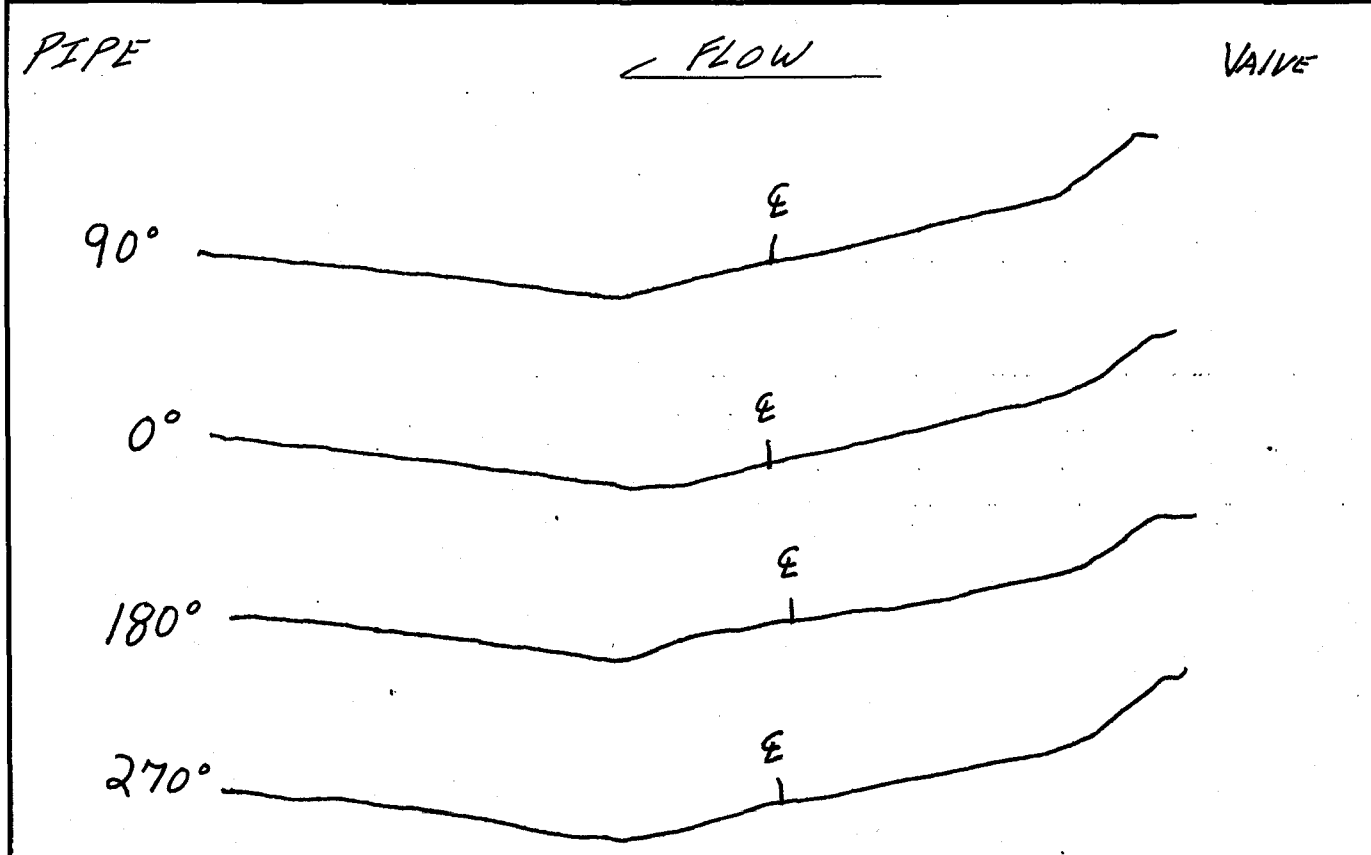


CROWN HEIGHT: Flush

DIAMETER: 10.0

CROWN WIDTH: 1.250

WELD LENGTH: 35.750



EXAMINER: [signature]

LEVEL: II

DATE: 04-28-09

REVIEWED BY: [signature]

LEVEL: III

DATE: 4-30-09

ANII: [signature]

DATE: 5/13/09

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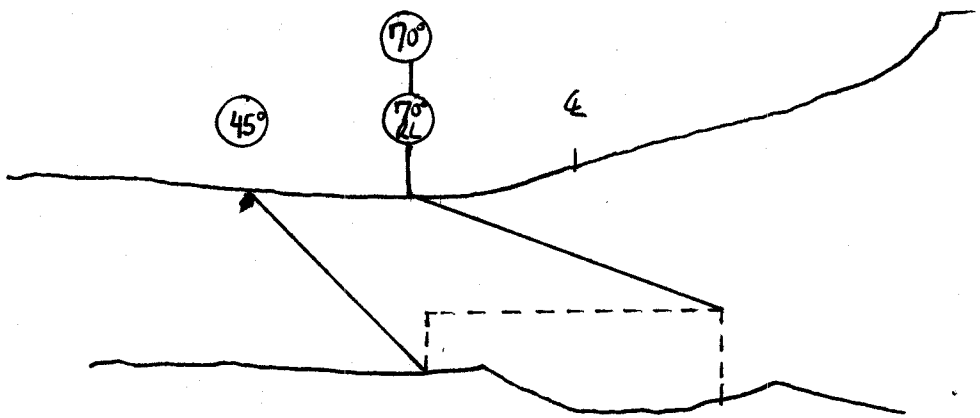
TVA 19668 (NP-5-89)

DS 5-26-09

1-108-999-44

TVA Office of Nuclear Power	PROJECT: WBN SYSTEM: SIS UNIT: 2 WELD NO: ~~SIS~~ SIF - D197-03	REPORT NO.: R P0304

PIPE ← FLOW VALVE



Note - phased array angles used 25° - 70° shear / 40° - 70° RL

BY: [signature] LEVEL: II DATE: 4/28/09 PAGE 67 OF 67

R. PO 304
SIS-D197-03

TVA Procedure
N-GP-31

Attachment 3

		Unprotected Field	Protected Field		
Item 1	Required examination Volume in sq. in. **(width x height)**	1.55	0.48	0.744	sq. in.
Item 2	Number of **scan directions**			4	directions
Item 3	Total Scan **volume** in sq. in.			2.976	sq. in.
Item 4	Total **length** of weld			35.75	inches
Item 5	Total required **exam volume** in cubic inches			106.392	cu. in.
Item 6	**Exam volume acheived** (sq. in.) in direction 1 X **length of weld achieved**	0.744	35.75	26.598	cu. In.
Item 7	**Exam volume acheived** (sq. in.) in direction 2 X **length of weld achieved**	0.744	35.75	26.598	cu. In.
Item 8	**Exam volume acheived** (sq. in.) in direction 3 X **length of weld achieved**	0.744	35.75	26.598	cu. In.
Item 9	**Exam volume acheived** (sq. in.) in direction 4 X **length of weld achieved**	0	0	0	cu. In.
Item 10	Determined the **acheived exam volume** add 6, 7, 8 & 9			79.794	cu. In.
Item 11	Exam **volume percentage** item 10/item 5 x 100			75	%

Joan Mason
4/29/09

INFORMATION ONLY

One sided exam limitation due to valve