

Indiana Michigan Power One Cook Place Bridgman, MI 49106 IndianaMichiganPower.com

April 8, 2011

AEP-NRC-2011-23 10 CFR 50.55a

Docket No.:

50-315

50-316

U. S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2
Relief Requests for Limited Coverage Examinations Performed In
The Third 10-Year Inspection Interval

The third 10-year interval for the inservice inspection program for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2 concluded on April 9, 2010. During this interval, the components identified in Attachments 1 through 10 received less than the required examination coverage. Accordingly, pursuant to 10 CFR 50.55a(g)(5)(iii), Indiana Michigan Power Company (I&M) requests relief on the basis that the required examination coverage is impractical due to physical obstructions and limitations imposed by design, geometry, and materials of construction of the subject components.

Attachments 1 through 10 contain the relief requests and the basis for these requests.

There are no new or revised commitments in this letter. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager at (269) 466-2649.

Sincerely,

Joel P. Gebbie Site Vice President

ful P-KUM

MCS/jen

c:

J. T. King – MPSC, w/o attachment
S. M. Krawec - AEP Ft. Wayne, w/o attachment
MDNRE – WHMD/RPS, w/o attachment
NRC Resident Inspector
M. A. Satorius – NRC Region III
P. S. Tam – NRC Washington DC
W. Vallance - DLEG/BCCFS/BD

A047

#### Attachments:

- Relief Request ISIR-33 Examination Category B-A, Pressure Retaining Welds in Reactor Vessels, and Examination Category B-D, Full Penetration Welds of Nozzles in Vessels – Inspection Program B (Reactor Vessel only)
- 2. Relief Request ISIR-34 Examination Category B-B, Pressure Retaining Welds in Vessels Other Than Reactor Vessels
- 3. Relief Request ISIR-35 Examination Category B-D, Full Penetration Welds of Nozzles in Vessels Inspection Program B
- 4. Relief Request ISIR-36 Examination Category B-F, Pressure Retaining Dissimilar Metal Welds
- 5. Relief Request ISIR-37 Examination Category B-J Pressure Retaining Welds in Piping
- 6. Relief Request ISIR-38, Examination Category C-A, Pressure Retaining Welds in Pressure Vessels
- 7. Relief Request ISIR-39, Examination Category C-B, Pressure Retaining Nozzle Welds in Vessels
- 8. Relief Request ISIR-40, Examination Category C-C, Integral Attachments for Vessels, Piping, Pumps, and Valves
- 9. Relief Request ISIR-41, Examination Category C-F-1, Pressure Retaining Welds in Austenitic Stainless Steel or High Alloy Piping
- 10. Relief Request ISIR-42, Examination Category R-A, Risk Informed Piping Examinations

# ATTACHMENT 1 to AEP-NRC-2011-23

# **RELIEF REQUEST ISIR-33**

# EXAMINATION CATEGORY B-A PRESSURE RETAINING WELDS IN REACTOR VESSEL

And

EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B
(Reactor Vessel only)

#### **RELIEF REQUEST ISIR-33**

## Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

# 1. ASME Code Components Affected

ASME Code Class:

Code Class 1

Examination Category:

B-A, Pressure Retaining Welds in Reactor Vessel

B-D, Full Penetration Welds of Nozzles in Vessels - Inspection

Program B (Reactor Vessel only)

Item Numbers:

B1.11, Shell Welds - Circumferential B1.12, Shell Welds - Longitudinal B1.21, Head Welds - Circumferential B1.22. Head Welds - Meridional B1.30, Shell to Flange Weld

B3.90, Reactor Vessel - Nozzle to Vessel Welds

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Categories B-A and B-D require volumetric examination of 100 percent of the weld volume as defined in ASME Section XI Table IWB-2500-1 and shown in Figures IWB-2500-1, IWB-2500-2, IWB- 2500-3, and IWB-2500-7. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the weld provided greater than 90 percent of the required volume has been examined.

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds. Due to the design of the reactor vessel, geometric configuration and permanent obstructions limit the volumetric examination coverage of the subject welds.

During the second 10-year reactor pressure vessel examination, the best available technology was utilized in performing the automated ultrasonic examination. The examinations were performed with equipment, procedures, and personnel qualified in accordance with the requirements of ASME Section XI, Appendix VIII, 1995 Edition thru 1996 Addenda as modified by the Performance Demonstration Initiative (PDI) program.

Several interferences and vessel geometries prevent full volumetric examination coverage, including the 58 permanent incore instrument nozzles penetrating the bottom head and six core support lugs permanently attached to the vessel interior limiting the access to the lower head welds. The close proximity of the inlet nozzle and outlet nozzle boss limits the ultrasonic scanning of the upper shell longitudinal seam welds. The flange to vessel configuration, specimen slots, and keyways also hinder access. These noted obstructions prevent achieving the essentially 100 percent volumetric examination coverage required by code. Also, Nozzle to Vessel geometry, vessel saddle effect, and adjacent outlet nozzle protrusion limited access for achieving 100 percent volumetric examination coverage for the Nozzle to Vessel welds.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical given the limitations caused by the geometric configuration and permanent obstructions. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for CNP Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-RPV-A	Shell to Flange	B1.30	84.44	The completed examination was limited to 84.4% coverage due to the configuration. The limitations are due to flange configuration, specimen slots, and keyways at 0, 90, 180, and 270 degrees. No recordable indications detected.
1-RPV-D	Lower Shell to Bottom Head	B1.11	82.60	The completed examination was limited to 82.60% coverage due to the configuration. The limitations are due to six core support lugs. No recordable indications detected.
1-RPV-E	Dollar Plate	B1.21	38.4	The completed examination was limited to 38.4% coverage due to the configuration. The limitation is due to the bottom mounted instrument penetrations. No recordable indications detected.
1-RPV-VC1	Lower Shell Longitudinal at 60 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-RPV-VC2	Lower Shell Longitudinal at 180 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-RPV-VC3	Lower Shell Longitudinal at 300 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-LHM-01	Lower Head Meridional at 30 Degrees	B1.22	79.0	The completed examination was limited to 79.0% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-LHM-02	Lower Head Meridional at 90 Degrees	B1.22	73.26	The completed examination was limited to 73.26% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-LHM-05	Lower Head Meridional at 270 Degrees	B1.22	88.1	The completed examination was limited to 88.1% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-LHM-06	Lower Head Meridional at 330 Degrees	B1.22	74.5	The completed examination was limited to 74.5% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-N3B	Outlet Nozzle to Shell at 22 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion. Two subsurface indications were detected and evaluated as acceptable to IWB-3512-1.
1-N4B	Outlet Nozzle to Shell at 158 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion. One subsurface indication was detected and evaluated as acceptable to IWB-3512-1.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-N1B	Outlet Nozzle to Shell at 202 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect and adjacent outlet nozzle protrusion. Six subsurface indications were detected and evaluated as acceptable to IWB-3512-1.
1-N2B	Outlet Nozzle to Shell at 338 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect and adjacent outlet nozzle protrusion. Eight subsurface indications were detected and evaluated as acceptable to IWB-3512-1.

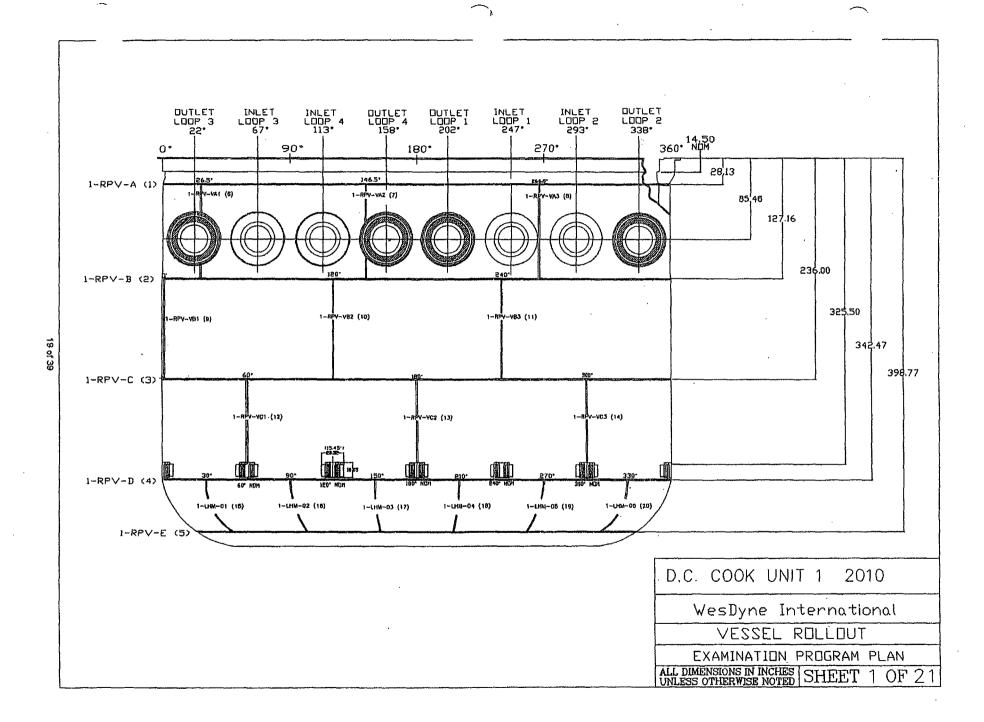
## **RELIEF REQUEST ISIR-33**

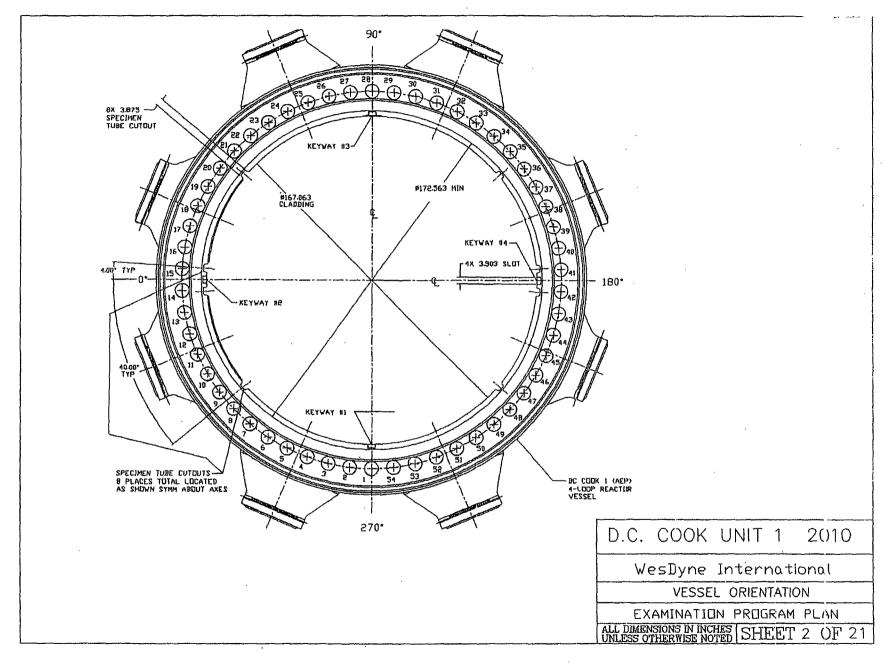
# EXAMINATION CATEGORY B-A PRESSURE RETAINING WELDS IN REACTOR VESSEL

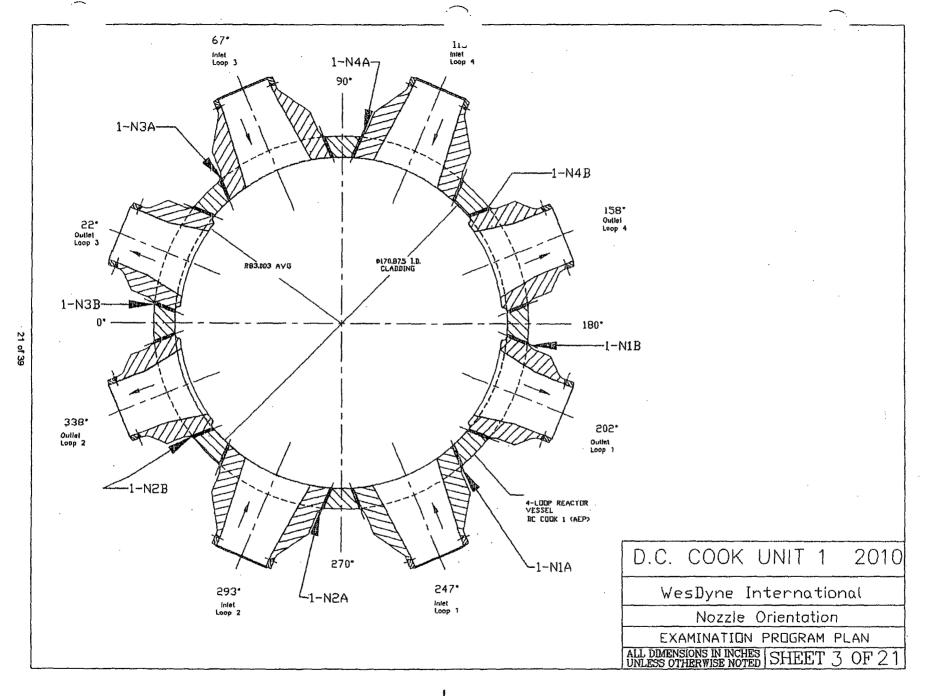
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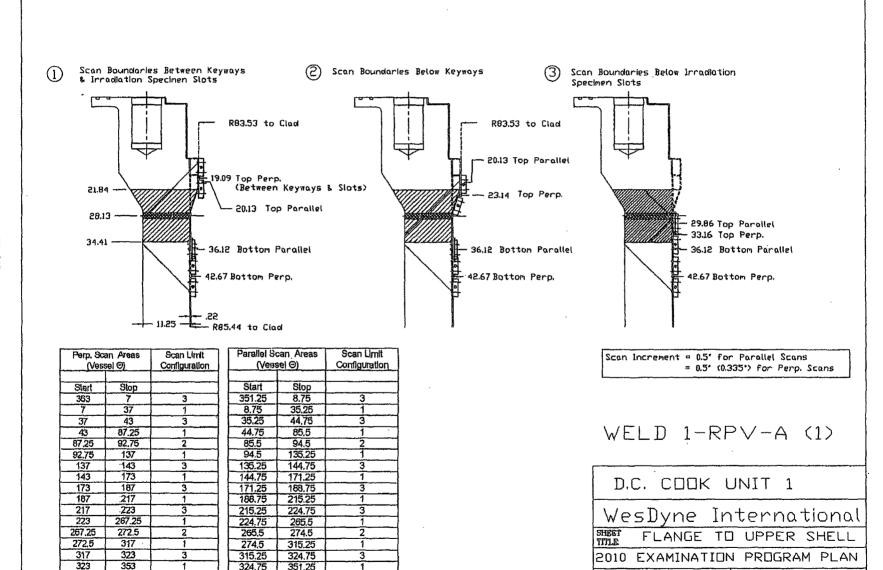
EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B
(Reactor Vessel only)

**SUPPORTING DOCUMENTATION** 









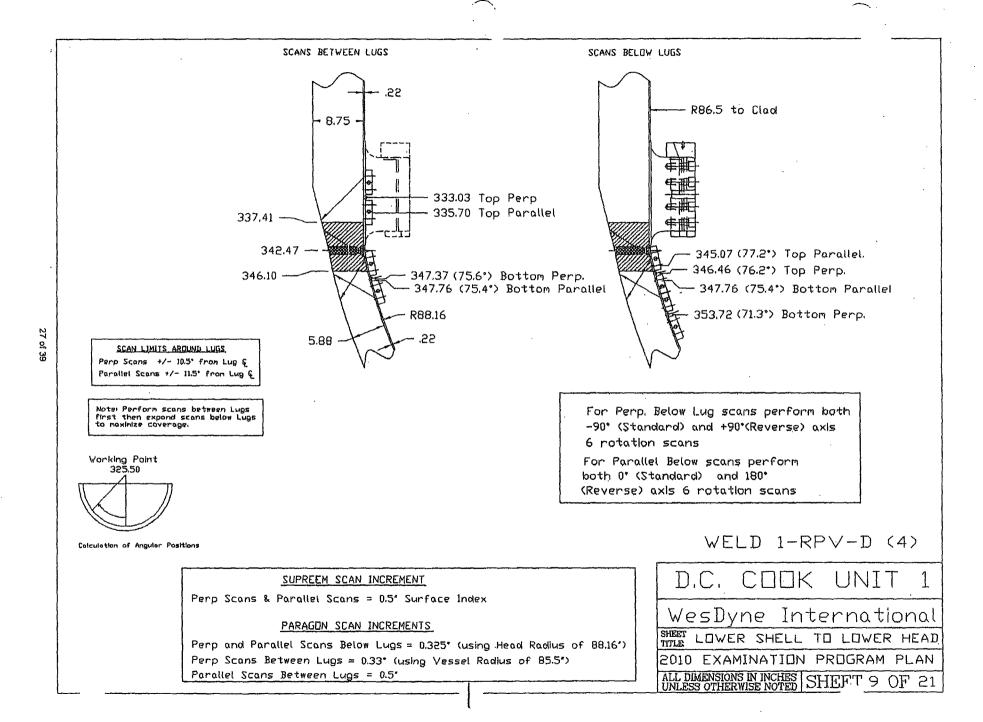
ALL DIMENSIONS IN INCHES SHEET 4 OF 21 UNLESS OTHERWISE NOTED SHEET 4

324,75

351,25

RE/	ACTOR VESS	EL WELD	RESULTS SU	JMMARY
PLANT NAME	DC Cod	ok Un	nit	1
WELD NO.	1-RPV-A	COMPONE	NT Sho	ell to Flange Weld
LIMITATIONS:	NO 🗀	YES X		6 Complete ge Breakdown Sheet
RESULTS	3	NC	). OF INDICATIO	NS <u>0</u>
NI	X	ST	ATUS	
RI	-			
EXAM	I DOCUMENTATIO	<u>INI</u>	DICATION DOCU	MENTATION
x PARAG	ON ANALYSIS LO	G	ASSESSM	ENT SHEET
X PARAGO	ON ACQUISITION	LOG	PARAGON	HARD COPY
X SCAN P	'RINT OUT		OTHER (S	pecify)
X COVER	AGE BREAKDOW	N		
Comments: Limited due to Flange	Configuration, Specime	en Slots, and Keyw	ays at 0, 90, 180 and	i 270 degrees.
	•	An	alyst Jam?	Date: 3/05/10

		R.V. (	COVERA	GE EST	TE	BREAK	OOWNS			
PLANT	NT NAME DC Cook			WesDyne						
WELD I	NO.	1-RPV-A				International				
СОМРО	ONENT S	shell to Fl	ange Wel	d						
			BEA	M ANGLE	BREAK	DOWN				
	BEAM DIRECTION	45 S	hear	45 L S	Single	45 L	. Dual			
		VOL	UME	VOLI	UME	VOLUME				
	Perpendicular	UP	DN	UP	DN	UP	DN			
		99.87	45.74	94.61	72.78	90.73	87.14			
	Parallel	CW	CCW	CW	CCW	CW	CCW			
		89.01	89.03	89.03	85.11	85.11	85.11			
	AVERAGE	80	.91	85.	38	87	.02			
Comme	ents: Limited due	to Flange	Configurati	on,Specime	n Slots, and	d Keyways	at 0, 90, 18	30 and 270	degrees.	
Combine	ed Perp. 81.8	81 ^	Com	bined Para.	Ω7	07	Combined	Δverage	84.44	
	Analyst	/1	72	MIIGU FAIA.			Compined	_Date	3/25/10	



PLANT NAME	DC Coo	ok Unit	1
WELD NO.	1-RPV-D	COMPONENT	Lower Shell to Bottom Head
LIMITATIONS:	NO 🗌	YES X	82.60 % Complete See Coverage Breakdown Sheet
RESULTS	;	NO. OF	FINDICATIONS 0
NI	X	STATU	S
RI			·
EXAM	I DOCUMENTATION	N INDICA	TION DOCUMENTATION
X PARAGO	ON ANALYSIS LOG	; . <u> </u>	ASSESSMENT SHEET
X PARAGO	ON ACQUISITION L	LOG [	PARAGON HARD COPY
X SCAN P	RINT OUT		OTHER (Specify)
X COVER/	AGE BREAKDOWN	ı	
Comments:	Limited due to 6 co	ore support lugs	

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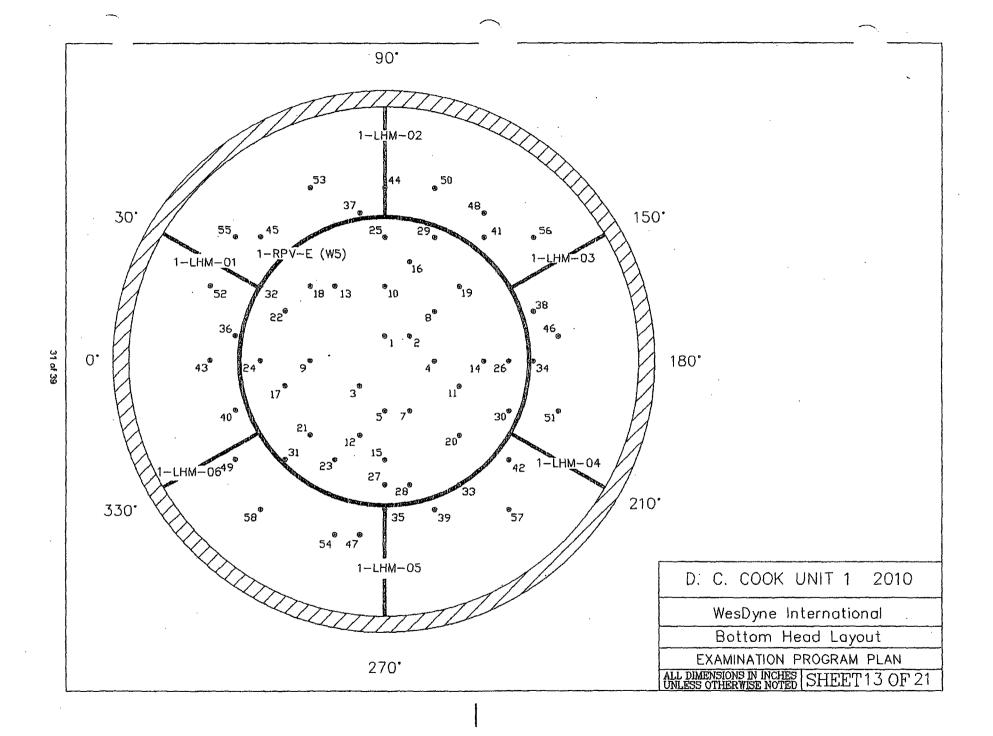
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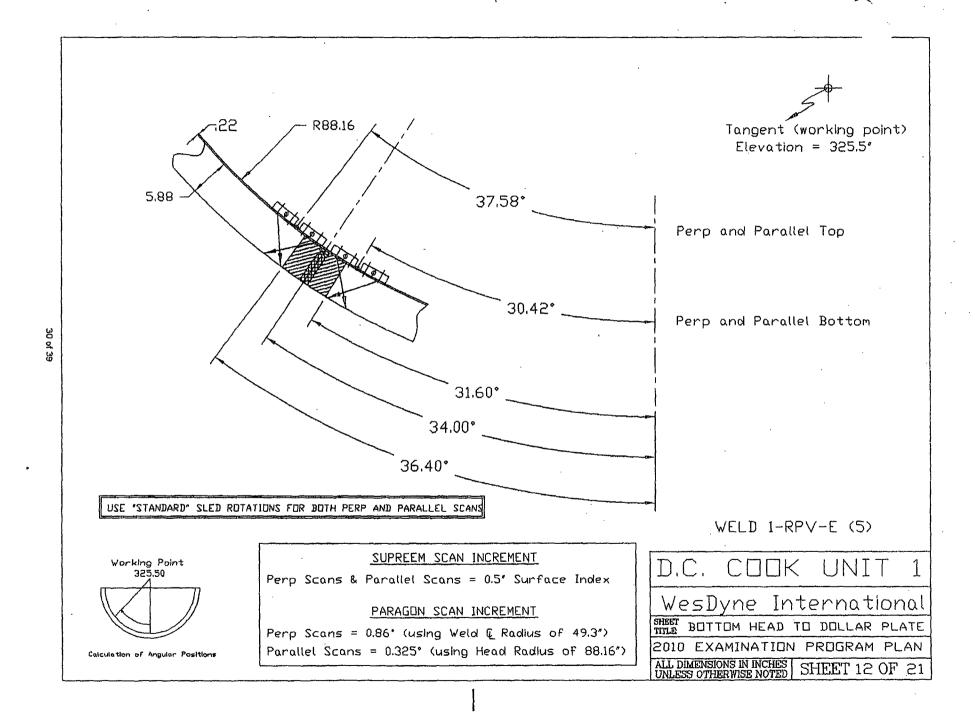
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		R.V. (	COVERA	GE EST	TE	BREAK	owns		•
PLANT	NAME	DC Cook			W	esDy	/ne	1	
WELD I	NO	1-RF	PV-D	•		Inte	ıl		
СОМРО	ONENT Lowe	er Shell to	Bottom I	lead					
			BEA	M ANGLE	BREAK	DOWN	,		
	BEAM DIRECTION	<del></del>	Shear UME	45 L S VOL		<del></del>			
	Perpendicular	UP	DN	UP	DN	UP	DN		
		99.86	65.71	81.20	64.99	89.48	68.03		T
	Parallel	CW	CCW	CW	CCW	CW	CCW		
		86.98	86.98	86.98	86.98	86.98	86.98		
	AVERAGE	84	.88	80.	04	82	.87		
Comme	ents: Limited due	to 6 core s	support lugs	3					
Combine	ed Perp. 78.2		Com	bined Para.	86.	98	Combined	Average Date	82.60 3/2-5/10
			,				•	<del> </del>	, (

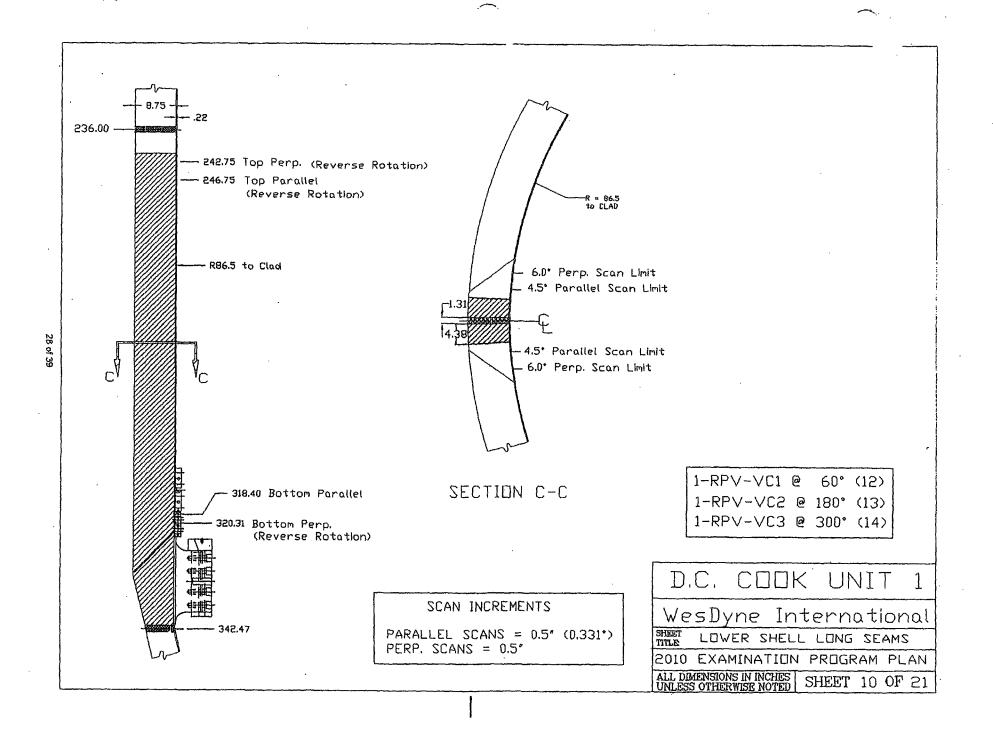




RE	ACTOR VESS	EL WELD RES	SULTS SUMMARY
PLANT NAME	DC Coo	ok Unit	1
WELD NO.	1-RPV-E	COMPONENT	Bottom Head Dollar Weld
LIMITATIONS:	NO 🗌	YES X	38.40 % Complete See Coverage Breakdown Sheet
RESULT	·S	NO. OF	INDICATIONS 0
NI	X	STATU	JS
RI			
EXAI	M DOCUMENTATIO	N INDICA	ATION DOCUMENTATION
X PARAC	GON ANALYSIS LOC	э [	ASSESSMENT SHEET
X PARAC	GON ACQUISITION I	LOG [	PARAGON HARD COPY
X SCAN	PRINT OUT		OTHER (Specify)
\(\times\)COVEF	RAGE BREAKDOWN	٧	
Comments:	Limited due to bot	ttom head instrumer	ntation tubing
		Analyst	Date: 3/5/10

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		R.V.	COVERA	GE EST	. \TE E	BREAK	OOWNS			
PLANT	NAME	DC Cook				W	esDy	/ne		
WELD I	NO	1-RF	PV-E	·····		Inte	rnati	iona	al	
COMPO	ONENT Bot	tom Head	d Dollar W	'eld						
			BEA	M ANGLE	BREAK	DOWN				
-	BEAM DIRECTION	·	hear UME		45 L Single VOLUME		45 L Dual VOLUME			-
	Perpendicular	UP 39.50	DN 39.50	UP 39.50	DN 39.50	UP 39.50	DN 39.50			-
	Parallel	CW 37.30	CCW 37.30	CW 37.30	CCW 37.30	CW 37.30	CCW 37.30			-
	AVERAGE	38	.40	38.	40	38	.40			]
Comme	ents: <u>Limited due</u>	to bottom	head instru	mentation to	ubing	·				· · · · · · · · · · · · · · · · · · ·
Combine	ed Perp. 39.5 Analyst		Com	bined Para.	37.	30	Combined	l Average Date	38.4 3/25/L	)



REA	CTOR VESSE	L WELD RES	SULTS SUMMARY
PLANT NAME	DC Cook	Unit	1 ·
WELD NO.	1-RPV-VC1	COMPONENT	Lower Shell Long Seams
LIMITATIONS:	NO 🗌	YES X	78.29 % Complete See Coverage Breakdown Sheet
RESULTS		NO. OF	INDICATIONS
NI ·	X	STATU	s
RI			
EXAM	DOCUMENTATION	INDICA	TION DOCUMENTATION
X PARAGO	ON ANALYSIS LOG		ASSESSMENT SHEET
X PARAGO	ON ACQUISITION LC	og 🗆	PARAGON HARD COPY
X SCAN PI	RINT OUT		OTHER (Specify)
X COVERA	AGE BREAKDOWN		
Comments:	Limited due to core s	support lug	

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PI AN	PLANT NAME DC Cook										
<u> </u> /\    \	I IVAIVIL					WesDyne					
WELD	ELD NO. 1-RPV-VC1					International					
COMF	ONENT Lov	ver Shell	Long Sea	ms			*.				
,		-	BEA	M ANGLE	BREAK	DOWN	·····	<del></del>		<del></del>	
	BEAM DIRECTION	45 8	Shear	45 L 3	45 L Single		. Dual				1 2500 \$ 1500
			VOLUME		VOLUME		.UME				
	Perpendicular	UP	DN	UP	DN	UP	DN				
		79.18	79.18	79.18	79.18	79.18	79.18		T		
	Parallel	CW	CCW	CW	CCW	CW	CCW				
		77.39	77.39	77.39	77.39	77.39	77.39				The state of the s
	AVERAGE	78	.29	78	.29	78	.29				Lance Control
Comm	ents: Limited due	to core su	pport lug								
Combin	ed Perp. 79. Analyst	/	Com Muss	bined Para.	77.	39 .	Combined	Average Date	3/25/	1.29	Chapter and the state of the state of

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PLANT NAME	DC Cook	Unit	1
WELD NO.	1-RPV-VC2	_COMPONENT	Lower Shell Long Seams
LIMITATIONS:	NO 🗌	YES X	78.29 % Complete See Coverage Breakdown Sheet
RESULTS	S .	NO. OF	INDICATIONS
NI	X	STATUS	S
RI			
EXAM	I DOCUMENTATION	I INDICA	TION DOCUMENTATION
XPARAG	ON ANALYSIS LOG		_ASSESSMENT SHEET
x PARAG	ON ACQUISITION L	og 🗆	PARAGON HARD COPY
X SCAN F	PRINT OUT		OTHER (Specify)
X COVER	AGE BREAKDOWN		
X COVER	AGE BREAKDOWN  Limited due to core	support lug	
		Analyst	1 My 2 Date: 3/25

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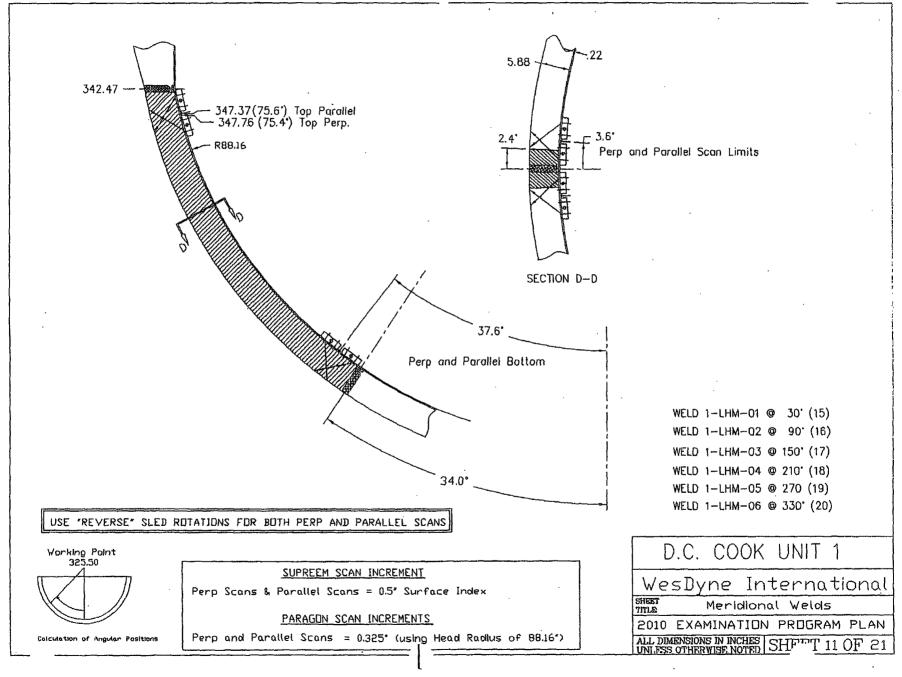
	WesDyn	
WELD NO. 1-RPV-VC2	Internation	
COMPONENT Lower Shell Long Seams	• •	
BEAM ANGLE BREA	K DOWN	
BEAM DIRECTION 45 Shear 45 L Single	45 L Dual	
VOLUME VOLUME	VOLUME	
Perpendicular UP DN UP DN	UP DN	
79.18 79.18 79.18 79.18	3 79.18 79.18	
Parallel CW CCW CW CCW	cw ccw	
77.39 77.39 77.39 77.39		
AVERAGE 78.29 78.29	78.29	,

•

PLANT NAME	DC Cook	Unit	1
VELD NO.	1-RPV-VC3	COMPONENT	Lower Shell Long Seams
IMITATIONS:	NO 🗌	YES X	78.29 % Complete See Coverage Breakdown Sheet
RESULT	S .	NO. OF	INDICATIONS
NI	X	STATU	s
.RI			
EXA	M DOCUMENTATION	INDICA	TION DOCUMENTATION
XPARAC	GON ANALYSIS LOG		ASSESSMENT SHEET
X PARAC	ON ACQUISITION LO	G [	□PARAGON HARD COPY
XSCAN	PRINT OUT		OTHER (Specify)
X COVEF	RAGE BREAKDOWN	·	·
Comments:	Limited due to core s	support lug	

		R.V.	COVERA	GE EST	TE	3REAKI	DOWNS			
PLANT NAN	ИЕ <u> </u>	DC (	Cook	,		W	esDy	/ne		
WELD NO.	***************************************	1-RP	V-VC3			Inte	rnati	iona	ı İ	
COMPONE	NT Lov	ver Shell	Long Sea	ms						
			BEA	M ANGLE	BREAK	DOWN		, , , , , , , , , , , , , , , , , , ,		
BEA	AM DIRECTION	<del></del>	Shear .UME	45 L S		<del></del>	Dual UME			
Pe	erpendicular	UP 79.18	DN 79.18	UP 79.18	DN 79.18	UP 79.18	DN 79.18			
	Parallel	CW	CCW	CW	CCW	CW	CCW			
	AVERAGE	77.39 78	77.39	77.39	77.39	77.39	77.39 3.29			*************
Comments:	Limited due	to core su	pport lug							
Combined Pe	rp. 79.		Com Jann 2	bined Para.	77.	.39	Combined	i Average Date	3/257	8.29





RE	EACTOR VESS	SEL WELD RES	SULTS SUMMAR	. <b>Y</b>
PLANT NAME	DC Cc	ook Unit	. 1	
WELD NO.	1-LHM-01	COMPONENT	Bottom Head M	/leridionals
LIMITATIONS:	NO 🗌	YES X	79.00 % Complete See Coverage Breakdow	
RESULT	rs	NO. OF	- INDICATIONS	0
NI	X	STATU	is	
RI				•
EXA	M DOCUMENTATION	ON INDICA	ATION DOCUMENTATI	<u>ION</u>
X PARA(	GON ANALYSIS LO	og [	ASSESSMENT SHE	ET.
X PARAC	GON ACQUISITION	I LOG	PARAGON HARD C	OPY
X SCAN	PRINT OUT	Г	OTHER (Specify)	
X COVE	RÅGE BREAKDOW	/N		
Comments:	Limited due to bo	ottom head instrumen	ntation tubing	
			1/ Jun 2 Da	ate: 2/2

F 14/7(14 I	NAME		Cook			W	esDy	/ne		
WELD	NO	1-LH	M-01	<b></b>		Inte	rnati	ona	l	
COMP	ONENT Bott	tom Head	d Meridion	ıals						
			BEA	M ANGLE	BREAK	DOWN			·····	
	BEAM DIRECTION		Shear UME	45 L S VOL	<del></del>		Dual UME			
	Perpendicular	UP	DN	UP	DN	UP	DN			
		84.00	84.00	84.00	84.00	84.00	84.00		T	
	Parallel	CW	CCW	CW	CCW	CW	CCW			
		74.00	74.00	74.00	74.00	74.00	74.00			
	AVERAGE	79	.00	79	.00	79	0.00			
Comm	ents: Limited due	to bottom	head instru	mentation t	ubing		·			
	<del></del>					<u></u>				

' REA	ACTOR VESSE	EL WELD RES	SULTS SUMMARY	
PLANT NAME	DC Cool	k Unit	1	
WELD NO.	1-LHM-02	_COMPONENT	Bottom Head Meridionals	je.,
LIMITATIONS:	NO [	YES X	73.26 % Complete See Coverage Breakdown Sheet	
RESULTS	<b>)</b>	NO. OF	INDICATIONS 0	
NI	X	STATU	s	
RI				
EXAM	I DOCUMENTATION	N INDICA	TION DOCUMENTATION	
X PARAG	ON ANALYSIS LOG		ASSESSMENT SHEET	
X PARAG	ON ACQUISITION L	.og	□PARAGON HARD COPY	
X SCAN P	RINT OUT		OTHER (Specify)	
X COVER	AGE BREAKDOWN		·	
Comments:	Limited due to bott	om head instrumen	itation tubing	
		Analyst	Mm 2 Date: 3/05	

		R.V.	COVERA	GE EST	TE E	BREAK	OWNS		
PLANT	NAME	DC (	Cook			W	esDy	yne	
WELD	NO.	1-LH	M-02			Inte	rnat	iona	ıl
СОМРО	ONENT Bot	tom Head	d Meridior	nals					
			BEA	M ANGLE	BREAK	DOWN		. ,	
	BEAM DIRECTION		Shear	45 L S			Dual		
		***************	UME	VOL			UME		
	Perpendicular	UP	DN	UP	DN	UP	DN		
		74.30	74.30	74.30	74.30	74.30	74.30		
	Parallel	CW 72.20	CCW 72.20	CW 72.20	CCW 72.20	CW 72.27	CCW 72.20		
	AVERAGE	73	.25	73.	25	73	.27		
Comme	ents: <u>Limited due</u>	to bottom	head instru	mentation to	ubing				
Combine	ed Perp. 74.3 Analyst	/	Com	bined Para.	72.	21	Combined	d Average _Date	73.26 3/23/10
		1		,	D1				

•

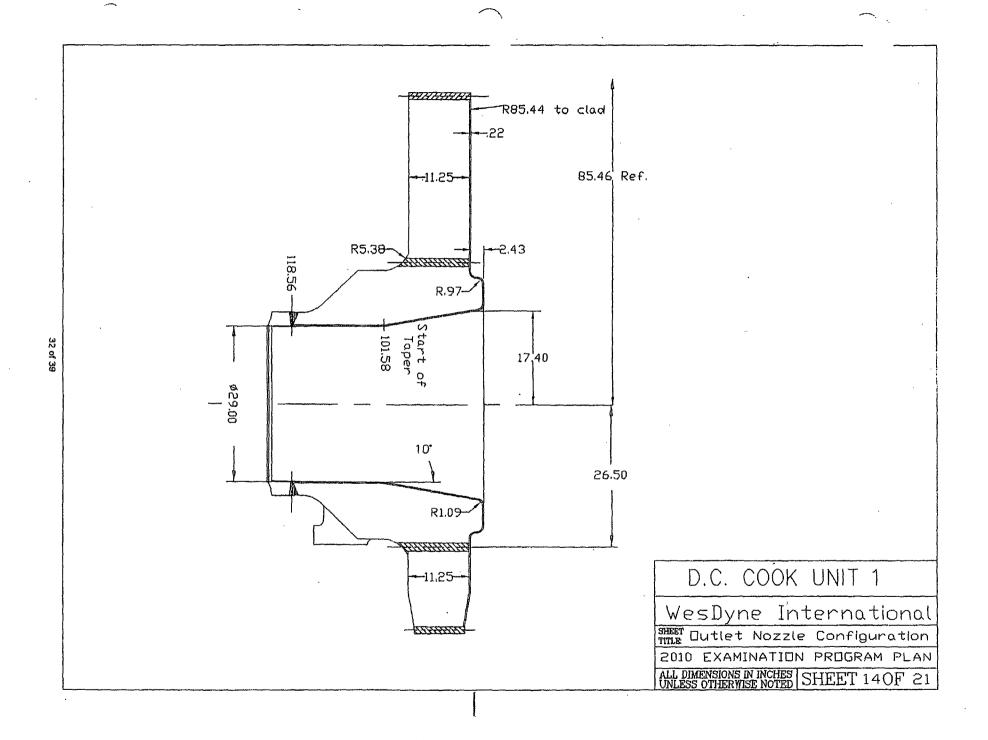
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☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	EXAM DOCUMENTATION INDICATION DOCUMENTA	ATION
SCAN PRINT OUT OTHER (Specify)	X PARAGON ANALYSIS LOG ASSESSMENT S	HEET
	X PARAGON ACQUISITION LOG PARAGON HARD	) COPY
	SCAN PRINT OUT OTHER (Specify)	
X COVERAGE BREAKDOWN	X COVERAGE BREAKDOWN	
Comments: Limited due to bottom head instrumentation tubing		

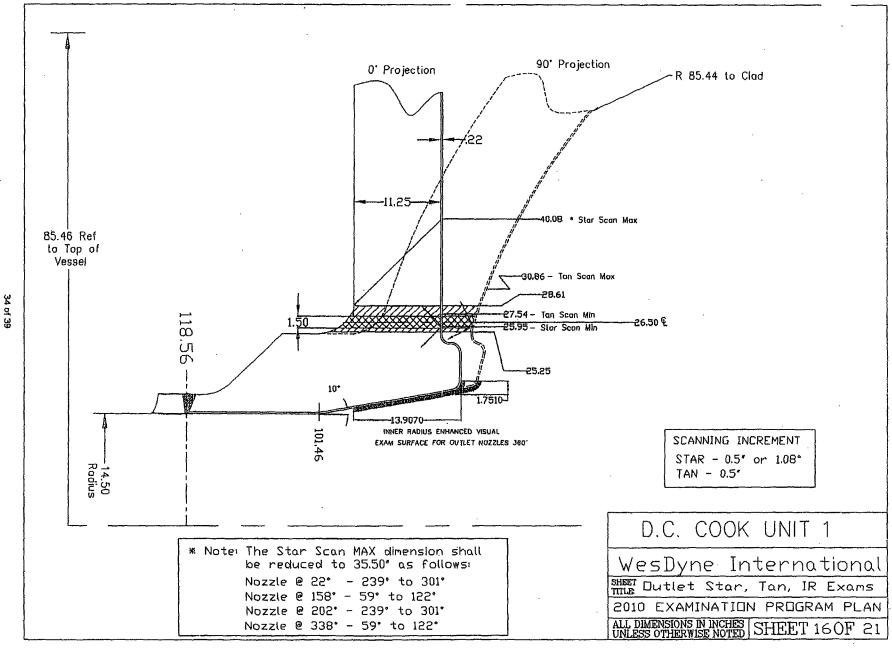
		R.V. (	COVERA	GE EST	IN. E	BREAKI	DOWNS		•	
PLANT	NAME	DC (	Cook			W	esDy	/ne		
VELD	NO.	1-LH	M-05			Inte	rnati	iona	W	
OMPO	ONENT Bot	tom Head	d Meridior	nals						
			BEA	N ANGLE	BREAK	DOWN				
	BEAM DIRECTION		Shear .UME	45 L 8		<u> </u>	Dual UME			
	Perpendicular	UP 87.70	DN 87.70	UP 87.70	DN 87.70	UP 87.70	DN 87.70			·
	Parallel	CW 88.50	CCW 88.50	CW	CCW 88.50	CW	CCW		1	
	AVERAGE		.10	88.50 88.	.10	88.50 88	88.50 3.10			
omme	ents: <u>Limited due</u>	to bottom	head instru	ımentation t	ubing					
Combine	ed Perp. 87.7	70	- Com	bined Para.	88.	50	Combined	Average		88.10
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Analyst		Jun 2				•	Date		45/10

REA	ACTOR VESSE	L WELD RES	ULTS SUMMAR	Υ
PLANT NAME	DC Cook	Unit	1	
WELD NO.	1-LHM-06	COMPONENT	Bottom Head N	/leridionals
LIMITATIONS:	NO [	YES X	74.50 % Complet See Coverage Breakdow	
RESULTS	· · · · · · · · · · · · · · · · · · ·	NO. OF	INDICATIONS	0
NI	X	STATU	S	
RI				
EXAM	I DOCUMENTATION	!NDICA	TION DOCUMENTATI	ON
X PARAGO	ON ANALYSIS LOG		_ASSESSMENT SHE	ET
\_X]PARAGO	ON ACQUISITION LO	og 🗀	]PARAGON HARD C	OPY
X SCAN P	RINT OUT		OTHER (Specify)	
X COVER	AGE BREAKDOWN			
Comments:	Limited due to botto	m head instrumen	tation tubing	
			1	
	100 day	Analyst	1 per /2 D	ate: 3/25/10

PLANT	NAME	DC (	Cook			WesDyne					
WELD	NO	1-LH	M-06			Inte	rnati	ona	al		
COMPO	ONENT E	ottom Head	d Meridion	nals							
			BEA	M ANGLE	BREAK	DOWN				······································	
	BEAM DIRECTIO		Shear UME	45 L S VOL	Single		Dual UME				
	Perpendicular		DN 74.00	UP 74.00	DN 74.00	UP 74.00	DN 74.00				
	Parallel	CW 75.00	CCW 75.00	CW 75.00	CCW 75.00	CW 75.00	CCW 75.00				
	AVERAGE		.50		.50		.50				
Comme	ents: <u>Limited d</u>	ue to bottom	head instru	mentation t	ubing						
Combine	ed Perp. 7	4.00	Com	bined Para.	75.	00	Combined	Average	)	<i>7</i> 4.50	
	Analy	et /	mn2					Date	3/	25/1/	2

•





RE	ACTOR VESS	SEL WELD RE	SULTS SUMMARY
PLANT NAME	DC Cod	ok Unit	
WELD NO.	1-N3B	COMPONENT	Outlet Nozzie To Shall Wold @ 22 Deg.
LIMITATIONS:	ио 🗆	YES X	71.08 % Complete See Coverage Breakdown Sheet
RESULTS		NO. OF	INDICATIONS 2
NI		STATUS	Code Allowable
RI	X		•
EXAM	DOCUMENTATIO	N INDICA	TION DOCUMENTATION
T PARAGO	N ANALYSIS LOG		JASSESSMENT SHEET
PARAGO	N ACQUISITION I	roe 🗵	]PARAGON HARD COPY
SCAN PF	RINT OUT		OTHER (Specify)
COVERA	GE BREAKDOWN	· ·	
Comments:			
Limitation is due to no	zzle geometry, vess	el saddle effect, and a	idjacent outlet nozzle protrusion
		Analyst	E-P. Zollan Date: 3/25/10

• •		R.V. COVERAGE	ESTIMATE BREAK	DOWNS	
PLANI	TNAME	DO Cook		•	
				WesDyn	e
WELD	NO.	1-N3B		•	i.
			1	Internatio	nal
COMP	ONENT Outlet No	ozzle To Shell Weld @ 22	Deg.		
		BEAM A	NGLE BREAK DOWN		
	BEAM DIRECTION	Tan Scan 45° L Dusi, 45° L Single, 45°	Ster Scen 45° L Dust, 48° L Single, 48°	Bore Scan	
		Shear	Shear Shear	15° 30', 45°, 60°	· · · · · · · · · · · · · · · · · · ·
	CW	42.54		**:	
	CCW	42.54			
	Out (away from bore)			100,00	·
	In ((oward bore)		99.23	100,00	
Сотри	nents: <u>Limitation is du</u>	ie to nozzle geometry, ve	ssel saddle effect, and a	idjacent oullet nozzle p	protrusion
Combin	71.08 Analyst	Z.L. Z	llung		Date 3/25/10

VELD NO. 1-N4B COMPONENT Outlet Nozzie To Shell Weld @ 1  IMITATIONS: NO YES X 71.08 % Complete See Coverage Breakdown Sheet	58 Deg.
	<del> </del>
RESULTS NO. OF INDICATIONS 1	· · · · · · · · · · · · · · · · · · ·
NI STATUS Code Allowable	<u> </u>
RI <u>X</u>	
EXAM DOCUMENTATION INDICATION DOCUMENTATION	·• · · · · · · · · · · · · · · · · · ·
X PARAGON ANALYSIS LOG X ASSESSMENT SHEET	
X PARAGON ACQUISITION LOG X PARAGON HARD COPY	
SCAN PRINT OUT OTHER (Specify)	
COVERAGE BREAKDOWN	

н		K.V. COVERAGE	ESTIMATE BREAKI	DOWNS		1
PLAN	T NAME	DC Cook				
				WesDyn	e	
WEL	O NO,	1-N4B				
				Internatio	nal	
СОМ	PONENT Outlet No.	zzle To Shell Weld @ 15	8 Deg.			
	· · · · · · · · · · · · · · · · · · ·	BEAM A	NGLE BREAK DOWN		······································	
	BEAM DIRECTION	Tan Scan	Star Scan	Bore Scan		
		45° L Dual, 45° L Single, 45° Shear	45° L Dual, 45° L Single, 45° Shear	15° 30° , 45°, 60°		·
	cw	42.54				
	CCW	42.54				
	Out (away from bore)			100.00		
	In (toward bore)		99.23			
a						
			•			1

K	EAUTUR VESSE	IL WELD KE	SULTS SUMMARY
LANT NAME	DC Cook	Unit	1
VELD NO.	1-N1B	COMPONENT	Outlet Nozzie To Shell Weld @ 202 Deg
IMITATIONS:	NO 🗌	YES X	71.08 % Complete See Coverage Breakdown Sheet
RESULT	S	NO. OF	INDICATIONS 6
NI		STATU	S Code Allowable
RI	X		
EXA	M DOCUMENTATION	INDICA	TION DOCUMENTATION
X PARAG	SON ANALYSIS LOG	Σ	ASSESSMENT SHEET
X PARAC	SON ACQUISITION LO	og 🖸	☐PARAGON HARD COPY
X SCAN	PRINT OUT		OTHER (Specify)
X COVER	RAGE BREAKDOWN		
omments: nitation is due to	nozzle geometry, vesse	saddle effect, and	adjacent outlet nozzle protrusion

PLANT	NAME .	DC Cook			
	•			WesDyr	10
WELD N	IO.	1-N1B			
				Internatio	na
COMPO	NENT Outle	et Nozzie To Shell Weld @ 2	02 Deg.		
<del></del>		BEAM	ANGLE BREAK DOWN		· · · · · · · · · · · · · · · · · · ·
-	BEAM DIRECTION	Tan Scan	Star Scan	Bore Scan	
		45° L Dual, 45° L Single, 45° Shear	45° L Dual, 45° L Single, 45° Shear	15° 30°, 45°, 60°	
		1			
-	CW	42.54			
	CM CM	42.54 42.54			
	CCW Out (away from bo	42.54 re)		100,00	
	ĆĊŴ	42.54 re)	99.23	100,00	

•

RE	ACTOR VESS	EL WELD	RESULTS SUMI	MARY
PLANT NAME	DC Coo	k Unit		1
WELD NO.	1-N2B	_COMPONEN	T Outlet Nozzle To	Shell Weld @ 338 Deg.
LIMITATIONS:	NO 🗌	YES X	71.08 % Cor See Coverage Brea	
RESULTS	***************************************	NO.	OF INDICATIONS	8
NI	<del>Little and the same of the sa</del>	STA	<b></b>	Code Allowable
RI	X			
EXAM	DOCUMENTATION	N INDI	CATION DOCUMEN	TATION
XPARAGO	N ANALYSIS LOG		XASSESSMENT	SHEET
X PARAGO	IN ACQUISITION L	oe:	X PARAGON HAR	ID COPY
SCAN PE	TUO TAIS		OTHER (Specify	'n
COVERA	GE BREAKDOWN			
Comments: imitation is due to no	zzle geometry, vesse	l saddie effect, au	nd adjacent outlet nozz	le protrusion
	•	Anak	m Et Zelle	_ Date: 3/24/10

		R.V. COVERAGE	ESTIMATE BREAK	OOWNS	
LANT NAME		DC Cook			
				WesDyr	le
Arr o seo		4 Nam			• •••·
NELD NO.		1-N2B		نعدم نے د	9
•				Internatio	nal
COMPONENT	Outlet No	zzie To Shell Weld @ 338	t.Dan		
- O(211). 101304(11)		The section story (2)			
	·	HEAM A	NGLE BREAK DOWN		
			AMEN WITHING GOESTA		
BEA	V DIRECTION	Ten Scan	Slar Scan	Bore Scan	ka ja
BEA	MOIRECTION			Bore Scan 15° 30°, 45°, 60°	
BEA		Ten Scan 45° L Duel, 45° L Single, 45° Shoar	Siar Scan 45° L Duol, 45° L Single, 45°		
BEA	GW	Ten Scan 45° L Duel, 45° L Strote, 45° Shoar 42,54	Siar Scan 45° L Duol, 45° L Single, 45°		
	GW	Ten Scan 45° L Duel, 45° L Single, 45° Shoar	Siar Scan 45° L Duol, 45° L Single, 45°	15° 80° , 45°, 60°	
Out (a	GW GCW way from bore)	Ten Scan 45° L Duel, 45° L Strote, 45° Shoar 42,54	Slar Scan 45° L Dool, 45° L Shojie, 45° Shear		
Out (a	GW	Ten Scan 45° L Duel, 45° L Strote, 45° Shoar 42,54	Siar Scan 45° L Duol, 45° L Single, 45°	15° 80° , 45°, 60°	
Out (a	GW GCW way from bore)	Ten Scan 45° L Duel, 45° L Strote, 45° Shoar 42,54	Slar Scan 45° L Dool, 45° L Shojie, 45° Shear	15° 80° , 45°, 60°	
Out (a	GW CCW way from bore) oward bore)	Ten Scan 46° i. Duel, 45° i. Stropte, 45° Shoar 42.54 42,54	Slar Scan 45° L Dool, 45° L Single, 45° Shear  98.23	16° 30° , 45°, 60°	
Out (a	GW CCW way from bore) oward bore)	Ten Scan 45° L Duel, 45° L Strote, 45° Shoar 42,54	Slar Scan 45° L Dool, 45° L Single, 45° Shear  98.23	16° 30° , 45°, 60°	protrusion
Out (a	GW CCW way from bore) oward bore)	Ten Scan 46° i. Duel, 45° i. Stropte, 45° Shoar 42.54 42,54	Slar Scan 45° L Dool, 45° L Single, 45° Shear  98.23	16° 30° , 45°, 60°	protrusion
Out (a	GW CCW way from bore) oward bore)	Ten Scan 46° i. Duel, 45° i. Stropte, 45° Shoar 42.54 42,54	Slar Scan 45° L Dool, 45° L Single, 45° Shear  98.23	16° 30° , 45°, 60°	protrusion Dale 3/24/

77 /01

## ATTACHMENT 2 to AEP-NRC-2011-23

## **RELIEF REQUEST ISIR-34**

## EXAMINATION CATEGORY B-B PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

## **RELIEF REQUEST ISIR-34**

## Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

## 1. ASME Code Components Affected

**ASME Code Class:** 

Code Class 1

**Examination Category:** 

B-B, Pressure Retaining Welds in Vessels Other Than Reactor

Vessels

Item Numbers:

B2.40, Steam Generators (Primary Side) - Tubesheet to Head

Component Identification: Listed in Table 1

## 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

## 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-B requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-1 and IWB-2500-6. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

## 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(q)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Tubesheet to Head Weld (2-24-01) was limited to 72% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand-hole openings, permanent support brackets, and permanent electrical conduits.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

## 5. Burden Caused by Compliance

To increase the examination coverage for STM-24-01 requires removal and reinstallation of insulation support ring mounting pads by cutting the mounting pad welds and then reinstalling the mounting pads by welding following completion of the examination. Additionally, to increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

## 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical given the limitations caused by the geometric configuration and permanent obstructions. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

## 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-24-01	Lower Shell to Tubesheet	B2.40	72.0	The completed examination was limited to 72% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand-hole openings, permanent support brackets, and permanent electrical conduits. One subsurface indication was detected and evaluated as acceptable to IWB-3512-1.

## **RELIEF REQUEST ISIR-34**

## EXAMINATION CATEGORY B-B PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

## SUPPORTING DOCUMENTATION

## D. C. COOK UNIT2 CYCLE 14 COVERAGE REPORT

W-13 N-	E T	Erom No	Х	- 61	F	711	Square Inches	Total Square	Square Inches	Percent	Total	Remarks
Weld No.	Ехат Туре	Exam No.	Start	Stop	Start	Stop	Scanned Per Exam	Inches Scanned	Required	reitent	Coverage	Kemarks
STM-24-01			404.00	414.64	441.70	451.66	106				72%	Limited exams due to
		3A1-UP	414.64	421.81	438.36	451.66	95					proximity of welded
Lower shell			421.81 0.00	427.00 2.09	442.50 442.50	451.66 451.66	48 19					pads and adjecent
-to-		<del></del>	6.00	16.26	442.70	451.66	92	PX:				piping.
Tube Sheet		3A2-UP	16.26	24.24	441.70	451.66	79					
	]		24.24	37.16	438.98	451.66	164					
		3A3-UP	37.40	41.96	141.98	451.66	1412					
		3A-DN	405.00	427.00	443.25	461.00	391					
	İ	JA-DIN	0.00	37.66	443.25	461.00	668	W-1-27				
			65.00	69.94	441.46	451.66	50					
	ŀ	3B1-UP	69.94	84.38	433.10	451.66	268					
	[		84.38	94.26	411.18	451.66	400					
			94.26 102.20	102.24 113,22	433.10 442.35	451.66 451.66	148 103					
	]	3B2-UP	113.22	115.50	443.10	451.66	20					
		202-01	115.50	118.92	442.10	451.66	33					
		3B1-DN	65.00	84.38	443.25	461.33	350					
		3B2-DN	84.38	98.44	458.69	461.29	37					
	Parallel	3B3-DN	98.44	120.94		461.33	407					
	(Axial scan)		138.00	143.70		451.66	106			1, 1 (1)		
	}		143.70	153.20		451.66	92					
	[	3C-UP	153.20	168.40		451.66	282			S/ (F #4.8)		
	1	30-01	168.40	177.52		451.66	88	Here is				
	1		177.52	193.10		451.66	289					
			193.10	198.42	441.98	451.66	51					
	1	3C-DN	138.00	198.42	443.25	461.41	1097					
	•	3D1-UP	198.42	248.56		451.68	546					
	ļ	3D2-UP	204.00	210.84		440.80	53 59					
	1	3D3-UP	241.55 198.40	249.15 249.32		440.80 461.09	908					
	[	3D1-DN 3D2-DN	249.32	258.42	446.60	461.44	135			e de Voure		
	•	3E1-UP	279.75	340.17	443.15	451.75	520					
		3E2-UP	286.10	300.16		443.15	141					
		3E3-UP	310.70	319.01	433.10	443.15	84					
		3E-DN	279.75	339.41	443.25	461.41	1083					
		3F1-UP	340.00	375.72	443.10	451.74	309					
		3F2-UP	347.85	360.39		443.10	125					
		3F-DN	340.00	375.72	443.25	461.24	643					
			105.00	100.00	143 62	450.46	0.5	11500	15767	73%		The Park of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the State of the St
	1	4A-CW	405.00		443.75		97 160					Limited exam due to
	<u> </u>		0.00	36.66 427.30			97					welded pads,
	1	4A-CCW	0.00	36.66		452.49	160					permanent support
	i	4B-CW	85.00		443.75		163		***********			braces, and electrical
	İ	4B-CCW			443.75		163					conduit.
	[	4C-CW		197.72		452.87	272					
	T	4C-CCW		197.72			272					
	Transverse	4D1-CW		258.70		452.68	29					
	(Circ scan)	4D2-CW				452.87	232					
	1	4D1-CCW					29					
		4D2-CCW	198.40	249.30	443.75	452.87	232					
		4E-CW		339.43			272					
		4E-CCW		339.43			272					
	1	4F-CW	340.00	375.84		452.87	163					
		4F-CCW	340.00	375.84	443.75	452.87	163		200			
	l .	i		l	L	I		2777	3897	71%	医肾经验检验	

X is the dimension in the cirvulerential direction measured in inches from vessel 0 degenes, Y is the dimension in elevation measured in inches from vessel 0°.

## ATTACHMENT 3

## **RELIEF REQUEST ISIR-35**

EXAMINATION CATEGORY B-D FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B

## **RELIEF REQUEST ISIR-35**

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

## 1. ASME Code Components Affected

ASME Code Class:

Code Class 1

Examination Category:

B-D, Full Penetration Welds of Nozzles in Vessels - Inspection

Program B

Item Numbers:

B3.110, Pressurizer, Nozzle to Vessel Welds

B3.140, Steam Generators (Primary Side) - Nozzle Inside Radius

Section (IRS)

Component Identification: Listed in Table 1

### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

## 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-D requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-7(a) thru (d) as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

## 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Inner Radius examinations (STM-12-I-IRS, STM-12-O-IRS, STM-14-I-IRS and STM-14-0-IRS) were limited to 34.9%, 36.8%, 40.9% and 25% coverage, respectively. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area.

Additionally, the pressurizer Nozzle to Vessel welds (2-RC-26 and 2-RC-27) were each limited to 75% coverage. Examination limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans.

These noted obstructions prevent achieving the essentially 100 percent volumetric examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

## 5. Burden Caused by Compliance

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

## 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

## 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	ltem Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-14-I- IRS	Inlet Nozzle Inside Radius Section	B3.140	40.9	The completed examination was limited to 40.9% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-14-O- IRS	Outlet Nozzle Inside Radius Section	B3.140	25.0	The completed examination was limited to 25% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-12-I- IRS	Inlet Nozzle Inside Radius Section	B3.140	34.9	The completed examination was limited to 34.9% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-12-O- IRS	Outlet Nozzle Inside Radius Section	B3.140	36.8	The completed examination was limited to 36.8% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-RC-26	Upper Head to Relief Nozzle	B3.110	75.0	The completed examination was limited to 75% coverage due to the configuration. Exam limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans. No recordable indications detected.
2-RC-27	Upper Head to Relief Nozzle	B3.110	75.0	The completed examination was limited to 75% coverage due to the configuration. Exam limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans. No recordable indications detected.

## **RELIEF REQUEST ISIR-35**

## EXAMINATION CATEGORY B-D FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B

## SUPPORTING DOCUMENTATION

## UT Calibration

Ŗ		Site/Unit:	DC Cook	/ 1			, Proce	dure:		54-151-132			Outage No.:		C20
	Summ	nary No.:		015000		Pr	ocedure l	Rev.:		01			Report N	lo.: U	Г-05-010
	Wo	rkscope:		ISI		W	ork Order	No.:	(	04145023-03		Nas	Pa	ge: 1	of 8
Code:		ASME	XI 1989		Cat./lten	1: B	D/B3.14	0		Location:			CONT. L4		
Drawing No.:			A-6		ı	Description: INL	ET NOZ	ZLE INSIDE	RADIUS SECTION						
System ID:	14					*******	·	· · · · · · · · · · · · · · · · · · ·				····	· · · · ·	:	
Component i	D: STM-14-I-IF	RS		······································					Size/l	Length:	167" circ		Thickness/Dia	meter: 61	/8" / 53 9/32 <b>"</b>
Limitations:	INSULATIO	N SUPPO	RT RING & COM	PONENT CONFIGI	JRATION	•				Start	Time:	1300	Finish	Time:	1430
	Instrume	nt Setting	9		Searc	h Unit		Cal.				Avis	I Orientated S	aarch Unit	
Serial No.:		VH-90	175	Serial No.:	0111	IPK DB# 35694	ļ .	Checks	Time	Date	Calibr		Signal		
Manufacture	:	KRAUTKE	RAMER	Manufacturer:		KBA		Initial Cal.	1030	4/1/2005	Refle		Amplitude %	Sweep Division	Sound Path
Model:		USN-	58L	Size: 0.50"	X 1.0"	Shape: RECTA	NGLE	Inter, Cal.							
Delay:	16.5822 uS	Range:	20.0"	Freq.: 2.25	Mhz	Style: Benci	nmark	Inter. Cal.							
M'ti Cal/Vel:	0.1273 in/uS	Puiser:	N/A	Exam Angle:	35	# of Elements	: [1]	Inter. Cal.							
Damping:	1 KHZ	Reject:	0	Mode:		SHEAR		Final Cal.	1600	4/1/2005					
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ	Measured Ang	le:	38 DEGREES	3	(	Couplai	nt					
Filter:	N/A	Mode:	SINGLE	Wedge Style:		FLAT		Cal. Batch:		04325		Circumfe	rential Orienta	ited Search	Unit
Voltage:	HIGH					,		Type:	Ultra	igel (I	Calib		Signal	Sweep	Sound Path
Ax. Gain (dB	): <u>N/A</u>	Circ. Gai	n (dB): 64.6		Search U	init Cable		Mfg.:	Sono	otech	Refle	ector	Amplitude %	Division	Sound Fall
1.0 Screen	Div. = 2.0	in. of	Sound Path	Туре:		RG174		Exam Batcl	h:	04325	NOT		85%	5.3	10.59"
Linearity Rep	ort No.:	L-(	05-002	Length: 1	2' No	o. Conn.:	0	Туре:		igel li	NOT	CH B	65%	6.4	12.73"
	Calibrat	tion Block			Scan C	overage		Mfg.:	Sono	otech					<del> </del>
Cal. Block N		IR-CSCL-		Upstream 😿	Downstre	am 🕢 Scan dB	3: 74	Defe	erence l	Block		Re	ference/Simula	tor Block	<u></u>
Thickness:	N/A	Dia.:	FLAT	cw <b>☑</b>	C	CW 🕢 Scan dE	3: 74	Serial No.:		037405	Gain		Signal	Sweep	Sound Path
Cal. Bik. Ten	np.: 89 F Tem	p. Tool:	VH-8048	Exam Surface	: _ NC	ZZLE & SHELL	OΠ	Type:		us Steel	dB 24.3	Reflecto 2"	or Amplitude %	·	
Comp. Temp	o.: 86 F Temp	p. Tool:	VH-8048	Surface Condi	tion:	MACHINEC		.,,,,			52.2	14"	80%	1.0 5.5	2.005" 13.95"
Recordable	indication(s):	Yes	□ No 🔽	(If Yes, Ref. Atta	ched Ulti	rasonic Indication	n Report.	)			65.3	20"	80%	8.5	20.00"
Results:	Accept 🔽	Reie	ect [	Info 🗌					Co	omments: SD	·				
			_	<del></del>						SE	E ATTAC	HED SHE	EET FOR NOTI	ES.	
Percent Of C	Coverage Obtain	ed > 90%:	No	Reviewed Pre	vious Da	ta: No									
Examiner	Level	11	-,ŋ	Signature		Date	Reviey	ver		,		Signa	ature		Date
Flesner, Br	et T.	WT TI	Osner	<b>,</b>		4/1/2005	M	<u> </u>				^			
Examiner N/A	Level	N/A		Signature		Date	Site R	eview (	25	1000	) 1	/   Signa	ature	4/2	Date
Other	Level	ini		Signature	<del></del>	Date	ANII R	eview	1/		<del>-</del> #	Signa	ature	1198	Date
Key, Michae			$\mathcal{U}$			4/21/2005	ì					Am		$\varphi _{\gamma_{\alpha}}$	8)
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*						Report No.:	UT	-05-010	)
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Summary No.:	015000								
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Examiner:	<u> </u>	Level:		Site Review:	KEN	00	Date:	4/24	Jos
Other:	Key, Michael W. ~	Level:	131	ANII Review:			Date:	yb)	105
Comments:					- ' ' ' '				

Limitations from nozzle configuration:

Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 40.9% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) - (d) do not represent the ID geometry of the inner radius detalled in the provided drawing. The drawing provided indicates a "Keyway" type feature rated in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure -2500-7(a) to this examination.

## Scan limitations:

- 1. 154" to 8" due to the insulation support ring. (Total limitation 21")
- 2. 23" to 32" due to support attachment. (Total limitation 9")

No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

## **Coverage Calculations:**

Inner Radius exam volume= 4.88182 square inches

- 2.44382 square inches of this area could not be achieved due to component configuration.
- 2.44382 square inches + 4.88182 square inches= 49.9% cross-sectional exam volume achieved.

30" of limited scan circumference ÷ 167" total circumference = 82% of total inner radius circumference scanned.

49.9% X 82.0% = 40.9% total coverage obtained by scanning from the nozzle side.

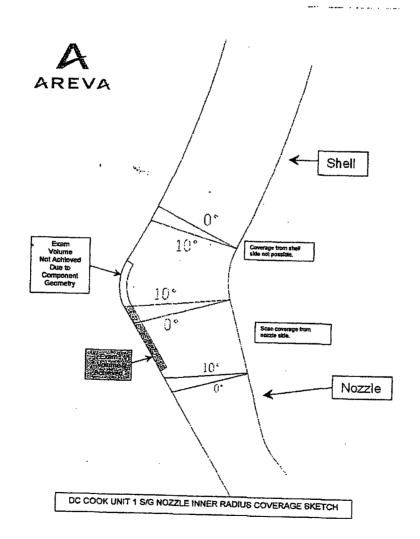
0% coverage obtained by scanning from the shell side.

Date: 04/01/2005 Examiner: Flesner, Bret T

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Comments:

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-I-IRS-G1.jpg



## UT Ca

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	Summ	ary No.:		015100		<del></del>	Procedure	Rev.:		01 ,		_	Report N	lo.: U	Г-05-019	)
	Wor	rkscope:		ISI			Work Orde	r No.:	1	04145023-04		-	Pa	ge: 1	of	10
Code:		ASME	XI 1989		Cal	l./Item:	B-D/B3.14	10	_	Location:			CONT. L4			
Drawing No.:			A-8		_	Description	: OUTLET N	OZZLE INSII	DE RAD	IUS SECTIO	N					
System ID:	14						₹.									
Component II	D: STM-14-0-1	RS	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·				Size/i	Length: 16	7.39" CIR	C	Thickness/Dia	meter: 6 1	/8" / 53	9/32"
Limitations:	INSULATIO	N SUPPO	RT RING & CO	MPONENT C	ONFIGURA	ATION				Start	Time:	1430	Finish	Time:	1600	
	Instrume	nt Setting	s			Bearch Unit		Cal.	Time	Date		Axial	Orientated S	earch Unit		
Serial No.:	<u></u>	VH-90	)75	Serial l	No.:	0111PK DB#	35694	Checks	111111111111111111111111111111111111111	Date	Calibr		Signal	Sweep	Ī.,	
Manufacturer		KRAUTK	RAMER		acturer:	KBA		Initial Cal.	1050	4/1/2005	Refle		mplitude %	Division	Sound	Path
Model:		USN-		Size:	0.50" X 1.	.0" Shape: F	RECTANGLE	Inter. Cal.								
Delay:	16.5822 uS	Range:	20.0"		2.25 Mh		Benchmark	Inter. Cal.		<del> </del>					<u> </u>	
M'ti Cal/Vel:	0.1273 in/uS	Pulser:	N/A	Exam .	Angle:	<del></del>	ments: <u>* 1</u>	Final Cal.	1600	4/1/2005	<u> </u>				<del> </del>	
Damping:	1 KHZ	Reject:	0	Mode:		SHEAR		<u> </u>	Couplai	<u></u>	<b></b>			<del> </del>	}	
Rep. Rate:	AUTO HIGH N/A	Freq.: _ Mode:	2.25 MHZ SINGLE		red Angle:	38 DEG	<del></del>		•	04325	<del> </del>	Circumfor	ential Orienta	ted Secret	Unit	
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Ax. Gain (dB)		Circ. Gai	in (dB): <b>64.</b> 6	ì	Saa	rch Unit Cable	,	Mfg.:		otech	Calibr	ation ector A	Signal mplitude %	Sweep Division	Sound	Path
, ,	Div. = 2	in, of	Sound Path	Type:	000	RG174				<del></del>	NOT	CH 7	85%	5.3	10.5	9"
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		ion Block		i Instru		_	on dD: 74	wiig	3011	DIBGII	<b></b>				<u> </u>	
Cal. Block No		IR-CSCL-	······································		_	vnstream 🕢 So		Refe	erence l	Block	2::-	Refe	rence/Simula			
Thickness:	N/A	Dia.:	FLAT		W 🔽	ccw ✓ so		Serial No.:		037405	Gain dB	Reflector	Signal Amplitude %	Sweep	Sound	Path
	p.: 89 Temp	_	VH-8048		Surface:	NOZZLE & S		. Type:	Romp	us Steel	24.3	2"	80%	1.0	2.00	5"
	.: <u>86</u> Temp		VH-8048		e Condition:		HINED	<u>.</u>			52.2	14"	80%	5.5	13.9	5"
Recordable i	indication(s):	Yes	No ☑	(If Yes, I	Ref. Attache	d Ultrasonic Ind	lication Report	i.)			65.3	20"	80%	8.5	20.0	0"
Results:	Accept 🔽	Reje	ect 🗌	Info 🗌					Co	mments: SD			EV. 00 ET FOR NOTE	:S.		
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Summary No.:	015100			•		
Examiner:	Flesner, Bret T. Sur Tunn Level:		Reviewer:	NIA		Date:
Examiner:	N/A Level:	N/A	Site Review:	RENOC	)	Date: 487/05
Other:	Key, Michael W. Level:	111	ANII Review:	1/1		Date: 4/2-7/01
Comments:						

## Limitations from nozzle configuration:

Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed using the techniques in procedure S4-ISI-132-1 and 25.0% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

### NOTE:

With the component configuration detailed in the drawing provided by the utility, the technique in procedure-54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

### Scan limitations:

1. 115" to 30" due to the insulation and its support ring. (Total limitation 82")

No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

### **Coverage Calculations:**

Inner Radius exam volume= 4.88182 sq in

2.44382 sq in of this area could not be achieved due to component configuration.

2.44382 sq in ÷ 4.88182 sq in = 49.9% cross-sectional exam volume achieved.

82" of limited scan circumference ÷ 167" total circumference = 50.1% of total inner radius circumference scanned.

49.9% X 50.1% = 25.0% total coverage obtained by scanning from the nozzle side.

0% coverage obtained by scanning from the shell side.

Examiner: Bret T Flesner, Level II Date: 4/1/05



Report No.:

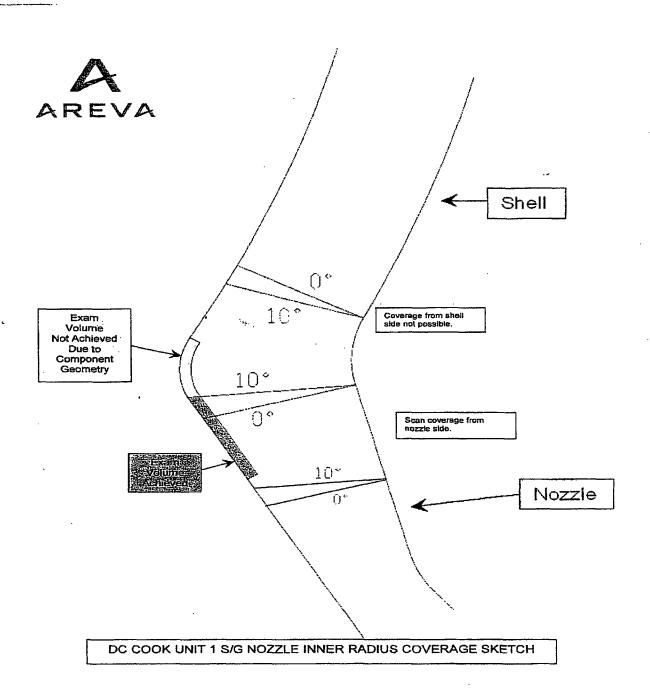
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## UT Calibration/

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g	Site/Unit: DC Cook /		/ 1		F'rocedure:		54-181-132			Outage No.:			J1-C20				
	Summ	ary No.:		012900			Proc	edure Rev.:			01		_	Report N	lo.:U	T-05-021	
	Wo	rkscope:		ISI		_	Work	Order No.:			04145016-04			Pa	ge: 1	of	8
Code:	-	ASME	XI 1989		Cat./II	em:	B-D/	B3.140			Location:	,		CONT. L2	M. M. M. M. M. M. M. M. M. M. M. M. M. M		
Drawing No.:			A-6			Description	n: INLET	NOZZLE I	VSIDE	RADIU	S SECTION						
System ID:	12				-		.:										
Component II	): STM-12-I-IF	RS			<del> </del>	····				Size/	Length: 10	67.39" cir	C	Thickness/Dia	meter: 61	/8" / 53 9	/32"
Limitations:	INSULATIO	N SUPPO	ORT RINGS & CO	MPONENT CON	FIGURAT	TION					Start	Time:	0830	Finish	Time:	1030	
	Instrume	nt Setting	is		Sea	arch Unit		С	al.	Time	Date	Axial Orientated Search Unit					
Serial No.:		VH-9	075	Serial No.:	0	111PK DB#	¥ 35694	Ch	ecks			Calib		Signal	Sweep	C	7-46
Manufacturer:		KRAUTK		Manufacture	or:	KB	A		l Cal.	0715	3/31/2005	Refle		Amplitude %	Division	Sound I	atri
Model:		USN-	<del></del>	Size: 0.5	0" X 1.0"		RECTAN	SLE Into	. Cal.		·						
Delay:	16.5822 uS	Range:	20.0"	Freq.: 2.			Benchm	ark Into	. Cal.			<b></b>			<del></del>		
	0.1273 in/uS 1 KHZ	Pulser:	N/A 0	Exam Angle	: 35		ements: 🕺	7	i Cal.	1220	3/31/2005					ļ	
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Voltage:	HIGH		4	wedge only	· <del></del>	FLA		Type			gel II	Calibi	<del></del>	Signal	Sweep	T	
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1.0 Screen	Div. = 2.0	in. of	Sound Path	Type:		RG174		Evan	Batcl	h.	98225	NOT	CH 7	85%	5.3	10.59	)''
Linearity Repo		1-	05-002	Length:	12'	No. Conn.:	0	Type			gel II	NOT	CH 8	55%	6.5	12.83	<u>,"</u>
					Scan	Coverage		. Mfg.			otech	<b></b>				<del> </del>	
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	ndication(s):		No 🔽	(If Yes, Ref. A				leport.)				55.5 67.9	14" 20"	80%	5.5 8.5	13.95 20.00	
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riesulis.	Accept 🗹	reje	ect 🗌	Info 🗌						C.				ETS FOR COM	MENTS.		
Percent Of Co	overage Obtain	ed > 90%:	NO	Reviewed F	Previous i	Data:	No									بنندنيين	
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UT Calibratio	n/Examination					<u></u> -						<del>-//\/\</del>	1	#	1100	100	



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Summary No.;	012900	_							
Examiner;	Flesner, Bret T.	Level:	11	Reviewer:	NIA,		Date:		
Examiner:	N/A	Levei:	N/A	Site Review:	RULLO	1	Date:	4/2	Nos
Other:	Key, Michael W. 2015	Level:	111	ANII Review		mar	Date:	yh	5/05
Comments:		<u> </u>	<del></del>		TO K		<del></del>	<i></i>	<del></del>

Limitations from nozzle configuration:

Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 34.9% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID geometry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature red in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure ~2500-7(a) to this examination.

### Scan limitations:

- 1. 143" to 14" due to the insulation support ring. (total limitation 38")
- 2. 25" to 37" due to support attachment. (total limitation 12")

No contact could be maintained in the blend radius area. This liftoff was in an ~4" area centered ~2" on each side of the blend radius centerline.

### **Coverage Calculations:**

inner Radius exam volume= 4.88182 sq in

2.44382 sq in of this area could not be achieved due to component configuration.

2.44382 sq in ÷ 4.88182 sq in = 49.9% cross-sectional exam volume achieved.

50" of limited scan circumference ÷ 167" total circumference = 70.0% of total inner radius circumference scanned.

49.9% X 70.0% = 34.9% total coverage obtained by scanning from the nozzle side.

0% coverage obtained by scanning from the shell side.

Examiner: Bret T. Flesner, Level II

Date: March 31, 2005



Report No.:

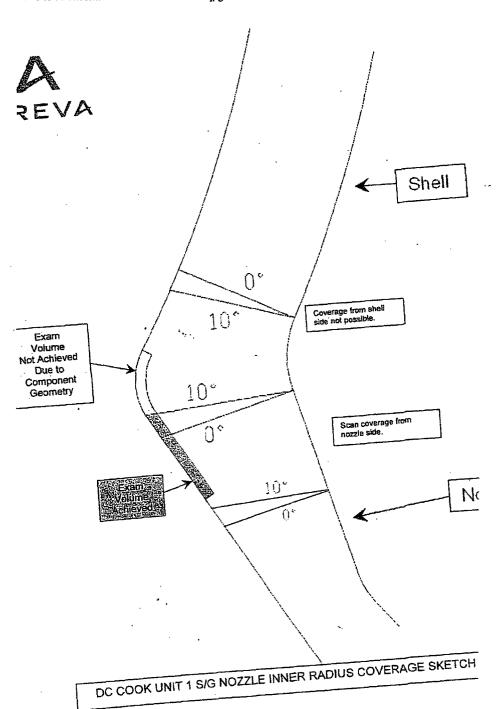
UT-05-021

Page:

of 8

nmary No.: 012900

Sketch or Photo: X:\U1C20-Framatome Info\STM-12-I-IRS-G1.jpg



## UT Calibration/ nination

2	{	Site/Unit: DC Cook / 1			Procedure:			54-ISI-132			Outage No.:		No.:1	U1-C20	
( California Prop.	Summ	ary No.:		013000		Proced	ure Rev.:		01			Report	No.: U	T-05-020	
	Wo	rkscope:		ISI		Work O	rder No.:	04145016-05			<u>-</u>	Pa	sge: 1	of 8	
Code:		ASME	XI 1989		Cat./Item:	B-D/B3	.140	Location:				CONT. L2			
Drawing No.:			A-6	<del></del>	Descrip	tion: OUTLET	NOZZLE INSI	DE RAD	IUS SECTIO	N	······································				
System ID:	12					.:						<del></del>			
Component IE	D: STM-12-O-I	RS	<del></del>					Size/I	Length: 1	87.39" cir	c	Thickness/Di	ameter: 61	/8"/ 53 9/32	
Limitations:	INSULATIO	N SUPPO	ORT RING & COM	PONENT CONFIGU	IGURATION -				Start	Time:	1030	1030 Finish Time:			
	Instrume	nt Setting	]8		Search Unit					Axial Orientated Search Unit					
Serial No.:		VH-9	075	Serial No.:	0111PK D	B# 35694	Cal. Checks	Time	Date	Calib	ration	Signal	Sweep	1	
Manufacturer:		KRAUTK	RAMER	Manufacturer:	К	ВА	initial Cal.	0715	3/31/2005		ector	Amplitude %	Division	Sound Path	
Model:		USN-		Size: 0.50" )	(1.0" Shape	RECTANGL									
Delay:	16.5822 uS	Range:	20.0"	Freq.: 2.25 l	Mhz Style	Benchmark									
_	0.1273 In/uS	Pulser:	N/A	Exam Angle:	35 # of 1	Elements: <u>🕺 1</u>	Inter. Cal. Final Cal.	1220	3/31/2005					<u> </u>	
Damping:	1 KHZ	Reject:	0	Mode:	SHEA	R				·				ļ <u>.</u>	
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ	Measured Angl	e: 38 D	EGREES		Couplai	nt		<del></del>			<u> </u>	
Filter:	N/A	Mode:	SINGLE	Wedge Style: _	FL	.AT	Cal. Batch:	-	98225		Circumi	erential Orient	ated Search	Unit	
Voltage:	HIGH			_		•	Type:		igel (i		ration ector	Signal Amplitude %	Sweep Division	Sound Path	
Ax. Gain (dB):	***************************************	Circ. Ga			learch Unit Cal		Mfg.:	Sono	otech			85%		40.50"	
1.0 Screen	Div. = 2.0	in. of _	Sound Path	Type:	RG17		Exam Batc	h:	98225		CH 7 CH 8	65% 55%	5.3 6.5	10.59"	
Linearity Repo	ort No.:	L-	05-002	Length: 12	No. Conn	0	Туре:	Ultra	igel li	1101	0110	2070	0.5	12.00	
	Calibrat	ion Block	•		Scan Coverag	e '	Mfg.:	Sono	otech						
Cal. Block No	<u>_</u>	IR-CSCL-	24-DCC	Upstream 🕢 🛭				erence l	Block		R	eference/Simul	ator Block		
Thickness:	N/A	Dia.:	FLAT	cw ₽	ccm. ✓	Scan dB: 79.	.5 Serial No.:	(	037405	Gain		Signal	Sweep	Sound Path	
Cal. Blk. Tem	p.: <b>85</b> Temp	o. Tool:	VH-8048	Exam Surface:	NOZZLE	& SHELL OD	Туре:		us Steel	28.6	2"	tor Amplitude 9	6 Division	2.005"	
Comp. Temp.	: <u>86</u> Temp	. Tool:	VH-8048	Surface Conditi	on: M	ACHINED	_			55.5	14"	80%	5.5	13.95"	
Recordable is	ndication(s):	Yes	No ₩	(If Yes, Ref. Attac	ched Ultrasonic	Indication Rep	ort.)			67.9	20"	80%	8.5	20.00"	
Results:	Accept 🗹	Reje	ect [	Info 🗌				Co	omments: SC						
Percent Of Co	overage Obtain	ed > 90%:	: No	Reviewed Prev	rious Data:	No			SE	EAIIAC	HED SH	EETS FOR CO	WIMENIS.		
Examiner	Level	1 /		Signature		Date Re	viewer,		7		Sign	ature		Date	
Flesner, Bret	-	Bin	Tlama		3	/31/2005	AIM				_				
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N/A	Lavat			Dimentions.		Det - Cal	N C	desx	Х	All.			4/127/	Date	
Other Key, Michael	Level p I W.	"~	RM	Signature	. 4	Date AN /21/2005	II Review		<	= #	sign	ature /27/	00	Date	
UT Calibration	n/Examination			· · · · · · · · · · · · · · · · · · ·			····			<del>(t/\</del>	7				



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Examiner:		Level:	N/A	Site Review:	RENAU	)	Date:	yb7	105
Other:	Key, Michael W.	Level:		ANII Review:			Date:	4/27	105
Comments:		$\mathcal{O}$			1 1				

Limitations from nozzle configuration:

Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 36.8% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISi-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID geometry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature ated in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure 3-2500-7(a) to this examination.

#### Scan limitations:

- 1. 149" to 8" due to the insulation and its support ring. (total limitation 26")
- 2. 24" to 36" due to support attachment. (total limitation 12")
- 3. 52" to 58" due to ID plate. (total limitation 6")

No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

V

#### Coverage Calculations:

Inner Radius exam volume= 4.88182 square inches

2.44382 square inches of this area could not be achieved due to component configuration.

2.44382 square inches ÷ 4.88182 square inches = 49.9% cross-sectional exam volume achieved.

44" of limited scan circumference + 167" total circumference = 73.7% of total inner radius circumference scanned.

49.9% X 73.7% = 36.8% total coverage obtained by scanning from the nozzle side.

0% coverage obtained by scanning from the shell side.

Examiner: Flesner, Bret T. Level II Date: March 31, 2005

AMATOME AND							
iomer: DC Cook Unit 2	Component: Branch	Connection Weld	Summary No.: 006950				
Weld No.: 6"-2-RC-26		Percent Of Exam C					
Reference Point: See below		,					
1) Interfering Condition		45 degree Axial scal					
Distance From Centerline	То	60 degree axial scar	ential scan – 100% Coverage n – 50% Coverage				
Distance From Ref. Point	То	1 -	rential scan – 100% Coverage				
2) Interfering Condition		]					
Distance From Centerline	То	Total Coverage – 75%					
Distance From Ref. Point	То						
3) Interfering Condition		]					
Distance From Centerline	То						
Distance From Ref. Point	То						
Weld No.: 6"-2-RC-26  Reference Point: See below  1) Interfering Condition  Distance From Centerline  To  Distance From Centerline  To  2) Interfering Condition  Distance From Centerline  To  Distance From Centerline  To  Distance From Ref. Point  To  Distance From Ref. Point  To  Distance From Ref. Point  To  Distance From Ref. Point  To	CW, CCW)						

Sketch Of Limitation(s):

Examination was limited due to component configuration.

MEAD HEAD

NO AXIAL SCAN FROM NOTTLE SIDE OF WELD DUE TO CONFIGURATION.

.

(IIVCEODE	ED THE EXTENT OF	% CUMPLETED OF EXAM AN	ID REASON FOR LII	NILLED KEPURI, AND	SKETCH SHUVVING AF	REA OF LIMITATION.)

Levelli: RA Keljerhail	123/164	Examiner: Julien Stanford  Aulien Han Ford	Date: 10-15-04
ver: NA		Date: \	
customer: Ry E Nall		Date: 10/25/64	1

416/490 46

بيو	PAMATOME	ANP

comer: DC Cook Unit 2	Component: Branch Connection Weld	Summary No.: 00696

Weld No.: 6"-2-RC-27

Reference Point: See below

1) Interfering Condition

Percent Of Exam Completed (Calculations Or Comments Below)

45 degree Axial scan – 50% Coverage

To

Distance From Centerline

45 degree circumferential scan – 100% Coverage
60 degree axial scan – 50% Coverage

Distance From Ref. Point To 60 degree circumferential scan – 100% Coverage 2) Interfering Condition

Distance From Centerline To

Distance From Ref. Point To

Interfering Condition

Distance From Centerline

To

(For All Measurements Indicate: US, DS, CW, CCW)

Total Coverage - 75%

Sketch Of Limitation(s):

Distance From Ref. Point

Examination was limited due to component configuration.

Nozzle

No Scen From Notele Side of WELD (ALIAL) DUE TO COLLFIGURATION. CASH

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kâlierhall Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colonial Colon	Pate:  10   23   \$4	Examiner: Julien Stanford  Aucen Henry	Date: 10-15-04
, ver: NA		Date:	
customer: Luf & Nacl		Date: 10/25/04	

422/490

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### ATTACHMENT 4

### **RELIEF REQUEST ISIR-36**

# EXAMINATION CATEGORY B-F PRESSURE RETAINING DISSIMILAR METAL WELDS

#### **RELIEF REQUEST ISIR-36**

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

ASME Code Class:

Code Class 1

Examination Category:

B-F, Pressure Retaining Dissimilar Metal Welds

Item Numbers:

B5.70, Steam Generator, Nozzle to Safe End Butt Welds

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-F requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figure IWB-2500-8. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Nozzle to Safe End examinations (STM-12-02R, STM-12-03R, STM-14-02R, and STM-14-03R) were limited to 25.72%, 23.92%, 25.72%, and 23.9% coverage respectively due to the component geometry. Coverage was limited due to tapers, weld contours, and depressions on some of the nozzles.

The Safe End to Elbow examinations (STM-22-02, STM-22-03, STM-23-02, and STM-23-03) were limited to 19.5%, 19.5%, 19.5% and 19.5% coverage respectively due to limitations encountered with the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to valve, and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1, the examinations were performed after the 10 CFR 50,55a mandatory implementation date (November 22, 2002) for Appendix VIII of Section XI. The provided code coverage percentages reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. However, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry as qualified through PDI. Indiana Michigan Power Company (I&M) has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. No alternative testing is proposed at this time. I&M has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code. I&M also performed surface examinations of 100% of the required area without limitations.

Additionally, for the welds consisting of CASS Elbow material (STM-22-02, STM-22-03, STM-23-02 and STM-23-03), there are currently no Appendix VIII PDI qualified procedures to inspect Cast Austenitic Stainless Steel (CASS) materials. The Steam Generator Inlet and Outlet nozzle configuration includes an austenitic stainless steel safe-end welded to a cast austenitic stainless steel elbow. The Appendix VIII procedure qualified for the examination of austenitic stainless steel welds from the Outside Diameter surface was used to perform a best effort examination of the CASS elbow material.

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design or material to eliminate the noted obstructions or material limitations. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Each weld also received a surface examination without limitations. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

#### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-12-02R	Safe End to Inlet Nozzle	B5.70	25.72	The completed examination was limited to 25.72% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-12-03R	Safe End to Inlet Nozzle	B5.70	23.92	The completed examination was limited to 23.92% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-14-02R	Safe End to Inlet Nozzle	B5.70	25.72	The completed examination was limited to 25.72% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-14-03R	Safe End to Inlet Nozzle	B5.70	23.9	The completed examination was limited to 23.9% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-22-02	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-22-03	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.
STM-23-02	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.
STM-23-03	Outlet Nozzle to Elbow	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.

#### **RELIEF REQUEST ISIR-36**

# EXAMINATION CATEGORY B-F PRESSURE RETAINING DISSIMILAR METAL WELDS

### SUPPORTING DOCUMENTATION



STM-12-

Report No.: UT-05-006 Page:

Summary No.: 013100

Examiner: Anderson, Paul S

II Reviewer

Date: Date:

Examiner:

N/A Other: Key, Michael W. Level: N/A

Site Review: ANII Review:

Date:

Comments:

Procedure 54-ISI-829-02 was used as guidance to perform a best effort examination.

Component configuration and contour prevented completing the examination in accordence with 54-ISI-829-02.

#### 45 Shear:

- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition (see coverage) and I or safe end to elbow weld

#### 35 Shear:

- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Axial scan performed only to help interigate near side
- Scan limited on safe end side due to taper transition and / or safe end to elbow weld.

#### 45RL:

- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.

#### 60 RL:

- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Scan limited on safe end due to taper transition
- Procedure 54-ISI-829-02 was used for guldance to perform a best effort examination,
- Component configuration and contour prevented completing the examination in accordance to 54-ISI-829-02

#### Axial Examination Coverage (CODE)

Total Area 1.5" (width) x 1.25" (height) = 1.8 SQ IN45 Degree S area examined 0.6175" SQ IN % exam complete = 34.3% % exam complete = 72.2% 35 Degree S area examined 1.3 SQ IN 45 RL area examined 0.097 SQ IN % exam complete = 6.4% 60 RL % exam complete = 0.0% area examined

#### **TOTAL COVERAGE**

AX DN CIRC DN CIRC UP AX UP 45 S = 0% 0% 100% = 134.3% / 4 = 33.5% 35 S = 0% 0% 0% = 72.2% / 4 = 18.05% 45RL= 0% 0% 100% 5.4% = 105.4% / 4 = 26.35% 60RL= 0% = 100 % /4 = 25.0% 0% 100%

25.7258 REH 4/5/2011

xaminer: Paul S. Anderson

Date: 3/31/05



Report No.:

UT-05-006

Page:

3 of 5

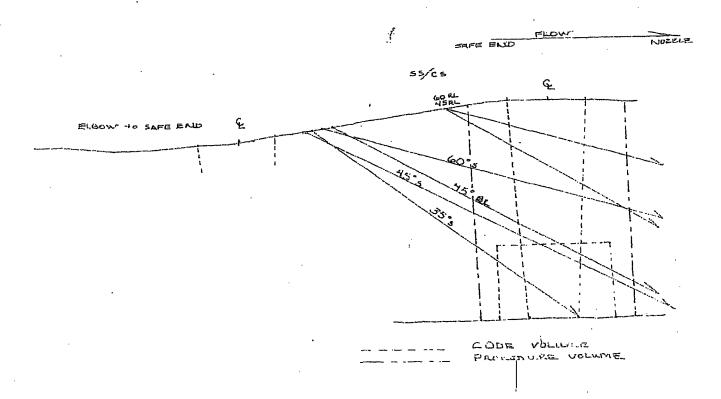
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Examiner:	N/A		Level:	N/A	Site Review	: KE	MAK	4	Date:	4/2	35/0
Other:	Key, Michael W.	rel	Level:	III	ANII Review	:	-116	<del></del>	Date:	4	261
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Procedure 54	ISI-829-02 was us	ed for gulda	nce to perfo	orm a bes	st effort exar	nination.	(	/			
Component of	onfiguration and	contour pre	rented comp	pleting th	ne examinati	on in accor	dance to 5	i4-ISI-829-02.			
- Exam lim	usted to maintain lited to safe end s in limited on safe	ide only due	to nozzle c	onfigurat	tion	d / or safe e	end to elb	 ow weld	٠.		
- Axial sca	usted to maintain in performed only ited on safe end s	to help inter	igate near s	sid <del>e</del>		o elbow we	ld.				
- Exam lim	ested to maintain lited to safe end s in limited on safe	ide only due	tonozzie co	onfigurati	ion	to elbow we	 eid.				
- Exam lim	usted to maintain lited to safe end s ited on safe end d	ide only due	to nozzle c								
	ation Coverage (0 1.3" x 1.5" = 1.9										
		mined mined	0.325 sq ii 1.3 sq ii 0 0	n % % i	Exam Comp Exam Comp Exam Comp Exam Comp	lete = 66.6% lete =  0%					
TOTAL COVE	RAGE										
45.0	AX UP	CIRC UP	AX DN		C DN RO	400					,
45 S 35 S	= 0% ≈ 0%	0% 0%	16.6% 66.6%	100% 0%							′
45 RL	= 0%	0%	0%	1009						٠	_
60 RL	= D%	0%	0%	1009	6 = <u>2</u> 5	%		-0/			
Examiner: Pa	aul S. Anderson, I	_evel li			95 REH	7/4 = Date: 4/7/201	みる.9♪   March 31 	. 2005			



### Supplementa. ..eport

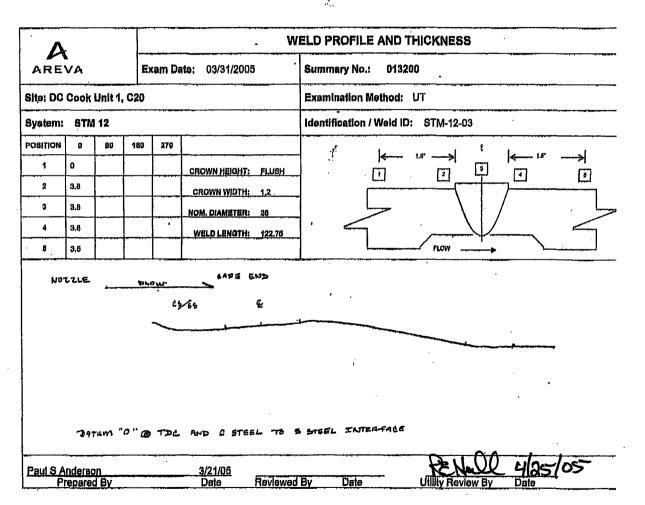
Report No.: UT-05-022

Page: 4 of 5

Summary No.: 013200

Sketch or Photo:

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						Report No.:	UT	-05-01	5
-						Page:	2	of	5
		ארת וא איב	2 R&	H 4/5/2011			<del></del>		
Summary No.:	015200	160-H-MT			ds	_			
Examiner:	Anderson, Paul S.	Lev	el: II	Reviewer:	NA	40/	Date:		
Examiner:	N/A	Lev	el: N/A	Site Review:	KE HOW	<i>DV</i>   /	Date:	409	<u> 105</u>
Other:	Key, Michael W.	Lev	el: III	ANII Review:	$\cdot$	AT.	Date:	410	6/83
				<u> </u>				71	<i></i>
Comments:						V			
accordence t	st effort examination o 54-ISI-829-02. Axi			onfiguration and	contour prevent	ed completing t	he exan	ninatio	n in
- Exam lim	usted to maintain a s lited to safe end sid an limited on safe en	e only due to nozz	le configu	ration	/ or safe end to e	 albow weld.			
- Axial sca	usted to maintain a s in performed only to ited on safe end sid	help interigate ne	ar side	•	elbow weld.	·		•	
- Exam lim	usted to maintain a l lited to safe end sid in limited on safe en	e only due to nozz	le configui	ration	elbow weld.				
- Exam lim	usted to maintain a lited to safe end sid ited on safe end du	e only due to nozz	le configu						
Total Area 45 Degrees	S Area Examined S Area Examined Examined	DE) 1.5" (width) x 0.6175 SQ IN 1.3 SQ IN 0.097 SQ IN 0	1.25" (H	% Exan % Exan	Complete = 34.3 Complete = 72. Complete = 5.4 Complete = 0.%	2% %			
TOTAL COVE									
•	AX UP	CIRC UP	CIRC DN	AX DN					

		AX UP		CIRC U	۲	CIRC D	Ne Pr	AX DN				
458	==	0%	+	0%	+	100%	+	34.7%	=	134.3% / 4	=	33.5%
35S	=	0%	+	0%	+	0%	+	72.2%	=	72.2% / 4	=	18.05%
45RL	=	0%	+	0%	+	100%	+	5.4%	==	105.4% / 4	=	26.35%
60RL	=	0%	+	0%	+	100%	+	0%	=	100% / 4	=	25.0%

Examiner: Paul Anderson

102.9/4=25.725% REH 4/7/2011

Report No.: <u>UT-05-015</u>

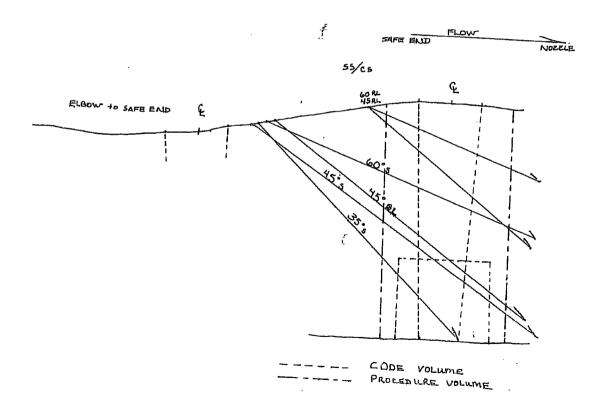
Page: 4 of 5

Summary No.: 015200

Sketch or Photo:

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WELD: STM-14-02 SUMMARY: 015200 REPORT: UT-05-015 PAGE:





Report No.:	UT	-05-01	11
Done	2	-6	

Summary No.: **015300** 

Examiner: Anderson, Paul S. Paul L

Level: II Level: N/A

Level:

Reviewer: Site Review:

ANII Review:

- WK 6 A

Date: \_\_

Date: 4/2605

Comments:

Examiner:

Procedure 54-ISI-829-02 was used for guidance to perform a best effort examination. The following issues prevented performing a complete examination in accordance with 54-ISI-829-02.

- Component configuration

Other: Key, Michael W.

- Transitional of OD taper at safe end to elbow weld

#### 45 Degree S:

- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition (see coverage) and / or safe end to elbow weld

#### 35 Degree S: (Supplemental)

- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Axial scan performed only to help interigate near side
- Scan limited on safe end side due to taper transition and / or safe end to elbow weld.

#### 45 RL:

Gain adjusted to maintain a 5-20% noise level throughout exam.

Exam limited to safe end side only due to nozzle configuration

- Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.
- Transducer does not meet freq. requirements for circ scans
- Focal depth = 2.7", squint angle = 3 degrees

#### 60 RL

- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Scan limited on safe end due to taper transition
- Focal depth = 2.1", squint angle = 3 degrees

#### **Axial Examination Coverage (CODE)**

**TOTAL AREA** 

1.3" x 1.5" = 1.95 SQ IN

CIRC UP

45 Degree SHEAR - AREA Examined	0.325 SQ IN	% Exam Complete = 16.6%
35 Degree SHEAR - AREA Examined	1.3 SQ IN	% Exam Complete = 66.6%
45 Degree RL - AREA Examined	0	% Exam Complete = 0%
60 Degree RL - AREA Examined	0	% Exam Complete = 0%

**AX DN** 

#### **TOTAL COVERAGE**

458	=	0%	0% -	- 16.6%	100%	=	29.1%
35\$	=	0%	0%	66.6%	0%	=	16.6%
45RL	=	0%	0%	0%	100%	=	25%
60RL	=	0%	<b>'0%</b>	0%	100%	=	25%
					TOTAL	=	23.9% (Code Coverage NOT PDI)

**CIRC DN** 

Framiner Paul Anderson Level II

Date: Allins



Report No.:

UT-05-011

Page

of

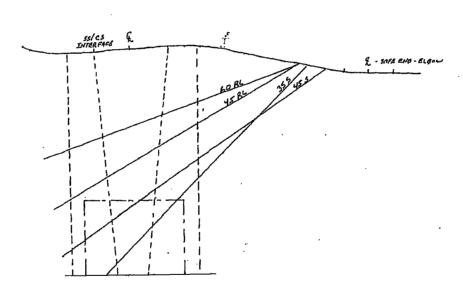
Summary No.: 015300

Sketch or Photo:

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A . - 12 . 13

NOZZLE FLOW - SAFE ENC



---- PROCEDURE COVERAGE

FORMATOME AND	·	EXAMINATI	ON SUMMARY
nary No.:009800	Data Package: N/A		Exam Date: 10/13/2004
Customer: DC Cook 2		Examination Meth	nods: UT and PT
System / Component ID: Steam Generator	/ STM-22-02	Examination Proc	edures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: ELBOW TO INLE	T NOZZLE	Calibration Sheets U2C15-Cal-013, U2	s No(s): U2C15-Cal-011, U2C15-Cal-012, 2C15-Cal-014
Examination Category: B-F		Results:	No Reportable Indications
ISO / Drawing:A-6			Reportable Indications Geometric
degree shear wave, 37.5% of the base materi	metric indications and so indication data sheets. In stainless elbow, weld did in the area of interest as covered. For the 60 ction Report for areas and idance to perform a besimplete examination in action.	can limitations. Geo contour, and depress was scanned. For the degree RL, 10.8% of dipercentages of covert effort examination.	sions on the nozzle side of the weld. For the 45 the 45 degree refracted longitudinal wave (RL), if the required examination was covered. See verage.  Weld crown configurations and the cast

Prepared By: John Langdon  WM Xangdan	Date: 10/18/2004	Reviewed By: RA Kellerhall Sign: ROKullerhall	10(20/64
Sign: Cury C	Date: 10/21/04		Page   of   2

D

### FRAMATOME AND

omer: DC Cook Unit 2	:	Com	ponent: STM-22-	02
Weld No.: STM-22-02		· · · · · · · · · · · · · · · · · · ·		P (0
Reference Point				s
1) Interfering Condition	Weld Ground are	a (dep	ression in weld)	S
Distance From Centerline	1.25" DS	То	1.75" DS	] #
Distance From Ref. Point	100.5" CW	To	104.8" CW	
2) Interfering Condition				] '`
Distance From Centerline		To		
Distance From Ref. Point		To		
3) Interfering Condition				]
Distance From Centerline		То		
Distance From Ref. Point		То		
(For All Measurements Ind	licate: US, DS, C	W, CC	W)	1

#### Percent Of Exam Completed

(Calculations Or Comments Below)

Scanning of the weld could not be performed due to the irregular contour of the weld.

Summary No.: 009800

Scanning of the elbow side of the weld was not performed due to the material being cast stainless steel.

Coverage was achieved as follows.

#### Nozzie side scans

- 45 degree shear wave- 37.5%
- 45 degree RL 10.2%
- 60 degree RL 10.8%

58.5/3 = 19.5% Ref 4/7/201

Sketch Of Limitation(s):

See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AI	ND SKETCH SHOWING AREA OF LIMITATION.
-------------------------------------------------------------------------------	---------------------------------------

Level HI: RA Wellechall	16/20/QU	Exampler Edward P Mazyck Western Charge	Date: 10/13/2004
rer: N/A		Date: NA	
E Day	talislos Oc	Date:	

10/12 232/490

COVERAGE PLOT
STM-22-02
INLET NOZZLE
(TOWARD RPV)

Nozzle VESSEL

- FLOW

ELBow

Par de parte de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction de la contraction

Edward Portrograck
LEVEL II 10/13/2004

Dal 12/12 234/490

	•	EXAMINA	TION	SUMMARY	
FRAMATOME ANP	Data Package: N/A		Ex	am Date: 10/13/2004	
Customer: DC Cook 2	Examination Methods: UT and PT				
System / Component ID: Steam Generator / STM-22-03  Component Description: Outlet Nozzle to Elbow		Examination P	rocedures	: 54-ISI-829-02 and 54-ISI-240-40	
		Calibration Sh U2C15-Cal-013		: U2C15-Cal-011, U2C15-Cal-012, al-014	
Examination Category: B-F		Examination Results:		eportable Indications	
ISO / Drawing:A-6		-	∐ Repor	rtable Indications	
Summary: A PT and UT exam was performed on weld S	TM-22-03.	<u> </u>			
The PT examination was performed with no re	ecordable indications a	nd no limitations.			
The UT examination revealed recordable geo intermittently 360 degrees. See the attached			3eometric	indications were noted in the root area	
Scan limitations were encountered due to cas degree shear wave, 37.5% of the base materi 10.2% of the required examination volume watched Ultrasonic Examination Scan Limitate sove procedure was used to provide guitables stainless material prevented performing a con	et stainless elbow, weld ial in the area of interes as covered. For the 60 ion Report for areas ar idance to perform a be	contour, and dep st was scanned. If degree RL, 10.89 nd percentages of st effort examinati	for the 45 of the recoverage.	degree refracted longitudinal wave (RL), quired examination was covered. See crown configurations and the cast	
degree shear wave, 37.5% of the base materi 10.2% of the required examination volume wa ched Ultrasonic Examination Scan Limitat	at stainless elbow, weld fal in the area of interest as covered. For the 60 ion Report for areas ar idance to perform a be applete examination in a	contour, and dep st was scanned. I degree RL, 10.89 nd percentages of st effort examinati accordance with the	for the 45 of the recoverage.	degree refracted longitudinal wave (RL), quired examination was covered. See crown configurations and the cast	

Reviewed By: RA Kellerhall

Date: 10/18/2004

Prepared By: JW Langdon

Page

of []

### FRAMATOME ANP

ner: DC Cook Unit 2		Con	nponent: STM-22-	03	Summary No.: 009900
Weld No.: STM-22-03  Reference Point  1) Interfering Condition  Distance From Centerline  Distance From Ref. Point  2) Interfering Condition  Distance From Centerline  Distance From Ref. Point  3) Interfering Condition  Distance From Centerline  Distance From Centerline  Distance From Ref. Point  (For All Measurements Index)	0.5" US 47.25" CW Weld Ground are 0.4" US 52.25" CW	To To Ea (de To To To To		contour of the weld.	ments Below) If could not be performed due to the irregion will state of the weld was not performed due to the irregion will be stated as the state of the weld was not performed due to the weld was not performed due to the weld was stated.  We will be stated as follows.

See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall ROCKION COO TIT	Date: 10 (19 (19 4	Examiner Edward Po Mazyck  Award Marysch	Date: 10/13/2004
wer: N/A		Date: N/A	
Long & Harl		Date: 10/25/04	

244/490 7/11

COVERAGE PLOT
STM-22-03
OUTLET NOZZLE
(TOWARD PUMP)

VESSEL FLOW ELBOW

10/05/04

Edward P. Margell
LEVEL III 10/13/2004
POUR 10/19/84
267/490 10/11

· · · · · · · · · · · · · · · · · · ·			
A		EXAMINATIO	ON SUMMARY
CAMATOME AND LIMARY No.:010700	Data Package: N/A		Exam Date: 10/12/2004
Customer: DC Cook 2		Examination Metho	ds: UT and PT
System / Component ID: Steam Generator	/ STM-23-02	Examination Proceed	dures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: ELBOW TO INLET	F NOZZLE	Calibration Sheets   U2C15-Cal-013, U2C	No(s): U2C15-Cal-011, U2C15-Cal-012, C15-Cal-014
Examination Category: B-F		Results:	No Reportable Indications
ISO / Drawing:A-6	· · · · · · · · · · · · · · · · · · ·		Reportable Indications Geometric
The PT examination was performed with no restriction intermittently 360 degrees. See the attached Scan limitations were encountered due to cast degree shear wave, 37.5% of the base materi 10.2% of the required examination volume was hed Ultrasonic Examination Scan Limitation and a provide guistainless material prevented performing a communication.	metric indications and sindication data sheets.  It stainless elbow, weld all in the area of interests covered. For the 60 ion Report for areas and idance to perform a besinplete examination in a	contour, and depression of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the contour of the conto	ons on the nozzle side of the weld. For the 45 e 45 degree refracted longitudinal wave (RL), ne required examination was covered. See rage.  Veld crown configurations and the cast

Prepared By: John Langdon  Www.Xeugdon	Date: 10-18-2004	Reviewed By: RA Kellerhall  Sign: PC Vel De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La De La D	Date:
Customer: Sign: Kurg F Hay	Date: 1024/04		Page 1 of 12

### MATOME AND

See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level ill: RA Kellerhall	wholl	Date: 10/21/04	Examiners Edward P. Mazyck  Award P. Mazyck	Date: 10/13/2004
wer.	и/А		Date: NA	
Customer:	e Mall	10/24/04	Date:	

244/490 10/12

Nozzle Vessel

- FLOW

ELBow

REHOLL 10/24/14

Edward P. Marriett.
LEVEL II 10/13/2004

RON 246/490

FRAMATOME AND ary No.:010800	Data Package: N/A		Exam Date: 10/12/2004
Customer: DC Cook 2		Examination M	ethods: UT and PT
System / Component ID: Steam Generat	or / STM-23-03	Examination P	ocedures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: OUTLET NOZZ	ZLE TO ELBOW		ets No(s): U2C15-Cal-011, U2C15-Cal-012, U2C15-Cal-014
Examination Category: B-F		Examination Results:	☐ No Reportable Indications ☐ Reportable Indications
ISO / Drawing:A-6			☐ Reportable indications  ☐ Geometric
intermittently 360 degrees. See the attaches Scan limitations were encountered due to degree shear wave, 37.5% of the base may	ed indication data sheets. cast stainless elbow, weld terial in the area of interes	contour, and dep	Geometric indications were noted in the root area ressions on the nozzle side of the weld. For the 4 or the 45 degree refracted longitudinal wave (RL)
The UT examination revealed recordable gintermittently 360 degrees. See the attached Scan limitations were encountered due to degree shear wave, 37.5% of the base mattached Ultrasonic Examination Scan Limitation	ed indication data sheets.  cast stainless elbow, weld terial in the area of interes was covered. For the 60 itation Report for areas ar guidance to perform a be	contour, and dep st was scanned. F degree RL, 10.8% nd percentages of st effort examinati	ressions on the nozzle side of the weld. For the 4 or the 45 degree refracted longitudinal wave (RL) of the required examination was covered. See coverage.

Prepared By: John Langdon  W Nawylan	Date: 10/18/2004	Reviewed By: RA Kellerhall Sign: RAKellerhall		Date: 10/21/84
Sign: Ruf E Naul	Date: 10/25/04		Page (	of 12



### FRAMATOME AND

mer: DC Cook Unit 2		Comp	oonent: STM-23-	03	Summary No.: 010800	
Weld No.: STM-23-03				Percent Of Exam C	•	
Reference Point					was limited from 114" to 117" and 118" to 5" to 1.80", due to grind out areas.	
1) Interfering Condition	Weld Ground ar	ea (dep	ression in weld)	ł	I could not be performed due to the irregular	
Distance From Centerline	0.5" US	То	1.8" US	contour of the weld.		
Distance From Ref. Point	114" CW	То	117" CW	Scanning of the elbo the material being ca	w side of the weld was not performed due to ast stainless steel.	
2) Interfering Condition	Weld Ground ar	ea (dep	ression in weld)	Coverage was achie	ved as follows.	
Distance From Centerline	0.5" US	То	1.8" US	Nozzle side scans		
Distance From Ref. Point	118" CW	То	10.5" CW	<ul> <li>45 degree shear</li> <li>45 degree RL 10</li> </ul>	·	
3) Interfering Condition				- 60 degree RL 10		
Distance From Centerline		То				
Distance From Ref. Point		То		1		
(For All Measurements Ind	licate: US, DS, 0	cw, cc	W)	1		

Sketch Of Limitation(s):

See attached Coverage Plot for contours causing scan limitations

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kell	. 1.7. 80	erhall	10/21/84	I	Edward P. Mazyck  Columb C- Mayyo	k	Date: 10/12/2004
ver:	)	N/A		Date:	NIA		_
_mer:	, E	NOO	10/25/04	Date:	,		

278/490

10/12

NOZZLE VESSEL COVERAGE PLOT STM-23-03 OUT NOZZLE (TOWARD PUMP)

ELBOW ELBOW

10605/04

LEVEL II 10/13/2001

280/490 Par 12/12

#### **ATTACHMENT 5**

### **RELIEF REQUEST ISIR-37**

# EXAMINATION CATEGORY B-J PRESSURE RETAINING WELDS IN PIPING

#### **RELIEF REQUEST ISIR-37**

#### Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

ASME Code Class:

Code Class 1

Examination Category:

B-J, Pressure Retaining Welds in Piping

Item Numbers:

B9.11, NPS 4 and Larger, Circumferential Welds

B9.31, Branch Pipe Connection Welds, NPS 4 or Larger

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-J requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-8, or IWB-2500-9, -10 or -11. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

Due to the component geometry coverage was limited due to tapers, bevels, weld contours, and joint configurations.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

During ultrasonic examination of the piping welds listed in Table 1 of this relief request. 100 percent coverage of the required examination volume could not be obtained. Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve, and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1, the examinations were performed using Appendix VIII of Section XI as modified by the PDI program. The provided code coverage percentages reflect what is allowed by qualified Appendix VIII techniques. Appendix VIII qualified PDI procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. However, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For all the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry, but this portion of the examination is not included in the reported coverage for welds examined under PDI and Appendix VIII rules. Indiana Michigan Power Company (I&M) has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. No alternative testing is proposed at this time. I&M has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design or material to eliminate the noted obstructions or material limitations. This is impractical due to the cost, additional radiation exposure and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Each weld also received a surface examination without limitations. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

#### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	ltem Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-RH-28-05F	Pipe to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the penetration side due to the bevel and the contour of the ID and OD. No relevant indications detected.
1-SI-22-18F	Pipe to Valve	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The coverage limitation was due to the OD bevel configuration on the valve side of the weld. No relevant indications detected.
1-SI-23-17F	Pipe to Valve	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The coverage limitation was due to the OD bevel configuration on the valve side of the weld. No relevant indications detected.
1-RC-5-01F	Branch to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the proximity of the branch connection to the branch side weld. No relevant indications detected.
1-SI-33-23S	Tee to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RC-22-01	Safe End to Elbow	B9.11	65.0	The completed examination was limited to 65% coverage due to the configuration. The configuration prevents examination due to the geometry of the safe end. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	ltem Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-RC-28-23	Tee to Pipe	B9.11	66.7	The completed examination was limited to 66.7% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-SI-56-19	Tee to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RH-33-01	Branch to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RC-17-08N	Branch to Pipe	B9.31	34.0	The completed examination was limited to 34% coverage due to the configuration. Limitations were based on the joint configuration. No axial scans were performed on the downstream side of the weld along with no circumferential scans on the branch connection weld due to the contour of the weld. In addition, circumferential scans could only be performed on the branch connection base material. No relevant indications detected.

## **RELIEF REQUEST ISIR-37**

## EXAMINATION CATEGORY B-J PRESSURE RETAINING WELDS IN PIPING

SUPPORTING DOCUMENTATION

## INCOMPLETE EXAMINATION REPORT

Marie Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the	REPORT NO: WC18-UT-015
į	PAGE 4 OF
	DATA PKG: A/A
	PROCEDURE: 83A 6228 REV2
PLANT/UNIT: D.C. COOK /UNIT   WELD NO: 1-RH-28-	-05F SYSTEM: RH
CONFIGURATION: PIDE TO PENGTRATION	
ASME CODE CLASS: C-F- (	
CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO	1989 SECTION XI, FIGURE
IWC-2500-7(a)	•
INTERFERING CONDITION: SINGLE-SIDED ACCESS DU	E TO CONFIGURATION. SMOLE
SIDED ACCESS EXAMINATION PERFORMS	ES UN ACCORDACE WITH
PROCEDURE PARAGRAPH 2.3. PRINTERTIAL S	SIDE LIMITED By BENEL
UD ID/OD CONTOUR.	
·	·
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETC	CH ATTACHED: YES NO
PARTIAL EXAMINATION PERFORMED: YES NO	
EXAMINATION ANGLE AFFECTED:	<del></del>
0 DEGREE WRV 45 0 DEGREE BASE MATERIAL	N/A
45 DEGREE AXIAL Yes 45 DEGREE CIRCUMFERENTAIL	, '
OTHER: * 70 · AXIAL	<u>/C3</u>
ALTERNATE METHOD RECOMMENDED: YES NO	<u> </u>
EXPLANATION: * EXAMINATION PERFORMED IN ACCORD	ANCE TO 83 H6228, KEV 2
PREPARED BY: V Smui P. Shick	DATE: 5-15-02
REVIEWED: Sup Jung	DATE: 517.02
Dave CO 11	
mark delade strates	

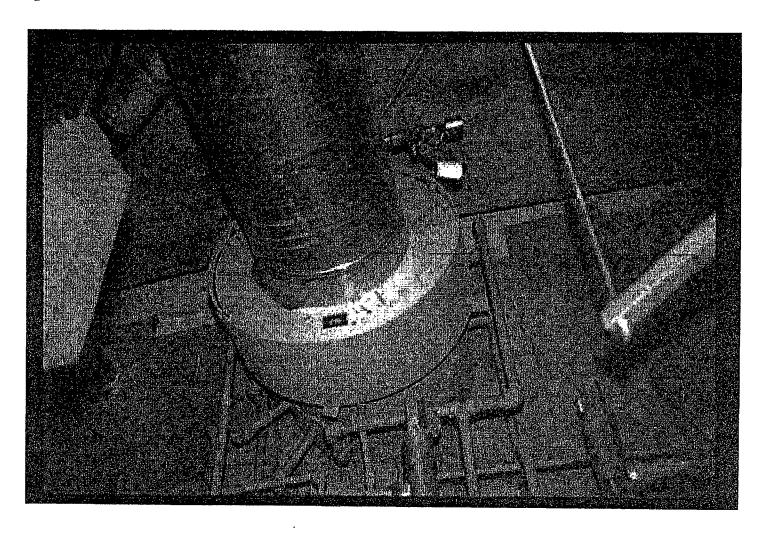


# Visual Component Database



**Component Number: 1-CPN-47** 

Image Title: 1-CPN-47 Image Date: 04/15/1985

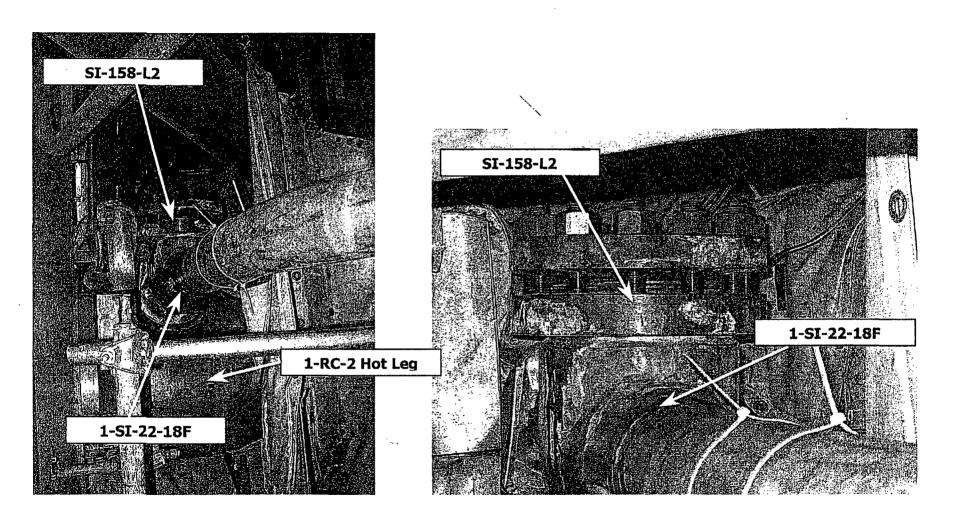


Date Printed: 05/30/2002 11:38 AM

## INCOMPLETE EXAMINATION REPORT

Garage	PAGE 8 OF 8
	DATA PKG: \u2224/A
	PROCEDURE: 83A6778 P/2
PLANT/UNIT: D.C. Cook # 1 WELD NO: 1-51-2	2-18F SYSTEM: SI
CONFIGURATION: PIPE TO VALUE	
ASME CODE CLASS: B-J, B9.11	
CODE EXAMINATION REQUIREMENTS: Examine in	ACCORDANCE WITH
ASME SEC. XI, 1989 ED., IWB	- 2500 Répurements.
INTERFERING CONDITION: A SINGLE SIOGO ACC	•
PERFORMED IN ACCORDANCE WITH PRI	
ACCESS WAS COMITTED DUE TO TH	FE OD BRUEL CONFIGURATION
ON THE VALUE SIDE OF THE W	ELD.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKI	ETCH ATTACHED: YES NO
PARTIAL EXAMINATION PERFORMED: YES NO	· · · · · · · · · · · · · · · · · · ·
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV 0 DEGREE BASE MATERIAL	$\frac{\nu/A}{}$
45 DEGREE AXIAL 45 DEGREE CIRCUMFERENT	FAIL
OTHER: * 70° R.L.	
ALTERNATE METHOD RECOMMENDED: YES NO	
EXPLANATION: * EXAMINATION PERFORMS	ID IN ACCORDANCE
WITH PROCEDURE PARAGRAPHS	1.8.2.
HEPARED BY:	DATE: 5.11.02  DATE: 5.20.02
REVIEWED: James P. Struby	DATE: 5.20.02
man) 72 Now 5/08/02	
(1,1/1,1)	

Lower Containment, just off 29" I.D. 1-RC-2 Hot Leg (Steam Generator #12). Scaffold required. Insulated. High contact dose rate (≈ 200 to 300 mr). Done from Steam Generator manway scaffold.

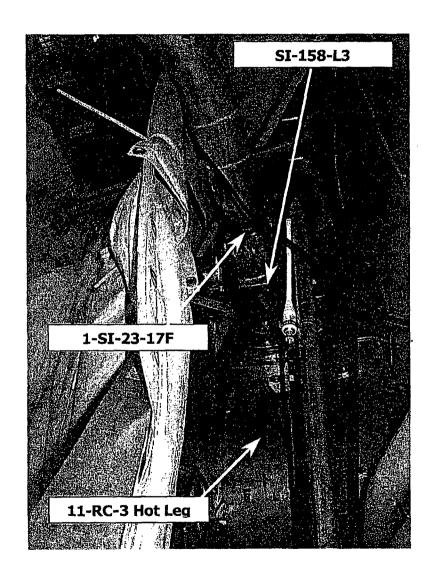


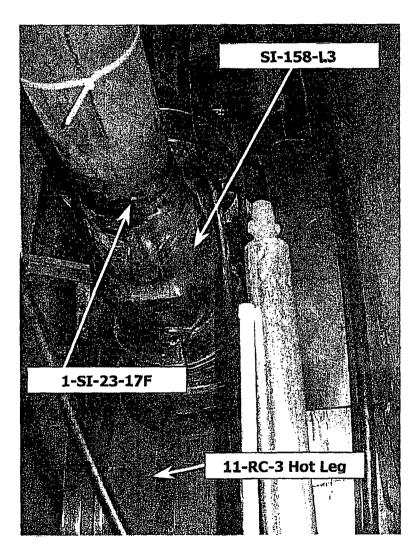
## INCOMPLETE EXAMINATION REPORT

PAGE 4 OF 4  DATA PKG: 074
PROCEDURE: <u>83A6228 R/2</u>
PLANT/UNIT: D.C. Cook # 1 WELD NO: 1-51-23-17F SYSTEM: SI
CONFIGURATION: PIPE TO VALUE
ASME CODE CLASS: B-J, B9.11
CODE EXAMINATION REQUIREMENTS: Examine in ACCORDANCE WITH
ASME SEC. XI, 1989 ED., IWB-2500 REQUERMENTS.
INTERFERING CONDITION: A SINGLE SIOGO ACCESS EXAMMATION WAS
PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 7.3.
ACCESS WAS COMITTED DUE TO THE OD BEVEL CONFIGURARA
ON THE VALUE SIDE OF THE WELD.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO
PARTIAL EXAMINATION PERFORMED: YES NO
EXAMINATION ANGLE AFFECTED:
0 DEGREE WRV 0 DEGREE BASE MATERIAL N/A
45 DEGREE AXIAL 45 DEGREE CIRCUMFERENTAIL
OTHER: #70° R.L.
ALTERNATE METHOD RECOMMENDED: YES NO
EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE
WITH PROCEDURE PARAGRAPH 5.1.B.2.
EPARED BY: Survey DATE: 5.11.02
REVIEWED: Warnin P. Sturk DATE: 5,20,02

1-SI-23-17F

Lower Containment, just off 29" I.D. 1-RC-3 Hot Leg (Steam Generator #13). Scaffold required. Insulated. High contact dose rate (≈ 200 to 300 mr). Done from Steam Generator manway scaffold.





# B

## UT Calibration/ amination

B	3	ite/Onit:	AEP	<i>'</i>		-		ouure.		131-101-01-2			Outage	NO		
	Summ	ary No.:		030900		_	Procedu	re Rev.:		4		_	Report	No.: U	T-00-041	6
	Woi	kscope:		ISI		-	Work Or	der No.:	!	55247776-01		_	P	age: 1	of _	3
Code:		ASME	XI 1989		Cat./l	tem:	B-J/B9.	11		Location:			CONT. L3			
Drawing No.:			A-19			Description	on: BRANCH	CONNECTIO	N TO PI	PE						
System ID:	RC				_ <del>_</del>							-				
Component ID:	1-RC-5-01F								Size/	Length:	Size: 14"		Thickness/D	iameler Thi	ckness	:1.40
Limitations:	No exam up	stream c	due to componen	t configuration						Start	Time:	1304	Finis	h Time:	1323	
	Instrume	nt Setting	js	······································	Şe:	arch Unit		Cal.	Time	D-4-		Δxi	al Orientated	Search Unit		
Serial No.:		1052	:05	Serial No.:		01D6N	VI.	Checks	111110	Date	Calib	ration	Signal	Sweep	т	
Manufacturer:		GEI	IT	Manufactur	er:	KBA	4	Initial Cal.	1016	10/17/2006	Refle		Amplitude %	Division	Sound	l Path
Model:		USN-6	0 SW	Size:	0.375"	Shape:	ROUND	Inter. Cal.	1303	10/17/2006	1.5"	Votch	80%	05.4	2.1	6"
	.8588 µsec	Range:	4.0 "	Freq.:1	.5 MHZ	Style:	Comp-G	Inter. Cal.	N/A		N	A	N/A	N/A	N/	A
	1220 "/µsec	-	Square	Exam Angle	e: 45°	# of El	ements: 1	Inter. Cal. Final Cal.	N/A	10/17/2006	<u></u>				<del> </del>	
Damping:	500 Ω	Reject:	0%	Mode:		Shear				<del></del>	<b></b>				ļ	
_	Auto High	Freq.:	2.0 MHz	Measured A			5°	-	Coupla		<u> </u>					
Filter:	N/A 450v	Mode:	Fullwave	Wedge Styl	le:	MSW	3C	Cal. Batch:		06225			erential Orient		h Unit	
Voltage: Ax. Gain (dB):	18.5	Circ. Gai	in (dB): N/A		0	L 11-14 O-bl	_	Type:		gel II otech		ration ector	Signal Amplitude %	Sweep Division	Sound	l Path
1 Screen D		in. of	Sound Path	 Type:	Searci	h Unit Cable RG174	,	Mfg.:			N/		N/A	N/A	N/	Α
				Length:	12'	No. Conn.:	0	_ Exam Bato		06225						
Linearity Report	t No.:	<u>L-</u>	06-011					Type:		igel II						
	Calibrat	ion Bloci				Coverage		Mfg.:	Son	otech					<u></u>	
Cal. Block No.:		CB-02		Upstream [			Can dB: 28.5	- 1761	erence	Block		Re	ference/Simu			
Thickness: 0	<del></del>	Día.:	Flat	CW 🗟		ccw <u>w</u> s	Gean dB: _28.5	- Serial No.:		A20250	Gain dB	Reflect	Signal or Amplitude	Sweep % Division	Sound	ı Patr
Cal. Blk. Temp.	: 89° Temp	o. Tool:	0506533	Exam Surfa	.—	0		_ Type:	Rom	pus SS	18.5	FSDH	<del></del>	4.5	1.8	3"
Comp. Temp.:	82° Temp	o. Tool:	0506533	Surface Co	ndition:	AS W	VELDED									
Recordable Inc	dication(s):	Yes	No 🗹	(If Yes, Ref. /	Attached l	Uitrasonic In	dication Repo	rt.)								
Results:	Accept 🕢	Reje	ect 🗀	Info 🗌					C				per procedure			
D	avana Ohtaina	-d = 000/.	50% *	Reviewed	Droulous I	Dotor	Van						configuration. 60° report.	Pulse Widtl	า (330).	See
Percent Of Cov	arage Obtains	eu > 90%.	5U7a	Kevieweu	Pievious	Dala.	Yes					0-10101	ov report.	المسائد المسائد		
Examiner	Level [[		aft	Signature	,	-	Date Revi	ewer e, Edward Reviev	HHEFT	MAIT	UHFI	Sign	ature			Date
Snyder, Steve			XXX	V X) CX		10/1	7/2006 Feig	e, Edward J	ΛÜŅ	VIIDIA	(B)	wan	25 1/2	70-5 1		10h
Examiner	Level N	I/A		Signature			Date Site	Review	MINING.	and a second second	D	Sign	eture -	,	6/4/	Date
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Other	Level [	Ī	MA	Signature		10/2	,	Review genberger, J	amoe A	1	~ %	Sign	) )			Date
Orihuela, Migu			11.0-		,	14 6	140   FOIL	Aainei Asi' Y	ames A.	James	Adm	zenk	<del>}</del>	10-2	2-0C	<u></u>
UT Calibration/	Examination	•														Œ



## Supplement Report

Report No.:

UT-0€

Page: 3

Summary No.: 030900

Examiner: Snyder, Steven C.

Other: Orihuela, Miguel

Level: Ii

Level: III

Reviewer: Feige, Edward J.

Date:

Examiner: N/A

N/A

Level: N/A Site

Site Review: Donavin, Paul

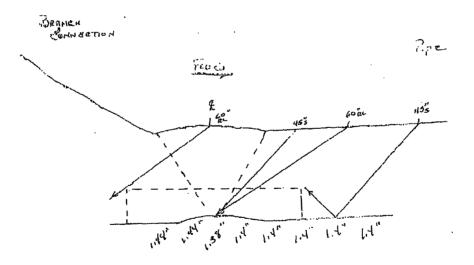
ANII Review: Longenberger, James A.

Date: \_\_\_\_\_

Comments: 1-RC-5-01F COVERAGE PLOT

Sketch or Photo: X:\IDDEAL\U1-C21 Inspection Documentation and Photos\WesDyne Examinations\CompID 1-RC-5-01F CompID 1RC-5-01F TC A.jpg

WO 55247776-01 SN 030900 Rpt UT-06-046\Coverage Plot



THE TAXEN FROM 1890 DATA

# 5

## UT Calibration/( imination

5	5	Site/Unit:	AEP	1	1			Dد	lure:		ISI-PDI-UT-2	!		Outage	No.:	U
	Summ	ary No.:		030900		_	Pro	cedure F	?ev.:		4			Report	No.: U	T-06-070
	Wo	rkscope;		ISI			Wor	k Order	No.:		55247776-0			P	ege: 1	of 1
Code:		ASME	XI 1989		Cal	t./Item:	B-J	J/B9.11		_	Location:			CONT. L3		
Drawing No.:			A-19		-	Descript	ion: BRAN	NCH CO	NNECTION	TO PI	'E					
System ID:	RC															
Component ID	: 1-RC-5-01F			·					<del>,</del>	Size/	Length:	Size: 14	n	Thickness/DI	ameter: Th	ckness:1,406
Limitations:	No exam up	stream du	ue to component	configuration	on			<del></del>		_	Sta	rt Time:	124	3 Finis	h Time:	1301
***************************************	Instrume	nt Setting:	\$			Search Unit			Cal.				A	cial Orientated S	oarch Linië	
Serial No.:		10520	D5	Serial N	lo.;	05-48	3		Checks	Time	Date	]	bration	Signal		Τ
Manufacturer:		GEI	Ť	Manufa	cturer;	R	ΓD		Initial Cal.	1020	10/17/2006		flector	Amplitude %	Sweep Division	Sound Path.
Model:		USN-60	sw	Size:	2(8 X 14)m	m Shape:	Rectang		Inter, Cal.	N/A		1.5	Notch	80%	06.3	2,5"
Delay:	9.0141 µ sec	Range:	4.0"	Freq.:	2 Mhz	Style:	TRL2-A	lust j	Inter, Cal.	N/A			WA	N/A	N/A	N/A
M'ti Cal/Vel:	0.2283 "/µsec	Pulser:	Square	Exam A	ngle: 6	80° # of E	iements:	2	Inter, Cai.	N/A						
Damping:	500 Ω	Reject:	0%	Mode:		Longitudi	nal		Final Cal.	1452	10/17/2006					
Rep. Rate:	Auto High	Freq.:	2.0 MHz	Measure	ed Angle:		80°		•	Couplai	nt			11		
Filter:	N/A	Mode:	Full Wave	Wedge	Style:	Inte	jral .		Cal. Batch:		06225	_	Circum	iferential Orienta	ated Search	Unit
Voltage:	450v								Туре:	Ultra	gel II		bration	Şignai	Sweep	Sound Path
Ax. Galn (dB):	58.5	Circ. Gair	n (dB): N/A		Sea	rch Unit Cab	le		Mfg.:	Sone	otech	Re	flector	Amplitude %	Division	Sound Patri
1 Screen	Div. = .40	in. of	Sound Path	Type:		RG174			Exem Batoh	1;	06225		N/A	N/A	N/A	N/A
Linearity Repo	rt No.:	L-0	06-011	Length:	6,	No. Conл.	: 0		Туре:	Ultre	igel (i	-		· · · · ·		
	Calibrat	ion Block		<del></del>	Sc	an Coverage	1	. •	Mfg.:	Son	otech	_				
Cal. Block No.		CB-02-		Upstrea	m 🖂 Dov	vnstream 🗸	Scan dB:	65.5	Pot	erence	Diegir	_		Reference/Simul	ator Block	
Thickness:	0.5" - 2.0"	Dia.:	Flat	C	w	ccw	Scan dB;	N/A	Serial No.;		120260	Gair		Signal	Sweep	Sound Path
Cal. Blk. Tem	o.: <b>89º</b> Temp	o. Tool:	0506533	Exam S	urface:	(	OD		Type:		ous SS	- dB		otor Amplitude 9		
Comp. Temp.:	82° Temp	o. Tool:	0606533	Surface	Condition:	As	WELDED		· , po	110111		_ <u>N/A</u>	N/A	N/A	N/A	N/A
Recordable i	ndication(s):	Yes	□ No 🗹	(If Yes, R	ef. Attached	l Ultrasonio In	dication Re	eport.)							<del> </del>	
Results:	Accept 🗹	Reje	ect 🗌	Info 🔲						C				≖Best effort exa		
Percent Of Co	overage Obtained	1 > 90%:	60% *	Review	ed Previous	Data:	Yes							to pipe configu or photo and co		
Examiner	Level	]	11-0	Signature			Date	Review	er				Sig	nature 314		Date
Snyder, Stev	en C.		XIIIX	5cl_		10/	17/2008	Feige, I	Edward J.			Rd	vay?	of Mex	3) 10	121/06
Examiner	Level A	V/A	7	Signature			Date	Site Re	view			/20	The state of	(49) yay	<del></del>	Date
N/A								Donavi	n, Paul			Tail	WANN)	mu	10/2	1/06
Other	Level (	it	MA	Signature		,	/ 1	ANII Re			1	WIFU	73.1.50	nature		Date
Orihuela, Mi	guel		1110-		fi.	10/2	20/06	Longer	nberger, Ja	mes A.	James	a To	en la	<u> </u>	10-2	1-86
LIT Calibration	/Evamination				<i>p</i>		•				1.	~ 0	•			

# R

## UT Calibration/[ nmination

	Site/Ur	nit: AEP	/ 1		•		adure:		ISI-PDI-UT-2		_	Outage N	lo.:	L 
	Summary N	0.;	108500			Proced	ure Rev.:		4		<u> </u>	Report N	lo.: <b>U</b>	T-06-049
	Workscop	De;	ISI			Work C	rder No.:		66247782-03			Pa	ge, 1	of 1
Code:	AS	ME XI 1989		Cat./Ite	em:	B-J/B9	9.11		Location:			CONT. L3		
Drawing No.:		A-56			Description	on: TEE TO	PIPE							1.70.
System ID:	SI		· · · · · · · · · · · · · · · · · · ·	-					<del></del>					
Component ID:	1-81-33-238		<del></del>			<del></del>		Size/	Length: 5	3ize: 10"		Thickness/Dia	meter: Thi	kness:1.312'
Limitations:	No exam upstrea	m due to compon	ent configuration		:			,	Start	Time:	1119	Finish	Time:	1131
	Instrument Set	tings		Sea	rch Unit		Cal.	Time	Date		Axia	Orientated 8	earch Unit	
Serial No.:		05205	Serial No.:		05-48	3	Checks	1 (1119	Date	Calibi		Signal	Sweep	1
Manufacturer:		GEIT	Manufacture	r:	ारा	D	Initial Cal.	1047	10/14/2006	Refle		Amplitude %	Division	Sound Path
Model:		N-60 SW	Size: 2(8	X 14)mm		Rectangula		1118	10/14/2006	1.5" N	lotch	80%	06.0	2,3"
	9.0141 µ sec Rang			2 Mhz	_ Style:	TRL2-Aust	Inter. Cal.	N/A		N/	A	N/A	N/A	N/A
	0.2203 "/µsec Puls					lements: 2	Final Cal.	1869	10/14/2006	<u> </u>				ļ
Damping:	800 Ω Rejs		Mode:		Longitudir	<del></del>	-	Couplai		<b> </b>		<del></del>		ļ <del></del>
Rep. Rate:	Auto High Freq N/A Mod		- 1,174,741,741,741,741,741,741,741,741,74			:0°					Circumfor	rential Orienta	ted Conrob	l Init
Fliter: Voltage:	450v	e, run yvav	e Wedge Style	); 	Integ	rai	Cal. Batch: Type:		06225 Igel II					Omi.
Ax. Gain (dB):	*	Gain (dB):	I/A	Search	Unit Cabl	· a	Mfg.:		otech	Calibr Refie		Signal Amplitude %	Sweep Division	Sound Path
1 Screen	Div. = .40 In. o	f Sound Par	h Type:		RG174	_	Exam Batol	n:	06225	N	Α	N/A	N/A	N/A
Linearity Repor	rt No.:	L-06-011	Length:	6'	No. Conn.:	0	Type:		igel II					<u> </u>
	Calibration B	lock		Scan	Coverage		Mfg.:		otech	<u> </u>				<del></del>
Cal. Block No.		3-02-184	Upstream [	Downs	tream 🕢 🧸	Scan dB: 58	.6 Ref	erence	Block	<b>—</b>	Ref	erence/Simula	tor Block	<u></u>
Thickness:	0.5" - 2.0" Dia	.: Flat	cw[	]	ccw	Scan dB: N/			A20260	Gain		Signal	Sweep	Sound Path
Cal. Blk. Temp	o.: 88° Temp. Too	l: 0506533	Exam Surfa	ce:	C	מפ	Туре:		pus SS	₫B 45	Reflector FSDH	Amplitude %	Division 3.0	
Comp. Temp.;	78° Temp, Too	i: 0506533	Surface Cor	ndition:	AS \	VELDED		1,011.		N/A	N/A	N/A	N/A	1.2" N/A
Recordable tr	ndication(s):	Yes No [	(If Yes, Ref. A	itached UI	trasonic in	dication Repo	rt.)			11/17	10/1-4	10/2		INFA
Results;	Accept 🔽	Reject	info [		10171755	-	rioni on	¶ <b>V</b> c	omments: Pu	lse Width	(260), ID	Geometry ob	served belo	)W
		_	_		18 02 H II	nrmai	<b>IUN UIV</b>					anned at refer		
Percent Of Co	verage Obtained > 90	%: 50%	Reviewed F	revious Da	ata: [ ] V	A Mezro	white to 5 and add a second		). NO	se level.	Kei-40, th	t UT-06-055 f	or Coverag	e Piot/Photo.
Examiner	Level	بوسي	Signature			Date Re	evlewer		125		Signat	ure	. 1	Date
Snyder, Stev	en C.	$\mathcal{O}\mathcal{M}$	R. Holm		10/	11/2006 Fe	ige, Edward J.		Edi	20.0	73	Je Je	10/21	06
Examiner	Level		Signature				e Review		0 10		e eignat	ure	, 1.	Date
Frana, Jerem	<u>-</u>			<del>,</del>	10/		onavin, Paul		Taulil	Vona	vin	·	0/24/06	
Other	Level III	M M	ੂੰ Signature∮		. 1		VII Review		1	" · 🗸	Signat	ure	· ,	Date
Orihuela, Miç	~ 	1100	4	ft.	. [0]	29/06 La	ongenberger, J	шиея Д.	James "	7 do	yen by		10-21-0	
UT Calibration	n/Examination		/ <sup>r</sup>			•		1	<b>V</b>	/				BAR.

# A

## UT Calibration/E mination

	Sit	te/Unit:	AEP	1	1			₃dure:		ISI-PDI-UT-2			Outage	No.:	U
	Summa	ry No.:	·	108500	ا	<del>_</del>	Procedure	Rev.:		4		-	Report	No.: U	T-06-056
	Work	scope:		ISI		<del></del>	Work Orde	r No,:		55247782-03		<del>-</del>	P	age: 1	of 3
Code:	, , , , , , , , , , , , , , , , , , ,	ASME )	KI 1989		Cal.	./Item:	B-J/B9.1	1	_	Location:			CONT. L3		
Drawing No.:	111111111111111111111111111111111111111		A-68	_		Description	n: TEE TO PIF	E							
System ID:	ŞI														•
Component ID:	: 1-SI-33-23S		·						Size/	Length:	Size:10"		Thickness/D	iameter: Th	lckness:1.312
Limitations:	No exam ups	tream du	ie to componen	t configurati	on.					Start	Time:	1103	Finis	h Time:	1117
- Andrews - Andrews - Andrews - Andrews - Andrews - Andrews - Andrews - Andrews - Andrews - Andrews - Andrews	Instrument	Settings			S	earch Unit		Cal.	Time	Date		Axial	Orientated 8	earch Unit	
Serial No.:		10520	)5	Serial N	lo.:	01D6NI	VI	Checks		L	Calibra	ation	Signal	Sweep	Sound Path
Manufacturer:		GEIT		Manufa	cturer;	KBA	4	Initial Cal.	1043	10/14/2006	Refle	ctor A	mplitude %	Division	Sound Paul
Model:		USN-60		Size: _	0.375"	Shape: _	ROUND	Inter. Cal, Inter. Cal,	1100 N/A	10/14/2006	1.6" N		80%	05.4	2.16"
Delay:		Range: -	4,0"	Freq.:_	1.6 MHZ		Comp-G	Inter, Cal.	NA		N/A	<del>`</del>	N/A	N/A	N/A
_		Pulser:	Square	Exam A	ingle: 4		ements; 1	Final Cal.		10/14/2006					
Damping:		Reject: _	0%	Mode:		Shear	<del></del>		Coupla	·			·	·	<del></del>
Rep. Rate: Filter:		Freq.: Mode:	2.0 MHz Fullwave		ed Angle:	<del></del>	5.	Cal. Batch:	-	06225		Citoumfen	ential Orient	ated Sparci	ilnit
Voltage:	460v	wode.	Pullwave	Wedge	Style:	MSW	4C	Type:	-	igel II	<u> </u>				101111
Ax. Gain (dB):		Circ. Gain	n (dB): N/A		Sear	ch Unit Cable	,	Mfg.:		otech	Calibra Refle		Signal mplitude %	Sweep Division	Sound Path
1 Screen		In. of	Sound Path	 Туре:	Ocui	RG174	•	-			N/	4	N/A	N/A	N/A
	,		06-011	Length:	6'	No. Conn.:	0	Exam Batcl Type:		06225 igel II					
Linearity Repo						an Coverage		Mfg.:		otech	ļ				
	Calibratio			Upstrea		_	Scan dB; 28.5	a			ļ				
Cal. Block No.		CB-02-						Ref	erence	Błock	0-1-	Refe	rence/Simul		<del></del>
Thickness:	0.5" - 2.0"	Dla,:	Flat		W 🗹		Scan dB; 28.5	Serial No.;		A20250	Galn dB	Reflector	Signal Amplitude	Sweep Division	Sound Path
Cal, Blk, Temp			0606533		Surface:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	D ·	Type:	Rom	pus SS	18.5	FSDH	45%	04.5	1.8"
Comp. Temp.:	<del></del>		0506533		Condition;		VELDED	•							
Recordable in	ndication(s):	Yes	□ No ☑	(If Yes, F	lef. Allached	Ultrasonic Ind	lication Report.)						<u> </u>		<u> </u>
Results:	Accept 🔽	Reje	ct .	Info 🗌			* .	٠.	С	omments: Pu			Geometry of		
Percent Of Co	overage Obtained	> 90%:	50%	Review	ved Previous	Data:	Yes								
Examiner	Level II		No	Signature	7		Date Revie	wer	<del></del>	57		Signat	ire		Date
Snyder, Stev	ren C.		XW.C	AL		10/1		, Edward J.		Phy	and	700	- Cert	10/21	
Examiner	Level (	/	,0	Signature	. ^		Date Site F				100	Signati	•	11 1-	Date
Frana, Jerem		(fin	y in t		Emy file	29NA 10/1	- VW N 842	vin Paul	73');;;;;;=(	-rom Jang	PRIC	Mount		10/21	106
Other Orihuela, Mig	Level III Guel	/ .	( M.1	Signature	•	المدا	Date A	IKNA	TIQI	N ONLY	n D	Signati	11.6	10-21-	Date !
UT Calibration			1 0 2 0			<del>'/'</del>	100		<del>~~~</del>	TO TO THE L	4 Conge	receipe	<del></del>	1 - 41/-4	<u>.</u>



### Supplemen<sup>-</sup> Report

Report No.: UT-06

Page:

Summary No.: 108500

Examiner: Snyder, Steven C.

Level:

Level:

Reviewer: Felge, Edward J.

ANII Review: Longenberger, James A.

Date:

Examiner: Frana, Jeremy R.

Other: Orihuela, Miguel

Level: 111 Site Review: Donavin, Paul

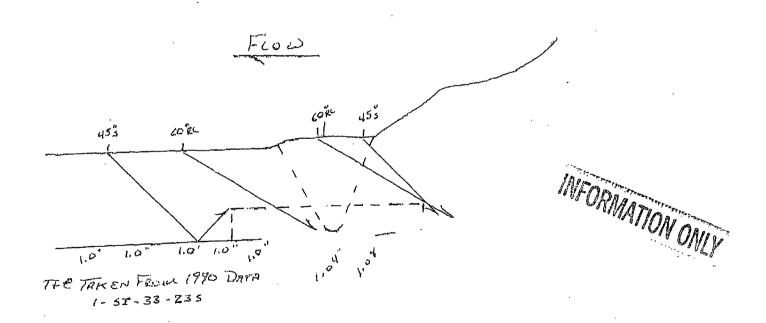
Date: Date:

Comments: 1-Si-33-23S Coverage Plot

Sketch or Photo: X:\IDDEAL\U1-C21 Inspection Documentation and Photos\WesDyne Examinations\ComplD 1-SI-33-23S

WO 55247782-03 SN 108500 Rpt UT-06-049\Coverage plot 1-

33-23S with TC D.jpg



A AMATOME AND		EXAMINATIO	ON SUMMARY					
mary No.:025700	Data Package: NA		Exam Date: 10/16/2004					
Customer: DC Cook 2		Examination Metho	ds: PT and UT					
System / Component ID: Reactor Coolant	/ 2-RC-22-01	Examination Procedures: 54-ISI-240-40 and 54-ISI-836-08						
Component Description: Safe End to Elbo	w Weld		No(s): U2C15-Cal-049, U2C15-Cal-051					
Examination Category: B-k / B5.130	1883-10-00	Results:	No Reportable Indications					
ISO / Drawing: A-19, 20			Reportable Indications Seometric					
Summary: A PT examination was performed on 100% of A UT examination was performed from one stareas coverage could not be obtained.			ted. See attached Scan Limitations Report for					
Prepared By: JW Langdon  — JW Computer  Sign: Langdon  And Computer  Sign: Langdon	Date: 10-25-04  Date: 10-25-04	Reviewed By: RA Kell	Date. 10-23-04					

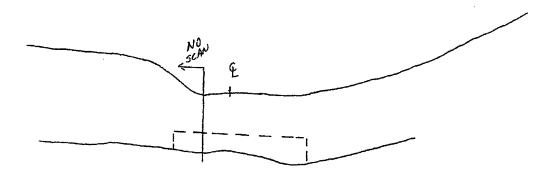
	-
A	

## **ULTRASONIC EXAMINATION SCAN LIMITATION REPORT**

## AMATOME AND

tomer: DC Cook Unit 2		Comp	onent: Reactor	Coolant	Summary No.: 025700
Weld No.: 2-RC-22-01				Percent Of Exam C	·
Reference Point 0"				•	·
1) Interfering Condition	Sur	face Ge	ometry	45 degree circumfere Total area:	ential coverage
Distance From Centerline	0.25" US	То	0.55 US	1.5" width	
Distance From Ref. Point	0"	То	20.4"	0.25 height	•
2) Interfering Condition				20.4" length	,
Distance From Centerline		То		1.5W x 0.25H x 20.4	L = 7.65
Distance From Ref. Point		То		Obstructed area	
3) Interfering Condition				0.3" obstructed width	1
Distance From Centerline		To		0.25" obstructed heig	
Distance From Ref. Point		То		20.4" obstructed leng	
4) Interfering Condition					
Distance From Centerline		To		45 degree cricumere	ential coverage = 80.0%
Distance From Ref. Point		To		45 degree axial cove	rage = 100%
(For All Measurements Indica	ate: US, DS, C	W, CCV	V)	To degree axial cove	

'ch Of Limitation(s):



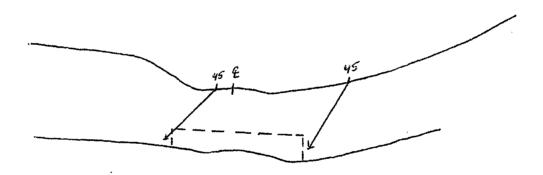
(INCLUDED THE EXTENT OF 9	6 COMPLETED OF EX	AM AND REASON FO	R LIMITED REPORT, AND SKETCH SHOWIN	IG AREA OF LIMITATION.)
Level III: Robert Kellerhall	rehall	Date: 10-25-04	Send James	Date:10-16-04
∍wer:	NIA		Date: NA	
_stomer:	NOO		Date: (0)26/04	

457/490

PAGE 5 of 7



## UT COVERAGE PLOT



458/490

COMPONENT: 2-RC-22-01

RENDO Idabley

PANC PAGE 6 OF 7

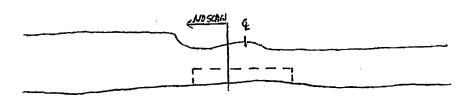
MATOME AND		EXAMINA	TION SUMMAR	<b>Y</b>
.mary No.:034300	Data Package: NA		Exam Date: 10/20	/2004
Customer: DC Cook 2	<u> </u>	Examination M	ethods: PT and UT	
System / Component ID: Reactor Coolant	/ 2-RC-28-23	Examination Pr	rocedures: 54-ISI-240-40	and 54-ISI-836-08
Component Description: Tee to Pipe Weld		Calibration She	eets No(s): U2C15-Cal-05	6, U2C15-Cal-057
Examination Category: B-J / B9.11		Examination Results:	No Reportable Indic	ations
ISO / Drawing:A-2\$ 7	od		Reportable Indication	ens
Summary:  A PT and UT examination was performed on  The PT exam covered 100% of the weld.	•	no indications note	Geometric	
The UT exam was limited to the pipe side. S	ee attached Scan Limit	ation Report for an	eas and percentages of co	overage.
		·	, ,	_
	•			
	·			
Prepared By: JW Langdon	Date: 10-25-04	Reviewed By: R/	A Kellerhall	Date:10-25-04
guxangdan	D-1	Sign: Will	Ellthall	
Sign: Left & Mall	10/26/04		F	Page 1 of 7
			479	1490

## ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

## AMATOME ANP

omer: DC Cook Unit 2		Comp	onent: Reactor	r Coolant	Summary No.; 034300				
Weld No.: 2-RC-28-23				Percent Of Exam Completed (Calculations Or Comments Below) 45S Circumferential coverage					
Reference Point 0" Weld CL									
1) Interfering Condition	Sur	face Ge	ometry	Weld length 14.3"					
Distance From Centerline	0.2" US	To	0.6" US	Coverage Height = 0	0.15" Obstructed				
Distance From Ref. Point	0.0" CW	То	14.5" CW	Coverage Width = 0.					
2) Interfering Condition				Coverage Length = 1	14.5" Obstructed				
Distance From Centerline		То		0.15H x 0.4W x 14.5L = 0.87  Coverage Height = 0.15"					
Distance From Ref. Point		То							
3) Interfering Condition				Coverage Width = 1.	2"				
Distance From Centerline		To		Coverage Length = 1	14.5"				
Distance From Ref. Point	·	To			L = 2.61 for Complete Coverage				
4) Interfering Condition				4.8/108.6 = percent o	obstructed area				
Distance From Centerline		То		66.7% Coverage A	chievod				
Distance From Ref. Point		To		_ 00.7 % Coverage At	Glicyeu				
(For All Measurements Indica	te: US, DS, 0	cw, cc	(V)	7					

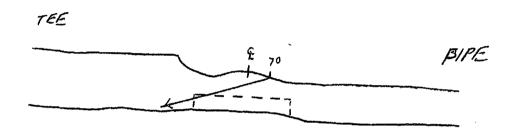
:h Of Limitation(s):



OR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATIO	N.)
Examiner: George Chapman Date:10-20	0-04
Date: NA	
Date: 10/26/04	
	Date: NA



## **UT COVERAGE PLOT**



184/490

COMPONENT: 2-RC-28-23

My Gly 10-20-04

PAK PAGE LE OF 7



## UT Calibration/( imination

	S	ite/Unit:	AEP	<u>/</u> 2	!	_	اد	cedure:		54-ISI-836			Outage I	No.:	46	
No.	Summ	ary No.:	0	89750		-	Procedu	re Rev.:		09		_	Report I	No.: U	T-06-018	}
	Wor	kscope:		ISI		- -	Work Or	der No.:	****	05144018	·		Pa	ige: 1	of	5
Code:		ASME	XI 1989		Cat./If	tem:	B-J/B9.1	11		Location:			CONT. L1			
Drawing No.:			A-47			Description	: TEE TO P	IPE								
System ID:	SI															
Component ID:	2-SI-56-19								Size/	Length: N//	A / 34.37	5	Thickness/Di	ameter:	1.1" / 10.	.0"
Limitations:	Tee configu	ration		-					~···	Start	Time:	2245	Finis	h Time:	2345	
<del></del>	Instrumer	t Settin	gs	**************************************	Sea	arch Unit		Cal.	Time	Date		Axial	Orientated S	earch Unit		
Serial No.:		0104		_ Serial No.:		00HRX9		Checks		!	Calibr		Signal	Sweep	D	
Manufacturer:		KE		_ Manufactur	rer:	KBA		Initial Cal.	2200	4/12/2006	Refle		mplitude %	Division	Dep	AIR
Model:		USN		_ Size:	0.375"	Shape:	ROUND	Inter. Cal.	2300	4/12/2006	1.5	5"	80%	7.5	1.5	n
Delay:	5.79	Range:	2.828	_ Freq.:2	.25 MHZ	Style:	COMP-G	Inter. Cal.	N/A N/A		IDR		10%	5.0	1.0	*
M'ti Cal/Vel:	0.124	Pulser:	High	_ Exam Angl	e: <u>45</u>	# of Elei	ments: 1	Final Cal.	0030	4/13/2006	N/	A				
Damping:	1K	Reject:	Off	_ Mode: _		Shear									<b>—</b>	
Rep. Rate:	AutoHigh	Freq.:	2.25 N/A	_ Measured /	_	45			Couplar			Cifa-		4-45	N//	<del>\</del>
Filter: Voltage:	Full Wave Fixed	Mode:	IWA	_ Wedge Sty	ie:	MSWQ	C	Cal. Batch:		04325			ential Orienta		T	
Ax. Gain (dB):	24.8	Circ. Ga	nin (dB): N/A		Searci	h Unit Cable		Type: Mfg.:	Ultra Sono		Calibr Refle		Signal   Amplitude %	Sweep Division	Dep	<i>i</i> th
1 Screen D	oly. = 0.20	in, of	Depth	Type:		RG174		Exam Batch		04325	N/	Α				
Linearity Report		_	-06-002	Length:	6'	No. Conn.:	0	_ Type:		gel II						
uneanty report	-			- · -	Scan	- Coverage		Mfg.:		otech					ļ	
O-L Di-Jaha	Calibrati			i instreem i		stream 📝 So	rand®· 41	-							N//	4
Cal. Block No.:		CB-0		CW }	_			– Kei	erence l	Block	Colo	Ref	erence/Simul			
Thickness:		Dia.:	Flat			CCW S		- Serial No.:		N/A	Gain dB	Reflector	Signal Amplitude %	Sweep 6 Division	Dep	xth
•		-	JC24395 / VH-9567	<del>-</del>		OD		Туре:	N	//A	N/A					
Comp. Temp.:	<del></del> ·	_	JC24396 / VH-9567	_ Surface Co	•		DUND	<del></del>								
Recordable in	dication(s):	Ye	s 🔲 No 🔽	(If Yes, Ref.	Attached U	litrasonio Indic	ation Report.	)			L	<u> </u>	<u> </u>		N/A	4
Results:	Accept 🗹	Re	ject 🔀 💮 I	nfo 🗌					Co	omments: NC	D					
Percent Of Cov	erage Obtained	> 90%:	No	Reviewed	Previous D	ata:	Yes									
Examiner	Level [	-PDI		Signature			Date Revi	ewer	·			Şignati	ure			Date
Chapman, Ge	orge G		/z	4C		4/13	/2006 Nich	nolas Shearer	, Level I	n	K	8H/1	عوا		4/14/	2006
Examiner	Level			Signature			Date Site	Review		17	× 11	élgpat.	ure			Date
Bauman, Nath	an M.		<u> </u>	<u>~S</u>		4/13	/2006 Roy	E. Hall			Q N	all			4/18/	2006
Other	Level ]	1		Signature	-		1	Review		/////	1	Signat	,	/		Date
Blum, William	E.		(	<u> </u>		4/14	/2006			/XX \/	Noch	972	4/19	186		
UT Calibration/	Examination									·V		7	,	51-9019		
											(	ر		Page 23	9 of 30:	5

## Limitation Record

Site/Unit:	AEP		2	Procedure:	54-ISI-836	Outage No.:	U2-C16					
Summary No.:		0897	50	Procedure Rev.:	09	Report No.:	U'	T-06-0	18			
Workscope:		ISI		Work Order No.:	05144018	Page:	2	of	5			

Description of Limitation:

One sided exam due to configuration of T to pipe. 50% coverage achieved. See supplemental report for limitation description.

Sketch of Limitation: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\2-SI-56-19a.jpg



Limitations removal requirements:

## Radiation field:

Examiner Level ILPDI	Signature	Date	Reviewer	Signature	Date
Chapman, George G	M	4/13/2006	Nicholas Shearer, Level III	BEX179	4/14/2006
Examiner Level	Signature	Date	Site Review	Signature	Date
່ ¬uman, Nathan M.	NMS	4/13/2006	Roy E. Hall	QU)	4/18/2006
ner Level III	Signature	Date	ANII Review	, /Signature	Date
Blum, William E.	1 JED	4/14/2006	- Hollman	4 18/04	

Additional - Limitation <edit from Setup>



## Supplemen' Report

Report No.: UT-06 ,
Page: 4 of 5

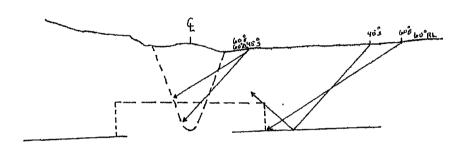
Summary No.: 089750

Sketch or Photo: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\coveragePlotsummary# 089750.jpg



## **UT COVERAGE PLOT**

TEE



PIPE

Coverage plot shows 45°, 60° shear and 60° RL angles. Coverage Plot for Safety Injection System weld# 2-SI-56-19

COMPONENT: Summary# 089750

PAGE \_\_\_\_ OF \_\_\_

51-9019875-000 Page 242 of 305

Additional - Supplemental Reports <edit from Setup>



## **Supplemental Report**

Report No.: UT-06-018

Page:

Summary No.: 089750

Examiner: Chapman, George G

Level:

Level:

Reviewer: Nicholas Shearer, Level III

Date: 4/14/2006

4/18/2006

Site Review: Roy E. Hall ANII Review:

Comments: None

Examiner: Bauman, Nathan M.

Other: Blum, William E.

Sketch or Photo: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\2-SI-56-19a.jpg



## UT Calibratio. amination

		Site/Unit:	AEP	/ 2			P	Procedure:	i	ISI-PDI-UT-2		_	Outage I	No.:	u2-C17
	Sum	mary No.:		148800			Proced	dure Rev.:		4			Report I	No.: U	T-07-133
	W	orkscope:		ISI			Work (	Order No.:		55289182			Pe	ige: 1	of 3
Code:	11.	ASME	XI 1989		Cat./Ite	em:	B-J/B	9.11		Location:			CONT. L2		
Drawing No.:			A-77			Descriptio	n: BRANC	H CONNECTION	N TO PIF	PE					
System ID:	RH														
Component ID:	2-RH-33-01						··		Size/	Length:	1.5"/44.5"		Thickness/Di	ameter: 1,4	1"/14"Sch160
Limitations:	50% cover	age due to	configuration.							Start	Time:	1006	Finisi	h Time:	1030
	Instrume	ent Setting	s		Sea	rch Unit		Cai.				Avi	al Orientated S	earch Unit	
Serial No.:		10234	44	Serial No.:		008J9H		Checks	Time	Date	Calib		Signal	Sweep	<del></del>
Manufacturer:		KBA	Α	Manufacturer:		KB/	4	Initial Cal.	0905	9/28/2007	Refle		Amplitude %	Division	Sound Path
Model:		USN-	50	Size:0	.50"	Shape:	ROUND	Inter. Cal.	1005	9/28/2007	1.5" [	Votch	80%	7.1	2.13"
Delay:	6.609 µsec	_ Range: _	3,00"	Freq.: <b>1.5</b>	MHZ	Style:	COMP-G		ļ						
M'tl Cal/Vel:	.1237/µsec	Pulser:	High	Exam Angle:	46*	# of Ele	ements:1	Inter. Cal. Final Cal.	1130	9/28/2007			<u> </u>	<del></del>	<u> </u>
Damping:	Fixed	_ Reject: _	0%	Mode:		Shear					<b> </b>				ļ
Rep. Rate:	Fixed	Freq.:	Fixed	Measured Ang	gle:	41	5°	<del></del>	Couplar	nt	·				<u> </u>
Filter:	N/A	_ Mode: _	Fullwave	Wedge Style:		Non-Inte	gral	Cal. Batch:		07125		Circumf	erential Orienta	ted Search	Unit
Voltage:	Fixed	Other:	N/A	<del></del>		•		Туре:	Ultra	igel II	Calibi		Signal	Sweep	Sound Path
Ax. Gain (dB):	17.5	_ Circ. Gair	n (dB): 17.5		Search	Unit Cable		Mfg.:	Sono	otech	Refle		Amplitude %	Division	-
10 Screen E	0iv. = 3.0	in. of	Sound Path	Туре:		RG174		Exam Batch	n:	07125	1.5" [	Votch	80%	7.1	2,13"
Linearity Report	l No.:	L-(	07-002	Length:	6'	No. Conn.:	0	Туре:	Ultra	igel II	<u> </u>				
	Calibra	tion Block		<del></del>	Scan	Coverage		Mfg.:	Sono	otech	<u> </u>			<del></del>	<del> </del>
Cal. Block No.;		1052		Upstream 🕢	Downst	ream 🕢 S	can dB: 37	7.5 Pof	erence i	Plack		Re	eference/Simula	ator Block	
Thickness:	0.5" - 2.0"	Dia.:	0	cw <b>₹</b>	•	ccw 🗹 s	can dB: 37			103434	Gain		Signal	Sweep	Sound Path
Cal. Blk. Temp.	: 82° Tem	p. Tool:	105379	Exam Surface		OI	D	Type:		npas	dB	Reflect			
Comp. Temp.:	69° Tem	p. Tool:	105379	Surface Cond	ition:	FLAT	TOPPED	туре	KUI	iihaə	17.5	FSDH	20%	3.5	1.06"
Recordable in		Yes	□ No 🔽	(If Yes, Ref. Atta	- ached Ui	trasonic Indi	ication Repo	ort.)			<b></b>			- <del> </del>	
Results:	Accept 🔽	Reje	ect [	Info 🗀					Co				indications ob		
Percent Of Cov	erage Obtaine	ed > 90%:	No	Reviewed Pre	evious Da	ıla:	N/A	_		re	cordable i	levels. 5	0% coverage d	ue to confi	guration.
Examiner	Level	II-PDI		Signature			Date Re	evlewer				Signa	ature /		Date
Cox, Stephen			Š			9/2	1	eige, Edward J.		È	Shin	FQ.	ره سفر	9/3	6/07
Examiner	Level	N/A		Signature			Date Si	te Review		····		Sign	ature	<del></del>	Date
N/A				-			De	onavin, Paul			Gant	Don	som	10	11/07
Other	Level	III-PDI		Signature		··· <u>··</u> ····	Date Al	NII Review			//_		ature		Date
Siever, Theod	lore J.		184	STELLS	5	9-29-	07   Ja	ickson, Charles			17,	Xbe/		10/1	107
UT Calibration/	Examination													· ( )	7

## Supplemental Report

Report No.:

UT-07-133

Page:

...mary No.: 148800

Examiner: Cox, Stephen R.

Other: Siever, Theodore J.

Level: II-PDI

Level: III-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Level: N/A

Site Review:

Donavin, Paul

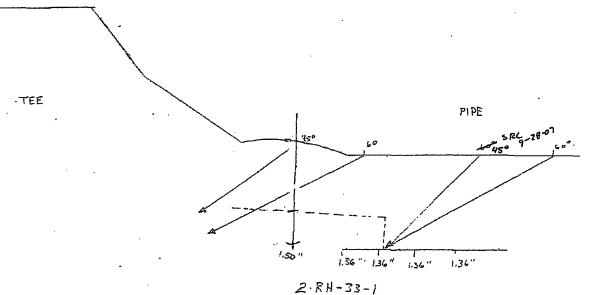
ANII Review: Jackson, Charles

Date:

Date:

Comments: Component # 2-RH-33-01

Sketch or Photo: C:\Documents and Settings\S206165\Wy Documents\Wy Scans\2007-09 (Sep)\2-RH-33-01 Dwg..jpg



## **Supplemental Report**

Report No.: UT-07-133

Page:

anmary No.: 148800

Examiner: Cox, Stephen R.

Level: II-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Level: N/A

\_evel: III-PDI

Site Review: Donavin, Paul

Other: Siever, Theodore J.

ANII Review: Jackson, Charles

Comments: Component # 2-RH-33-01

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-RH-33-01 Photo.jpg

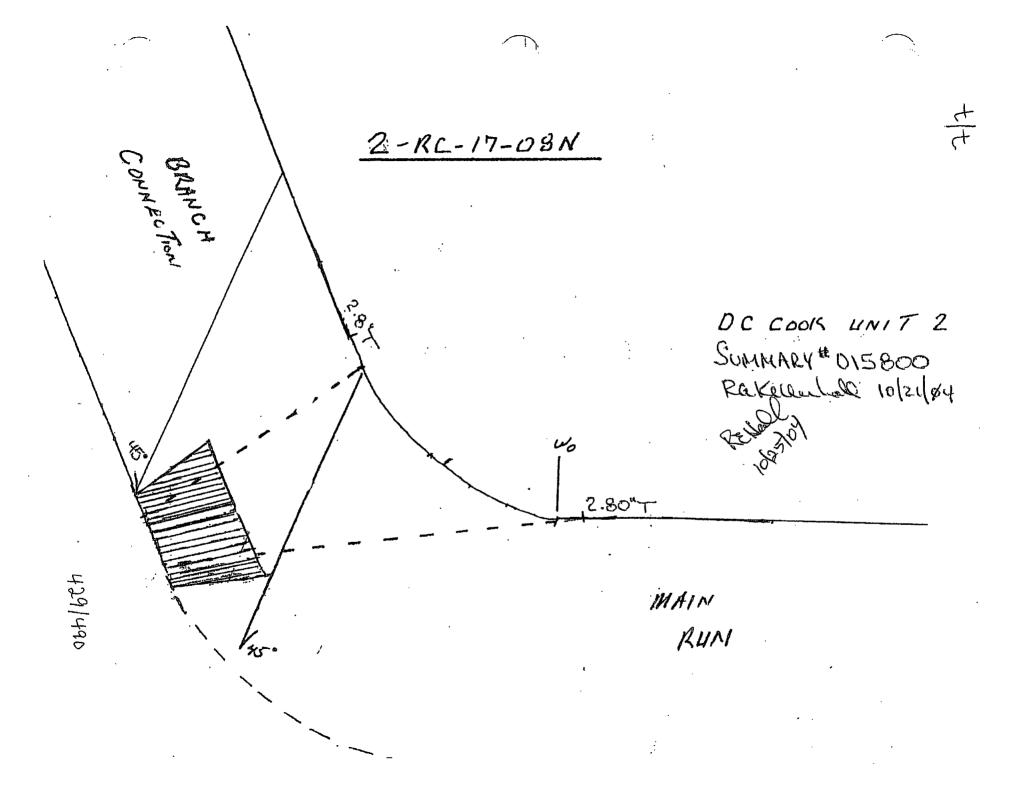




AMATOME AND		EXAMINATION SUMMARY							
mary No.:015800	Data Package: NA		Exam Date: 10/21/2004						
Customer: DC Cook 2		Examination M	lethods: UT and PT	······································					
System / Component ID: Reactor Coolant	/ 2-RC-17-08N	Examination Procedures: 54-ISI-836-08, 54-ISI-240-40							
Component Description: Branch Connecti	on to Pipe		eets No(s): U2C15-Cal-029						
Examination Category: B-J		Examination Results:	<ul> <li>☑ No Reportable Indications</li> <li>☐ Reportable Indications</li> </ul>						
ISO / Drawing:A-9			Geometric						
the downstream side in the axial direction. The downstream side in the axial direction.	ne weld geometry preve	ented performing o	circumterential scanning on the weld.						
Prepared By: JW Langdon,  GW Cowydin	Date: 10-22-04	Reviewed By: RA	A Kellerhall Date	10/24/04					
Sign: La Called	10/25/04	·	Page ( of	<u></u>					
	· · · · · · · · · · · · · · · · · · ·		423/490						

## **ULTRASONIC EXAMINATION SCAN LIMITATION REPORT**

AMAI UME AND					
.comer: DC Cook Unit 2	Component: Branch C	Connection Weld	Summary N	No.: 015800	
Weld No.: 2-RC-17-08N		Percent Of Exam C (Calculations Or Com	-		
Reference Point: Weld Toe @ Main Loop					
1) Interfering Condition		Axial, Upstream – 10			
Distance From Centerline	То	Axial, Downstream -			
Distance From Ref. Point	То	Circumferential, Cou			
2) Interfering Condition					
Distance From Centerline	То	Total Coverage 34	%		
Distance From Ref. Point	То				
3) Interfering Condition					
Distance From Centerline	То				
Distance From Ref. Point	То				
(For All Measurements Indicate: US, DS, C	W, CCW)				
Sketch Of Limitation(s):					
See attached Coverage Plot. Circumferen  '. Weld configuration prevented scan			terial on the	branch connectio	n side of the
· well configuration prevented scant	imig on or across the W	ciu.			
·					
'		•			
	•				
·					
(INCLUDED THE EXTENT OF % COMPLETED O	F EXAM AND REASON FO	R LIMITED REPORT. AN	ID SKETCH SH	HOWING AREA OF L	IMITATION.)
Level III: NA	Date:	Examiner: RA Kellerhal	···		Pate: 10-21-04
		Ralelle	whall		
wer: Edward P. Mazyck	and 10-23-09	Date:			
Customer: Na C	,	Date: /0/25/0	4		_
5		(1021)	(	427/490	5/7



### ATTACHMENT 6

## **RELIEF REQUEST ISIR-38**

## EXAMINATION CATEGORY C-A PRESSURE RETAINING WELDS IN PRESSURE VESSELS

### **RELIEF REQUEST ISIR-38**

### Relief Requested In Accordance with 10 CFR 50.55a(g)(5)(iii) -Inservice Inspection Impracticality

### 1. ASME Code Components Affected

ASME Code Class:

Code Class 2

Examination Category:

C-A, Pressure Retaining Welds in Pressure Vessels

Item Numbers:

C1.10. Shell Circumferential Welds C1.20, Head Circumferential Welds C1.30, Tubesheet to Shell Weld

Component Identification: Listed in Table 1

### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-A requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figures IWC-2500-1 or IWC-2500-2 as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject weld due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

### 5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires removal of the permanently welded pads, supports, electrical supports, adjacent piping and nozzles or replacement of the heat exchanger with a design that would allow for complete examination coverage of the subject weld. This option to meet the 100 percent code examination requirement is considered impractical due to the cost, increased radiation exposure and impact to plant equipment.

### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a visual (VT-2) examination is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained with acceptable results along with the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
W-CTSHEX-2	Shell to Flange	C1.10	48.1	The completed examination was limited to 48.1% coverage due to the configuration. The examination was single sided due to the proximity of the flange and its associated bolting. Exam limitation on the accessible side was due to the inlet and outlet nozzles restricting access for an 11" area of the weld. No relevant indications detected.
2-BIT-A	Shell to Lower Head	C1.20	80.5	The completed examination was limited to 80.5% coverage due to the configuration. The examination limitation was due to four leg supports located along the weld from 0 degrees at 18"-26", 62"-70", 99"-107", and 142"-150". No relevant indications detected.
STM-24-04	Tube Sheet to Stub Barrel	C1.30	85.0	The completed examination was limited to 85% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand hole openings, permanent support brackets and permanent electrical conduits. No relevant indications detected.

### **RELIEF REQUEST ISIR-38**

## EXAMINATION CATEGORY C-A PRESSURE RETAINING WELDS IN PRESSURE VESSELS

## SUPPORTING DOCUMENTATION

## UT Calibration. mination

		Site/Unit:	AEP	/ 2	2		1-10	cedure:	1	ISI-PDI-UT-2			Outage	No.:	17 ناسا
	Sumr	nary No.:		300680		_	Procedu	re Rev.:		4			: Report	No.: U	T-07-036
	Wo	orkscope:		ISI		<del>-</del>	Work Or	der No.:		55289193			P	age: 1	of 1
Code:		ASME )	(J 1989		Cat./	Item:	C-A/C1.	10	_	Location:			W CTS HXR	М	
Drawing No.:			B-8			Description	: SHELL TO	FLANGE							
System ID:	CTSHEX														
Component ID:	W-CTSHEX	(-2	·		<del></del>		······································	•	Size/	Length: 2	.0"/192.5"	1	Thickness/D	lameter:	0.5"/61"
Limitations:	Single side	d exam du	e to flange and t	olting configu	ration.		<u> </u>			Start	Time:	1215	Finis	h Time:	1245
	Instrume	nt Settings			Se	arch Unit	·-·	Cal,	Time	Date	T ===	Δxi	al Orientated S	Search Unit	
Serial No.:		10130	4	Serial No.:		57462967	9	Checks	Time	Date	Calibr		Signal	Sweep	Т
Manufacturer:		Stavel	ey	Manufactu	rer:	КВА		Initial Cal.	1130	8/28/2007	Refle		Amplitude %	Division	Depth
Model:	·	SONIC	136	Size: 3.	5 X 10mm	Shape:	ROUND	inter. Cal.	1216	8/28/2007	ALT	.50"	80%	3.3	0.5"
Delay:	1.09 µsec	Range:	1.50"	Freq.:	4.0 Mhz	Style:	MSEB4E	Inter. Cal.			ALT	1.0"	60%	6.6	1.0"
Mtl Cal/Vel:	0.223/µsec	_ Pulser: _	126ns	Exam Angl	e: 0°	# of Ele	ments: 2	Inter. Cal.	40.00		ALT	1.5"	40%	9.9	1.5"
Damping: _	500 Ω	Reject: _	Off	Mode:		LONGITUDINA	AL	Final Cal.	1615	8/28/2007					
Rep. Rate:	4 Khz	Freq.:	5 Mhz	Measured	Angle:	0°			Couplar	nt .		1			<u></u>
Filter:	1	_ Mode: _	Dual	Wedge Sty	/le:	Integra	ıl	Cal. Batch:		05225		Circumf	erential Orient	ated Search	Unit
Voltage:	Fixed	Other:	N/A					Type:	Ultra	gel II	Calibi		Signal	Sweep	Depth
Ax. Gain (dB):	51.4	Circ. Gain	(dB): N/A		Searc	h Unit Cable		Mfg.:	Sono	otech	Refle	ctor	Amplitude %	Division	Бери
10 Screen I	Div. = 1.50	in. of	Depth	Type:		RG174		Exam Batc	h:	05225	N/	Α	N/A	N/A	N/A
Linearity Repor	t No.:	L-0	7-001	Length:	6'	No. Conn.:	0	_ Type:		igel II	<b>-</b>				
, ,	Calibra	tion Block			Scar	n Coverage		Mfg.:	Sono	otech	<b>-</b>				
Cal, Block No.:		10526	i6	Upstream	☐ Down	stream 📝 So	an dB: 57.4	Pol	erence l	Plack	-	Re	eference/Simul	lator Block	<del></del>
Thickness:	0.5" - 2.0"	Dia.:	0	cw		ccw s	an dB: N/A			105256	Gain		Signal	Sweep	Depth
Cal. Blk. Temp.	.: <b>75</b> Tem	p. Tool:	105379	Exam Surf	ace:	OD (BM 8	k Weld)	_ Type:		Block	dB	0.50"	or Amplitude 9		0.5"
Comp. Temp.:	88 Tem	p. Tool:	105379	Surface Co	ondition:	AS WI	ELDED				51.4	0.50	80%	3.3	0,0
Recordable In	dication(s):	Yes	□ No 🗹	(If Yes, Ref.	Attached (	Jitrasonic Indic	cation Report	.)					<del>-  </del>	<del></del>	
Results:	Accept 🔽	Reje	ct 🗀	Info [					Co	omments: NF	RI. Single	sided, lin	nited exam du	e to flange a	and bolting
	_		_	_						co	nfiguratio	n. Limit	ed exam refere	enced on U1	Г-07-036. ISI
Percent Of Cov	rerage Obtaine	ed > 90%:	NA	Reviewed	Previous D	Data:	Yes				-350 use	d to obta	in T&C's and p	ertorm lam	ination scan
Examiner	Level	II-PDI		Signature			Date Rev	ewer				Signa	ature		Date
Cox, Stephen	R.	*************				8/28	/2007 Feiç	je, Edward J.		Ede	van		<u> </u>	9/.	26107
Examiner	Level	N/A		Signature				Review			1 1.	∽ Shana	ature /	_	Date
N/A								avin, Paul			and t	mare	m		12607
Other		III-PDI 🚤		Signature		<b>.</b>		Review			2	Sign:	akare 	dil	Date
Siever, Theod	dore J.		\Ec	لتحاجب	حور	9-23-6	7 Jac	kson, Charles	·			سيرين	<u></u>	0/17	7/1///
UT Calibration	Examination									7/			•	//	100

## Supplemental Report

							Report No.:	UT-07-036		
							Page:	4	_ of	5
anmary No.:	300680		·			•	1 -12			
Examiner:	Cox, Stephen R.	SIL	Level:	II-PDI	Reviewer:	Feige, Edward J.	a gar	Date:	9126	107
Examiner.	N/A		Level:	N/A	Site Review:	Donavin, Paul	PRD	Date:	9/24	107
Other:	Siever, Theodore J.	T	Level:	III-PDI	ANII Review:	Charles Jackson	m	Date:	912	8/8/
			'					٠, .		41

Comments: Inlet and outlet nozzles restricted access for 11" and one sided exam.

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\W-CTSHEX-2 Coverage 1.jpg

### Determination of Percent Coverage for **UT Examinations**

Component ID: W-CTSHEX-2 0 deg Planar Examine Length / Weld Length / \_\_192.5 X 100 = 0 % total for Scan 1 LKDN Scan 2 181.5 / 192.5 X 100 = 94.3 47.15 Add totals of percentages and divide by # scans = 60.15 % total for 0 deg 45 deg LKUP Scan 1 192.5 X 100 = \_\_\_0 LKDN Scan 2 181.5 192.5 X 100 = \_\_\_94.3 \_ % total for Scan 2 Scan 3 96.25 192.5 X 100 = 50.0CCW Scan 4 96.25 192.5 X 100 = 50.0 % total for Scan 4 Add totals of percentages and divide by # scans = 48.58 % total for 45 deg Other deg LKUP Scan 1 192.5 X 100 = 0 \_\_ % total for Scan 1 LKDN Scan 2 X 100 = \_ 181.5 192.5 94.3 % total for Scan 2 CW Scan 3 96.25 192.5 X 100 = 50.0 CCW Scan 4 192.5 X 100 = 50.0 % total for Scan 4

Add totals of percentages and divide by # scans = 48.58 % total for 60RL deg

### Percent complete coverage

Add totals for each angle and divide by # of angles to determine:

48.10 % Total for complete exam

### Supplemental Report



Report No.: UT-07-036

Page:

anmary No.: 300680

Examiner: Cox, Stephen R.

Level: II-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Level: N/A

Site Review: Donavin, Paul

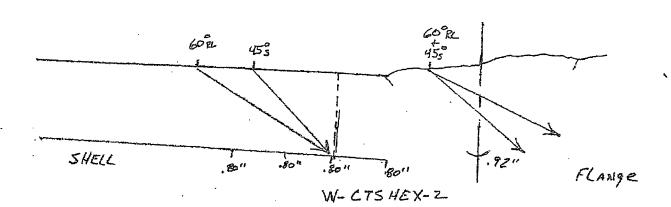
Other: Siever, Theodore J.

Level: III-PDI

ANII Review: Jackson, Charles

Comments: W-CTSHEX-2

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\W-CTSHEX-2 Dwg 1.jpg



# UT Calibration amination

		Site/Unit:	AEP	1	2		Proc	edure:		ISI-PDI-UT-2			Outage	No.:	U2-C17
	Sum	mary No.:		300680			Procedure	Rev.:		- 4		_	Report	No.: U	T-07-037
	Wo	orkscope:		ISI			Work Orde	er No.:		55289193		_	Pa	age: 1	of <u>1</u>
Code:	<del> </del>	ASME	XI 1989		Cat./It	em:	C-A/C1.1	0		Location:			W CTS HXR	M	····
Drawing No.:			B-8			Description:	SHELL TO	FLANGE	_						
System ID:	CTSHEX														
Component ID:	W-CTSHEX	(-2							Size/	Length: 2	2.0"/192,5"		Thickness/D	ameter:	0.5"/61"
Limitations:	Single side	d exam d	ue to flange and	bolting config	ıration.					Start	Time:	1330	Finis	h Time:	1415
	Instrume	nt Setting	ıs		Sea	rch Unit		Cal.	T			A = 1	al Orientated S	Page al Limit	
Serial No.:		1013	04	Serial No.	:	F1013		Checks	Time	Date	Caliba		<del></del>		
Manufacturer:		Stave	eley	Manufact	urer:	Megasoni	cs	Initial Cal.	1145	8/28/2007	Calibr Refle		Signal Amplitude %	Sweep Division	Sound Path
Model:		SONIC	: 136	Size: (	).38"x0.75"	Shape: R	ectangular	Inter. Cal.	1330	8/28/2007	ALT	1.0"	80%	8,0	2.00"
Delay:	1.02 µsec	Range:	2.5"	Freq.:	2.0 Mhz	Style:	CGD-60L	Inter, Cal.							
M'tl Cal/Vel:	0.225/µsec	Pulser:	250ns	Exam An	gle: 60°	# of Elem	nents: Dual	Inter. Cal.							
Damping:	500 Ω	Reject:	Off	Mode:		Longitudinal		Final Cal.	1620	8/28/2007					
Rep. Rate:	4 KHz	Freq.:	2.25 Mhz	Measured	Angle:	60°			Coupla	nt					<u> </u>
Filter:	1	Mode:	Dual	Wedge S	tyle:	Integral		Cal, Batch:		05225		Circumf	erential Orient	ated Search	Unit
Voltage:	Fixed	Other:	N/A			-		Type:	Uitra	igel II	Calibr		Signal	Sweep	Sound Path
Ax. Gain (dB):	53.0	Circ. Gal	in (dB): 53.0	<u> </u>	Search	Unit Cable		Mfg.;	Son	otech	Refle		Amplitude %	Division	ļ
10 Screen D	iv. = 2.5	in. of	Sound Path	Type:		RG174		Exam Batcl	h:	05225	ALT	1.0"	80%	8.0	2.00"
Linearity Report	: No.:	L-	07-001	Length:	6'	No. Conn.:	0	Туре:	Ultra	egel II	<b>—</b>				
	Calibra	tion Block	· · · · · · · · · · · · · · · · · · ·	<del></del>	Scan	Coverage		Mfg.:	Son	otech					+
Cal. Block No.:		1052	256	Upstream	Downs	tream 📝 Sca	an dB: <b>59</b>	Ref	erence	Block		Re	eference/Simul	ator Block	
Thickness:	0.5" - 2.0"	Dia.:	0	cw		CCW 🗹 Sca	an dB: 59	Serial No.:		103772	Galn		Signal	Sweep	Sound Path
Cal. Blk. Temp.	: 75° Tem	p. Tool:	105379	Exam Su	face:	OD		Type:		mpas	6B 53,0	FSDH	or Amplitude 9	6 Division 6.0	1.6"
Comp. Temp.:	88° Tem	p. Tool:	105379	Surface C	condition:	AS WE	LOED			1117-12	83.0	Faun	00%	0.0	1.0
Recordable Inc	dication(s):	Yes	No 🗹	(If Yes, Ref	. Attached Ui	trasonic Indica	ation Report.)		•					<del> </del>	<del></del>
Results:	Accept 😿	Rej	ect 🗌	Info 🗀					C				exam due to f		
Percent Of Cov	erage Obtaine	ed > 90%:	No	Reviewed	d Previous Da	ata:	Yes				onfiguratio cordable i		ed exam refere ns.	nced on U1	-07-036. No
Examiner	Level	II-PDI		Signature			Date Revie	wer		E,		Signa	ature		Date
Cox, Stephen	R.					8/28/2	2007 Feige	, Edward J.		Mus	- D	1 Or	<u>~</u>	9/261	07
Examiner N/A	Level	N/A		Signature			Date Site R	leview vin, Paul		PartDo	navni	J Signa	alure	9/26/	Date クフ
Other	Level	III-PDI	<u></u>	Signature			Date ANII I	Review		<i></i>		Sign	ature :	(1/-	Date
Siever, Theod	ore J.		\cd	The wa	3	9-23-0	フ Charl	es Jackson			<u></u>			7/0	9/07
UT Calibration/	Examination	·				· · · · · · · · · · · · · · · · · · ·								7	

# UT Calibration. mination

3	Site/Unit:	AEP	1	2		Pro	ocedure:		ISI-UT-208			Outage N	lo.: I	J2-C17
	Summary No.:		300840		_	Procedu	re Rev.:		0			Report N	lo.: U	Г-07-003
	Workscope:		ISI		<del>-</del> 	Work Or	der No.:		55289186		_	, Pa	ge: 1	of 3
Code:	ASME )	(1 1989		Cat./	item:	C-A/C1	.20		Location:			BIT RM		
Drawing No.:		B-11		<del>-</del>	Description	n: SHELL TO	O LOWER HEA	AD.	• •			:	-	
System ID:	BIT	***************************************				**************************************								
Component ID:	2-ВІТ-Д	······································		<del></del>		······································		Size/I	Length:	2"/184"		Thickness/Dia	meter:	2.5"/52"
Limitations:	Obstruction due to 4 s	support legs e	qually spaced	i.					Start	Time:	1150	, Finish	Time:	1215
	Instrument Settings			Se	earch Unit		Cal.				Λνί	al Orientated S	arch Unit	
Serial No.:	10234	4	Serial I	No.;	40003		Checks	Time	Date	Colibr		<del></del>		· 
Manufacturer:	КВА		Manufa	acturer:	PANAME	TRICS	Initial Cal.	1050	8/29/2007	Calibra Refle		Signal Amplitude %	Sweep Division	Depth
Model:	USN-5	0	Size:	0.5"	Shape:	ROUND	Inter. Cal.	1150	8/29/2007	1/4 5	DH	80%	2.0	0.75"
Delay:	11.04 µsec Range:	5.3"	Freq.:	2.25 MHZ	Style:	Gamma	Inter, Cal.			2/4 9	DH	60%	4.0	1.50"
M'ti Cal/Vel:	.1320/µsec Pulser:	High	Exam /	Angle: 46	° # of El	ements: 1	Inter. Cal.			3/4 \$	DH	40%	6.0	2,25"
Damping:	Fixed Reject:	0%	Mode:		Shear	<del> </del>	Final Cal.	1615	8/29/2007	5/4 H	lole	4%	10.0	3,75"
Rep. Rate:	Fixed Freq.:	Fixed	Measu	red Angle:	4	5°	<del></del>	Couplar	nt	ID No	otch	10%	8.0	3.00"
Filter:	N/A Mode: W	II PE	. ४५ <u>४-२३-</u> ∉7Wedge	: Style:	Non-inte	egral	Cal. Batch:		05225		Circumfe	erential Orienta	ted Search	Unit
Voltage: Fixe	d NA Pl. 4/1/Other:	N/A					 Туре:	Ultra	gel II	Calibr	ation	Signal	Sweep	5
Ax. Gain (dB):	33 Circ. Gain	(dB): 33	3 .	Sear	ch Unit Cable	3	Mfg.:	Sono	tech	Refle	ctor	Amplitude %	Division	Depth
10 Screen D	iv. = 3.76" in. of	Depth	Type:		RG174		Exam Batch	h.	05225	1/4 9	DH	80%	2.0	0.75"
Linearity Report	<del></del>	7-002	Length	: 12'	No. Conn.:	0	Type:		gel II	2/4 9	DH	60%	4.0	1.50"
circuity report	•_ •_ •_ •	1-702		Sca	n Coverage	-	ypo: Mfg.:	***************************************	otech	3/4 8	DH	40%	6.0	2.25"
	Calibration Block				•			0011	Accii	ID No		10%	8.0	3.00"
Cal. Block No.:	PL-3,0-CSCI	L-4-DCC		_	· =	Scan dB:	Kei	erence l	Block		Re	ference/Simula	<del></del>	
Thickness:	Dia.:	0	<u> </u>	w 🗹	ccM <b>™</b> 8	Scan dB: 39	- Serial No.:		103768	Gain dB	Reflecto	Signal or Amplitude %	Sweep Division	Depth
Cal. Blk. Temp.:	88° Temp. Tool:	106379	Exam	Surface:	0	D	Type:	Ror	npus	N/A	N/A	N/A	N/A	N/A
Comp. Temp.:	103° Temp. Tool:	106379	Surfac	e Condition:	FI	,USH					7417		1,	1,17,
Recordable inc	lication(s): Yes	□ No 🗹	(If Yes, F	Ref. Attached	Ultrasonic Ind	lication Report	:.)							
Results:	Accept 🗹 Rejec	ct 🗀	Info 🗌					C			n. No re	cordable indic	ations.	
Percent Of Cove	erage Obtained > 90%:	No	Revie	wed Previous	Data:	Yes			26	ro: 6.542		•		
Examiner	Level II-PDI		Signature			Date Rev	riewer				Signa	iture		Date
Cox, Stephen					8/2	9/2007 Fei	ge, Edward J.		E	Quan	27	Jar	"	24/07
Examiner	Level 1		Signature	7.5/		Date Site	Review			/7	Signa	ature		Date
Wright, Gary D	).		ast N	7	8/2	9/2007 Dor	navin, Paul			Fait.	Dom	pric	9	124/07
Other	Level III-PDI		Signature	75	9-23-07	Date ANI	I Review			17	Sign	skufe ,	/	Date
Siever, Theod	ore J.	· 180	STED	Dogu.	920	007 Cha	arles Jackson		2	1			9/2	8707
UT Calibration/	Examination	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7										,	9	7-1-

### Supplemental Report



Report No.: UT-07-003

Page:

\_ummary No.: 300840

Examiner: Cox, Stephen R.

Level: II-PDI

Reviewer: Feige, Edward J.

Examiner: Wright, Gary D.

Site Review: Donavin, Paul

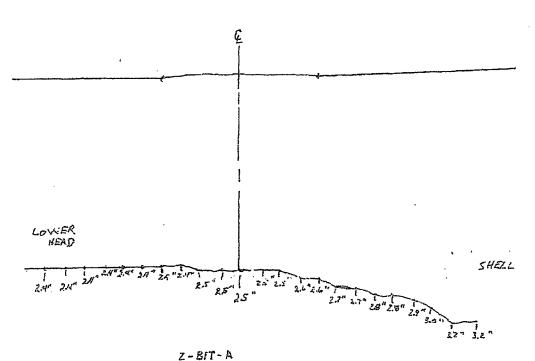
Other: Siever, Theodore J.

Level: III-PDI

ANII Review: Charles Jackson

Comments:

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-BIT-A.jpg



### Supplemental Report

							Report No.:	U1	-07-0	03
							Page:	3	of	3
Summary No.:	300840									
Examiner:	Cox, Stephen R.	SKL	Level: I	II-PDI	Reviewer.	Feige, Edward J.	Set -	Date: 9		
Examiner:	Wright, Gary D.	FIRST	Level:	1_	Site Review:	Donavin, Paul	PRD	Date:	9/25	5/07
Other:	Siever, Theodore	J. 15	Level: I	II-PDI	ANII Review:	Charles Jackson		Date:	al1	8/01
							-		4	- V

Comments: 4 Leg Supports located from 0 degree @ 18"-26", 62"-70", 99"-107", 142"-150" 8" X 4 legs = 32", 164" - 32" = 132"

No scan looking down from Shell. No Circ scan on Shell side.

Weld Length 164", Weld Width 2", Weld Thickness 2.5"

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-BIT-A Coverage.jpg

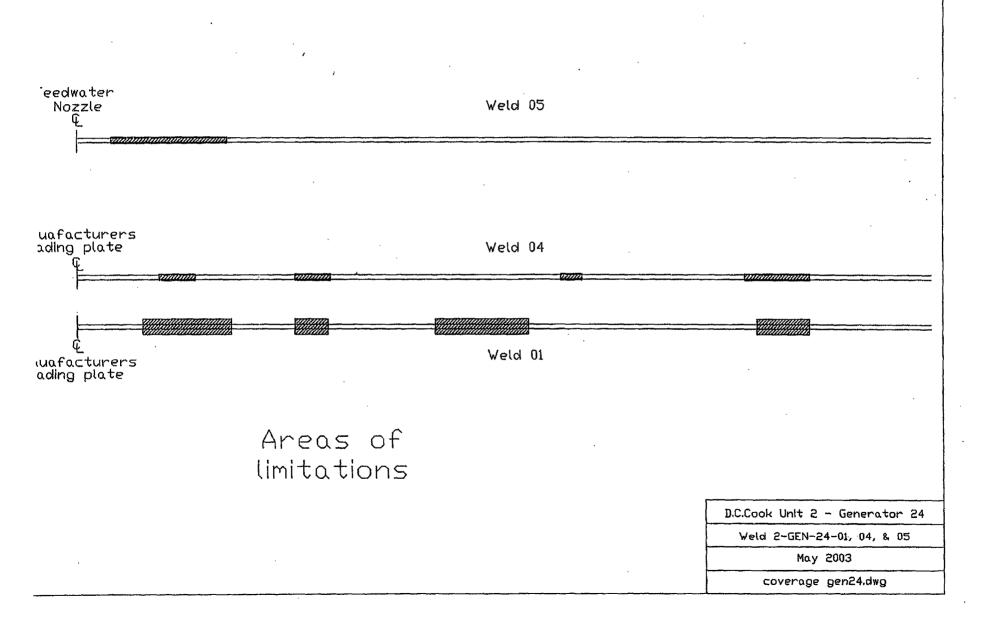
	D	atem	ination of Pe UT Exam			age for	
Component ID	: 2-817-A				-		
0 deg Flanar							
	Examina Lenoth (Inches)		Held Length (Inches)				
Scan 1	132	1 -	164	×	100 =	80.5	% total for Scen 1
Scan 2	132	1	164	X	120 =	50.5	% total for Scan 2
45 dea	Add totals of pe	rcerta	ges and divide by	# sc	ans⇒ _8	0.5 % total	for 0 deg
Scan 1	132	′_	164	X	190 = _	80.5	% lotal for Scan 1
Scan 2	137.	′_	164	X	100= _	60.5	≤ total for Scan 2
Scen 3	132	. / _	164	X	100 ×	80.5	% total for Scan 3
Scen 4	132	1 _	164	. x	100 ∞	80.5	% total for Scan 4
	Add totals of perc	anlage	es and divide by f	scar	1G =	80.6 % total	for 45 deg
Other ties	60						
Scan 1	132	′-	154	. ×	100 = _	80,5	% total for Scan 1
Scan 2	132	1	164	×		89.5	% total for Scan 2
Scan 3	192	′-	154	X	100 = _	80.5	% total for Scan 3
Scan 4	132	′-	<u> </u>	×	100 = _	<u>80,5</u>	% total for Scan 4
,	add lotets of percen	ntages	and divide by # s	csus	≈ <u>80.5</u>	% local for	_60_ dag
Percent compi	efe coverage						
Add totals for ea	ach angle and divid	ie by #	of angles to dote	min	3;		
80.5	6 Total for com	olete (	maxe				

### D. C. COOK UNIT2 CYCLE 14 COVERAGE REPORT

Weld No.	Exam Type	Exam No.	Х	"	. Y	/n	Square Inches Scanned	Total Square Inches	Square Inches	Percent	Total Coverage	Remarks
			Start	Stop	Start	Stop	Per Exam	Scanned	Required			
STM-24-04		5A-UP	405.00	427.30	464.05	477.65	303				85%	Limited exam due to
			0.00	18.70	464.05	477.65	254				C. C. C. C. C. C. C. C. C. C. C. C. C. C	proximity of manway
		5A-DN	405.00	464.66	472.70	486.34	814					nozzie, welded pads
1		6D 170	0.00	18.70	472.70	486.34	255					and adjacent piping.
Tube Sheet	·	5B-UP	65.00	120.86	466.78	477.66	608			100		
-to-		5B-DN	65.00	67.28	472.70	479.98	17 583					
Stub Barrel		5C1-UP	67.28 139.48	120.86 147.08	472.70 466.28	483.58	383 86					
		5C2-UP	147.08	155.26	466.78	477.00	69					
		5C3-UP	155.26	172.45	466.78	474.62	135					
	1	5C4-UP	174.45	198.28	466.78	477.66	259	2007				
		304-01	139.48	148.98	472.70	483.58	103					
	Parallel		148.98	164.18	472.70	474.78	32					
	(Axial scan)	5C-DN	164.18	173.30	472.70	477.62	45					
			173.30	198.38	472.70	483.58	273	12.00				
		5D1-UP	198.38	224.98	466.78	477.46	284			- C		
		5D2-UP	229.52	261.44	466.78	477.66	347					
		5D1-DN	198.38	227.70	472.70	483.58	319					
		5D2-DN	232.88	259.86	473.30	483.38	272					
		5E-UP	279.50	339.92	466.78	477.70	660					
		5E1-DN	279.00	319.02	319.02	472.70	484					
		5E2-DN	319.02	340.20	472.70	483.58	484					
		5F-UP	339.92	365.46	466.78	477.66	278					
		5F-DN	339.92	365.16	472.70	483.50	273					
								7235	9341	77%		
		6A-CW	405.00	427.30	472.60	477.92	59					
			0.00	45.00	472.60	477.92	120					
		6A-CCW	405.00	427.30	472.60	477.92	59					
			0.00	45.00	472.60	477.92	120					
		6B-CW	65.00	120.08	472.60	478.29	157					
		6B-CCW 6C-CW	65.00 139.48	120.08 198.04	472.60 472.60	478.29 478.29	157 167					
	1	6C-CCW	139.48	198.04	472.60	478.29	167					ı
	Transverse	£D1-CW	198.04	224.90	472.60	478.29	76					
	(Circ scan)	6D2-CW	231.56	266.84	472.60	478.29	100					
		6D1-CCW		224.90	472.60	478.29	76					
		6D2-CCW		478.30	472.60	478.29	702					
		6E-CW	279.75	340.15	472.60	478.29	172					
		6E-CCW	279.75	340.15	472.60	478.29	172					
	[	6F-CW	340.15	369.16	472.60	478.29	83					
	<b>.</b>	6F-CCW	340.15	368.84	472.60	478.29	82					
	)							2468	2692	92%		

(

 $<sup>{\</sup>bf X}$  is the dimension in the circuferential direction meassured in inches from vessel 0 degerees. Y is the dimension in elevation meassured in inches from vessel 0°.



#### ATTACHMENT 7

### **RELIEF REQUEST ISIR-39**

## EXAMINATION CATEGORY C-B PRESSURE RETAINING NOZZLE WELDS IN VESSELS

#### Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

**ASME Code Class:** 

Code Class 2

Examination Category:

C-B, Pressure Retaining Nozzle Welds in Vessels

Item Numbers:

C2.21, Nozzles Without Reinforcing Plate in Vessels > ½ inch

Nominal Thickness, Nozzle to Shell (or Head) Weld

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-B requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figures IWC-2500-4(a) or IWC-2500-4(b) as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limits the volumetric examination coverage of the subject welds.

Due to the component geometry, coverage was limited due to tapers, bevels, weld contours. and joint configurations.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires removal of significant portions of insulation and its supporting elements and redesign of the blend radius of the nozzle to shell weld with a design that would allow for complete examination coverage of the subject weld. This option to meet the 100 percent code examination requirement is considered impractical due to the cost, increased radiation exposure and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a surface examination without any limitations was performed along with a visual (VT-2) examination that is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained along with acceptable results and the acceptable surface examination that was performed and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

#### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-14- FWN	Nozzle to Shell	C2.21	46.5	The completed examination was limited to 46.5% coverage due to the configuration. The coverage limitation was due to the proximity of insulation and a metal strap at top-dead-center and at bottom-dead-center due to the shell weld. No relevant indications detected.

# EXAMINATION CATEGORY C-B PRESSURE RETAINING NOZZLE WELDS IN VESSELS

SUPPORTING DOCUMENTATION

# 3

### UT Calibration

### mination

ğ.		Site/Unit:	DC Cook	1 1			, Proc	edure:		54-ISI-130			Outage N	No.; (	U1-C20
	Sumr	nary No.:		300400			Procedure	Rev.:		38			Report N	Vo.: U	T-05-049
	Wo	orkscope:		ISI			Work Orde	er No.:	- (	04145023-12		<del></del>	Pa	ge: 1	of 7.
Code:		ASME	XI 1989		Cat./Item	1:	C-B/C2.2	:1		Location:		•	CONT. L4		
Drawing No.:			B-4	····	C	Description:	NOZZLE T	O SHELL							
System ID:	14				_	•	.;	<del></del>			~~~				
Component IE	STM-14-FV	VN	<del> </del>		······································		<del>.,,</del>		Size/l	_ength:	106.0"		Thickness/Dia	meter:	3.7"
Limitations:	INSULATIO	ON, METAL	STRAPS, & SH	ELL CONFIGURA	TION	•			_	Start	Time:	10:00	Finist	n Time:	10:40
<del>11</del>	Instrume	ent Setting	8		Searc	h Unit		Cal,		D-4-		Avist	Orientated S	earch I Init	
Serial No.:		VH-90	75	Serial No.:	014L	.WR/ DB#36	029	Checks	Time	Date	Calib	ration	Signal	Sweep	1
Manufacturer:		KRAUTKE	IAMER	Manufacturer		KBA		Initial Cal.	08:45	4/13/2005	Refle		mplitude %	Division	Sound Path
Model:		USN-6		Size:	1.0"	Shape: F	ROUND	Inter. Cal.	<del> </del>		1/4	T	59%	1.4	0.690"
Delay:	1.1181"	_ Range: _	5.0"		5 Mhz	-	Samma	Inter. Cal.	<del>                                     </del>		<del></del>	2 T	85%	2.9	1.435"
-	0.2310 in/uS	_ Pulser: _	N/A	Exam Angle:		# of Eleme	nts: 1	Final Cal.	13:40	4/13/2005	3/4	T	73%	4.4	2.18"
Damping: _ Rep. Rate:	1 KHZ AUTO HIGH	_ Reject: _ Freq.:	0 2.25 MHZ	Mode:		IGITUDINAL	<u> </u>		Couplai	·	<del> </del>	<del></del>			<del> </del>
Filter:	N/A	Mode:	SINGLE	Measured An Wedge Style		N/A		Cal. Batch:	•	04325	-	Circumfere	ential Orlenta	ted Search	l Init
Voltage:	HIGH			avedge Style	·	INA	,	Type:	Ultra		Calib		Signal	Sweep	T
Ax. Gain (dB):	24.5	- Circ. Gai	n (dB): N/A		Search U	nit Cable		Mfg.:		tech			mplitude %	Division	Sound Path
1 Screen	Div. = 0.4	in. of	Sound Path	Type:		RG174		Exam Batc	h·	04325					
Linearity Repo	ort No.:	L-0	5-006	Length:	<b>6'</b> No	. Conn.:	0	Type:	Ultra		ļ	<u> </u>			<del> </del>
	Calibra	tion Block			Scan Co	overage		Mfg.:		otech	<u> </u>				<del> </del>
Cal. Block No		PL-3.0-CS-		Upstream 📝	Downstrea	am 📝 Scan	dB: 38.5	D-6			-		rence/Simula	ator Block	<del></del>
Thickness:	3.0"	Dia.:	FLAT	cw_		W∐ Scan		Serial No.:	erence l	ыоск <i>I/A</i>	Gain	1,010	Signal	Sweep	Sound Path
Cal. Blk, Tem	p.: 86 F Tem	p. Tool:	VH-8556	Exam Surfac	e:	OD SHEL	.L	. Type:		<i>)()</i> 4	dB.	Reflector	Amplitude %	Division	Sound Fall
Comp. Temp.:	: 87 F Tem	p. Tool:	VH-8556	Surface Cond	dition:	GROU	ND	. rype		WA		<b> </b>	<del></del>		
Recordable i	ndication(s):	Yes	□ No 🗸	 (If Yes, Ref. At	tached Ultra	asonic Indica	tion Report	i.)			<b> </b>	<b></b>	<del> </del>	-	
Results:	Accept 🔽			Info 🗌					Co	mments: SC			ET FOR COM	MENTS	<del></del>
Percent Of Co	overage Obtain	ied > 90%:	NO	Reviewed Pr	revious Dat	a: <u> </u>	lo								
Examiner	Level	<u>"</u>		Signature			ate Revie			,		Signatu	ııe		Date
Flesner, Bre		SLET 4	Home			4/13/20		A	<del>-</del>						
Examiner N/A	Level	N/A		Signature		Di	ate Site F	Review	1	QQ.		Signatu	n <del>e</del>	4/24	Date
Other	Level	<u></u>	11	Signature		Da	ate ANII I	Review				Sighatu	tue	//	Date
Key, Michael	IW	LL	1			4/20/20	05				<=	XX VI	marc	4/27	100
UT Calibration	n/Examination		1									' V	$\mathcal{C}^{\prime}$	'/ '/	
			1/										Y		



#### Supplemental Report

Report No.: UT-05-049 2 Page: Summary No.: 300400 Flesner, Bret T Level: Reviewer Date: Examiner: Site Review: Examiner: N/A Level: N/A Date 111 ANII Review: Other: Key, Michael W. Level:

Comments:

Notes for Lamination Scan:

Gain adjusted while scanning to maintain ~80% FSH backwall response.

No Laminations were noted in the area scanned.

The lamination and weld examination scans were limited at TDC from -17" to +17" due to insulation and a metal strap.

Notes for weld volume inspection:

Total weid length is 106".

Scan limitation at TDC from -17" to +17" due to insulation and metal strap.

Scan limitation at BDC from 43" to 63" due to shell weld.

Both of the above limitations affected the 60° transducer, but only the limitation at TDC affected the 0° and 45° transducers.

60° coverage:

54" of scan area limited or 52" of area covered

52" ÷ 106"= 49% coverage obtained in axial down, CW, and CCW directions.

:qverage:

of scan area limited or 72" of area covered

72" ÷ 106"= 67.9% coverage obtained in the axial down, CW and CCW directions.

0° coverage:

34" of scan area limited or 72" of area covered

72" ÷ 106"= 67.9% coverage obtained.

Total coverage obtained:

[ $(60^\circ \text{axup} + 60^\circ \text{axdwn} + 60^\circ \text{cw} + 60^\circ \text{cw}) + (45^\circ \text{axup} + 45^\circ \text{axdwn} + 45^\circ \text{cw} + 45^\circ \text{cw}) + (0^\circ)] \div 9 \text{ scan directions} = \text{total coverage obtained.}$ 

[(0% + 49% + 49% + 49%) + (0% + 67.9% + 67.9% + 67.9%) + 67.9%) + 9 = 46.5% coverage obtained.

Maintained 5% ID roll with 45° which resulted in a scan gain exceeding +14 dB.

Maintained 5% to 10% weld noise with 60° which resulted in a scan gain exceeding + 14 dB.

One indication at ~180° and one at ~270° were noted within the weld material at scan gain. These two indications are far below recordable levels and noted for future information only.

Intermittent responses from internal attachments were also noted with all three transducers. These attachments are outside the examination volume.



### Supplement ... Report

Report No.: UT-05-049

Page: 3 of 7

Summary No.: 300400

Sketch or Photo:

X:\U1C20-Framatome Info\STM-14-FWN-G1.jpg

		PROFILE AND	THICKNESS	
A T	Component ID: STM-14-FWN	Summary No.: 300400	1_0	Report No.:
AREVA	Crown Height: Flush to 1/16"	Crown Width: 2.85"	Diameter. ~25" Boss	Weld Length: 106" circ.

Toe Q

NOZZLE

SHELL

3.98

Profile taken at BDC (180°)

Prepared By: Cashille

Reviewed By:

3.7

Additional - Supplemental Reports <edit from Setup>

#### **ATTACHMENT 8**

#### **RELIEF REQUEST ISIR-40**

# EXAMINATION CATEGORY C-C INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES

#### Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

ASME Code Class:

Code Class 2

Examination Category:

C-C, Integral Attachments for Vessels, Piping, Pumps and Valves

Item Numbers:

C3.20, Pumps, Integrally Welded Attachments

C3.40, Valves, Integrally Welded Attachments

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-C requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figure IWC-2500-5. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent surface examination coverage requirement for the subject weld due to the permanently attached support orientation and permanently embedded bolting obstructions which limits the surface examination coverage of the subject weld.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

To increase the examination coverage on the subject weld requires removal of the permanent structural steel support member by physically cutting the support members apart and replacing the support members by re-welding following the completion of the surface examination. Removal of the permanently welded support members is considered to be impractical based due to increased cost, potential for increased radiation exposure, and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a surface examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a visual (VT-2) examination is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained along with acceptable results and the acceptable visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

#### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-MS-6-11S- PS	Integrally Welded Pipe Attachment	C3.20	64	The completed examination was limited to 64% due to configuration. Base metal examinations were limited due to inner and outer cooler interference. No relevant indications detected.
MSIV-MRV- 230-S2	Integrally Welded Support	C3.40	83.3	The completed examination was limited to 83.3% coverage due to the configuration. The limitation on the extent of the coverage for the bottom horizontal attachment weld was based on the orientation of the attached support in relation to the weld. No relevant indications detected.

# EXAMINATION CATEGORY C-C INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES

### SUPPORTING DOCUMENTATION

## **Liquid Penetrant Examination**

Site/Ur	nit:A	EP	/ 1	1 Procedure:			2-QHP-5050-NDE-001	Ou	Outage No.: U1-C2			
Jummary No	o.:	31:	3800		Procedure Re	ev.:	6	R	eport No.:	РТ	-10-001	
Workscop	e:	ı	SI		Work Order N	lo.:	55321209-02	_	Page: _	1	of	4
Code:	ASN	1E XI 198	9	Cat./l	tem: C-C/C3	3.20	Location:		ANNULUS			
Drawing No.:		B-	63		Description:	PENET	RATION SUPPORT W	VELD				
System ID:	MS				-		•					
Component I	D: <b>1-MS</b> -	6-11S-PS						Mat./T	hickness:	SA3	50 / 1.6	88
Limitations:	Base	Material o	on both sid	des of we	ld inaccessible	due to	attached coolers					
Light Meter	Mfg.:		Sylvania		Serial No.	·.:	CQC-275	Illumina	nation: 473 fc			
Temp. Tool	Mfg.:		Fluke Cor	р	Serial No.	·.:	CQC-357					
Comparator	Block Te	mp.: S	ide A: N	<u>/A</u> °F	Side B: N/A	<u>A</u> °F	Resolution:	Not Use	ed			
Lo/Wo Loca	ation:				· · · · · · · · · · · · · · · · · · ·	Sur	face Condition:		As Found	<u> </u>		·
	Cleaner				Penetrant		Remover		De	velop	ег	
Brand					Magnaflux		Magnaflux		Ma	gnafl	ux	
Туре	pe SKC-S				SKL-SP1		skc-s		S	KD-S	2	
Patch No.					05M068		09E01K		06J05K			
. me							Evap.		Develop			
	Time Exa	am Starte	d:	02:30		7	ime Exam Completed:		03:30			
Indication	Loc	Loc	Diameter	Length	Туре		<del></del>	Remarks				
No.	L	w			R/L							
		<u> </u>										
								···········				
		<u> </u>						· · · · · · · · · · · · · · · · · · ·				
<u> </u>	<u> </u>	<u> </u>				<u> </u>				8.84		
Comments No Poport		natione M	atad Exta	nt of Cov	erage per IWC-	2500.5						
					information.	2000-0	•					
Results:	Acc	ept 🗹	Reject		Info 🗌							
Percent Of	Coverage	Obtained	d > 90%:	<del></del>	No	Rev	iewed Previous Data:		Yes	-		
Examiner	Level	IIL	Sigr	naturė	Date	Revie	wer	(	Signature		. D	ate
Blamer, Er						N/A						
miner	Level	N/A	Sigr	ature	Date	Site R		5	Signature			ate
<del>1</del>		·, ··				Roy E					3/21/20	
Other	Level	III	Sigr	ature		ANILF		,	Signature			ate
Vargo, Ste	phen R.				3/21/2010	Reuel	K. Schenck				3/22/20	)10

Liquid Penetrant Examination

#### **Limitation Record**

Site/Unit:	AEP	1	1	Procedure:	12-QHP-5050-NDE-001	Outage No.:		J1-C2	23
Summary No.:		313800		Procedure Rev.:	6	Report No.:	PT	-10-0	001
Workscope:		ISI	·	Work Order No.:	55321209-02	Page:	4	of	4

Description of Limitation:

Inner and outer coolers are within the area of interest, circumference = 164.148". Total sq/in of required coverage = 451.407" (1.75 x 164.148 + 82.074 + 82.074). Total sq/in of exam surface NOT examined = 164.148" (1.0 x 164.148). Total sq/in of exam surface examined = 287.259" (1.75 x 164.148). Calculated percentage of required coverage = 64% (287.259 + 451.407)



Limitations removal requirements:

#### Radiation field:

Examiner	Level	IIL	Signature	Date	Reviewer	Signature	Date
Blamer, Eri	c J.			3/19/2010	N/A		
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
٠.4					Roy E. Hall		3/21/2010
.er	Level	<u>                                     </u>	Signature	Date	ANII Review	Signature	Date
Vargo, Step	hen R.			3/21/2010	Reuel K. Schenck		3/22/2010

Additional - Limitation <edit from Setup>

### **Magnetic Particle Examination**

Site/L	Jnit:	AEP /	1		Proced	ure: <u>12-</u>	QHP-5050-	NDE-002	Outag	je No.: _	U	/1-C21	
Summary 1	mmary No.: 317180			Procedure R	tev.:	3	Report		rt No.: _	No.: MT-06-004			
Worksco	ре:		ISI Work O		Work Order	No.:	lo.: 55247775-02			Page:	1	of	3
Code:	ASME XI 1989		Cat./Ite	Cat./item: C-C/C3.40 Lo		Location:	Location: W MS E		MS ENC			•	
Drawing No.:	<b></b>	B-7	76		Description	: Integrall	y Welded S	upport					
System ID:	MRV												
Component ID	: MSIV-	-MRV-230-	<b>S</b> 2						Size/Ler	ngth: Re	f.Lim	itatior	ı Rec.
Limitations:	Botto	m horizon	tal attach	ment welc	l inaccessibl	e due to s	upport ged	metry.					
Light Meter I	Mfg.:		N/A		Serial	No.:	N/A		Illuminati	on:	Yok	e Ligh	it
Temp. Tool	Mfg.:		N/A		Serial	No.:			Surface T	emp.:	An	nbient	*F
Resolution:			N/A										
Lift Block Se	erial No.:		<u> </u>	VT-2			Condition:		As	Welded	1		
Lo/Wo Loca	tion:		N/.	Α		Field O	rientation:			N/A	····	<del></del>	
Magnetic Pa			_		w	B. 47	·	<del></del>				<b>.</b>	
Brand:					Wet 🗌	Mixed			Appı	ied By:		Dustin	_
_		Red #8A		<del>-</del>	Dry 🗹		No [					prayin	
Batch No.:		01K08	.5		orescent	With:		N/A		_		loodin	9 📙
`quipment:				Parker -					o.:		575		
Head Shot		<del></del>	N/A	Amperes	<b>;</b>		Spacing				C 🔽	DC	
Adj. Spacing			"-6"	inches		Enciro	cling Coils		N/A	Tur	ns		
Prods. Spac	ing 🗀	!	WA.	inches		Сипе	nt (machine	setting)		N/A		Amp	eres
Indication	Loc	Loc	Diameter	Length	Туре				Remarks		•		
No.	L	W			R/L								
										-			
		1				<u> </u>		<del></del>	·····	<del> </del>			
	·	1							<u>.</u>		<del></del>		<del></del>
L		<u> </u>				<del>,</del>							
Comments: No Relevan	t Indicat	tions Note	ч										
Reference "				mination I	imitations.								
Results:	Acc	ept 🔽	Reject (		Info 🗌		<del>,</del>	···········					
Percent Of (	Coverage	e Obtained	> 90%: _	No	Reviewe	ed Previou	s Data:		Exam	Γime:			
Examiner	Level	111	Sign	ature	Dat				Siç	gnature			Date
Vargo, Step			·····		9/21/200		Edward J.					10/16	6/2006
raminer JA	Level	N/A	Sign	ature	Dat	e Site Rev Donavi			Sig	gnature		10/40	Date 9/2006
Other	Level		Sign	ature	Date				Sir	gnature		10/13	Date
Ouellette, Jo		11	Oigit			1	berger, Ja	mes A.	Jų.	a		10/19	9/2006

Magnetic Particle Examination

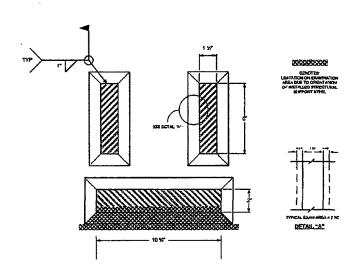
### **Limitation Record**

Site/Unit:	AEP	1	1	Procedure:	ocedure: 12-QHP-5050-NDE-002		U1-C21		
Summary No.: 317180		Procedure Rev.:	3	Report No.:	No.: MT-06-004		004		
Workscope:		isi		Work Order No.:	55247775-02	Page:	3	of	3

Description of Limitation:

Limitation on the extent of coverage due to orientation of installed support steel. Calculated that 83.3% of the required exam area was examined.

MSIV-MRV-230-S2 SUMMARY NO. 317180 55247775-02



Total Sq/m. of required coverage = 204,375

Total Sq/m. of Exam Surface NOT Examined = 34,125

Total Sq/m. Examtined = 170,25

Total coverage attained = 63,30%

Limitations removal requirements:

#### Radiation field:

Examiner	Level	111	Signature	Date	Reviewer	Signature	Date
Vargo, Step	hen R.			9/21/2006	Feige, Edward J.		10/16/2006
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
٠٠′٩					Donavin, Paul		10/19/2006
er	Level	]]	Signature	Date	ANII Review	Signature	Date
Ouellette, J	ohn			9/25/2006	Longenberger, James A.		10/19/2006

Additional - Limitation <edit from Setup>

#### **ATTACHMENT 9**

### **RELIEF REQUEST ISIR-41**

EXAMINATION CATEGORY C-F-1
PRESSURE RETAINING WELDS IN AUSTENITIC STAINLESS STEEL OR HIGH ALLOY
PIPING

#### Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

ASME Code Class:

Code Class 2

**Examination Category:** 

C-F-1,

Item Numbers:

C5.11, Piping Welds ≥ 3/8 inch Nominal Wall Thickness for Piping

> NPS 4. Circumferential Weld

C5.21, Piping Welds ≥ 1/5 inch Nominal Wall Thickness for Piping

≥ NPS 2 and ≤ NPS 4, Circumferential Weld

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

Austenitic piping welds with single side access subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

#### 3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-F-1 requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figure IWC-2500-7. The alternative requirements of ASME Section XI. Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

- 10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage criteria when applying Supplement 2 to Appendix VIII:
- (1) Piping must be examined in two axial directions and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available.
- (2) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single sided Appendix VIII demonstration using flaws on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B), requires that examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to the two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

#### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for austenitic piping welds with single side access.

There are currently no Performance Demonstration Initiative (PDI) qualified single side examination procedures that demonstrate equivalency to two-sided examination procedures on austenitic piping welds. Current technology, is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to United States nuclear applications.

PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping list the limitation that single side examination is performed on a best effort basis. The best effort qualification is provided in place of a complete single side qualification to demonstrate that the examiners qualification and the subsequent weld examination is based on application of the best available technology.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B) and full coverage credit may not be claimed.

Based on the configuration limited to single side access, relief is requested from the essentially 100 percent surface examination coverage requirements for the subject piping welds listed in Table 1. Note that examination coverage listed is that attained during examination with no credit taken for the far side of each weld in which examination from that side could not be performed.

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

#### 5. Burden Caused by Compliance

Compliance with code requirements requires extensive modification or replacement of components with a design that allows examination from both sides of the weld. This option to meet the required 100 percent volume examination coverage is considered impractical based on the cost, additional radiation exposure and impact to plant equipment.

#### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination to the maximum extent practical utilizing the best available techniques, as qualified through the Performance Demonstration Initiative (PDI) for Supplement 2 with demonstrated best effort for single sided examination, from the accessible side of the weld. Additionally, a surface examination without limitations was performed on each weld. Further, a visual (VT-2) examination is performed each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

#### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-CTS-2-18F	Pipe to Flange	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The flange side is limited by the O.D. contour and flange bolting. No relevant indications detected.
1-SI-2-42S	Pipe to Pump Casing	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the pump side due to its severe taper and the proximity of the pump casing to the weld. No relevant indications detected.
1-RH-27-05S	Pipe to Elbow	C5.11	78.0	The completed examination was limited to 78% coverage due to the configuration. The configuration prevents examination due to the welds location inside of the box restraint surrounding the pipe. No relevant indications detected.
1-SI-24-06F	Pipe to Tee	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-30-08F	Valve to Pipe	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The examination limitation is caused by the OD bevel on the valve, which is in proximity to the weld toe on the valve side. No relevant indications detected.
1-SI-34-11F	Elbow to Valve	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-CTS-13- 04F	Pipe to Valve	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.
1-SI-11A-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration of the reducing elbow to flange leads to a limited examination based on the taper of the flange face and its proximity to the weld. No relevant indications detected.
1-SI-11-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration of the elbow to flange leads to a limited examination based on the taper of the flange face and its proximity to the weld. No relevant indications detected.
1-SI-11-05F	Pipe to Valve	C5.21	49.0	The completed examination was limited to 49% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and the close proximity of the valve. A portion of the pipe side is obstructed due to the proximity of the integrally welded pipe support. No relevant indications detected.
1-SI-74-01F	Penetration to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the penetration side due to the OD surface contour and the proximity of the penetration. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-42-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the flange side due to its severe taper and close proximity of the flange taper to the weld. No relevant indications detected.
2-SI-42-03F	Pipe to Valve	C5.21	46.5	The completed examination was limited to 46.5% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. Additionally, a portion of the examination area was obstructed due to a branch connection in the piping. No relevant indications detected.
2-SI-73-02S	Elbow to Pipe	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the elbow side due to its severe taper and close proximity of the elbow to the weld. No relevant indications detected.
2-SI-81-01F	Valve to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.

# EXAMINATION CATEGORY C-F-1 PRESSURE RETAINING WELDS IN AUSTENITIC STAINLESS STEEL OR HIGH ALLOY PIPING

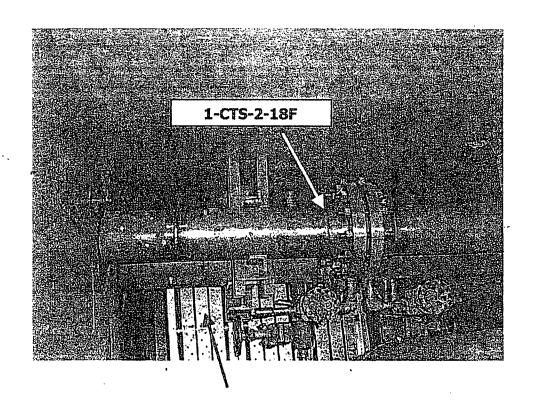
#### **SUPPORTING DOCUMENTATION**

### INCOMPLETE EXAMINATION REPORT

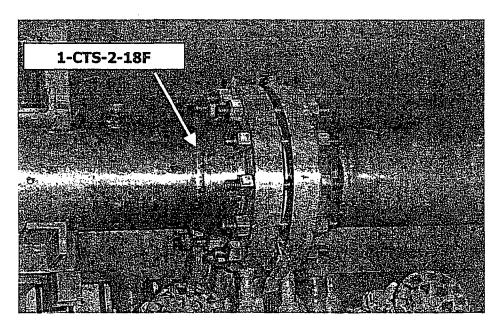
	PORT NO: UICIB-UT-008
	SE4 OF4
	TA PKG: N/A
PRO	OCEDURE: <u>8346228 Rev.2</u>
PLANT/UNIT: D.C. Cook / Uo:+/ WELD NO: 1-CTS-2-18	F SYSTEM: CTS
CONFIGURATION: FLANGE to Elbow	
ASME CODE CLASS: C-F-1, C5.11	
CODE EXAMINATION REQUIREMENTS: In Accordance to 1989	Section XI, Figure IWC-2500-76
INTERFERING CONDITION: Single - Sided Access Due to	• • • • • • • • • • • • • • • • • • •
FLAMBE SIDE IS LimitERS BY QD. CONTOUR &	FLAMER BOLTUE, SUIGLE
SIDED ACCESS CLAIMED IN ACCORDANCE WITH	+ PROCEDURE PARAGRAPH 2.3.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH	ATTACHED: YES NO _X
PARTIAL EXAMINATION PERFORMED: YES X NO	
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL	∪/A
45 DEGREE AXIAL Yes 45 DEGREE CIRCUMFERENTAIL	Yes
OTHER: 70° Axial Scan*	
ALTERNATE METHOD RECOMMENDED: YES NOX_	<del></del>
EXPLANATION: EXAMINATION PERFORMED IN ACCORDAN	CE TO 8346228 REV 2
-	
• .	
PREPARED BY: Dennie P. Strick O	DATE: 4.50.02
REVIEWED: Subjection	DATE: 5-4.02
RE Novel 5/17/02	
- 10 to 0 311/10x	

### 1-CTS-2-18F

Elevation 609', rear of CTS Heat Exchanger Room. Approximately 6' of scaffold. Non-insulated.



 $\mathbb{V}_{\mathcal{F}^{\mathcal{F}}}$ 

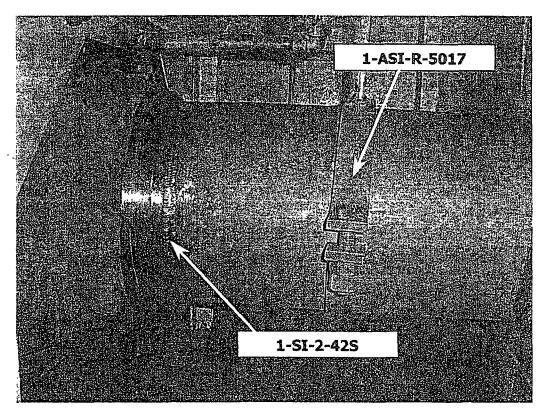


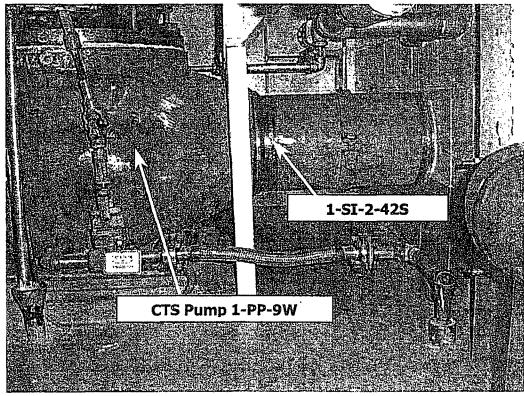
### INCOMPLETE EXAMINATION REPORT

PAGE <u>4</u> OF <u>4</u> DATA PKG:
PROCEDURE: 03A6223 KBU Z
PLANT/UNIT: D.C. COOK / UNIT   WELD NO: 1-SI-2-425 SYSTEM: SI
CONFIGURATION: PIPE TO PUMP
ASME CODE CLASS: C-F-1, C 5.11
CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE WITH 1989 SECTION XI, FIGURE INC-2500-760
INTERFERING CONDITION: SINGLE-SIDE ACCESS DUE TO CONFIGURATION.
Pumpside configuration 15 Eunited By A ShARP BEOFL AT THE
WELD EDGE. PROCEDURE BBAGZZB 15 QUALIFIED FOR DETECTION
ON THE NEAR SUDE OF SUIGLE SLDED ACCESS WELDS Only (PARA. 2.3)
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO X
PARTIAL EXAMINATION PERFORMED: YES NO
EXAMINATION ANGLE AFFECTED:
0 DEGREE WRV YES 0 DEGREE BASE MATERIAL N/A
45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES
OTHER: \$ 70° AXIAL
ALTERNATE METHOD RECOMMENDED: YESNOY
EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228 REV 2
· ·
$\frac{1}{1000000000000000000000000000000000$
1 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
PREPARED BY: DATE: 5.3.02
PREPARED BY: Just DATE: 5.3.02  REVIEWED: DATE: 5.6.02

### 1-SI-2-42S (F on Fig. B-12)

Auxiliary building, 577' elevation. West CTS pump room. No scaffold required. Non-insulated.





Weld location is within the area of the box restraint surrounding the pipe.

0" location = top dead center of upstream horizontal run of pipe.

Total circumferential length of weld = 40.0

Of the total 40 inches of circumferential weld length, the following was not examined with the 45° scan.

Lug @ 0° - 0.0"

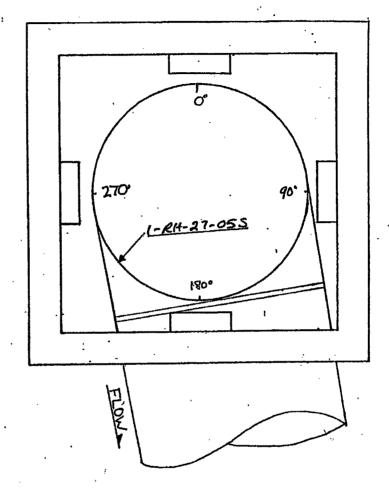
Lug @ 90° - 6.5"

Lug @ 180° - 0.0"

Lug @ 270° - 2.5"

Total Length 9.0"

40.0" – 9.0"= 31.0" examined 31.0" / 40.0"= 78% of weld inspected



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1.	Level:	Date:	
2.	 Level:	Date:	

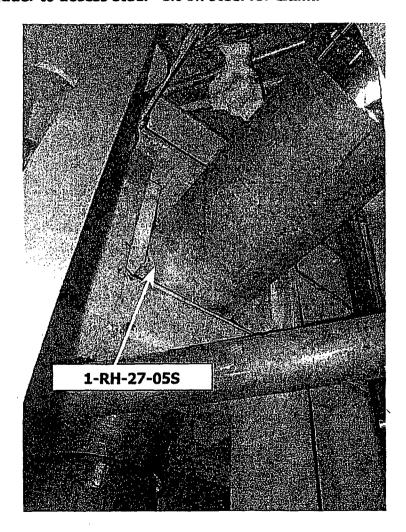
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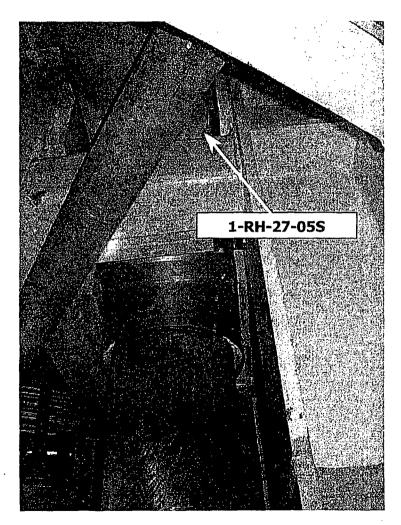
1.	Sulgran	Level: III	Date:	5.21.02
2.	0	Level:	Date:	
3.	·	Level:	Date:	

May 1	REPORT NO: WC18-UT-021
	PAGE4
	DATA PKG: <u>\(\rightarrow\{A}\)</u> PROCEDURE: <u>\(\frac{83A-G228}{6228}\) Rev 2</u>
	PHOCEDURE: 03F-0220 REV Z
PLANT/UNIT: D.C. GOK/UNIT   WELD NO: 1-R14-6	27-055 SYSTEM: RH
CONFIGURATION: PIPE TO ELBOW	
ASME CODE CLASS: <u>C-F-1</u>	
CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE	TO 1989 SECTION XI, FIGURE
IWC-2500-7(a)	,
. , ,	
INTERFERING CONDITION: WELD FOCATED INSIDE &	OF BOY RESTRAINT
<u></u>	·
	_
	ETCH ATTACHED: YES X NO
PARTIAL EXAMINATION PERFORMED: YES YES YES YES YES YES YES YES YES YES	<del> </del>
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV YES 0 DEGREE BASE MATERIAL	N/A
45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENT	AIL YES
OTHER: 4/A	
	· · · · · · · · · · · · · · · · · · ·
ALTERNATE METHOD RECOMMENDED: YES NO	
EXPLANATION: <u>EXAMINATION PERFORMED IN ACC</u>	
ALTERNATE METHODS WILL NOT INCREASE COVERAGE	E DUE TO THE BYSICAL LOCATION
OFTHE WELD IN RELATION TO THE BOX RESTRAINT.	- 4
·	
FREPARED BY: * James P. Strick	DATE: 5-15-02
REVIEWED: Suppose	DATE: 5.21-02
REMOD SP863	
· Sport	

### 1-RH-27-05S

Annulus Area, elevation 608'. No scaffold required. Insulated. Limited UT examinations due to box restraint. Need ladder to access steel - sit on steel for exam.





REPORT NO: WCI 8- W7	-014
PAGE	
DATA PKG: <u>~\^/A</u> PROCEDURE: <u>\&amp;3A\622\&amp;</u>	REV2
PLANT/UNIT: D.C. COK WELD NO: 1-ST-24-06F SYSTEM:	
CONFIGURATION: PIPE TO TEE	
ASME CODE CLASS: C-F-1	
CODE EXAMINATION REQUIREMENTS: TW ACCORDANCE TO 1989 SECTION XI T	MGURE
IWC-2500-7(a)	
	·
INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION.	SUGLE
SIDED ALLESS EXAMINATION PERFORMED UN ACCORDANCE WITH	PROCEDULE
- DARAGRAPH 2-3. O.D. CONFIGURATION OF TEE SIDE LIMITS	EXAM
PUZ TO SHARD BENEL ADJACENT to TEESIDE WELD	TOE.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES	NO X
PARTIAL EXAMINATION PERFORMED: YES X NO	,
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV NA 0 DEGREE BASE MATERIAL NA	
45 DEGREE AXIAL VGS 45 DEGREE CIRCUMFERENTAIL VG-S	
OTHER: # 70° RL ANGE SCAN	
ALTERNATE METHOD RECOMMENDED: YES NO	0.13
EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228,	KEV I
	······································
	·
·· \	
PHEPARED BY: DAME P. Strick DATE: 5-16-02	2
REVIEWED: DATE: 5.17.0	
many tisper Rethold 5/18/02	



# visual Component Database



Component Number: 1-SI-152N

Image Title: 1-SI-152N Image Date: 12/30/1899



Date Printed: 05/30/2002 09:37 AM

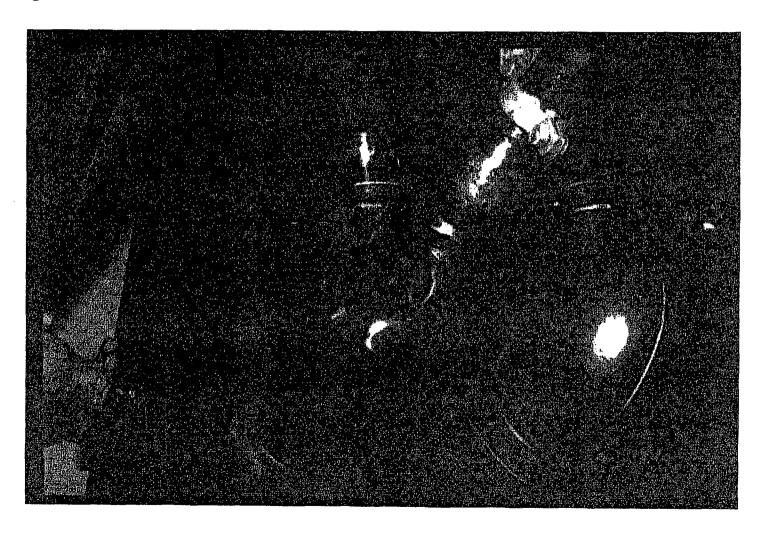


# visual Component Database



Component Number: 1-SI-152N

Image Title: 1-SI-152N Image Date: 04/14/1997

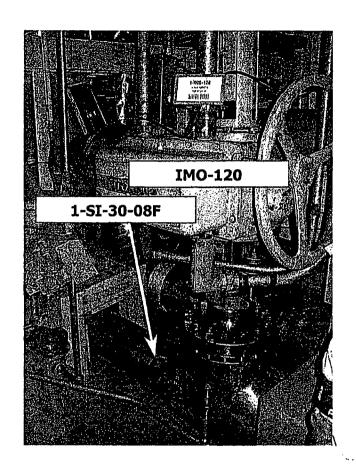


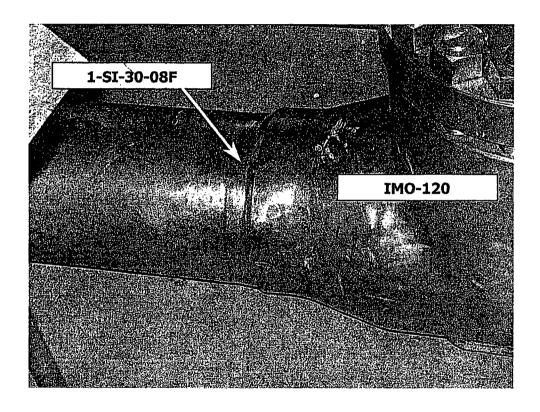
Date Printed: 05/30/2002 09:37 AM

PAGE 4 OF 4 DATA PKG: PROCEDURE: \$3A6228 P.W. 2  PLANTIUNIT: D.C. COOK UNIT! WELD NO: 1-SI-30-08F SYSTEM: SI  CONFIGURATION: VALVE TO PLAGE  ASME CODE CLASS: C-F-1  CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XL  FIGURE TWC-2500-7(a)  INTERFERING CONDITION: SINGLE-SINCO ACCESS DUE TO CONFIGURATION. PLAZE  TO VALUE CONSQUEATION LIMITED TO PLAZE SINCO SUNGLE SINCOL  YAM IN ACCORDANCE WITH PARAGRAPH 2.3 of PREVENUES. THE LIMITATION  COULSED BY THE O.D. BROGL OND THE JAWE ADJACENT TO THE  WYLLO TOE VALUE SINCE  ESTIMATE OF TOTAL & CODE COMPLETE: 50°L SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WAY  O DEGREE BASE MATERIAL  45 DEGREE AXIAL  X 45 DEGREE CIRCUMFERENTAIL  COTHER: 70° RL AYIAL
PROCEDURE: \(\frac{\nabla_{228}}{3A6228}\) \(\frac{\nabla_{228}}{\nabla_{228}}\) \(\frac{\nabla_{228}}{\nabl
PLANT/UNIT: D.C. COOK UNIT WELD NO: 1-SI-30-08F SYSTEM: SI CONFIGURATION: VALVE TO PIPE  ASME CODE CLASS: C-F-1  CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI  FIGURE TWC-2500-7(a)  INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION, PIPE  TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SINGLE SIDED  YAM IN ACCORDANCE WITH PARAGRAPH 2.3 of PRESONES. THE LIMITATION  CAUSED BY THE O.D. BRUGE OND THE JACKE ADJACENT TO THE  WYLLO TOE WALVE SIDE.  ESTIMATE OF TOTAL & CODE COMPLETE: 50° b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WAY YOU DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL
CONFIGURATION: VALVE TO PIPE  ASME CODE CLASS: C-F-1  CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI  FIGURE TWC-2500-7(A)  INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION, PIPE  TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SUNGLE SIDED  KAM IN ACCORDANCE WITH PARAGRAPH 2.3 of PROFEMULE. THE LIMITATION  CAUSED BY THE O.D. BRUCK ON THE JAWE ADJACENT TO THE  WYCH TOE UALUE SIDE  ESTIMATE OF TOTAL & CODE COMPLETE: 50°b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV YOU DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL
ASME CODE CLASS:  C-F-1  CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI  FIGURE TWC-2500-7(a)  INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFULVERTION, P.P.2  TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SUNGLE SLOED  YAM IN ACCORDANCE WITH PARAGRAPH Z-3 & PROGRAMME. The Unitation  CAUSED BY THE BD. BROYL ON THE JAWE ADJACENT TO THE  WYCH TOE VALUE SIDE.  ESTIMATE OF TOTAL & CODE COMPLETE: 50°b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRY YOU DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL
CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI  FIGURE TWC-2500-7(G)  INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFULURATION. PUPE TO VALUE CONSQUEATION LIMITED TO PUPE SUDE ACCESS AND SINGLE SIDED  YAM IN ACCORDANCE WITH PHEAGRAPH 2.3 of PROFESSIVE. THE LIMITATION  CAUSED BY THE O.D. BROGL ON THE JAWE ADJACENT TO THE  WILL TOE UAWE SIDE.  ESTIMATE OF TOTAL & CODE COMPLETE: 50% SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV
INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION. PIPE  TO VALUE CONSQUENTION LIMITED TO PIPE SUDE ACCESS AND SINGLE SCOED  YAM IN ACCORDANCE WITH PARAGRAPH 2.3 of PROTEDURE. THE LIMITATION  CONSED BY THE B.D. BRUGL ON THE JAKUE ADJACENT TO THE  WILLO TOE VALUE SIDE.  ESTIMATE OF TOTAL & CODE COMPLETE: 50% SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV
INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION, PIPE  TO UNIONE CONSQUENTION LIMITED TO PIPE SUDE ACCESS AND SINGLE SCORD  YEAR IN ACCORDANCE WITH PARAGRAPH Z.3 of PROTEDURE. THE LIMITATION  CAUSED BY THE O.D. BROYL ON THE JAWE ADJACENT TO THE  WALLO TOE UAWE SIDE.  ESTIMATE OF TOTAL & CODE COMPLETE: 50% SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV YOUR DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL
TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SINGLE SLOED  EARN IN ACCORDANCE WITH PARAGRAPH 2.3 of PROPERSURE. The Limitation  CAUSED BY THE O.D. BEOGL ON THE JAWE ADJACENT TO THE  WILLO TOE VALUE SLOE  ESTIMATE OF TOTAL & CODE COMPLETE: 50° b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV O DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SINGLE SLOED  EARN IN ACCORDANCE WITH PARAGRAPH 2.3 of PROPERSURE. The Limitation  CAUSED BY THE O.D. BROGL ON THE JAWE ADJACENT TO THE  WILL TOE VALUE SLOE  ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV
TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SINGLE SLOED  EARN IN ACCORDANCE WITH PARAGRAPH 2.3 of PROPERSURE. The Limitation  CAUSED BY THE O.D. BROYL ON THE JAWE ADJACENT TO THE  WYLLO TOE VALUE SLOE  ESTIMATE OF TOTAL & CODE COMPLETE: 50° b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV O DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
TO VALUE CONSQUEATION LIMITED TO PIPE SUDE ACCESS AND SINGLE SLOED  EARN IN ACCORDANCE WITH PARAGRAPH 2.3 of PROPERSURE. The Limitation  CAUSED BY THE O.D. BROYL ON THE JAWE ADJACENT TO THE  WYLLO TOE VALUE SLOE  ESTIMATE OF TOTAL & CODE COMPLETE: 50° b SKETCH ATTACHED: YES NO  PARTIAL EXAMINATION PERFORMED: YES NO  EXAMINATION ANGLE AFFECTED:  O DEGREE WRV O DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
ESTIMATE OF TOTAL & CODE COMPLETE: 50° b SKETCH ATTACHED: YES NO EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV 0 DEGREE BASE MATERIAL
ESTIMATE OF TOTAL & CODE COMPLETE: 50% SKETCH ATTACHED: YES NO X  PARTIAL EXAMINATION PERFORMED: YES NO EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV 0 DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO X  PARTIAL EXAMINATION PERFORMED: YES X NO  EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV X 0 DEGREE BASE MATERIAL X  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO X  PARTIAL EXAMINATION PERFORMED: YES NO EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV 0 DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO X  PARTIAL EXAMINATION PERFORMED: YES NO EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV 0 DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
PARTIAL EXAMINATION PERFORMED: YES NO EXAMINATION ANGLE AFFECTED:  0 DEGREE WRV 0 DEGREE BASE MATERIAL NA 45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
0 DEGREE WRV X 0 DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
0 DEGREE WRV X 0 DEGREE BASE MATERIAL NA  45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X
OTHER: 70° RL AVIAL
ALTERNATE METHOD RECOMMENDED: YES NO
EXPLANATION: EXAMINATION PERFORMEN IN ACLORDANCE TO 83A6228 REV 2.
PREPARED BY: DATE: 5-11-02
REVIEWED: Suprage DATE: 5-11.02
MIN 27 Hand 5/17/02

1-SI-30-08F

Annulus Area, elevation 599'. No scaffold required. Not Insulated. Right above floor.





# Ultrasonic Examinatio.. Limitation Report



DATA SHEET & WILLB-UT-02 Z

Weld located approximately 1" downstream from the top of the lugs.

0" location = inside radius of the upstream elbow.

Total circumferential length of weld = 33.75

Of the total 33.75 inches of circumferential weld length, the following was not examined with the 45° scan on the upstream side of the weld.

Lug @ 0° - 0.0"

Luq @ 90° - 5.0"

Lug @ 180° - 3.5"

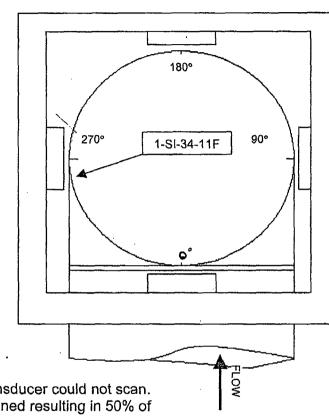
Lug @ 270° - <u>5.5</u>"

Total Length 14.0"

33.75" - 14.0"= 19.75" examined

19.75" / 40.0"= 58.5% of weld inspected

A 70° RL examination was conducted in the areas that the 45° transducer could not scan. Because of this, 100% of the upstream side of the weld was examined resulting in 50% of the total required being completed.

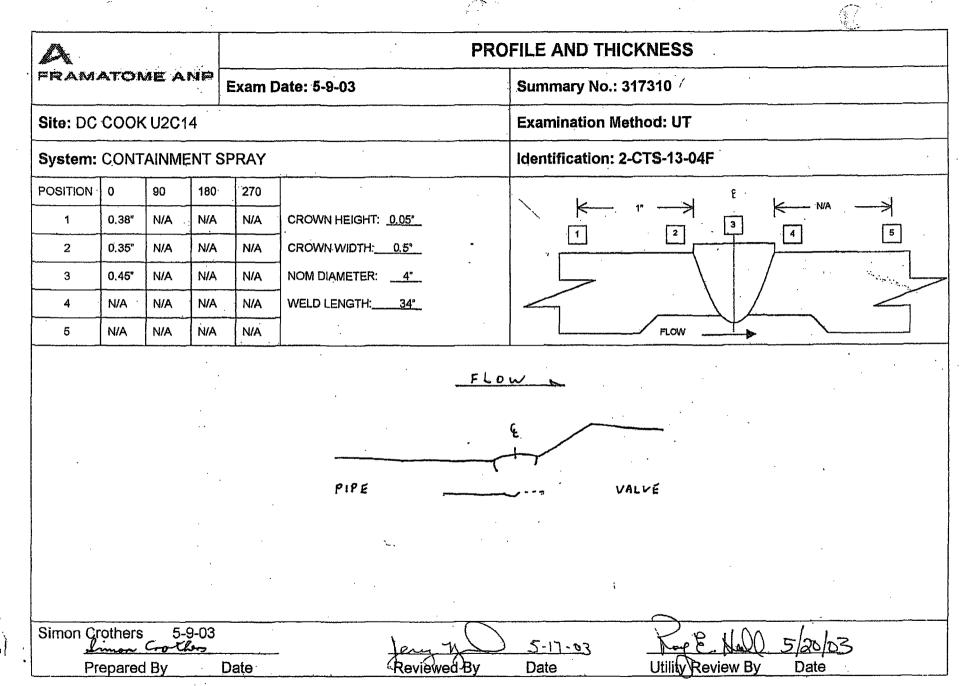


The downstream side of the weld could not be examined because of the valve. See Incomplete Examination Report for total coverage achieved on this exam.

Examiners:	Reviewers:	•
1. (1) amin 1. The Level: I Date: 5.11.02	1 Slupina	Level: TL Date: 5.4-02
1. (1) Juni 1. 714-12 Level: <u>I</u> Date: 5-11-02 2 Level: Date:	2. E Nal	Level: Date: 5 2 2 2
	3. Malergary	Level: Date: <u>5/21/6</u> -,
		PAGE <u>4</u> 0F <u>5</u>

R	REPORT NO: MICHO-UT-022
	AGE5 OF5
	PROCEDURE: \$3 A 6228 PEVZ
Р	PROCEDURE: \$3 A 6228 PEVZ
PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-SI-34.	- NF SYSTEM: SI
CONFIGURATION: ELGOW TO VALVE	
ASME CODE CLASS: C-F-1	
CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO	1989 SECTION XI FIGURE
IWC-2560-7(a)	,
Since Since	2 (2) (2) (2)
INTERFERING CONDITION: SINGLE - SIDEN ACCESS	
SINGLE SIDED EXAMINATION PERFORMED iN ACC	
"ARAGRAPH 2.3. VALUE SIDE SCANNING	15 NOT POSSIBLE BUETO
BEUEL AT THE WELD TOE ON THE UDLU	
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETC	CH ATTACHED: YES X NO
	HAITAGHED: YES _/ NO
PARTIAL EXAMINATION PERFORMED: YES NO	<del></del>
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV 0 DEGREE BASE MATERIAL _	N/A
45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL	×
OTHER: * 70° RL ANIAL	
	/
ALTERNATE METHOD RECOMMENDED: YES NO X	
EXPLANATION: EXAMINATION PERFORMED IN ACCORDANG	LETD 83A6228, REV. Z.
	-
00.00	
PREPARED BY: Dennis P. Starkle	DATE: 5./1.02
REVIEWED:	DATE: 5.21.02
KENOUL 5/28/02	
MARK	

AMATOME AND mary No.:317310	Data Package: U20	:14-0007	Exam Date: 5/9/2003	
Customer: DC COOK U2C14		7	lethods: UT, PT	
System / Component ID: CONTAINMEN	T SPRAY / 2-CTS-13-		rocedures: 54-ISI-836-04, 54-IS	SI-240-40
Component Description: PIPE TO VALV	/E	Calibration Sh	eets No(s): 00018, 00019, 0002	0
Examination Category: C-F-1		Examination Results:		3
ISO / Drawing:B-49			⊠ Geometric	
Summary: COMPONENT NUMBER 2-CTS-13-04F, F	PIPE TO VALVE WAS EX	(AMINED USING		
ID GEOMETRY WAS RECORDED WITH				
	•			

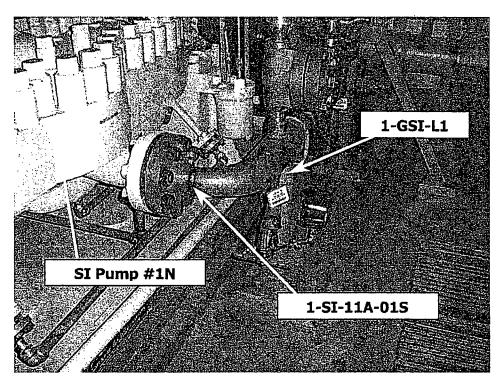


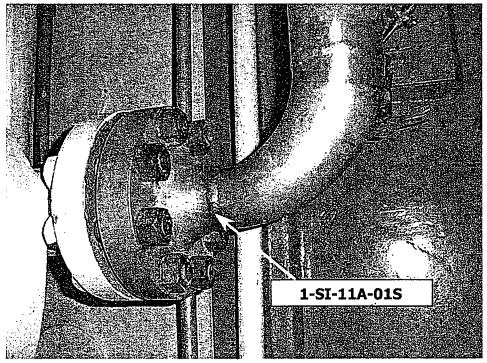
	REPORT NO: ULLIB-UT-004
·	PAGE OF
· · · · · · · · · · · · · · · · · · ·	DATA PKG: \(\infty\)/A
	PROCEDURE: 83AG228 Reu, 2
PLANT/UNIT: D.C. Cook / Unit   WELD NO: 1-5I-11	A-015 SYSTEM: SI
CONFIGURATION: Flange to Elbow	
ASME CODE CLASS: <u>C-F-I</u>	
CODE EXAMINATION REQUIREMENTS: In Accordance with	1989 Section XI, Figure
IWC-2500-7(A)	
INTERFERING CONDITION: Single - Sided Acces Due	to Configuration. REDucing
ELBOW TO FLAMEE CONFIGURATION IS Lim	
EXAMINATION FROM THE ELLOW SUBE UN A CO	
MARAGRAPH Z.3. THE Constarian is THE	·
FLANGE FACE.	
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SK	ETCH ATTACHED: YES NO _X
PARTIAL EXAMINATION PERFORMED: YES X NO	• • • • • • • • • • • • • • • • • • • •
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL	
45 DEGREE AXIAL 45 DEGREE CIRCUMFERENT	TAIL <u>Yes</u>
OTHER: 70° Axia/	
ALTERNATE METHOD RECOMMENDED: YES NO	
EXPLANATION: Examination Performed in Accordance	83A6228 Rev 2
70° Axial Scan Perfored Due to Pipe Wall Den	nension (203), Weld (Rown
Condition ( As welded) And Elbow to Flange	Configuration.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
PREPARED BY: Daniel Thick	DATE: 4.30.02
REVIEWED: Sur	DATE: 5-4.02
Re Hall = 10/02	•

### 1-SI-11A-01S

Auxiliary building 587' elevation. North Safety Injection Pump Room. No scaffold required. Non-insulated.

 $\frac{i_{s,m,j}}{s_{m,j,s}} j$ 





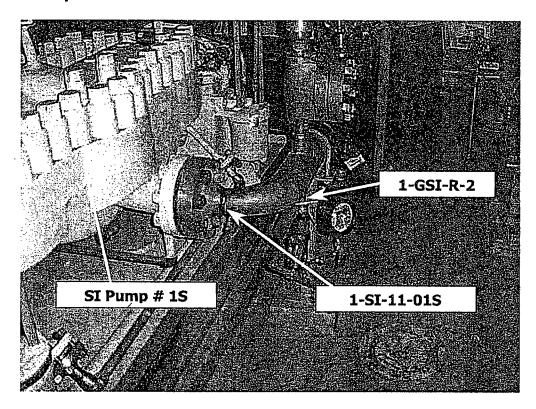
REPORT NO: WICIB-UT-005
PAGE <u>4</u> OF <u>4</u> DATA PKG: <u>A/A</u>
PROCEDURE: <u>83A/6228 Rev 2</u>
,
PLANT/UNIT: D.C. Cook / Unit   WELD NO: 1-SI-11A-015 SYSTEM: SI
CONFIGURATION: Flange to Elbow
ASME CODE CLASS: <u>C-F-/</u>
CODE EXAMINATION REQUIREMENTS: In Accordance to 1989 Section XI,
Figure INC-2500-7-(a)
INTERFERING CONDITION: Single - sided Access Doc to Configuration. Reducing
Elbow to FLANGE Confiburation is Limited to single side Access
FROM THE ELDOW SIDE IN ACCORDANCE WITH PROCEDURE PAPAGRAPH Z.3.
The Limitarian 15 THE O.D. CONTOUR (BEVEL) OF THE FLANGE FACE.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO _X
PARTIAL EXAMINATION PERFORMED: YES X NO
EXAMINATION ANGLE AFFECTED:
0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL NA
45 DEGREE AXIAL N/A 45 DEGREE CIRCUMFERENTAIL Yes
OTHER: 70° Axial
ALTERNATE METHOD RECOMMENDED: YES NOX
EXPLANATION: Examination Performed in Accordance with 33A6228 Rev. 2
70° Axial Scan Perfored Due to Pipe Wall Demension (.203), weld crown
condition (As welded) and Elbow to Flange Configuration.
PREPARED BY: DATE: 4-30.02
REVIEWED: DATE: 5.4.02
mad RENDO 5/17/02

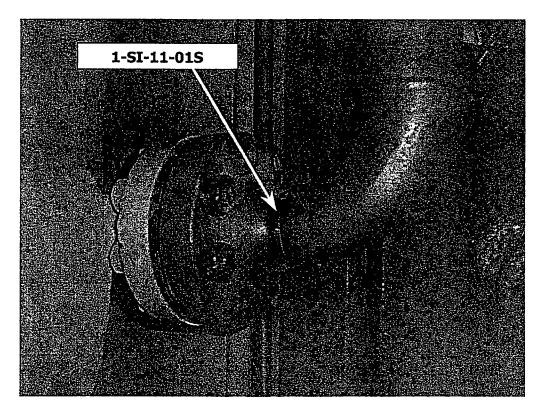
REPORT NO: WICIB-UT-005
PAGE4OF4
DATA PKG: N/A
PROCEDURE: <u>83A/6228 Rev 2</u>
PLANT/UNIT: D.C. Cook / Unit 1 WELD NO: 1-SI-119-015 SYSTEM: ST
CONFIGURATION: Flange to Elbow
ASME CODE CLASS: <u>C-F-/</u>
CODE EXAMINATION REQUIREMENTS: In Accordance to 1989 Section XI,
Figure INC-2500-7-(a)
INTERFERING CONDITION: Single - sided Access Doe to Configuration. Reducing
Elbow to FLANGE Confiduration is Limited to SUIGLE SIDED ACCESS
FROM THE ELDOW SIDE IN ACCORDANCE WITH PROCEDURE PARAGRAPH Z.3.
The LimitAtion 15 THE G.D. CONTOUR (BEVEL) OF THE FLANGE FACE.
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES NO _X
PARTIAL EXAMINATION PERFORMED: YES X NO
EXAMINATION ANGLE AFFECTED:
0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL N/A
45 DEGREE AXIAL $\sqrt{A}$ 45 DEGREE CIRCUMFERENTAIL $\sqrt{e_S}$
OTHER: 70° Axia/
ALTERNATE METHOD RECOMMENDED: YES NO
EXPLANATION: Examination Performed in Accordance with 33A6228 Rev. 2
70° Axial Scan Perfored Due to Pipe Wall Demension (.203), weld crown
condition (As welded) and Elbow to Flange Configuration.
PREPARED BY: Demis Phich DATE: 4-30.02
REVIEWED: DATE: 5.4.02
$\sim$ $\sim$ $\sim$ $\sim$ $\sim$

### 1-SI-11-01S

Auxiliary building 587' elevation. South Safety Injection Pump Room. No scaffold required. Non-insulated.

 $\mathbb{Q}_{2}^{(2)}$ 

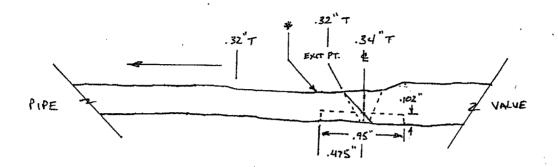




Asset	REPORT NO: WILLIO-UT-006
	PAGE 4 OF 6
	DATA PKG: N/A PROCEDURE: B3A6228 R/2
•	PROCEDURE: DONGLES PL
PLANT/UNIT: D.C. COOK UNIT! WELD NO: 1-SI-11.	-05F SYSTEM: SI
CONFIGURATION: FLANGE TO ELLOW	
ASME CODE CLASS:	
CODE EXAMINATION REQUIREMENTS: 1989 Ed. A	SME Section XI
FIGURE INC-2500-7(a)	·
INTERFERING CONDITION: SINGLE SIDE ACCESS	DULL TO CONFIGURATION
AND PIPE Support 1-GSI-R-Z. P.	
• •	
15 Comité Due to O.D. BEUEL ADJ	
PIDE SIDE BY Support intEGRAL ATTA	CH MEUT. (582 SKETCH)
ESTIMATE OF TOTAL % CODE COMPLETE: 49% SKE	ETCH ATTACHED: YES NO
PARTIAL EXAMINATION PERFORMED: YES NO	j.
EXAMINATION ANGLE AFFECTED:	
0 DEGREE WRV 185 0 DEGREE BASE MATERIAL	<u> </u>
45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENT.	AIL YES
OTHER: * 70 DEGREE AMAL	
ALTERNATE METHOD RECOMMENDED: YES NO	
EXPLANATION: * Examination PERFORMED IN A	0000 0000 11111 02 4677 & R/2
EXPLANATION: EXAMINEMATION PERFORMED ID A	THE WHITE WHITE DOTTE CEO 17C
	·
PREPARED BY: Danie 1. Hunt	DATE: 4.30.02
REVIEWED: Ship sour	DATE: 5-6-02
lidati O O O	
MM (Chall 5/17/02	

1-SI-11-05F Lummarian

PAGE 5 OF 6



\* OBSTRUCTION. . 30" FROM WELD TOE, . 20" LONG CIRCUMFERENTALLY, Z PLACES, SUPPORT #1-GSI-R2. SEE ATTACHED SLETCH.

REDUCED VOLUME = .95" x 102" x 14.25" (chacum feature) = (.38"5

VOLUME MOT EXAMUSED = 50% NOT EXAMUSED ON UMUS SIDE DUE TO SINGLE SIDED
ALLESS.

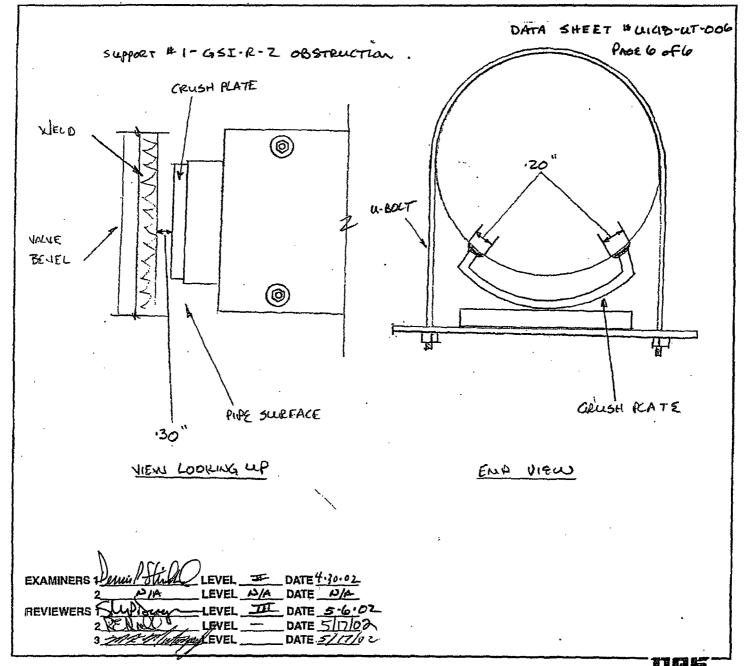
PLUS

1475" X.102" X.20" X 2 (PLAC45) = .00969"3

PERCENTAGE NOT EXAMINED = .00969"3 : 1.38"3

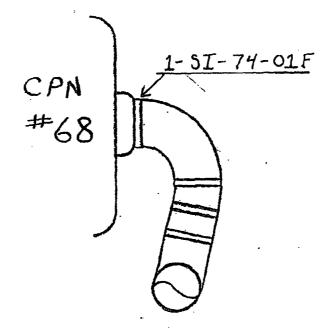
.70% + 50% = 50.7% = 51%

EXAMINERS 1	mis l'Ital	LEVEL_	亚	DATE	4.72.02	
2	MA	LEVEL	NIA	DATE	N/4	
REVIEWERS S	Please	_LEVEL_	皿	DATE	5.6.07	<u> </u>
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3 200	N W holinger	LEVEL_		DATE	5/17/0	2



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	REPORT NO: UICIB-UT-013
	PAGE OF
	DATA PKG: ~/A
	PROCEDURE: 83A6228 R/2
PLANT/UNIT: D.C. Cook Lint #1 WELD NO: 1-51-74	H-OIF SYSTEM: SI
CONFIGURATION: PENETRATION TO ELLOW	
ASME CODE CLASS: C-F-(, C 5.71	
CODE EXAMINATION REQUIREMENTS: IN ACCORDAM	CE WITH 1989 ASME
Section XI IWC-2500-7(a)	
INTERFERING CONDITION: SUGLE SUDED ACCESS	
Panetration TO Elsow ALLOWS EXAMINA	ATTOM FROM Ellow SUEE only
DUE TO O.D. SURFACE CONTOUR AT	10 penerearian proximity
on Panetrearian Sor.	•
ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKE	
	TCH ATTACHED: YES NO V
PARTIAL EXAMINATION PERFORMED: YES NO	<u> </u>
EXAMINATION ANGLE AFFECTED:	,
0 DEGREE WRV 0 DEGREE BASE MATERIAL	<u> </u>
45 DEGREE AXIAL 45 DEGREE CIRCUMFERENTA	AIL ×
OTHER: 70° AXIAL+	
ALTERNATE METHOD RECOMMENDED: YES NO	
EXPLANATION: * Examination PERFORMED in	ACCORDANCE WITH
83A6228 R/Z.	· · · · · · · · · · · · · · · · · · ·
Vac: AFM	
PREPARED BY: Deman Formble	DATE: <u>5-11-62</u>
REVIEWED: July 1 July 1	DATE: 5-11.02
man Rethall 5/17/02	



EXAMINERS 1 LEVEL TI DATE 5-11-02

LEVEL N/A DATE N/A

REVIEWERS 1 SUD Success LEVEL TIT DATE 5-11-02

LEVEL DATE 517103

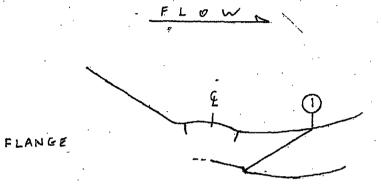
LEVEL DATE 517103

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A FRAMATOME ANE	EXAMINATION SUMMARY					
Summary No.:325500	Data Package: U20	C14-0004	Exam Date: 5/8/2003			
Customer: DC COOK U2C14		Examination M	ethods: UT , PT			
System / Component ID: ECCS (SI) / 2-SI-42-01S		Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40				
Component Description: FLANGE TO ELBOW		Calibration Sheets No(s): 00010, 00011				
Examination Category: C-F-1 ISO / Drawing:B-83		Examination Results:	☑ No Reportable Indications			
			☐ Reportable Indications  ☑ Geometric			
Summary: COMPONENT NUMBER 2-SI-42-01S , VA	LVE TO ELBOW WAS I	EXAMINED USING	THE PT, AND UT METHODS.			
COUNTERBORE WAS OBSEVED WITH T	HE 70 DEGREE TRAN	SDUCER, SEE TH	E ATTACHED UT INDICATION DATA SHEET.			
CA NO: DC-03-001 REVISION 00 APPLIES TO 54-ISI-836-04						
THE UT EXAM WAS LIMITED TO SINGLE SIDED ACCESS , DUE TO FLANGE TO ELBOW CONFIGURATION, RESULTING IN 50% COVERAGE.						

Prepared By: Simon Crothers Sign: Somon Crothers	Date: 5-8-03	Reviewed By: Jerry Newgard	Date: 5-12.03
Customer. Sign: Your L. Lau	Date: 5/13/03	Sign: Journ 1	Page   of 7

# **UT INDICATION PLOT**



REDUCING ELBOW

(F) 67° COUNTERBORE SEEN THROUGHOUT ELBOW INTRADOS.

S-8-03

FIGURE NO.: IWC-2500-7
COMPONENT ID: 2-SI-42-01S
COMPONENT: FLANGE TO ELBOW

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# **EXAMINATION SUMMARY**

RAMATOME ANP				S.	·	
ammary No.:325520	Data Package: U2C1	4-0005		Exam Date: 5/9	/2003	
Customer: DC COOK U2C14		Examination Methods: UT , PT				
System / Component ID: ECCS (SI) / 2-SI-4	12-03F	Examination P	rocedu	res: 54-ISI-836-	04 , 54-ISI-2	40-40
Component Description: PIPE TO VALVE		Calibration Sheets No(s): 00012, 00013, 00014				
Examination Category: C-F-1		Examination Results:		Reportable Inc portable Indica		
ISO / Drawing:B-83	-	·		eometric	LIOTIS	
Summary: COMPONENT NUMBER 2-SI-42-03F PIPE T						
ID ROOT GEOMETRY WAS OBSERVED WI						
THE UT EXAM WAS LIMITED TO SINGLE S WAS OBSTRUCTED BY BRANCH CONNEC			VE CO	NFIGURATION.	THE AXIAL	UT EXAM
EXAM COVERAGE =46.5%						
CA NO: DC-03-001 REVISION 00 APPLIES	TO 54-ISI-836-04					
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pared By: Simon Crothers	Date: 5-9-03	Reviewed By: Je	erry New	gard		Date:
Sign: Simon Crothers		Sign: Jenny	75			5-12-03
Customer:	Date:		) <u>(</u>	)	Page	of C

# **UT INDICATION PLOT**

PIPE VALVE

1) 58° ROOT GEOMETRY SEEN INTERMITTENT 360°

Suman Crothers 5-9-03

FIGURE NO.: IWC-2500-7 COMPONENT ID: 2-SI-42-03F COMPONENT: PIPE TO VALVE

A RAMATOME A	r p	ATION SUMMARY			
ammary No.:330010	Data Package: U	2C14-0013	Exam Date: 5/16/2003		
Customer: DC COOK U2C14		Examination N	Nethods: UT , PT		
System / Component ID: ECCS (SI) / 2-SI-73-02S		Examination P	Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40		
Component Description: ELBOW TO PIPE		Calibration Sh	Calibration Sheets No(s): 00032,00033,00034		
Examination Category: C-F-1 ISO / Drawing:B-89		Examination Results:			
			⊠ Geometric		
Summary: COMPONENT NUMBER 2-SI-73-02	S, ELBOW TO PIPE WAS E	EXAMINED USING TI	HE PT, AND UT METHODS.		
ID ROOT GEOMETRY WAS RECOR	RDED WITH THE 70 DEGR	EE TRANSDUCER.	•		
THE EVANA MARCH MAITED TO CINIC	NE CIDED ACCESS DUE		CONFIGURATION PERMITTING IN 50 0		

EXAM COVERAGE,

CA NO: DC-03-001 REVISION 00 APPLIES TO 54-ISI-836-04

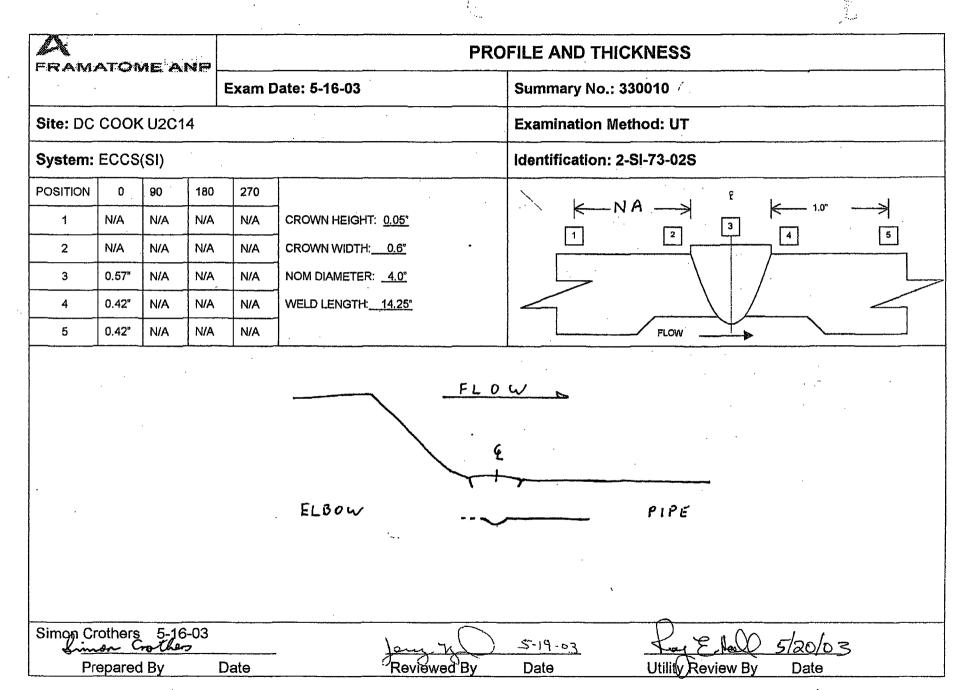
pared By: Simon Crothers

Date: 5-16-03

Reviewed By: Jerry Newgard

Date:

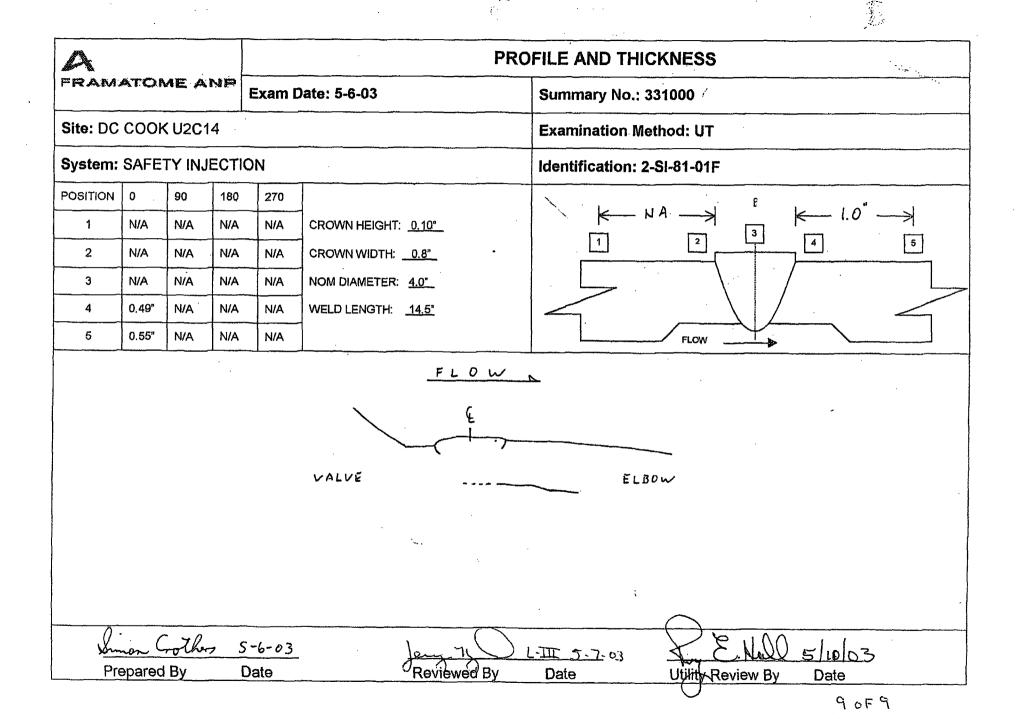
Sign: Sign: Page | of A



		EXAMINA	TION SUMMARY	
RAMATOME ANP Jummary No.:331000	Data Package: U2C1	4-0002	Exam Date: 5/6/2003	
Customer: DC COOK U2C14		Examination M	lethods: UT , PT	
System / Component ID: ECCS (SI) / 2-SI-81-01F		Examination P	rocedures: 54-ISI-836-04 , 54-ISI-240-40	
Component Description: VALVE TO ELBOW		Calibration Sheets No(s): 00005, 00006, 00007		
Examination Category: C-F-1		Examination Results:	☑ No Reportable Indications	
ISO / Drawing:B-92			☐ Reportable Indications  ☑ Geometric	
Summary: COMPONENT NUMBER 2-SI-81-01F , VAL\	/E TO ELBOW WAS E)	KAMINED USING	THE PT, AND UT METHODS	
ID ROOT GEOMETRY WAS RECORDED W	TITH THE 60 & 70 DEG	REE TRANSDUC	ERS,	
THE UT EXAM WAS LIMITED TO SINGLE SIDED ACCESS, DUE TO VALVE TO ELBOW CONFIGURATION, RESULTING IN 50% EXAM COVERAGE.				
CA NO: DC-03-001 REVISION OO APPLIES	TO 54-ISI-836-04			

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pared By: George G Chapman	Date: 5-6-03	Reviewed By: Jerry Newgard	Date: 5 - 7 - 03
sign: George & Chyp		Sign: Lever 7	,
Customer. Sign:	Date: 5/10/03	0 0 0	Page   of 4



### **ATTACHMENT 10**

### **RELIEF REQUEST ISIR-42**

EXAMINATION CATEGORY R-A RISK INFORMED PIPING EXAMINATIONS

### **RELIEF REQUEST ISIR-42**

### Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii) Inservice Inspection Impracticality

#### 1. ASME Code Components Affected

ASME Code Class:

Code Class 1 and 2

Examination Category:

R-A, Risk Informed Piping Examinations

Item Numbers:

R1.11, Elements Subject to Thermal Fatigue

R1.16, Elements Subject to Intergranular or Transgranular Stress

Corrosion Cracking (IGSCC or TGSCC)

R1.20, Elements Not Subject to a Degradation Mechanism

Component Identification: Listed in Table 1

#### 2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

Austenitic piping welds with single side access subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

### 3. Applicable Code Requirement

The examination requirements for Class 1 and 2 piping welds are governed by the Risk Informed Inservice Inspection program that was approved by the NRC in a Safety Evaluation Report dated September 28, 2007 (ADAMS Accession No. ML072620553). This program was developed in accordance with ASME Section XI Code Case N-716, Alternative Piping Classification and Examination Requirements. Table 1, Examination Category R-A, of Code Case N-716 requires 100 percent of the examination location to be examined. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allow credit for essentially 100 percent coverage of the weld provided greater than 90 percent of the required volume has been examined. 10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage when applying Supplement 2 to Appendix VIII:

- (1) Piping must be examined in two axial directions and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available.
- (2) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only

after completing a successful single side Appendix VIII demonstration using flaws on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B), requires that examinations performed from one side of a stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to the two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

### 4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the 100 percent volumetric examination coverage requirement for austenitic piping welds with single side access.

There are currently no Performance Demonstration Initiative (PDI) qualified single side examination procedures that demonstrate equivalency to two-sided examination procedures on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to United States nuclear applications.

PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping list the limitation that single side examination is performed on a best effort basis. The best effort qualification is provided in place of a complete single side qualification to demonstrate that the examiners qualification and the subsequent weld examination is based on application of the best available technology.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B) and full coverage credit may not be claimed.

Based on the configuration limited to single side access, relief is requested on complying with the 100 percent required examination coverage for the piping welds listed in Table 1. Note that examination coverage listed is that which was obtained during examination with no credit taken for the far side of each weld when only single-sided access was attainable.

Other welds in Table 1 have physical limitations that prevented full access from both sides of the weld. These limitations include pipe support members, transition areas on elbows, tapers and other geometric interferences. Compliance with code requirements would require extensive modification or replacement of components with a design that allows examination from both sides of the weld.

### 5. Burden Caused by Compliance

Compliance with code requirements requires extensive modification or replacement of components with a design that allows examination from both sides of the weld.

This option to meet the required 100 percent volume examination coverage is considered impractical based on the cost, additional radiation exposure and impact to plant equipment

### 6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination to the maximum extent practical utilizing the best available techniques, as qualified through the Performance Demonstration Initiative (PDI) for Supplement 2 with demonstrated best effort for single sided examination, from the accessible side of the weld. Additionally, a surface examination without limitations was performed on each weld. Further, a visual (VT-2) examination is performed each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

### 7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-CS-96-60F (Class 1)	Elbow to Branch	R1.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the geometry of the branch limiting access from the downstream side. No relevant indications detected.
1-SI-29-19S (Class 1)	Pipe to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side, downstream, due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-29-20S (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-29-23S (Class 1)	Tee to Pipe	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-31-21S (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-SI-57-19 (Class 1)	Pipe to Tee	R1.16	36.8	The completed examination was limited to 36.8% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). Additional coverage was missed due to the weld contour (13.2%). No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-57-21 (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50.0% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). No relevant indications detected.
2-SI-56-18 (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50.0% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). No relevant indications detected.
1-SI-548-45S (Class 1)	Valve to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-RH-30-06F (Class 2)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-RC-8-02S (Class 1)	Elbow to Pipe	R1.20	89.7	The completed examination was limited to 89.7% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-SI-29-26F (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-SI-33-26F (Class 1)	Nozzle to Elbow	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the Nozzle taper at the weld toe. No relevant indications detected.
2-RC-22-24 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-RC-23-12 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-RC-24-09 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-SI-569-49S (Class 1)	Tee to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.
2-SI-569-53S (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-569-54S (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.
2-SI-57-22 (Class 1)	Tee to Pipe	R1.16	48.4	The completed examination was limited to 48.4% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). Additional coverage was missed due to the weld contour (1.6%). No relevant indications detected.
2-SI-56-10 (Class 1)	Pipe to Elbow	R1.20	66.2	The completed examination was limited to 66.2% coverage due to the configuration. The configuration prevents examination of 100% of the required area due to the presence of a permanent support which limited access. No relevant indications detected.
2-SI-78-01 (Class 1)	Valve to Elbow	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.
2-SI-56-22 (Class 1)	Elbow to Branch	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the geometry of the branch limiting access from the upstream side. No relevant indications detected.

### **RELIEF REQUEST ISIR-42**

# EXAMINATION CATEGORY R-A RISK INFORMED PIPING EXAMINATIONS

### SUPPORTING DOCUMENTATION

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Con	p/System	:	1-C	S-96-60	F/CVCS	_				_	Pr	ocedi	re No.	WE	I-ST	D-1026	Rev. 0	)		
ISO	#:	AEP 1-0	CS-9	\$							~C∈	al Bloc	k No.	337	8027	7				_
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A Westinghouse NDI	E Company	UT No.	U10	C22-UT-08-02	25
WALL THICKN	IESS PROFILE SHEET	WELD NO.:		1-CS-96-60F	
Position 0° 1 0.44 2 0.44 3 0.44 0.50 5 0.52 0E* 6 0.45 7 0.44 8 0.43 9 0.43 Crown Height: Crown Width: Longseam:		2.5"  1 2 3 4°  Toe  Up Stroam (-) Skio	3 11	- Weid Edge  25	#
Longseam:	N/A	lso Drawing:	AEP 1	-CS-96	
	45°	6.45	45	+60°	
Examiner:	Steven Snyder N/A	Level: II Level: N/A	Date:	4/6/2008 N/A	
Reviewer:	Phil Lancaster	Level:iii	_ Date:	4/7/2008	
Utility Review:	Repural & Dung	Level: \\\	Date:	4/8/08	i



A Westinghouse NDE Company

## **ULTRASONIC CALIBRATION**

Page 3 of

**DATA SHEET** 

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Comp	/System	;	1-5	-29-198	/ Safety Ir	njeci	tion System				Pro	cedu	re No.	ISI-PDI-	UT-2	Rev	v. 4			
ISO #	<b>‡</b> ;	AEP 1-SI-					· · · · · · · · · · · · · · · · · · ·			_	•		k No.	102915						_
Sumn	nary No.:	102400					······				Sca	n Su	rface:		]ID	1	NO.	,		-
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		<u> </u>	NESS		ILE SH	łEET	WELI	D NO. :		1-SI-29-19S	
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	8	N/	A				Pipe			Tee	
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	Crown	Height:		0.	15"		Diameter:	-	1	0.0"	
	Crown	Width:		0.	95"		Weld Leng	gth: _	3	31.4"	
	Longs	eam:		N	!/A	·	Iso Drawii	ng:	AEP	1-SI-29	
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### ULTRASONIC CALIBRATION DATA SHEET

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A Westi	inghouse !	VDE Comp	any									
, ant :	D.C. Coo		•*	Unit	1		UT No.	U1C22-	-UT-08-02	22		
Comp/System	:	1-SI-29-20	S / Safety I	- njection System		-			ISI-PDI-			
ISO #:	AEP 1-SI		or calcty i	illectori Oysteiii	<del></del>		Cal Blo		102915	01-2, RE	ev. 4	
Summary No.:					•		Scan S			ID	<b>V</b> OD	
1		Thorm	ometer S/N	Lor CAD#	405024					-		
i	SEARCI		ometer 2/h	VOI SAP#.	105231	-		omp Ter or ⊥TO v	•	82° / 8	TO WE	. n
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Scan Angle:	60°	Mode:	RL	Rompas	103774	IDENT	Pos	AMPL	ATTEN dB	Pos	AMPL %	
Serial No.:	01-049	Mfg.	RTD	SCAN A	DEA	2.0" Notes		80	49	N/A	N/A	N dB N/A
Fixturing:	Integral	Model:		0° WRV	ND4	Z.O NOICE	3.0	00	1 49	I IVA	INA	IWA
Size:	2(8x14)		Rect.	0° BM			<del> </del>		<del> </del>	<del> </del>	<del> </del>	-
Frequency:	2.0 MHz	<u></u>		⊥ To Weld	×		<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del>                                     </del>	
Measured Ang		60°		To Weld			<del> </del>	<del> </del>	1	<del>                                     </del>	<del>                                     </del>	
	RG-174	Length:	6'	# Connectors	d	197	50%	<u> </u>				
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INS'	TRUMENT	SETTINGS	3	CHECKS	TIME	1 I	60 50	1.		1	++-	+
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Damping:	500	Puls Wth:	250	Intermediate	12:36	1 1	20	<del>-}</del>	+	┼╾┼┈	+	+
Mode Select:	Dual On	Reject	0%	Intermediate	N/A	] [	10 L			11111111		, ,,,,,,
		Rep. Rate:		Final Cal.	16:33	) · [_						
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ctify: Full Wa	ave					<del></del>		<del></del>	ns, 10 =	8.0"		
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Range	8*	Vel.	0.224	WELD/A	REA	Indic	ations	Lim	itation	}	COMME	NTS
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Swp Delay	0	Zero	7.153		<del></del>	Yes	No	Yes	No	<u> </u>		
Gain 0° or	···	Zero dB 49	7.153	1-SI-29-	208	Yes	No X	Yes X	No			aintain a 5
	···		7.153	1-SI-29-	20S	Yes	<del>                                     </del>		No	- 20%	ID roll.	50%
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Gain 0° or Gain    Scan Sens INS High N/A 2 3 4 5  AMPL CONTF Initial 80 80 40 20	Sitivity  STR. LINE/ Low N/A  ROL LINE/  A dB  -6  -12 +6 +12	dB 49 dB N/A  Axial = Circ = ARITY CAL. High 6 N/A 7 8 9 10  ARITY Result N/A	54 N/A Low N/A	Examiner Print Examiner Print Reviewer Utility Review Authorized Ins	Matt Sch Phil Lanc	malz N/A  N/A  Associater Tud	L. Je	Level Level	II N/A	Date Date Date Date Date	ID roll.  ege due etric con  4/3/	50% to figuration. 2008
Gain 0° or Gain    Scan Sens INS High N/A 2 3 4 5  AMPL CONTF Initial 80 80 40 20	Sitivity  STR. LINE/ Low N/A  ROL LINE/  A dB  -6  -12 +6 +12	dB 49 dB N/A  Axial = Circ = ARITY CAL. High 6 N/A 7 8 9 10 ARITY Result N/A	54 N/A Low N/A	Examiner Print Examiner Print Reviewer Utility Review Authorized Ins	Matt Sch	malz N/A  N/A  Associater Tud	X Value Reu- Check B	Level Level	II N/A	Date Date Date Date Date	ID roll.  ege due etric con  4/3/	50% to figuration. 2008
Gain 0° or Gain    Scan Sensensensensensensensensensensensensense	Sitivity  STR. LINE/ Low N/A  ROL LINE/  A dB  -6  -12  +6  +12  I Linearity Accepta	dB 49 dB N/A  Axial = Circ = ARITY CAL. High 6 N/A 7 8 9 10  ARITY Result N/A	54 N/A Low N/A	Examiner Print Examiner Print Reviewer Utility Review Authorized Ins	Matt Sch Phil Lance	malz N/A  Asser Tud	X Value Reu- Check B	Level Level	II N/A	Date Date Date Date Date	ID roll.  ege due etric con  4/3/	50% to figuration. 2008

A Westinghouse Ni	DE Company	Page UT No.	4 of 4 U1C22-UT-08-022
WALL THICK	NESS PROFILE SHEET	WELD NO. :	1-SI-29-20S
Position 0° 1 N// 2 N// 3 1.3 TOE* 4 1.33 C <sub>L</sub> 5 1.12 TOE* 6 N// 7 N// 8 N//	A	Streem (-) Side	2.6"  [6"] [7] [8] [9]  Toe  Down Streem (+) Skie
9 N/	0.05*	Component  Diameter:	Component
Crown Width:	1.15"	Weld Length:	31.4"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-29
	Flow	G 60°E1	· .
Examiner:	Matt Schmalz	Level: II	Date: <u>4/3/2008</u>



Page 3 of

**ULTRASONIC CALIBRATION DATA SHEET** A Westinghouse NDE Company ;ant : D.C. Cook Unit UT No. U1C22-UT-08-023 1-SI-29-23S / Safety Injection System Comp/System: Procedure No. ISI-PDI-UT-2, Rev. 4 Cal Block No. ISO #: **AEP 1-SI-29** 102915 Summary No.: 102700 Scan Surface: **VOD** Thermometer S/N or SAP#: 105231 Block/Comp Temp 82° / 86° F **SEARCH UNIT** 0° or ⊥TO WELD || TO WELD AMPL ATTEN AMPL Sweep Sweep ATTE 103774 Rompas Pos Scan Angle: 60° Mode: RL IDENT dΒ Pos N dB 01-049 SCAN AREA 5.0 Serial No.: Mfg. RTD 2.0" Notch 80 49 N/A N/A N/A Fixturing: Integral Model: TRL2 0° WRV 2(8x14) Size: Shape: Rect. 0° BM ⊥ To Weld 2.0 MHz Frequency: 60° To Weld Measured Angle: Length: **RG-174** Cable Type: # Connectors 1008 0.4" Couplant Brand: Ultragel II Exit Pnt Dim: = N/A Contoured 80 Couplant Batch: 07125 70 CAL 60 **INSTRUMENT SETTINGS CHECKS** TIME 50 Mfg/Model No.:Krautkramer USN 58 Lsw Initial Cal. 8:45 40 Serial/SAP No .: 104391 11:45 30 Intermediate 20 Puls Wth: 250 Damping: 500 Intermediate 12:36 10 Mode Select Dual On Reject 0% Intermediate N/A Frequency: 2.0 MHz Rep. Rate: Auto High Final Cal. 16:33 5 Pulser Type: Square Voltage: 450 2 3 4 6 7 8 9 10 Screen Divisions, 10 = 8.0" ctify: Full Wave ier. Fixed "T & R" **EXAMINATION** Jack Recordable Scan **WELD/AREA** Limitation 8" Vel. 0.224 Indications COMMENTS Range Swo Delav 7.153 Yes Yes Zero Gain 0° or ⊥ Scanned to maintain a 5 1-SI-29-23S dB |49 Х X 20% ID roll. 50% Gain | dB N/A coverage due to geometric configuration. Scan Sensitivity Axial = 54 N/A Circ = INSTR. LINEARITY CAL High Low Low High N/A N/A N/A Examiner = Ħ Date 4/3/2008 6 Matt Schmalz 8 9 Examiner N/A N/A Date N/A Print 10 AMPL. CONTROL LINEARITY Reviewer Date 4/6/2008 Initial ΔdB Result -6 N/A 80 Date -Utility Review 80 -12 Authorized Inspection Agency< 40 +6 Date 20 +12

Horizontal Linearity Performed

N/A Acceptable

"A powerful part of your team"

ADDITIONAL SHEETS? (Check Box)

Continuation X Beam Plot

Supplements Other

72	WESD	WNE	<b>i</b>			Page	4	of	4
	estinghouse ND		•			UT No.	H:	1C22-UT-08-0	23
						01110,		1022 01 00 0	20
V	VALL THICK	NESS PRO	OFILE SH	EET	WELD	NO.:		1-SI-29-23S	
1	Position 0°	90° 180	)° 270°			Welc	·	* Weld Edga	
-	1 N/A 2 N/A		-	1	2.5*	Centeri	ine	2.5*	
ŀ	3 1.080			, T	2 3	47 5	[67]	7 8 9	n
LOE*	4 1.07			5	Too 1	7	7	700	<u>-</u>
٦. [	5 1.016			}					
roe*	6 N/A			Up Stre	em (-) Stde	<u> </u>		Down Stream (+) S	ide
	7 N/A					FLO	w ·		
L	8 N/A				Tee			Pipe	<u> </u>
L	9 N/A	<u> </u>			Component	•		Component	
(	Crown Height:		0.05"		Diameter:		1	0.0"	
(	Crown Width:		1.2"		Weld Lengt	th:	3	31.4"	į.
						۹۰	۸ED	1-SI-29	
	Longseam:		N/A_		Iso Drawing	· .	ALF	1-31-29	
			N/A	<del></del>	ISO Drawing	· .	<u> </u>	1-31-29	
	Longseam: LE AREA		N/A		Iso Drawing	· .	ALI.	1-31-29	
		· · · · · · · · · · · · · · · · · · ·	N/A	<u></u>	iso Drawing	·	ALI		
		· · · · · · · · · · · · · · · · · · ·	N/A		iso Drawing		ALI		
			N/A	FLow		·	ALI	1-31-29	
			N/A	FLOW		·	∧Li		
			N/A	FLOW					
			N/A	FLow					
			N/A	FLow			60°RL	1-31-29	
			N/A	FLOW				1-31-29	
			N/A	FLOW				1-31-29	
			N/A	FLOW				1-31-29	
			N/A	FLOW				1-31-29	
			N/A	FLOW					
			N/A	FLOW				1-31-29	
			N/A	FLOW				1-31-29	
PROFI	LE AREA		N/A	FLOW	QI -	159	60°RL.		
PROFI		Matt Schn		FLOW				4/3/2008	
PROFI	LE AREA			FLOW	QI -	159	60°RL.		
PROFI	LE AREA  Examiner:	Matt Schn		FLOW	Level:	II N/A	Date:	4/3/2008 N/A	
PROFI	LE AREA	Matt Schn	nalz Lanca	FLOW	Level:	159	O'RL.	4/3/2008	



## **ULTRASONIC CALIBRATION**

Page 3 of

**DATA SHEET** 

A Westi	inghouse [	VDE Co	mpai	ry												
.ant :	D.C. Cool	k			Unit:	1		UTI	Vo.	U1C22-	UT-08	-028				
Comp/System		1-SI-31	-215	/ Safety I	- niection System		•	Proc	uher	re No.	ISLPE	TILLIC	-2 Re	v 4		_
ISO #:	AEP 1-SI-	<del></del>		, oursey ii	ijodaon Oyotom			_		k No.	10291		2, 100	· • · · · ·		-
Summary No.:					<del></del>	•		_		rface:		Пір		√OD		-
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	000			<b></b>	Rompas	103774		Swe			ATTE		weep	AMPL	ATTE	
Scan Angle:	60°		ode:	RL			IDENT	Pos		%	dB		os	%	N dB	-
Serial No.:	01-049	Mf	<del></del>	RTD	SCAN A	KEA	2.0" Notel	7 2	.0	80	49	<u>'</u>	N/A	N/A	N/A	-
Fixturing:	Integral		odel:	TRL2	0° WRV			┼			├				<u> </u>	-
Size:	2(8x14)	Sn	ape:	Rect.	0° BM	<del>-</del>		-						-		-
Frequency:	2.0 MHz	60°			⊥ To Weld			-			<del> </del>			<del>├</del> ──	├	- 1
Measured Ang	RG-174	Leng	dh.	6'	To Weld		<u> </u>	1			<u></u>				L	J
Cable Type: Couplant Brand		Ultrag		0	# Connectors	<u> </u>		90			$\overline{1}$		7	Til	77	]
Couplant Batch		07125			Exit Pnt Dim: =	Contoure	.	<del>9</del> 0			<u> </u>			<del>                                     </del>		
Couplant Batch	l.	0/125			CAL.	Contoure	u i	70							$\Box$	
INS	TRUMENT	SETTI	NGS		CHECKS	TIME		60			+-+	-		++	+	
Mfg/Model No.				EW.	Initial Cal.	8:45		50 40			╁┈┼			+	+	
Serial/SAP No.		104391			Intermediate	11:45		30						1.		
Damping:	500	Puls W		250	Intermediate	12:36		20			44				$\perp$	
Mode Select		Reject		0%	Intermediate	N/A		30			1			<del>                                     </del>		
Frequency:	2.0 MHz			Auto High	Final Cal.	16:33	1 1	0	ىبىن	ummu	سس	шш	шш		шш	
Pulser Type: S			ltage:				, -	0	1	2 :	3 4	5	6 7	8 9	10	-
ctifv: Full W					1			Scr	een	Division		= 8	.0"			
er: Fixed		J	ack	"T & R"	EXAMINA	TION	Reco				can	T				
Range	8"	Ve	.1	0.224	WELD/A	RFΔ	Indic	ation	اے		itation			COMME	NTS	
					11			T			1				,	
Swp Delay	0	Ze		7.153	1		Yes	+	0	Yes	No			ed to m		
Gain 0° or	· 4-	dB 49		····	1-SI-31-	215		1-	<u> </u>	X	├──			ID roll.		las
Gain		dB N/	Α		ł I		ł	╂—			<u> </u>			ige due		
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Scan Sen	SHIVITY	Axial =	:	54	<b></b>			+				<u> </u>	COIIIC	SUIC COL	iliyula	uvi.
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High	Low		-ligh	Low	ļ <sub>F</sub>			_		1	. 81	-		410	2000	
1 N/A	N/A		N/A	N/A	Examiner Print		mol-			Level		L	ate	4/3/	2008	
3	<del> </del>	7		<b> </b>	- FIBIL	Matt Sch	maiz									
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AMPL. CONTI	ROL LINE	ARITY		7	Reviewer	1111	1	$\theta$		Level	iii	Г	ate	Δ <i>1</i> 71	2008	
Initial	∆dB		sult	-	Nonewar	Phil Lanc	aster	and M.	<del>-</del>				uic			_
77.70	<del> </del>	<del> </del>	N/A	┥.	Utility Review	Flu		2	عره	<del>&gt;-</del>		Г	)ate	1/1	1090	
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80 80	-6 -12			.												
	-6 -12 +6				Authorized In	spection A	gency «	1		115	D	E	)ate	4-9	2008	′
80	-12				Authorized In	spection A	-		1	165	<u> </u>		ate	4-8	2008	_
80 40	-12 +6				Authorized In	spection A	-		<u>J</u>	115	<u>l</u> che		ate	4-8	2005	_
80 40	-12 +6					spection A		Re			<u>l</u> che		ate	4-8	2,005	<b>!</b>
80 40	-12 +6 +12		med					Pe Chec			chei		)ate	4-8	<u>2009</u>	_
80 40 20 Horizonta N/A	-12 +6 +12	Perfor			ADDITIO	NAL SHE	ETS? (	Pe Chec			che		Pate	4-8	<u>2009</u>	_

Name	
Position   0°   90°   180°   270°	H
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1	→ (B)
OE*	터 [9
OE* 4 N/A Toe  Toe  Toe  Toe  Toe  Toe  Toe  Toe	ا سلاما
OE* 6 1.312	(
OE* 6 1.312 (Up Stream (-) Side Down Streem (+	
7 1.308 FLOW	) Side
8 N/A Tee Flbow	
100	
9 N/A Component Component	nt
Crown Height: 0.05" Diameter: 10.0"	_
Crown Width: 1.10" Weld Length: 31.4"	_
Longseam: N/A Iso Drawing: AEP 1-SI-31	
PROFILE AREA	
Flow 453 60°RL	
	08
Examiner: Level: II Date: 4/3/200	
Watt Schmalz	



## ULTRASONIC CALIBRATION DATA SHEET

Page 40F6

lant :	_	- : •			1 5		•	÷				
	D.C. Cook .			Unit: 2	. :				UT-09-03		5	
Comp/System	2-SI-57-19		-				Procedu	re No.	ISI-PDI-1	JT-2		Rev 4
ISO #:	A-48			•	' '!		Cal Bloo	k No.	102917			
Summary No.	: 092900	·. : ·	· · · · · · · · · · · · · · · · · · ·	····						ID (II	OD "	
'		Thorms	winter C	/N or SAP#:	 405547			•		88°F/		•
	SEVDOR H		meter 2	IN OF SAP#:	105547		Block/C					<del></del>
	SEARCH U	NI I		٠ 👈	•	·		± TO \			TO WE	
	0000		_	IW / Rompies					ATTEN	, ,		
Scan Angle:	60 ° RL	Mode:		S/N - Step Wedge		IDENT		%	dB	Pos	% .	N dB:
Serial No.:	05-483	Mfg.	RTD	SCAN A		1.0" notch	4.2	: 80 .	47.2			
Fixturing:	Integral	Model:	TRL-2	0° WRV		1.5" notch	6.0	80	47.2			
Size :	2(8x14)	Shape:	Rect	0° BM				. :				
Frequency:	2 MHz			⊥ To Weld	X		N		[	N/	Α	
Measured Ang	nie: 60 °			To Weld				Α .	,		8	
Cable Type:	RG-174	Length:	6'	Connectors	0 :	177	O%					
Couplant Bran	d:	Ultragel II		Exit Pnt Dim: =			0 _					
Couplant Batc		07125			Contoure	4 6		ļ <u>.</u>	<b></b>	-		1
	<del></del>		·	CAL	-	7	!O	<del>                                     </del>	1.0" notch	1.5*	notch —	<del></del>  }-
10	ISTRUMENT SE	TTINGS	•	CHECKS	TIME		50	<del>                                     </del>	<del>                                     </del>	<del>                                     </del>	<del></del>	+
Mfg/Model No.		USN 60 SW	<del></del>	Initial Cal	11:00		30	<del>  </del>		<del>                                     </del>	-	1-11
Serial/SAP No		Display Star		Intermediate	11.00	1 1	30					
Damping:	500			Intermediate	· · · · ·		20				·	
Pulser Type:		Reject:	D%			:	10	<u> </u>	<del>                                     </del>	<u> </u>		1 1
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Display. Wode.	(RECTIE): Full W	ave		Amond Simple Control			0_,	.1.2	.345	<b>.</b> 6 /	89	. 10
Filter: Fixed	Voltage: 450	Jack:	T&R	<u> </u>		·	Screen	Division	ns, 10 =	5"		
lange	5.0	Vel.	.2279	EXAMINA	TION	Recor	dable	9.	an			
				1 {						ļ		
Swp Delay	7.6509	Zero	0.00	WELD/A	REA	Indica	ations	Limi	tation	.0	OMME	VTS
Gain 0° or	<u>.</u> T	dB 47.2				Yes	No	Yes	No	<u> </u>		
Gain		dB N/A	1	2-SI-57-19			Х	Х		Single s	ided exa	m due
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Scan S	Sensitivity	Axial = 59.0							<u></u>	to config	juration	of
Scan S	Sensitivity	Axial = 59.0 Circ = N/A								compor	guration ent.	
· · · · · · · · · · · · · · · · · · ·		Circ = N/A	·								guration ent.	
]; 	NSTR. LINEARI	Circ = N/A								compor	guration ent.	
· .		Circ = N/A TY CAL. High	Low							compor	guration ent.	
li High	NSTR. LINEARI	Circ = N/A TY CAL. High 6							11	compor Maintair	guration ent. eed 20%	ID roll.
High 1 N	NSTR. LINEARI	Circ = N/A TY CAL. High 6 7 N	Low	Examiner					11	compor Maintair	guration ent.	ID roll.
High 1 2 N 3	NSTR. LINEARI	Circ = N/A TY CAL. High 6 7 N		Examiner	Matthew				11	compor Maintair	guration ent. eed 20%	ID roll.
High 1 2 N 3 4	NSTR. LINEARI	Circ = N/A TY CAL. High 6 7 N 8 9	Low	Examiner Print	Matthew			Level		compor Maintair Date	guration ent. eed 20%	ID roll.
High 1 2 N 3	NSTR. LINEARI	Circ = N/A TY CAL. High 6 7 N	Low	Examiner Print Examiner	Matthew					compor Maintair	guration ent. eed 20%	ID roll.
High 1 2 N 3 4 5	NSTR. LINEARI Low A	Circ = N/A TY CAL. High 6 7 N 8 9	Low	Examiner Print	Matthew			Level		compor Maintair Date	guration ent. eed 20%	ID roll.
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High  High  N  N  AMPL CONT	NSTR. LINEARI Low A	Circ = N/A TY CAL. High 6 7 N 8 9 10	Low	Examiner Print Examiner	Matthew			Level		compor Maintair Date	guration ent. eed 20%	ID roll.
High  N  N  AMPL. CONT	Low  A  ROL LINEARITY  A dB  -6	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer	Matthew			Level		compor Maintair Date Date Date	guration ent. eed 20%	ID roll.
High  High  N  N  N  AMPL. CONT  Initial  80  80	Low A ROL LINEARITY	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print	Matthew			Level		compor Maintair Date	guration ent. eed 20%	ID roll.
High  High  N  N  N  AMPL. CONT  Initial  80	Low  A  ROL LINEARITY  A dB  -6	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer	Matthew			Level		compor Maintair Date Date Date	ouration lent.  eed 20%  04/02/	1D roll. 2009
High  High  N  N  N  AMPL. CONT  Initial  80  80	NSTR. LINEARITY  A  ROL LINEARITY  Δ dB  -6  -12	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer Utility Review	Matthew  M. O	Schmal:		Level		Date Date Date Date	ouration lent.  eed 20%  04/02/	1D roll. 2009
High  High  N  N  N  AMPL. CONT  Initial  80  80  40	NSTR. LINEARITY  A  ROL LINEARITY  Δ dB  -6  -12 +6	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer	Matthew  M. O	Schmal:	neu neu	Level Level	III	Date Date Date Date Date	04/02/ 4/3/ 4/3/	ID roll.
High   1   2   N   3   4   5	NSTR. LINEARITY  A  ROL LINEARITY  Δ dB  -6  -12  +6  +12	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer Utility Review Authorized In	Matthew  Matthew  spection	Schmal	I LU	Level Level		Date Date Date Date Date	04/02/ 4/3/ 4/3/	1D roll. 2009
High  N  N  N  AMPL. CONT Initial 80 80 40 20 Horizonta	A  ROL LINEARITY  A dB  -6 -12 +6 +12  Al Linearity Perf	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer Utility Review Authorized In	Matthew  M. O	Agency	The Check B	Level Level	III	Date Date Date Date Date	04/02/ 4/3/ 4/3/	1D roll. 2009
AMPL. CONT Initial 80 80 40 20	NSTR. LINEARITY  A  ROL LINEARITY  Δ dB  -6  -12  +6  +12	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result	Low	Examiner Print Examiner Print Reviewer Utility Review Authorized In ADDITIC	Matthew  Matthew  Spection	Agenca ETS? (I	The Check B	Level Level	III	Date Date Date Date Date	04/02/ 4/3/ 4/3/	1D roll. 2009
AMPL CONT Initial 80 80 40 20 Horizonta	A  ROL LINEARITY  A dB  -6 -12 +6 +12  Al Linearity Perf	Circ = N/A TY CAL. High 6 7 N 8 9 10 Result N A	Low	Examiner Print Examiner Print Reviewer Utility Review Authorized In	Matthew  Matthew  spection	Agency	The Check B	Level Level	III	Date Date Date Date Date	04/02/ 4/3/ 4/3/	1D roll. 2009

A Westinghouse NDE Company

### ULTRASONIC EXAMINATION SUPPLEMENT SHEET

6 of 6 Page

U	T	No.	4201	8-UT-09.	-037

	UT No. 42C18-4T-09-0
Plant/Unit: <u>ac. Cook / Unit Z</u> Comp/System: <u>z - St - 57 -</u> Weld / Component ID Number: 2 - 51 - 57 - 19	Crown Height: ./ Crown Width: /./ Diameter: // Weld Length: 31.4
FLOW	
PIPE	TEE
Light E	
	No coverace.
0.4	<i>u</i>
No coverage = $\frac{1}{2}(0.4^{\circ})(0.5^{\circ}) = 0.1 \text{ in}^2$ Total = $(1.9^{\circ})(0.4^{\circ}) = 0.76 \text{ in}^2$ Missed coverage $(\%) = \frac{0.1}{0.76} * 100\% = 13.2\%$	
SINGLE SIDED EXAM COVERAGE = 50%	
TOTAL COVERAGE = 50-13.2=36.8%	
onments: SINGLE SIDED EXAM DUE 70 COMPONENT CONFIGUR	ATION
caminer: Leyel: II Date: 4-2-09 Examiner:  WATT SHIMALZ  Eviewer: 15 0   Tevel: III Date: 4/3/09 Utility Reviewer: Ray  Watthorized Inspection Agency: 10 US: 1   Revel   C.S. Leves Day  On the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control	Level:Date:
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"A powerful part of your team"

## ULTRASONIC CALIBRATION

Page 40F6

₹N₹	ERNATIONAL					DATAS	HEEL	` .						
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	tinghouse NDE	Com	pany									•		
'ant.:	D.C. Cook	•		_:	U	nit: 2		•			-UT-09-0			<u> </u>
Comp/System			<u> </u>					· ·			ISI-PDI-	U1-2		Rev 4
ISO #:	A-48			<del></del>				:	Cal Blo		102917			<u>_</u>
Summary No.	: 093100		··,	<u> </u>	_			:		urface:	•		Δop	
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Fixturing:	Integral		Model:	TRL-2	П	0° WRV		1.5" notch	6.0	80	47.2	<u> </u>	ļ	$\leftarrow$
	2(8x14)		Shape:	Rect		0° BM			ļ			1		
Frequency:	2 MHz				IJ	上 To Weld	X		N		· ·	N/	<u> 1</u> A	
Measured Ang			1.		Ш	To Weld				Α .				3
Cable Type:	RG-174		ength:	6'		Connectors	0	. b	00%	<del></del>		<del></del>	<del></del>	
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Serial/SAP No	o.: 105420	Dis	olay Star	t = IP	in	termediate		1 1	30	+-	.	+	+-+	+
Damping:	500	Puls	se Width	250	in	termediate		1 1	20	+ -	1.	1-1-		1 11
Pulser Type:	Dual	Rej	ect	0%	ln	termediate	,			وراويان	سلسل	ساسيل	برايسان	السلب
Frequency:	2 MHz	PR	F Mode: /	Auto High	Fi	nal Cal.	13:30	L	<u></u>		<u> </u>			
Display Mode	(RECTIF): Full W	/ave.							0	12	3_4_	5 6 7	78,9	10
Filter: Fixed	Voltage: 450		Jack:	T&R		•			Screer	Divisio	ns, 10 =	5"		•
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Gain		dB	N/A	j	ļ	2-SI-57-21			X	X	ļ	<del></del>	sided ex	
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Scan	Sensitivity		al = 59.0					ļ	ļ	<del> </del>	<u> </u>	compo		
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<sup>4</sup>	<u> </u>	9	<u> </u>	ļ	-		•							
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ł										Re	uel 10	5.5ch	ence	_
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1					S	upplements	X	Other			]			

## ZWESDYTE

### ULTRASONIC EXAMINATION SUPPLEMENT SHEET

Page 6of 6

A Westinghouse NDE Company

Privoding	mouse tibe company .		., ~9	υ p	
		-	UTI	No. U2C18-UT-	-09-03
Plant/Unit:	DC COOK / UNIT Z				
,	•		Crown Height: Crown Width:	.1	
	: 2-51-57		Diameter:	10"	
Weld / Compo	onent ID Number: 2-51-57-21	·	Weld Length:	31.4	<del></del>
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	PIPE FLO	(.)		TEE	
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comments:	SINGLE SIDED EXAM PUE TO CO	MPONENT CONFILUR	ATION		
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uthorized Inspec	ction Agency: RDic 5 D/1	Zenel 1c. Schon	دار Date: <u>۷- 4</u>	1-2009	:
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## ULTRASONIC CALIBRATION DATA SHEET

Page 4 of 6

A West	inghouse NDE	Com	panv											٠.		
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ISO #:	A-47	•		<del></del>		•	• ;		Cal	Bloid	k No	102917	<del></del>	<del></del>		_
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			Thermo	meter S	/NI d	or SAP#:	105547				omp Ten		80 ° F/		•	
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Scan Angle:	60 <sup>D</sup> .		Mode:	Long		i - Step Wedge	102268	IDENT	Pos	•	%	dB	Pos	%	N dB	
Serial No.:	05-483	-	Mfg.	RTD	lſ	SCAN A		1.5" notel	-	5	80	45	· · ·	-		1
Fixturing:	Integral		Model:	TRL-2	1.1	0° WRV			1		. :			N		1
Size:	2(8x14)		Shape:	Rect	11	0° BM			1						Α	1
Frequency:	2.0 MHz				ĺľ	⊥ To Weld	Х			N.					7	1
Measured Ang	le: 60 °	<i>i</i> .				I To Weld				3'	Α .			35	· ·	1
Cable Type:	RG-174	L	ength:	6'	Γ	Connectors		[7]	00%				·			_
Couplant Bran	d:	Ulti	a Gel II		Ex	it Pnt Dim: =	N/A		90						$\perp$	
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Filter: Fixed	Voltage: 450		Jack:	T&R	_ ا				Sc	een	Division	ns, 10 =	5.9116			
Range	5,9116		Vel.	.2245	$\  \ $	EXAMINA	TION	Reco	rdab	le	Sc	an			•	
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Gain 0° or	. 1	dB		T	1			Yes		Vo.	Yes	No	1			
Gain			N/A	1	ļ	2-SI-56-18		163		X	X	NO.	Maintai	ad 10 t	0.20%	
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	al Linearity Pe	rform	ed			ADDITIC	NAL SH	ETS? (	(Che	ck E	ox)	]				
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INTERNATIONAL	Page 5 of 6
A Westinghouse NDE Company	UT No. UZC18-UT-09-062
WALL THICKNESS PROFILE SHEE	T WELD NO.: 2-SI-56-18
Position   0°   90°   180°   270°	Weld Weld Edge Centerline  2.5"  2.5"  1 2 3 4° 5 6° 7 8 9  Toe  Up Stream (-) Side  Down Stream (+) Side  FLOW Component  Component
Crown Height: .02"	Diameter: 20"
Crown Width:	Weld Length: 34"
Longseam: N/A	Iso Drawing: A-47
PROFILE AREA	THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O
450 600	60°
	50% Coverage P.L. 4/30/09
FLOW→ Examiner:	Level: Date:
Examiner: Setsief Language	Level: <u>I</u> Date: <u>4/3/09</u>
Reviewer: 11.0	Level: Date: 4/7/09  Level: Date: 4/7/09
Authorized Inspection Agency: ILDICS D	Revel KSchenin Date: 4-7-2009
: "A powerful part of your team"	

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## WESDYNE INTERNATIONAL, LLC

4 Westinghouse NDE Company

UT Sheet No. U2C18- UT-09-062

Page <u>6</u> of <u>6</u>

# ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

Weld Number: 2	-S1-56-18	interfering Cond	lition:	EE CONFIGURA	Tranl
Size of Interfering Condi	iion:	12"	-		
Distance from Weld Cen	terline:	2"	Distance from	m Datum Point 0.0:	O"
Reference Drawing Num	ber:				
Comments and Sketcher	s: (include extent o	f exam coverage no	t completed)	2"	
•			% Coucins e P.L. 4/30/09	Obtained	
Examiner:			Leve	el:Date:	4/3/09
Examiner:	Patri	The france	Leve	l: Date:	4/3/09
Reviewer:	M. 0	<u></u>	Leve	l: III Date:	4/7/09
Utility Review:	Haul Don	svin	Leve	el:Date:	4/7/09
Authorized Inspowerful part of your t	pection Agency: 10 eam"	elks DI	Reuel K.	Schencu Date: _	4-7-2009

Ī		ES	D	Yn							Page	4	of	5
Pla	nt:	D.C. Co	ok			Unit	1		UTN	lo. U1C22	-UT-08-0	31		
Con	np/Svstem				S / Safety k	_		•	Proce	edure No.	WDI-ST	D-1026.	Rev. 0	
		AEP 1-9					~		-	llock No.				
	nmary No.:						•			Surface:				
	•				meter S/N o	Y SAP#	- 105231		Block/Comp Ten		nn			1
		SEARC			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		100201	-	0° or 1 TO				TO WE	LD
						1 _				p AMPL				
Sca	n Angle:	60°		Mode:	Shear	Rompas	102268	IDENT	Pos	%	ď₿	Pos	%	N dB
Ser	ial No.;	010XT9		Mfg.	KBA	SCAN A	REA	iD Notch	5,6	80	47.2	N/A	N/A	NVA
Fixt	uring :	Non-Inte	grai	Model:	Comp-G	0° WRV			}					
Size	χ	0.25"		Shape:	Round	O° BM						<u> </u>		
Fre	quency:	5.0 MHz	:			⊥ To Weld							<u></u>	
	sured Ang		60°			To Weld	<u> </u>	L			<u> </u>	<u> </u>	<u> </u>	
	ele Type:				6'	# Connectors		3	Г		7	1	1 1	
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					lin	Intermediate	N/A N/A		20					
	nping: de Select:				0%	Intermediate	N/A	<b>∮</b> . [ :	20 L		<b>├</b>	<del>  </del>	$\vdash$ $\vdash$	<b>↓</b>
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	Delay Gain 0° or	4.76 ⊥	dΒ	Zero 61.6 N/A		WELDIA	REA	Indic	ations No	Lim Yes	itation	Single to che	sided e	xam due e. NRI
	Delay Gain 0° or Gain	4.76 ⊥	dB dB	Zero 61.6 N/A	0.000	WELDIA	REA	Indic	ations No	Lim Yes	itation	Single to che	sided eck valve	xam due . NRI
	Gain 0° or Gain 1] Scan Sens	4.76 ⊥	dB dB Axia	Zero 61.6 N/A	0.000 67.6 N/A	WELDIA	REA	Indic	ations No	Lim Yes	itation	Single to che	sided e	xam due . NRI
	Gain 0° or Gain 11 Scan Sens INS	4.76  Low	dB dB Axia Circ	Zero 61.6 N/A  I = TY CAL High	0.000 67.6 N/A	WELDIA	REA	Indic	ations No	Lim Yes	itation	Single to che	sided eck valve	xam due . NRI
Swi	Gain 0" or Gain 1] Scan Sens	4.76  ± stivity	dB dB Circ EARI	Zero 61.6 N/A   = = Ty CAL	0.000 67.6 N/A	1-SI-548	3-45S	todic Yes	No X	i Lim Yes X	No No	Single to che	sided eck valve	xam due NRI NACE
Sw <sub>1</sub>	Gain 0° or Gain 11 Scan Sens INS	4.76  Low	dB dB Cho	Zero 61.6 N/A  I = TY CAL High	0.000 67.6 N/A	1-SI-548	3-45S	indic Yes	No X	i Lim Yes X	No No	Single to che	sided eck valve	xam due NRI NACE
Swj	Gain 0° or Gain 11 Scan Sens INS	4.76  Low	dB dB Circ EARI 6 7	Zero 61.6 N/A  I = TY CAL High	0.000 67.6 N/A	1-SI-548	3-45S	indic Yes	No X	i Lim Yes X	No No	Single to che	sided eck valve	xam due NRI NACE
Sw <sub>1</sub>	Gain 0° or Gain 11 Scan Sens INS	4.76  Low	dB dB Che Che 6 7 8	Zero 61.6 N/A  I = TY CAL High	0.000 67.6 N/A	1-SI-548	3-45S	indic Yes	No X	Level	Ifation No	Single to chea	sided eck valve COVC	exam due NRI NCE ACII 2008
Sw <sub>1</sub>	Gain 0° or Gain 11 Scan Sens INS	4.76  Low	dB dB Circ EARI 6 7	Zero 61.6 N/A  I = TY CAL High	0.000 67.6 N/A	1-SI-548	3-45S	indic Yes	No X	Level	No No	Single to chea	sided eck valve COVC	xam due NRI NACE
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A	4.76  Iffivity  TR. LINI Low N/A	dB dB Axia Circ EARI 6 7 8 9	Zero 61.6 N/A  = TY CAL High N/A	0.000 67.6 N/A	1-SI-548 Examiner	3-45S	indic Yes Snyder/	No X	Level	No No	Single to cher	Sided eck valve COVC	XAM due  NRI  NRI  NACE  ACII  2008
1 2 3 4 5	Delay Gain 0° or Gain 1] Scan Sens INS High N/A	4.76  If it it is a second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of	dB dB dB Clirc EARI 6 7 8 9 110	Zero 61.6 N/A    = = TY CAL High N/A	0.000 67.6 N/A	1-SI-548 Examiner	3-45S	indic Yes Snyder/	No X	Level	No No	Single to cher	Sided eck valve COVC	XAM due  NRI  NRI  NACE  ACII  2008
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A	4.76  Iffivity  TR. LINI LOW N/A   ROL LINE A dB	dB dB Axis Circ FARI   6   7   8   9   10   EAR	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result	0.000 67.6 N/A	1-SI-548	S-45S Steven S	indic Yes Snyder/ N/A	No X	Level	No No	Single to cher	Sided eck valve COVC	XAM due  NRI  NRI  NACE  ACII  2008
1 2 3 4 5	Delay Gain 0° or Gain 1] Scan Sens INS High N/A PL. CONT Initial	4.76  It in the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the	dB dB Clirc EARI 6 7 8 9	Zero 61.6 N/A    = = TY CAL High N/A	0.000 67.6 N/A	1-SI-548  Examiner  Examiner	S-45S Steven S Phil Lan	indic Yes Snyder/ N/A	No X	Level	II N/A	Single to ches to ches Date	sided eck valve COVC 4/6/	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80	4.76  If it it it is a second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second	dB dB Cho EARI 6 7 8 9 10	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result	0.000 67.6 N/A	1-SI-548 Examiner	S-45S Steven S Phil Lan	indic Yes Snyder/ N/A	No X	Level	II N/A	Single to ches to ches Date	sided eck valve COVC 4/6/	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80 40	4.76  It in the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the	dB dB Axia Circ EARI 6 7 8 9 10	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result	0.000 67.6 N/A	1-SI-548  Examiner  Examiner  Reviewer  Utility Review	S45S Steven S Phil Lan	indic Yes Snyder/ N/A	No X	Level	II N/A	Single to ches to ches Date	sided eck valve COVC 4/6/	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80	4.76  If it it it is a second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second	dB dB Axia Circ EARI 6 7 8 9 10	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result	0.000 67.6 N/A	1-SI-548  Examiner  Examiner	S45S Steven S Phil Lan	indic Yes Snyder/ N/A	No X	Level	II N/A	Single to cheat Date  Date  Date  Date  Date	sided ex valve  COVC  A/6/  4/8/  4/8/  4/8	XAM due  NRI  NRI  NACE  ACII  2008
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80 40 20	## A dB A dB A dB A dB A dB A dB A dB A	dB dB Ada Circ EARI 8 9 10	Zero 61.6 N/A  = = TY CAL High N/A  ITY Result N/A	0.000 67.6 N/A Low N/A	Examiner  Examiner  Reviewer  Utility Review  Authorized In	S45S Steven S Phil Len	indic Yes Snyder/ N/A	No X	Level Level	II N/A	Single to cheat Date  Date  Date  Date  Date	sided ex valve  COVC  A/6/  4/8/  4/8/  4/8	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80 40 20 Horizonta	## A dB A dB A dB A dB A dB A dB A dB A	dB dB Axia Circ FARI 6 6 7 8 9 10 EAR	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result N/A	0.000 67.6 N/A Low N/A	Examiner  Examiner  Reviewer  Utility Review  Authorized In	Phil Language	indic Yes Snyder/ N/A Agency	No X	Level Level	II N/A	Single to cheat Date  Date  Date  Date  Date	sided ex valve  COVC  A/6/  4/8/  4/8/  4/8	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC
1 2 3 4 5	Delay Gain 0° or Gain 11 Scan Sens INS High N/A PL. CONT Initial 80 80 40 20	## A dB A dB A dB A dB A dB A dB A dB A	dB dB Axia Circ FARI 6 6 7 8 9 10 EAR	Zero 61.6 N/A  I = = TY CAL High N/A  ITY Result N/A	0.000 67.6 N/A Low N/A	Examiner  Examiner  Reviewer  Utility Review  Authorized In	S45S Steven S Phil Len	indic Yes Snyder/ N/A	No X	Level Level	II N/A	Single to cheat Date  Date  Date  Date  Date	sided ex valve  COVC  A/6/  4/8/  4/8/  4/8	EXAMPLE PACE PACE PACE PACE PACE PACE PACE PAC

<b>WESD</b>	yne	Page	5 of 5
A Westinghouse ND		UT No.	U1C22-UT-08-029
<del></del>	NESS PROFILE SHEET	WELD NO. :	1-SI-548-45S
Position 0°   1		Wel Center 2.5"  1 2 3 4 5  Too FLC  Valve  Component	7 8 9  Toe  Down Stream (+) Side
Crown Height:	Flush	Diameter:	1.5"
Crown Width:	0.6"	Weld Length:	6.5"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-548
	45° 60°S		:15°6
Examiner:	Steven Snyder	Level:	Date: <u>4/6/2008</u>
Examiner:	THE RESTRICTION OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF	Level: II Level: N/A	Date: <u>4/6/2008</u> Date: <u>N/A</u>

# P WESDYNE

### ULTRASONIC EXA

### **NATION REPORT**

HTERNATIONAL							Data Pkg#	U1C23	-UT-10-022	
A Westinghouse NDE Com	npany							Page 3	of 4	
Plant: Cook Nuc	lear Plant	Unit: _	1	Proce	dure 1	No.:	FCN#	ISI-PDI-U	·	Rev.:4
Comp/ System: Emergency C	Core Cooling Cal. B	lk.#_	SAP 105255 · ]	Ref. B	lk.# _	SAP			12" Nom. Pipe	Ø 8.0"
Isometric Dwg # 1-F	RH-30, Rev. 13	7	Thermometer S/N	: _	SAI	P 10537	8 Block / Co	omp Temp:	69 °F / 81	_°F
SEARCH UN	ı <b>r</b> [	Exami	nation Surface	V	OD :	ID		INSTRUM	ENT SETTING	S
Scan Angle:60° RL1	Mode: Long.	Materi	al Type 🔲 CS	V	ss [	Othe	er Mfr/Mode	l No. GE	/ KrautKramer l	JSN 60 SW
Serial No.: 08-376	Mfr. RTD	100% 90			Т	TT	Serial No.		SAP 104389	
Fixturing: Non-Integral	Model: TRLA	80	Ror	npas	د ۔	Note	h Pulser:	Square DL	ial On ial Off Puls Wth	: 250
Size: 2(7x10) S	Shape: Rect.	70	<del></del>		-	<u>'</u>	Damping:		Reject:	0%
• •	Elem: 2	60 50					Freq:	2.0 MHz	Rectify:	Full Wave
Measured Angle: 60°	Exit Pnt. 0.3	40					PRF: Aut	o High Volt:	450 Jac	k: T&R
Couplant Type/Batch #: Ult	raGel II / 07125	30 20				++				
	_	. 10					Rang			
Cable / Length / # Conn: RC	3-174 /6' /0	О	ևահահահահաև	لسلسا	سلسا	щищ	ш Probe D	elay: 8.24	400 Dsp Dela	y: 0.0000
Contoured Wedge 🔽 N/A	Ax Circ		0 1 2 3 4	5 6	3 7	8 9	10		Cai :	Scan
			Screen Divis	ions, 1	0 = [	2.5"	Gair	0° or⊥	64.0	68.0 dB
·			DA	C			G	ain	N/A	N/A dB
	CAL	1	Reflector	%	Swp					
	HECKS TIME	L	ID ID	FSH	Pos	dB		EXAMINAT	ION WELD/A	REA
	tial Cal. 0720	1	1.0" Notch Tip	80	7.6	64.0		1_121	H-30-06F	
	ermediate 1250	1	Rompas FSDH	80	6.0	55.0		····		
	ermediate N/A						1	lable Indicatio		☑ NO
	ermediate N/A						<del></del>	n Limitations		U NO
<u> </u>	nal Cal. 1625			<u> </u>					e (UPST) only, d	le to valve
Examiner 2	1. Clark	Lv	III Date: 3/	/5/201	0	-	con	figuration.		
Print Wade Holasek	73 46267			5/201	<u> </u>	·	Code Cove	erage Achieved	i 50 %	, o
Examiner The 4/	14.7	Lv.	IT Date: 3/	/5/201	0	<u>L</u>	Risk Info	med 🗸 YES [	NO C'Bore	]Y 🗸 N
Print Jordan Taylor	· · · · · · · · · · · · · · · · · · ·						Exam is	Acceptable	✓ YES 🗌	NO,
Reviewer: Michael M.	chaig LVIII	Date:	3/6/10	Revie	wer:	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	Nacl		Date: _3	डाठ
	V	Author	rized Inspection Ag	ency		TL	pus P	Revell	. Schencus	3-9-2010
"A powerful part of your	r team"									

A Westinghouse NDE					्र <b>स्</b> र		Page	4 of	
Plant/Unit:	Cook Nuclear I		Comp / System	ı Emerger	cy Core Cooling	ATTACHED		N/	
Iso. Drwg:	1-RH-30	), Rev. 13				UT Sho		N/A	<u>`</u>
Weld / Component ID N	umber:	1-RI-	I-30-06F			Weld Centerline	* We	ld Edge	
	Ground	Position 0	90   180   270		2.5"	<b>5</b> (5)	2,5"		
Crown Height:	Smooth	1 0.914" 2 0.918"		7 -	2 3 4			8 9	1
Crown Width:	1.500"	3 . 0.930"		☐	Toe		Тое		(
		5 0.801"			Stream (-) Side		Down	Stream (+) Si	de (
Diameter:	8.625"	6 0.810" 7 N/A		_		FLOW	<u> </u>	<del></del>	<b></b> د
Weld Length:	27.600"	8 N/A 9 N/A			Elbow	PLOVV		Valve	
M-11- a-ala					Component			Componen	t
Not to scale	•	•							
			: •	4					
	45°	•	605/60R	. L	•				
			405160K	L.	- American				
		511 *					•		
	•						•		
						ſ			-
•		No.	1	-		· 1 _			
						•			
			Elbow	***************************************			lue		
			-	,	-	Va	rive		
			;				-		
COMMENTS:									
					<del></del>				
EXAMINER:	bulles for	Lv. III DATE:	3/5/2010 F	EXAMINER:	Print Jordan Tay		Lv. IT	DAT	E: 3
	Holasek				Print Jordan Tay	lor			
REVIEWER: Michael	Wek:	Lv# DATE	3/6/10	REVIEWER:	Y 20 K	$\Gamma^{\circ}O()$	Lv. N	A DAT	E 3
	MI - DOLL		-, 4, 10	VI 4 III 44 IVIV.		Tech	Lv. 101	, DAI	ا إحب. ت

## WESDYITE

### ULTRASONIC EXA

### NATION REPORT

Data Pkg # U1C23-UT-10-029 A Westinghouse NDE Company Page 2 of Plant: Unit: 1 Procedure No.: Cook Nuclear Plant ISI-PDI-UT-2 Rev.: 4 FCN# N/A Comp/ System: Cal. Blk. # SAP 105256 Ref. Blk.# SAP 102268 "T" Nom. 0.718" Nom. Pipe Ø Reactor Coolant Isometric Dwg # 1-RC-8 SAP 105547 Block / Comp Temp: 98 °F / 103 °F Thermometer S/N: SEARCH UNIT Examination Surface INSTRUMENT SETTINGS Material Type ☐ CS ☐ SS ☐ Other Scan Angle: 60° Mode: Mfr/Model No. Shear GE / KrautKramer USN 58 L Serial No.: 00X1R9 Mfr. KBA Serial No.: SAP 104765 90 Square Dual On Dual Off Puls Wth: Fixturing: | Non-Integral | 🕶 Rompas Notch Model: Comp-G 80 Pulser: 220 70 Size: 0.25" Shape: Round Damping: 500 Reject: 0% Frequency: 2.25 MHz # Elem: Freq: 2.25 MHz Rectify: Full Wave 50 Measured Angle: 58° Exit Pnt. 0.25 PRF: Auto High Volt: 450 Jack: T Couplant Type/Batch #: UltraGel II / 07125 Velocity Range: 3.0000 0.1220 Cable / Length / # Conn: RG-174 / 6' / / 0 Swp Delay: 2.5000 Zero: 0.0000 Contoured Wedge ☑ N/A ☐ AX ☐ Circ 0 1 2 3 4 5 6 7 8 9 10 Cal Scan Screen Divisions, 10 = 3.0" Gain 0° or ⊥ 60.0 54.0 dB DAC Gain | N/A N/A dΒ CAL Reflector % Swp Pos dB **EXAMINATION WELD/AREA** SCAN AREA CHECKS TIME ID FSH 0° WRV 1030 1.0" Notch Tip Initial Cal. 80 6.0 54.0 1-RC-8-02S 0° BM Intermediate N/A **FSDH Rompas** 4.8 59.0  $\overline{\mathbf{Q}}$ ⊥ To Weld 1250 ✓ NO Recordable Indications YES Intermediate To Weld N/A Intermediate Scan Limitations YES □ NO Final Cal. 1500 Remarks: Limited scan on pipe side due to proximity of weld I-RC-8-03S. 3/7/2010 Examiner Lv. II Date: Patrick Mahoney 89.7 % Print Code Coverage Achieved Lv. IT Date: Risk Informed Y YES NO C'Bore Y N 3/7/2010 Examiner Print Jordan Taylor/ Exam is Acceptable YES NO LVIII Date: 3/10/10 Reviewer: ₹ Reviewer: A 1 Renel K. Scherck 3-11-2010 Authorized Inspection Agency "A powerful part of your team"

Print Patrick Mahoney  REVIEWER: Michael Lv. III DATE 3/10/10 REVIEWER: Print Jordan Taylor  Lv. N A DATE: 3/11/	A Westinghouse NDE Co		C EXAM \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ON SKETCH SHEET	01023-01-10
Crown Height: S0.100" Crown Width: 1.100" Diameter: 6.6.25" Weld Length: 21.250"  Not to Scale  Pipe Side Limitation (.27x1.05) = 0.28" (Total Exam Volume)  27 x.30 = .081" + (.27 x.25) + 2 = .034" = 0.115" (Missed Volume)  115" / 28" = .41" or 41% US Ax - 100% DS Ax - 59% US Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS Circ - 100% DS	Plant/Unit : Iso. Drwg:	Cook Nuclear Plant / 1 1-RC-8			TACHED TO: N/A  UT Sheet No. N/A  Weld **Weld Edge
Not to Scale	Crown Height: Crown Width: Diameter:	Position   0   1   0.75"   2   0.75"   3   0.75"   3   0.75"   4   0.75"   5   0.86"   6   0.82"   7   0.82"   21.250"   8   N/A		2.5"  1 2 3 4*  Toe  Up Streem (-) Side	2.5°  5 6° 7 8 9  Toe  Down Stream (+) Side  Pipe
EXAMINER: V. H. V. II DATE 3/7/2010 EXAMINER: A A A A A S LV. IT DATE: 3/7/2010  Print Patrick Mahoney  REVIEWER: Mickael & Kaig Lv. III DATE 3/10/10 REVIEWER: E Nacl Lv. N A DATE: 3/11/2010	Pipe Side Limitation (.27x1.05) = 0.28" (Total Exam Vol. 27 x.30 = .081" + (.27 x.25) ÷ 2 = .034" = 0.115" (Missed Vol. 115" / .28" = .41" or 41" US Ax - 100% DS Ax - 59% US Circ - 100% DS Circ - 100%	olume) ELBOW	45' 60'		035) PIPE
Authorized Inspection Agency 14/C5 / There K. Schenck DATE 3-11-2010	EXAMINER: Print Patrick I REVIEWER: Mickael A	Mahoney  Lv. III DATE	3/10/10 REVII	Print Jordan Taylor  EWER:	Lv. N A DATE: 3/7/20

### ULTRASONIC EXA NATION REPORT

U1C23-UT-10-036 Data Pkg # A Westinghouse NDE Company Page 3 Plant: Cook Nuclear Plant Procedure No.: ISI-PDI-UT-2 Unit: 1 Rev.: 4 N/A FCN# Cal. Blk. # SAP 105256 Ref. Blk.# SAP 102268 "T" Nom. Comp/ System: Safety Injection 1.312" Nom. Pipe Ø 10.0" SAP 105547 Block / Comp Temp: 72 °F / 85 °F Thermometer S/N: Isometric Dwg # 1-S1-29 Examination Surface ☑ OD ☐ ID INSTRUMENT SETTINGS SEARCH UNIT ☐ CS ☑ SS ☐ Other Scan Angle: 60° RL Mode: Long. Material Type Mfr/Model No. GE / KrautKramer USN 60 SW RTD Serial No.: SAP 105420 Serial No.: 08-374 Mfr. 90 Square Dual On Puls Wth: , Notch Fixturing: Integral Model: TRL-2 Pulser: 70 Damping: 500 Reject: 0% Size: 2(7x10)Shape: Rect. 60 Rectify: Frequency: 2.0 MHz # Elem: Freq: 2.0 MHz **Full Wave** 50 Rompas Measured Angle: 60° Exit Pnt. 0.3 PRF: Auto High Volt: 450 Jack: T&R 40 Couplant Type/Batch #: UltraGel II / 07125 5.0000 Velocity 2.8800 Range: 10 Cable / Length / # Conn: RG-174 / 6' / / 0 Swp Delay: 7.2438 Zero: 0.0000 Contoured Wedge ☑ N/A ☐ Ax ☐ Circ 0 1 2 3 4 5 6 7 8 9 10 Cal Scan Screen Divisions, 10 = 5.0" Gain 0° or 1 60.0 62.6 ldB DAC Gain N/A N/A ldB CAL % Reflector Swp **EXAMINATION WELD/AREA** SCAN AREA ID FSH Pos **CHECKS** TIME dB 0° WRV Initial Cal. 0825 1.5" Notch 80 5.2 60.0 1-SI-29-26F 0° BM N/A 40 3.0 49.0 Intermediate FSDH Rompas ☑ NO 1115 Recordable Indications ☐ YES ⊥ To Weld Intermediate To Weld N/A Scan Limitations √ YES □ мо Intermediate Remarks: Scanned elbow (UPST) side only due to nozzle. 1228 Final Cal. Scanned 0.5" beyond counterbore. Lv. Il Date: 3/9/2010 Observed counterbore below recordable levels. Examiner Code Coverage Achieved Matt Schmalz Print Risk Informed V YES NO C'Bore VY N 3/9/2010 Examiner Lv. IT Date: Print David Frve Exam is Acceptable ✓ YES □ NO Lu ZII Date: 3/11 Reviewer: Reviewer: 165 / Royal K. Schency 3-12-2010 Authorized Inspection Agency "A powerful part of your team"

	Cook Nuclear Pla	nt/1 Comp/System	Safety Injection	ATTACHED TO:	N/A	
Iso. Drwg:	1-SI-	· ·		UT Sheet No.	N/A	
eld / Component ID N	ımber:	1-SI-29-26F	2.5*	Centerline	/eld Edge	
Crown Height: Crown Width: Diameter: Weld Length:	0.100" 1.250" 10.750" 31.400"	Position 0 90 180 290  1 N/A 2 1.480" 3 1.155" 4 1.156" 5 1.006" 6 N/A 7 N/A 8 N/A 9 N/A	1 2 3 4 Toe  Up Stream (-) Side  Elbow Component	2.5" Toe  Pow FLOW	Nozzle Component	<b>v.u</b>
	7.5 8.8 8.8	66.0° c.				
	سردد					
DMMENTS: <u>N/A</u>						
OMMENTS: N/A  KAMINER: Print Matt S		vv. II DATE 3/9/2010 EXA	MINER: Oc V	Yne Lv. iT	DATE:	3/9/2010

# WESDYTE

## ULTRASONIC EXA

### NATION REPORT

A Westinghouse	NDE Company									Dala Pky #		3 of	f 4	· ——		
	***************************************	<del></del>	7 for the	1		Duo	cedure	~ NI~		<u> </u>	Page					
	Cook Nuclear Plant		- Omi: –	1		F100	cedure	3 140	)	FCN#	121-1	PDI-UT-2 N/A	·· · · · · · · · · · · · · · · · · · ·	Rev.:4		
Comp/ System:	Safety Injection	Cal. :	Blk.#_	SAP 1	05255	_Ref.	. Blk.#	!	SAP 1		Nom.		Nom. Pip	e Ø10.0"		
Isometric Dwg #	1-SI-33		- 1	Thermometer S/N: SA				AP 1	05547	Block / Co	ınp Tei	mp: <u>72</u>	2_°F/_8	6_°F		
SEA	RCH UNIT		Examination Surface  OD					ID INSTRUMENT SETTINGS								
Scan Angle: 60°	RL Mode:	Long.		aterial Type 🔲 CS 🗹 SS				$-\Box$	Other	Mfr/Mode	l No.	GE/	KrautKrame	r USN 58 L		
Serial No.: 08-37	4 Mfr.	RTD	100% - 90							Serial No.:			SAP 104766			
Fixturing: Integral	▼ Model:	TRL2	80 70	Ron	pas 🚕	<b>—</b> ,	K Not	ch		Pulser:	Square	✓ Dual C	on Puls Wt	h: 250		
Size: 2(7x10							-	-		Damping:		500	Reject:	0%		
Frequency: 2.0	MHz # Elem:	1	- 60 _ 50							Freq:	2:0	MHz	Rectify:	Full Wave		
Measured Angle:		Pnt. 0.3	40			-	_			PRF: Auto	High	Volt:	450 Ja	ck: T&R		
Couplant Type/Batch #	t: <u>UltraGel II /</u>	07125	30 - 20		$\vdash$	++				-						
			10							Rang		5.0000	Veloci	ty 0.2230		
Cable / Length / # Con	n: <u>RG-174/</u>	6' / / 0	_ 0		سلسا	باسلا	ساسا	لسا	шшш	Swp De	lay:	6.0000	Zero:	0.0000		
Contoured Wedge	Z N/A □ Ax □	Circ		0 1	2 3 4	1 5	6 7	7 8	9 ′	10			Cal	Scan		
		<u> </u>		Sc	reen Div	isions	, 10 =	5.	.0"	Gain	0° or ⊥		59.0	65.0 dB		
			_ [	DAC						Ga	N/A dB					
	CAL			Refl	ector	.   %	Sw	p								
SCAN AREA	CHECKS	TIME		ı	<u>D</u>	FSI	H Pos	s d	В	E	XAMI	NATION	WELD/A	REA		
0° WRV □	Initial Cal.	0745	]	1.5" No	tch Tip	80	5.5	59	9.0			1-SI-3	3_26F			
0° BM □	Intermediate	N/A	╛	FSDH	Roinpas	80	3.2	53	3.0		<del></del>			··		
⊥ To Weld ✓	Intermediate	1010	_									dications	YES	☑ NO		
To Weld	Intermediate	N/A	4 1					_	_		Limit		₹ YEŞ	□ ио		
. /	Final Cal.	1100	ا ل			٠,,			I	Remarks: Sing	le sided	exam due	to nozzle to	elbow		
1/2	# //					0 11 0 10			_		iguratio					
Examiner //	OV MAN		_ Lv	II D	ate:	3/12/2	2010		<u> </u>	Scan	ned elb	ow (DNS)	f) side only.	<del></del>		
1 1/	ok Mahoney	<u> </u>							L	Code Cove			50	%		
Examiner (	ta-4/157	/	_ Lv.	IT D	ate:	3/12/2	2010			Risk Infor	med 🔽	YES 🔲 N	O C'Bore	□ Y ☑ N		
·	n Taylor/		_							Exam is	Accep	table	☑ YES [	], NO ,		
Reviewer: Mich	all this	LUTT	_Date:	te: <u>3/13/10</u> Reviewer:				Per: Date: 3/17/10						17/10		
,	'			Authorized Inspection Agency					720LS 3-17-2010							
"A powerful pa	rt of your team"								Renel K. Schenck							

A Westinghouse NDE C					3-UT-10-6
	Сотрапу			Page	4 of 4
Plant/Unit:	Cook Nuclear Plant / 1	Comp / System	Safety Injection	ATTACHED TO:	N/A
Iso. Drwg:	1-SI-33			UT Sheet No.	N/A
Weld / Component ID Nu	mber: 1	-SI-33-26F		Weld *W Centerline	reid Edge
Crown Height: Crown Width: Diameter: Weld Length:	Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Solution   Color   Color   Solution   Color   Col	A	1 2 3 4* Toe  Up Streem (-) Side  Nozzle  Component	2.5° 7 Toe	8 9  In Stream (+) Side  Elbow  Component
Nozzle	F	E (25°	45.	ELBOW	
EXAMINER:		E 3/12/2010 EXA	MINER:  Print Jordan Tay  IEWER:  DATE 3-17-20	Lv. IT	DATE: 3/12/2
, Auutonzea inspe	CHUIT AGENCY _ 1 27 15 7 1	K. Schenen		<del></del>	

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# UT Calibration. mination

		Site/Unit:	AEP	/ 2	<b>:</b>		Pro	cedure:		ISI-PDI-UT-2			Outage N	lo.:	U2-C17	
111111	Sumr	mary No.:		027420			Procedu	e Rev.:		4		_	Report N	lo.: U	Γ-07-052	
	Wo	rkscope:		ISI			Work Or	ler No.:		55246120		<del>-</del>	Pa	ge: 1	of 3	
Code:		ASME X	I 1989		Cat./Ite	em:	R-A/R1.	20		Location:			PRESS. DH		<del>,,_,,,,,,,</del> ,,	
Drawing No.:			A-20			Description	tion: ELBOW TO VALVE									
System ID:	PRZ												-	<u> </u>		
Component ID:	2-RC-22-24					···			Size/	Length:	3"/11"		Thickness/Dia	ameter:	0.45"/3"	
Limitations:	None 925	er 50	% covera	icodoeto	COMIDO	nfwovat	loh	Start Time: 1				Finish	n Time:	1330		
······································		nt Settings			Search Unit							Arial	Orientated S	oarab Unit		
Serial No.;		102342	2	Serial No.:	o.: 00X1R9			Cal. Checks	Time	Date	Calibr		Signal	Sweep	T	
Manufacturer:		KBA		Manufactui	rer:	KBA		Initial Cal.	1115	8/28/2007	Refle		Implitude %	Division	Depth	
Model:		USN-6	0	Size:	<del></del>				ļ		0.5" N	otch	80%	4.0	0.5"	
Delay:	4.125 µsec	Range:	1.4"	Freq.:	req.: 2.25 Mhz Style: COMP-G					<u> </u>	1.0" N	otch	80%	8.0	1.0"	
Miti Cal/Vel:	.123/µsec	Pulser:	High	Exam Angl	e: <u>45°</u>	# of Ele	ments: 1	Inter, Cal. Final Cal.	1330	8/28/2007	ļ					
Damping:	Fixed	Reject:	0%	Mode:		Shear		-	·	<del></del>	<u> </u>			<del></del>	ļ	
Rep. Rate:	Fixed	Freq.:	Fixed	Measured	· —	44	· · · · · · · · · · · · · · · · · · ·	-	Couplai		<u> </u>				1	
Filter:	Fixed	_ Mode:	Fullwave	Wedge Sty	'le:	Non-Integ	gral	Cal. Batch: Type:		05225	<b></b>		ential Orienta	ted Search	Unit	
Voltage:	Fixed	Other:	Jack: R	<del></del>						igel II	Calibr Refle		Signal Implitude %	Sweep Division	Depth	
Ax, Gain (dB):	22,5	Circ. Gain	(dB): 22.5 Depth	******	Search Unit Cable			Mfg.:	Sono	otech	N/		N/A	N/A	N/A	
10 Screen D	Div. = 1.25	In. of	Deptil	Type:				_ Exam Batcl		05226	<del></del>		IWA	147	19/75	
Linearity Report	l No.:	L-07	7-003	Length: _		No. Conn.: _		_ Type:	Ultragel II					· · · · · · · · · · · · · · · · · · ·		
	Calibra	tion Block			Scan	Coverage	27/0'(	Mfg.;	Sonotech							
Cal. Block No.:		10525	6	Upstream {	Downst	ream 😿 So	an dB: 34.5	- Ref	Reference Block				Reference/Simulator Block			
Thickness:	0.5" - 2.0"	Dla.:	0 .	cw {	<b>7</b>	ccw 🗹 s	an dB: 34.5	- Serial No.:		N/A	Gain dB	Definition	Signal Amplitude %	Sweep	Depth	
Cal, Blk. Temp.	: <b>76°</b> Tem	p. Tool:	106543	Exam Surfa	ace:	OD		_ Type:		I/A	N/A	N/A	N/A	Division N/A	N/A	
Comp. Temp.:	78° Tem	p. Tool:	105543	Surface Co	ondition:	FLU	JSH	···			10//	1465	. 18754	100	N/PA	
Recordable In	dication(s):	Yes	□ No 🗹	(If Yes, Ref.	Attached Uli	trasonic Indic	cation Report.	)								
Results:	Accept 🔽	Rejec	* []	info 🔲					C	omments: No						
Percent Of Cov	rerage Obtaine	id > 90%:	No	_	Previous Da	ita:	N/A						and verified r transducer :		. root.	
Examiner					^		Date Revi	ewer				Signat			Dat	
	caster, Philip L.				( <del>)</del>	8/28	/2007 Feig	e, Edward J.		Eda	Resor	20	رتسو	9/24/	07	
Examiner					<del>/</del> 54			Review			<u> </u>	Signat	ure		Dal	
N/A	- IVA						Don	avin, Paul		. A	En (D)	menin		91	2407	
Other	Level	III-PDI		Signature	Σ,	J 9250	Date ANII	Review			)	Signat	nte	-/	/ Dal	
Siever, Theod	lore J.		150	Store		9-23-07 Charles Jackson					M			9/2	5/07	
LIT Calibration/	Evamination										No constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the constitution of the con			7	1	

### Supplemental Report



Report No.: UT-07-052 2 Page:

ummary No.: 027420

Examiner: Lancaster, Philip L.

PJ. Level: III-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Other: Siever, Theodore J.

Levei:

WA

Site Review:

Donavin, Paul ANII Review: Charles Jackson Date

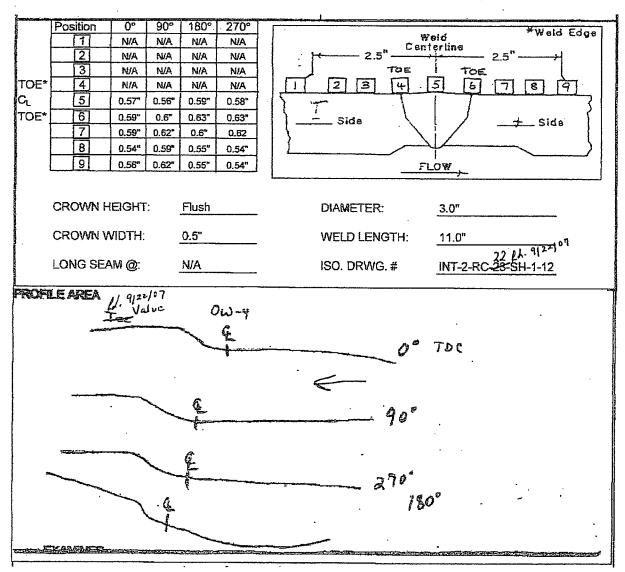
Date:

Comments: T&C for Component 2-RC-22-24

50% coverage obtained due to geometric configuration (elbow to valve).

Level: III-PDI

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-RC T&C 3.jpg



# UT Calibration mination

		Site/Unit;	AEP	AEP / 2 Prod				Proc	edure:		ISI-PDI-UT-2			Outage I	No.:	U2-C17		
No.	Sumr	mary No,:		027420				Procedure	e Rev.:		4			Report I	No.: U	T-07-085	;	
	Wo	orkscope:		ISI				Work Ord	er No.:		65246120		_	Pa	ige: 1	of	1	
Code:		ASME )	XI 1989			Cat./Ite	əm:	R-A/R1.2	0		Location:			PRESS, DH			-	
Drawing No.:			A-20				Description:	ELBOW TO	VALVE				····	·····				
System ID:	PRZ												, <u>,</u>	······································	·			
Component ID:	2-RC-22-24	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								Size/	Length:	3"/11"		Thickness/Di	ameter:	ter: 0.45"/3"		
Limitations:	One sided	examinatio	n due to geom	etric config	uration e	elbow to	valve.				Start	Time:	1400	Finisi	h Time:	1630		
	Instrume	ent Settings				Sea	rch Unit											
Serial No.;		10234		Seria	i No.:		010R01		Cal. Checks	Time	Time Date			al Orientated Search Ur				
Manufacturer;		KBA	<u> </u>		ufacturer:		KBA	·····	initial Cal.	1400	8/28/2007	Calibr		Signal Amplitude %	Sweep Division	Dep	oth	
Model:		USN-	50	Size	0.	25"	Shape:	ROUND	Inter. Cal.		•	0.5" N		80%	5.0	0.5	5"	
Delay:	18.3 µsec	Range:	1.52"	Freq	2.2	Mhz	Style:	Comp-G	Inter. Cal.			1.0" P		50%	10.0	1.0		
M'ti Cal/Vel:	0.123/µsec	Pulser:	High	Exan	n Angle:	70°	# of Elem	ents: 1	Inter. Cal.									
Damping:	Fixed	Reject:	0%	Mode	ə;		Shear	-	Final Cal.	1530	8/28/2007							
Rep. Rate:	Fixed	Freq.:	Meas	sured Ang	ile:	68°		•	Coupla	nt								
Fliter:	Fixed	Mode:	Fullwave	Wed	ge Style:		Non-Integ	ral	Cal. Batch:		05225		Circumfe	erential Orienta	ited Search	Unit		
Voltage:	Fixed	Other:	N/A					Type:	Ultra	igel II	Calibi	ration	Signal	Sweep	0			
Ax. Galn (dB):	46.5	Circ, Gain	n (dB): N//	Α		Search	Unit Cable		Mfg.:	Son	otech	Refle	ector	Amplitude %	Division	Dep	лп	
10 Screen C	olv. = 1	in, of	Depth	Туре	: <u> </u>		RG174		Exam Batch	n:	05225	N/	A	N/A	N/A	N/A	<u> </u>	
Linearity Report	t No.;	L-O	7-003	Leng	th:	8'	No. Conn.:	0	Type;		igel II	<b> </b>				┼		
, ,		tion Block				Scan	Coverage		Mfg.:		otech					-		
Cal. Block No.;		10625	SR.	Upst	ream 🗸	Downs	tream [ ] Sca	an dB: <b>62.</b> 6				Reference/Simulator Block						
	0,5" - 2,0"	Dia.:	0	· · · · · ·	cw [	_	ccw 🗍 soa			erence		Gain	1	Signal	Sweep	<u> </u>		
Cal. Blk. Temp.			105543	Even	n Surface		OD	<u> </u>	- Serial No.;		N/A	dB	Reflecto	or Amplitude %		Dep	Jth .	
Comp. Temp.;			105643		ace Cond		FLU	он	- Type:		I/A	N/A	N/A	N/A	N/A	N/A	A	
Recordable in						-	trasonic Indica		<del>-</del>	·	ė					<u> </u>		
	•	Yes			, Itel: Mile	aciied Oi	ii gayriic ii tulce	ittori (veport.)				L	L		<u> </u>	<u> </u>		
Results:	Accept 🔽	Reje	ct 🗌	Info 🗌						C				recordable ind or transducer :				
Percent Of Cov	verage Obtaine	ed > 90%:	No	Rev	iewed Pre	vious Da	ata:	N/A						- 144110-440CI				
Examiner	Level	III-PDI	/	η / Signatur	)	2		Date Revie	wer				Signa	ature			Date	
Lancaster, Ph	ıilip L.		No.	リヤイ	י אניצו ו'מה נ	f-	8/28/	2007		FZ	Burul	Je	205	- >	9/24/	07		
Examiner	Level	N/A		Signatur	9			Date Site I	Review		<i>~</i> .	<u>_0</u>	Sign				Date	
N/A		•		-							fails	2000	vi	;	9/	24/07	-	
Other	Level III-PDI			Signature	2				Review	/		1	Signa	ature .	-31	/	Date	
Siever, Theod	dore J.	Sie	NQ)		9-24-07 Charles						1/0	8/5	_					
LIT Calibration	/Everningtion													ı	7	77		

### **Supplemental Report**

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Report No.: UT-07-052

Page:

ammary No.: 027420

Examiner: Lancaster, Philip L.

Level: III-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Level: N/A

Site Review: Donavin, Paul

Other: Siever, Theodore J.

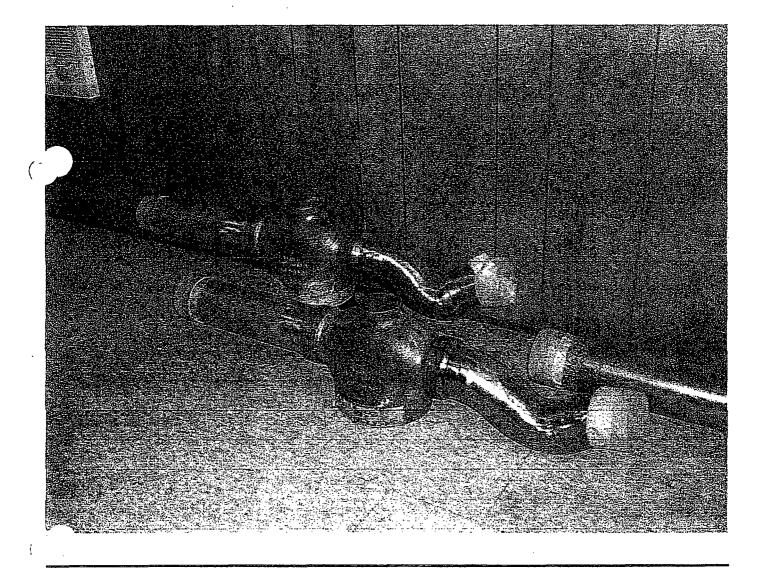
Level: III-PDI

ANII Review: Charles Jackson

Comments: Typical spool piece.

Component ID 2-RC-22-24

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\DSCN0162\_JPG



# UT Calibration amination

	Site/Unit: AEP				2		-1	ocedure:		ISI-PDI-UT-2			egstuO,	No.:	UA-C17	
	Sumn	nary No.:		028220		<del></del>	Procedu	ıre Rev.:		4			Report	No.:	JT-07-05	9
•	Wo	rkscope:		ISI		<del></del>	Work O	rder No.:		55246120		_	- P	age: 1	of	.3
Code:		ASME X	1989	****	Ça	st/Item:	R-A/R1	,20		Location:	***************************************	<u> </u>	PRESS DH			
Drawing No.:			A-21			Description: ELBOW TO VALVE										
System ID:	RC								***********							
Component ID:	2-RC-23-12				· · · · · · · · · · · · · · · · · · ·				Size/	Length:	3"/11"	·····	Thiokness/D	(ameter:	0.45"/3	3"
Limitations;	One sided e	examination	due to geome	tric configur	ation elbo	w to valve.	50% a	overner R	91-4/	6/20/ Star	rt Time;	1115	Finis	sh Time:	1330	· .
·	Instrume	nt Settings				Search Unit		Cal.	l	2.4	1	Axial Orientated Search				**********
Serial No.:		102342		Serial N	lo.:	00X1R	9	Checks	Time	Date	Calibi		Signal	Sweep		
Manufacturer:		KBA		Manufa	cturer:	КВ	A	Initial Cal.	1115	8/28/2007	Refle		Amplitude %	Division	De	plh
Model:		USN-50		Size:	0.25"	Shape:	ROUND	Inter, Cal.			0,5" 1	lotch	80%	4.0	0,0	5"
Delay:	4.126 µsec	Range:	1,4"	Freq.: _	2.25 Mh	z Style:	COMP-G	Inter. Cal.			1.0"	lotch	80%	8.0	1.0	יים
Mili Cal/Vel:	.123/µsec	Pulser:	High	Exam A	ingle:		ements: 1	Final Cal.	1330	8/28/2007	1		· · · · · · · · · · · · · · · · · · ·			
Damping:	Fixed	Reject:	0%	Mode:		Shear					ا					
Rep. Rate:	Fixed	Freq.:	Fixed		ed Angle:		4°		Coupla					_4		
Filter: Voltage:	Fixed Fixed	Mode:	Fullwave Jack: R	Wedge	Style:	Non-Int	egral	Cal. Batch:		06225	-		erential Orient		ח טוטונ	
Ax. Gain (dB):	22,5	Circ. Gain			Search Unit Cable			Type: Mfg.:		igel II otech	Calibe Refle		Signal Amplitude %	Sweep Division	De	pth
10 Screen D		in, of	Depth	Type:	J66	RG174	<b>.</b>	-			- N/	'A	N/A	N/A	N	 /A
		L-07	003	Length:	6,	No. Conn.:	0	Exam Balol Type:		05225 igel il	-					
Linearity Report	,		-003			 can Coverage		Type Mfg.:	<del></del>	olech	-					
w		ion Block		Unetros		wnstream 🗍	ScondB: 34				-			L		
Cal. Block No.:		105256			w <b>2</b> 7		Scan dB: 34.	Kei	erence	Block	Gain	Reference/Simu				
	0.5" - 2.0"	Dia.:			_			Serial No.:		N/A	_ dB	Reflect	Signal or Amplitude S			pth
Cal. Blk. Temp.			105543		Surface;		LUSH	— Туре: <u> </u>	1	VA.	N/A	N/A	N/A	N/A	N/	Α
Comp. Temp.:	·			<del></del>	Condition:						-	ļ			<del> </del>	
Recordable In	aication(s):	Yes [	No <b></b>		er, Attache	d Ultrasonic inc	icadon Kebol	i.)			<u></u>	<u> </u>			ــــــــــــــــــــــــــــــــــــــ	
Results:	Accept 🗹	Reject		info 🗀					С				recordable in n recordable k			netry
Percent Of Cov	erage Obtaine	d > 90%:	No	Review	red Previou	s Data:	N/A	<u> </u>					USN-52L Tab			
Examiner	Level	II-PDI	4.0	Signature			Date Re	/iewer			<u> </u>	Signa	ature			Date
Lancaster, Ph	ilip L.			lora cm	A-	8/2	28/2007 Fei	ge, Edward J.		fe	Lua	ورهه	2005	9/2	2/07	
Examiner	Level	WA		Signature		•		Review				Signa	ature		0/	Date
N/A			·	····				navin, Paul		<del></del>		Sand of	Jamin	3	9/27/	<u>07</u>
Other							Il Review					Rura	,	2/-1	Date	
Siever, Theodore J.					~=~	9/2	6/2007 Jac	kson, Charles	·			1/2			109/0	7
UT Calibration/	Examination										//	-		. 7	·	

### **Supplemental Report**

Report No.: UT-07-059

Page:

oummary No.: 028220

Examiner: Lancaster, Philip L.

Level: III-PDI

Reviewer: Feige, Edward J.

Examiner: N/A

Level: N/A

Site Review: Donavin, Paul

Other: Siever, Theodore J.

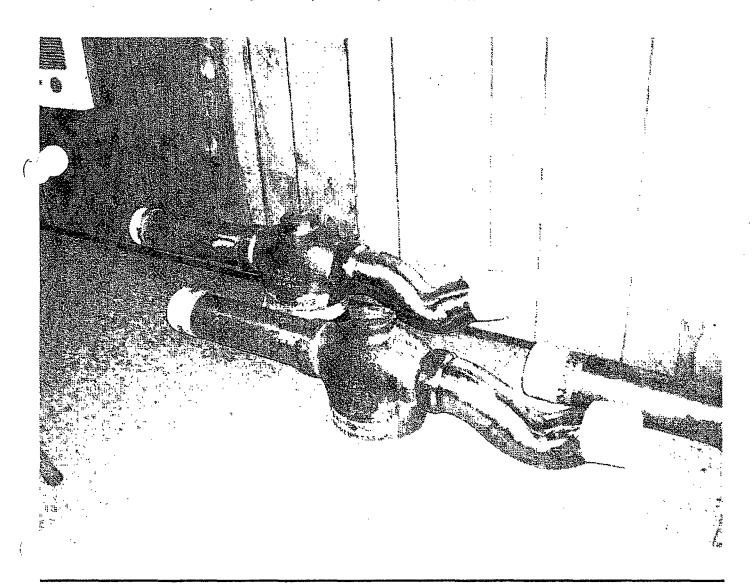
Level: III-PDI

ANII Review: Jackson, Charles

Comments: Typical spool piece.

Component ID 2-RC-23-12

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\DSCN0162.JPG



# UT Calibration mination

	5	Site/Unit:	AEP	1	2	_		Proces	dure:	1	ISI-PDI-UT-2		_	Outage I	Vo.:1	Uz-C17
12023A	Summ	ary No.:		028620		<del></del>	Pro	cedure F	?ev.:		4		_	Report I	√o.: U	T-07-086
	<b>VV</b> oi	rkscope:		181		<del></del>	Wo	rk Order	No.:		55246120		_	Pa	ige: 1	of 3
Code:	<del></del>	ASME	XI 1989		Cat.	/(tem:	R-A	VR1.20			Location:			PRESS. DH	i	
Drawing No.:			A-22		_	Descriptio	n: ELBC	OT WC	VALVE	<del>-</del>	<del></del>			,		
System ID:	RC		··········		<del></del> ,	•	-									
Component ID:	2-RC-24-09									Size/	Length:	3"/11"		Thickness/Di	eméter:	0,46"/3"
Limitations:	One sided e	xaminatio	on due to geome	tric configura	ation elbow	to valve.	50% C	Corcal	ACE REX	14/4/2	201/ Start	Time:	1115	Finis	h Time:	1330
	Instrume	nt Sellings	ş		S	earch Unit	<del></del>		Cal.	Time	Date		Axi	ial Orientated S	earch Unit	
Serial No.:	····	10234	12	Serial N	o.:	00X1R	9		Checks	THUE		Calibr		Signal	Sweep	1
Manufacturer:		KBA		Manufac	turer;	KB/	4		Initial Cal.	1115	8/28/2007	Refle		Amplitude %	Division	Depth
Model:		USN-	50	Size:	0,25"	Shape: _	ROUN	QV	Inter, Cal.		[	0.5" N	otch	80%	4.0	0,6"
Delay:	4.125 µsec	Range: _	1.4"	Freq.:	2.25 Mhz	Style: _	COMP	2-G	inter. Cal.		<b></b>	1.0" 1	otch	80%	8.0	1.0" .
M'ti Cal/Vel:	.123/µsec	Pulser: _	High	Exam Aı	ngle; 46	of Ele	ements:	1	Inter. Cal. Final Cal.	1330	8/28/2007					
Damping:	Fixed	Reject:	0%	Mode:		Shear		l	Filial Gal.	1330	012812001			·		
Rep. Rate:	Fixed	Freq.:	Fixed	Measure	d Angle:	4	4°		4	Coupia	nt					
Filter:	Fixed	Mode:	Fullwave	Wedge	Style:	Non-Inte	grai		Cai. Batch;		06225	<u> </u>	Circumf	erential Orienta	ited Search	Unit
Voltage:	Fixed	Other: _	Jack: R			,			Type:	Ultra	igel II	Calibr		Signal	Sweep	Depth
Ax, Gain (dB):	22.6	Circ. Gair	n (dB): 22.5	<del>Varrary</del>	Sear	ch Unit Cable	<u> </u>		Mfg.:	Sono	otech	Refle	ctor	Amplitude %	Division	Dehin
10 Screen D	)lv. = 1.26	in. of	Depth	Type:		RG174			Exam Batch	)]	05225	N.	A	N/A	N/A	N/A
Linearity Report		L-0	7-003	Length:	8'	No. Conn.:	0		Туре:		igel II	<u></u>				
				·····	Sca	n Coverage			M(g.:		otech ·			· ·		ļ
	Calibrat	ion Block	<b>r</b> 0	Unstres		nstream 😿 S	zz(#9					<b> </b>				1
Cal. Block No.:		1052	<del></del>			CCW [7] S			Refe	erence l	Block	0-/-	R	eference/Simul	<del></del>	·
	0.5" - 2.0"	Dia.;	0		<b>√ </b>	-		34.0	Serial No.:		N/A	Gain dB	Reflect	Signal or Amplitude 9	Sweep 6 Division	Depth
Cal. Blk. Temp.			105543	Exam S		0			Туре:	١	UA	N/A	N/A	N/A	N/A	N/A
Comp. Temp.:	78° Temp	o. Tool:	105543	Surface	Condition:	FL	USH									
Recordable in	dication(s):	Yes	□ No <b>②</b>	(If Yes, Re	ef. Attached	Ultrasonic Ind	ication R	eport.)								
Results:	Accept 🖓	Reje	ct 🗍	info 🗀						C	omments: Or	ne-sided e	xam. No	recordable in	dications, I	D Geometry
		•		_										n recordable le		
Percent Of Cov	erage Obtained	1 > 90%:	No	Review	ed Previous	Data:	NA				Vis	sually Le.	root. Se	e USN-52L Tab	e for transc	ducer
Examiner	· Level	I-PDI	1.	Signature			Date	Review	er	9	= ^	***************************************	Sign	alure		Date
Lancaster, Ph	illp L		r Pl-	lance	J-	8/2	8/2007	Felge,	Edward J.	W.	Deva	Θλ.	~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	9/2	27/07
Examiner	Level	I/A		Signature	<del>-</del> 7		Date	Síte Re	weiw		0 47	<del>, 0</del>	Sign	ature .		Date
N/A				•				Donavi	in, Paul		to lle	man	û,	ــــــــــــــــــــــــــــــــــــــ	9/2	1/07
Other	Level p	II-PDI		Signature		<u></u>	Date	ANII Re	eview				Sign	ature :	01/-	Date
Slever, Theod	lore J.		18	STF	WED -	9-26	07	Jackso	on, Charles	/		199		1	.7/0	9/07
UT Calibration	Evernination		·				<del></del>	•						1		7

### **Supplemental Report**

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Report No.: UT-07-066 Page:

ummary No.: 028620

Examiner: Lancaster, Philip L.

Other: Siever, Theodore J.

Level: III-PDI

Reviewer: Feige, Edward J.

ANII Review: Jackson, Charles

Examiner: N/A

Level:

Level: III-PDI

Site Review: Donavin, Paul

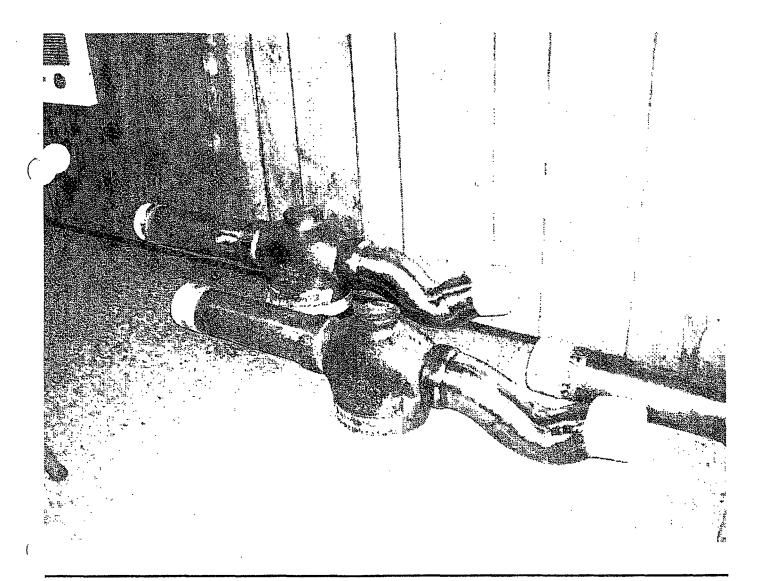
Date:

Date:

Comments: Typical spool piece.

Component ID 2-RC-24-09

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\DSCN0162.JPG



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Page | 0F2

	stinghouse NDE	Company	• '	:						÷		
	D.C. Cook	·		Unit 2	_	٠.			UT-09-02			
	m 2-SI-569-49S				_		Procedi	re No	WDI-ST	D-1026	REV 0	
ISO #:	A-68				_		Cal Bloo	k No.	1.5-88-1	160281-1-	DCC	<u> </u>
Summary No	122665			:		*.	Scan Si	urface:		ID 🗹	OD	_
ĺ		Thermo	meter S	/N or SAP#:	105547.		Block/C	omp Tei	าต	74.5° F/7	74 <sup>0.</sup> F	
	SEARCH U				1000	•			WELD :		WELD	٦
				IIW / Rompas				<del></del>		Sweep A		_
Scan Angle:	45 °	Mode:	Shear	S/N - Step Wedge	N/A	IDENT	Pos	%	dB	Pos %	1	
Serial No.:	00YHTP	Mfg.	KBA	SCAN A		ID notch	4.2	80	30	4.9	80 4.0	
Fixturing:	Non-Integral		Comp-G			iD notari	7.55	1		1.5	90 1.0	ᅱ
Size:	.25"	Shape:	<del></del>	0° BM		:	<b></b>	-			<del>-/-</del>	7
Frequency:	2.25 MHz		1110	⊥ To Weld	X	<del></del>	N		<b></b>	N A		<u>-</u> [
	igle: Ax 45 ° Circ	40 °	;	·   To Weld	<del></del> -	<b></b>	<u> </u>	A	<del>                                     </del>			┥.
Cable Type:		Length:	6'	Connectors			00%					
Couplant Bra		Ultra Gel II		Exit Pnt Dim: =		3	90 [	Ι .	T			
Couplant Bate		04225			Contoure	- ' . 1	30					1.
	J. 1.	0.1220	<del></del>	CAL.	Oomoune	î l	70 -	<del> </del>	AX .	CIRC		
1	NSTRUMENT SE	TTINGS	•	CHECKS	TIME	ŧ I.	50	<del>  -</del>	++	<del>                                     </del>	+	1
	o.: Krautkramer	USN 50		Initial Cal.	08:30	1 1	50 40	<del>  </del>	1-1-		+   -	]
Serial/SAP No				Intermediate	10:00	1 1	30					
Damping:	Fixed	Puls Wth:	Fixed	Intermediate	1,15.55	:	20	<del>                                     </del>	<del></del>			1
Pulser:	High	Reject:	0%	intermediate	<del>                                     </del>	1	10		+		+	.
Frequency:	Fixed	Rep. Rate:		Final Cal.	11:25	1  .	سبنا ه	шии	سيلسا	mmmm	шишш	
	(RECTIF): Full W				1	, –	. 0	12	3 4 5	67	B 9 10	_
Filter: Fixed	Voltage: Fixed					. ,						
<del></del> -		Jack:	<u> T · </u>	l		1		DIVISIO	ns 10 =	1.0		
ange	1,0"	Vel.	.1220	EXAMINA	ATION	Recor	rdable	S	can			
Swp Delay	3,039	Zero	6.30	WELD/A	REA	Indica	ations	Lim	itation	co	MMENTS	
Gain 0° o	or I	dB 30		<b>^</b>   •	•	Yes	No	Yes	No	1		
Gain	<del></del>	dB 40	1	2-\$1-569-49	S		×	X	111	Scan limits	ation due to	
		1 1	J .	2 5. 555 16	<u> </u>	<b></b>		<del></del>			canned 3"	
Scan	Sensitivity	Axial =	42.5dB		<u>.                                    </u>		<del> </del>		<u> </u>	DS to sup		
·		Circ =	55 dB					<b>i</b> —	l —		20% ID ro	 )][.
	INSTR. LINEARI	TY CAL.						<del>                                     </del>			unge Ort	
High	Low	High	Low	l		<b>-</b>	<del>                                     </del>	1	l		30/09	MINE
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5		10		Examiner		•		Level		Date		
				Print				7				
AMPL. CONT	TROL LINEARITY			•	MA		14	/				
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80	-12	N/	].	Utility Review	Vou 1	Hon.	avin			Date	4/1/04	
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				Authorized In	enection	Anenna		VI. S		Date	1-1-200	, (
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			]				7		( IC.	Schen	دار	
Horizont	al Linearity Perf		J	ADDITIC	NAL SHI	ETS? (	Check I		( K.		c 4	,
				ADDITIC Continuation	NAL SHI	ETS? (	Check I		( 16.		د در	<u>,</u>
Horizont N/A	al Linearity Perf	ormed		ADDITIC		ETS? (	Check I		( 16.		<i>c</i>	<u>,</u>

# WESDYNE INTERNATIONAL, LLC

4 Westinghouse NDE Company

UT Sheet No. U2C18-UT-09-021

		Page <u>2</u> of <u>2</u>
	ULTRASONIC EXAMINATION	
19 84 15-6	SCAN LIMITATION REPOR	RT
Weld Number: 2-51-58-495	Interfering Condition:	I BEAM SUPPORT
Problem in the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the contro	mitolioung comme	Description of the second
Size of Interfering Condition:	4"	
Distance from Weld Centerline:	N/A Distance	e from Datum Point 0.0; 🔑 🔼
Reference Drawing Number:	A-68	
Comments and Sketches: (include extent of	of exam coverage not completed)	)
		50% Coverage Obtained
	•	P. 4130109
	495	•
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		Support
Examiner:		revel: Date: 03-31-09
MATT SEI	HMALZ	
Examiner: ————————————————————————————————————		Level:Date;
Reviewer:		Level: III Date: 4/1/09
Utility Review: Paul 18		Date: 4/1/04
Authorized Inspection Agency:	17. On 5 // Revel	16. Schencu Date: 4-1-2009



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Summary No.		<del></del> -		<u> </u>	_		•					arface:				OD	<u> </u>
Carrinary 140.	122,000	<u> </u>								•		-		]ID			
	OFADOULI		Thermo	meter S	/N	or SAP#:	10554	7				omp Ter		74.5°			
	SEARCH U	NH			1	•			1	<del></del>	_	<u> </u>			_ ·	WE	
	45 <sup>0</sup>			~,		W / Rompas				Swe	ер		ATTE				ATTE
Scan Angle:			Mode:	Shear	٥/ <u>(</u>	V - Step Wedge			IDENT	Pos		%	dB	Pos	·  %		N dB
Serial No.:	00YHTP	<u>.</u>	Mfg.	KBA		SCAN A			ID notch	4.	2	. 80	30	4.9	<del>-</del>	08	4.0
Fixturing:	Non-Integral		Model:		1	0° WRV				<del> </del>		<u> </u>		-	+		
Size:	.25"	<u>:                                     </u>	Shape:	Rnd		0° BM				╂			[	<del></del>	-ا-	_	
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	ile: Ax 45.0 Circ				Ц	To Weld			L			A	L		<u>l.</u>		
Cable Type:			ength:		<del></del>	Connectors			L	00%	==:	<del></del>				<del></del>	
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N/A	Acceptable				C	ontinuation			Beam I	⊃lot		X					
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1	Wesdyne
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### WESDYNE INTERNATIONAL, LLC

A Westinghouse NDE Company

UT Sheet No.	42CI8-UT-	09-025

			• • •	Page 2	of 2	
	ULTRASONIC EXAMINATION SCAN LIMITATION REPORT					
	49 - 411 1000	<del></del>	ON REPORT	<u>.</u>	•	
Weld Number: 2-5	51 -58-535	Interfering Con-	dition:	IELD FROM ADJA	CENT JOHT	
Size of Interfering Cond	ition:	1"-360	•	•		
Distance from Weld Ce	nterline:	<u> </u>	Distance fr	om Datum Point 0.	0: <u>NA</u>	
Reference Drawing Nur	nber:	A -68	-	•		
Comments and Sketche	s: (înclude extent of e	exam coverage no	ot completed)			
		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		50% Covera		
Examiner:	MATT SCHMA		Le	vel: # Da	te: <u>63 - 31 - 0</u> 9	:
Examiner			Le	vel:Da	te:	
Reviewer:	17.0	1	<u>·</u> Le	vel:Da	te: 4/1/09	
Utility Review:	Pour Do	nhvin	Le	vel:Da	te: 4/1/09	

Authorized Inspection Agency: 120125 17 Trevel 16 School Date: 4-1-2009

verful part of your team"



Page 10F2

A West	linghouse NDE (	Company			:			:	;		
.ant:	D.C. Cook	:		Unit 2					UT-09-02		:
	2-SI-569-54S				. ,				WDI-ST		REV 0
ISO #:	A-68	· · · · · · · · · · · · · · · · · · ·			· :		Cal Bloc	k No.		160281-1	
Summary No.	: 122687	··					Scan St	ırface:			OD "
	•	Thermo	meter S/	N or SAP#:	105547		Block/C	omp Ter	np	74.5 <sup>0</sup> F/	74 <sup>0</sup> F
ļ:	SEARCH U			:		•		±TO1			O WELD
	,			IIW / Rompas			Sweep	AMPL	ATTEN	Sweep /	MPL ATTE
Scan Ängle:	45 °	Mode:	Shear	S/N - Step Wedge	N/A	IDENT	Pos ·	%	dB	,	6 NdB
Serial No.:	00YHTP	Mfg.	KBA	SCAN A	REA	ID notch	4.2	:80	30	4.9	80 4.0
Fixturing:	Non-Integral	Model:	Comp-G	0° WRV						1 - 1	
Size:	.25"	Shape:	Rnđ	0° BM							
Frequency:	2.25 MHz			⊥ To Weld	X	·	N		<u> </u>	N 1	٢
	gle: Ax 45 ° Circ	40 <sup>0</sup> .		To Weld	Χ.			A	<u> </u>		2
Cable Type:	RG-174	Length:	6'	Connectors	· 0	220	DO#		<del>;</del> -	<del></del>	<del></del>
Couplant Bran		Ultra Gel II	٠.	Exit Pnt Dim: ≓			90 <u> </u>	-	┼┼	<del>                                     </del>	
Couplant Batc	<u>h:                                      </u>	04225		Х	Contoure	TU I	30 . 70 —			CIRC -	
				CAL.	1 2	1 1	50		AX		
	VSTRUMENT SE	<del></del>	<del></del>	CHECKS	TIME		50	-   -	┼├-	╂┈┼╼┼	
	.: Krautkramer	USN 50		Initial Cal.	08:30	1 1	40	1 1-	+ +	<del>}</del>	<del>-                                    </del>
Serial/SAP No		D. J. 1470	F=1	Intermediate	10:00	1 1	30	ĿĹ			
Damping:	Fixed	Puls Wth:	Fixed	Intermediate	<b></b>		20	$\Box$			
Pulser:	High	Reject:	0%	Intermediate	44:05		ىسا ە	سلسد	վասևու	ىلىسلىسل	ا استسلسار
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Filter: Fixed	Voltage: Fixed	Jack:	T	l ,	·	<del>,</del> .	Screer	Divisio	ns 10 =	1.0"	
ange	1.0"	Vel.	.1220	EXAMINA	NOITA	Reco	rdable	S	can	1.	-
Swp Delay	3,039	Zero	6.30	WELD/A	REA	Indic	ations	Lim	itation	C	DMMENTS
Gain 0° o	·	dB 30	T	*		Yes	No	Yes	No	1	
Gain	•	dB 40	1.	2-SI-569-548		1	I X	X	1.00	Scan limi	tation due to
[0011 []		145 140	J	2-01-003-040		<del>                                     </del>	<del>  ^</del>	<del>                                     </del>	<del> </del>		tion of part.
Scan	Sensitivity	Axial =	42.5dB			<del>                                     </del>	<del>                                     </del>	1			d CIRC scan
		Circ =	55 dB			1	1	1	<u> </u>		ntained 20%
ı	NSTR. LINEARI			۱ 🗀			T	<del>                                     </del>		iD roll.	<del> </del>
High	Low	High	Low	1			1		<b>1</b>		verage Oblam
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3	A	8	A	Print	Matthew	Schmal	z	_			
4		9		1		•					
5		10		Examiner				Leve	l	_Date _	
		······································		Print		-		•			
	ROL LINEARITY				MA	! .		_	411		11.100
Initial	ΔdB		_	Reviewer	1110		A.	_ Leve	亚	_Date _	1/1/09
80	-6		4		0	175	/ .			<b>-</b>	1/4-
80	-12	<del></del>	_	Utility Review	Tout	1.600	avn			_Date _	4/1/09
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20	+12	<u> </u>		Authorized In	rspection	Agency	<u> </u>			_Date	1, -009
·	•								e(K.	Schen	cce
	al Linearity Perf	formed		ADDITIO	DNAL SH			3ox)	]		
N/A	Acceptable			Continuation		Beam F	Plot		1		
ı				Supplements	X	Other		1	J		
"A nouse	rful part of your	team"									

WES:	WESDYNE INTERNATIONAL, LLC
: Gerthelicuse Stell Company	UT Sheet No. U2C18-UT-09-826
- (	Page 2 of 2  ULTRASONIC EXAMINATION  SCAN LIMITATION REPORT
Veld Number: <u>2-81-58-545</u>	Interfering Condition: WELD FROM ADJACENT JOINT
ize of Interfering Condition:	
stance from Weld Centerline:	אַנע Distance from Datum Point 0.0: אַן אַ
eference Drawing Number:	_ A-68
mments and Sketches: (include extent	
	56% Coverage Obtamol
	PL. 4/>0/09
_	
•	545
Examiner:	Level: 7 Date: 03 - 31 - 09.
Examiner:	Level: Date:
Reviewer. 7,0	Level: III Date: 4/1/09.

Utility Review:

Authorized Inspection Agency: K



Page 4 1 7

A West	inghouse NDE	Company					•		•	÷			
lant:	,			U	Init 2			UŤ No.	U2C18-	-ŲT-09-0:	39	7	
Comp/System			.:			•		Procedu	re No.	ISI-PDI-	UT-2	•	Rev 4
ISO #:	A-48					•		Cal Bloc	k No.	102917			
Summary No.:	093200		٠٠.			• .	••	Scan St	urface:		ID	<b>√</b> op	
		Ther	mometer S	/NI	or SAP#	- 105547	•	Block/C	omp Tei		88 <sup>0</sup> F/		
	SEARCH U				or ora #.	100041	•		L TO			TO WE	ו מו
	<u> </u>	1411		7	INAC: ( Dammas	·		Sweep		ATTEN	Sweep		
Scan Angle:	60 ° RL	Mode	e: Long	s	IIW / Rompas /N - Step Wedge	400000	IDENT	Pos	%	dB	Pos	%	N dB
Serial No.:	D5-483	Mfg.	RTD	┨▔	SCANA		1.0" noich		80	47.2	1 03	<del> "</del>	
Fixturing:	Integral	Mode		1	0° WRV		1.5" notch		80	47.2		<del> </del>	
Size:	2(8x14)		e: Rect	1	: 0° BM		1.5 Hotel	0.0	- 00	71.5			
	2 MHz	Orial	o. Nect	1	⊥ To Weld	<del></del>	<del></del>	N			N/	A	
Measured Ang			··········	1	I To Weld			<del> </del>	A	<del> </del>		<del> ^</del>	
		Length		╀			L		<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Cable Type:				┢	Connectors			308		T	1.1		<del>                                     </del>
Couplant Bran		Ultragel	11	┨┖				90					
Couplant Batc	n:	07125	<del></del>	╁	CAL.	Contoure	tu i	70		1.0° notch	1.5	notch	$\Box$
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Mfg/Model No.		USN 60	2107	╁	nitial Cal.	11:00	1 1	50	<del>                                     </del>	+	<del>  -</del>	<del>├</del> ─┼─	<del>                                     </del>
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Pulser Type:		Reject:	0%	-	ntermediate	<u> </u>	1 1	20	<del> </del>	<del></del>	<b></b>	<del>  </del>	╀╌┨╵
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				4	inai Cai.	13.30	) : L	^	1 2	3 4 5	6 7	8 0	10
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Filter: Fixed	Voltage: 450	Jac	k: T&R					Screen	Divisio	ns, 10 =	5"		
ange	5.0	Vel.	.2279		EXAMINA	NOITA	Reco	rdable	S	can			
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Gain 0° or	·	dB 47.	—}		0.01.57.00		Yes	No.	Yes	No	Oin als		
Gain II	·	dB N/	<u>4</u> .		2-SI-57-22		<del> </del>	X_	X_	<del> </del>		sided ex	
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	Sensitivity	Axial = 59					ļ			ļ	compo	nent.	
		Circ = N		1							compo		
	NSTR. LINEARI	Circ = N	/A	]							compo	nent.	
High		Circ = N TY CAL.	/A								compo	nent.	
High 1	NSTR. LINEARI	Circ = N TY CAL. Hig	IA Low							-	compo Maintai	nent ned 20%	6 ID roll.
High 1 2 N	NSTR. LINEARI	Circ = N TY CAL. Hig 6 7 N	IA Low		Examiner				Leve	-	compo	nent.	6 ID roll.
High 1 2 N 3	NSTR. LINEARI	Circ = N TY CAL. Hig 6 7 N	IA Low			- Le-C	Schmal	Z	Leve	. 11	compo Maintai	nent ned 20%	6 ID roll.
High  1	NSTR. LINEARI	Circ = N TY CAL. Hig 6 7 N 8	IA Low		Print	Matthew	Schmal	Z			Maintai  Date	nent ned 20%	6 ID roll.
High 1 2 N 3	NSTR. LINEARI	Circ = N TY CAL. Hig 6 7 N	IA Low		Print Examiner	Matthew	Schmal	Z	Leve		compo Maintai	nent ned 20%	6 ID roll.
High 1	NSTR. UNEARI	Circ = N TY CAL. Hig 6 7 N 8 9 10	IA Low		Print	Matthew	Schmal	Z			Maintai  Date	nent ned 20%	6 ID roll.
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High  N N N AMPL CONT Initial 80 80 40 20 Horizonta	A  ROL LINEARITY  A  A  A  ROL LINEARITY  A de  -6  -12  +6  +12  al Linearity Perf	Circ = N TY CAL. Hig 6 7 N 8 9 10 Y Rest	ih Low A	<i>F</i>	Print Examiner Print Reviewer Utility Review Authorized In	Matthew 17.0	Agency	TZ-Check E	Leve Leve		Date Date Date Date Date Date	04/02 4/3 4/3	6 ID roll.

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A Westinghouse NDE Company

### ULTRASONIC EXAMINATION SUPPLEMENT SHEET

Page 6 of 7

	UT No. U 2 C18- UT-09-03
Plant/Unit: x cook /unit2	Crown Height:
Comp/System: 2-S/- 57	Crown Width: 1.1°
Weld / Component ID Number: 2 - 31 - 57 - 22	Weld Length: 10° Weld Length: 31.4°
FLOW	<del>-</del>
TEE	PIPE
H <sub>S</sub>	60° RL
No COVERAGE	
No coverage = 1/2 (0.22) (0.13) = 0.014 m²	(SEE ATTACHED)
TOTAL = 0.876 $m^2$ MISSED COVERAGE = $\frac{0.014}{0.876} \pm 100\% = 1.6\%$ SINGLE SIDED EXAMS COVERAGE = $50\%$	
TOTAL COVERAGE = 50-1.6= 48.4%	
omments: SIN BLE SIDED EXAM DUE TO Component Com	FIGUR ATION
eviewer: 1 Date: 4-2-09 Examiner: Date: 4-3/09 Utility Reviewer:	Level:Date:
uthorized Inspection Agency: TALS (Revel to Schenn	Date: <u>4-4-2009</u>
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### ULTRASONIC EXAMINATION SUPPLEMENT SHEET

7 of 7

A Westinghouse N	IDE Company		Page	7 of 7
	,	:	UT No,	: U2C18-UT-09-639
Comp/System: 2-	Cook / UNIT 2 SI-57 Number: 2-SI-57		Crown Height: Crown Width: Diameter: Veld Length:	MA
AREA 1 = (	( 015 + 014 ) × 014	2 = 0.189 in²		
	(0.67) (0.38) = 0			
AREA 3 = (	(1.03)(0.42) = 0 Total = 0			
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Reviewer: M. D. J. J. J. J. J. J. J. J. J. J. J. J. J.	Level: III Date: 4/3/09	Utility Reviewer:	Dona Level:	Date: <u>4/3/0</u> 9



Page. 40F 7

A West	tinghouse NDE	Comp	any						:					
lant:	D.C. Cook	,			Unit: 2		1	UT No.	U2C18-	UT-09-0	44			
Comp/System				·		• , •,				ISI-PDI-I		· · · · · ·	Rev 4	7
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# WESDYNE INTERNATIONAL, LLC

Attachment to:

	UT Sheet No. 42 <u>618-47-04</u> -044
	Page <u>6</u> of 7
	TRASONIC EXAMINATION
<u>SC.</u>	AN LIMITATION REPORT
Weld Number: 2-51-56-10	Interfering Condition: BOX RESTRAINT SUPPORT
Size of Interfering Condition:	23" TOTAL
Distance from Weld Centerline:	Distance from Datum Point 0.0:
Reference Drawing Number:	A-47
Comments and Sketches: (include extent of e	exam coverage not completed)  Able to achieve coverage on upstream side 2"-6.5," 12"-13,"
	21"-22", 27.5-32" in "L"
).	
2-51-56-10	ACCESSIBLE AREA
	AREA
ACCESSIBLE AREA	
AKCO	
EXAMINER H	LEVEL DATE 4/4/09
EXAMINER Patrick Lung	LEVEL I DATE 4/4/09
REVIEWER M. O	LEVEL ## DATE 4/6/09
· OM/	win LEVEL DATE 4/6/09
	DIES D/Revel 18. SchargeDATE 4-6-2009
Authorized Inspection Agency <u>IZe</u>	VICE VI RECEIR CONTROL 10 -07

# **WESDYNE**

Examiner: N/A

verful part of your team"

### ULTRASONIC EXAMINATION SUPPLEMENT SHEET

A Westinghouse NDE Company

Page 7 of 7

Level: <u>N/A</u> Date: <u>N/A</u>

,	•	;	:	•	;
<del></del>		-		UT No, UZC18-1	UT-09-0
Plant/Unit:	DC COOK	UNIT 2			
`omo/Quetor				Height: 0.07"	
zomprayster	n: <u>2-5I-5</u>	<u> </u>	Crown Diame	Width: 1.1" ter: 10" non	
Veld / Comp	onent ID Numb	er: <i>10</i>		Length: 34"	
	:	"			
IOTAL	WELD LE	NGTH = 34" X	LSIDES = 68,	•	
TOTAL	L UNSCANN	ED LENGTH = 2	23" ON ONE SIDE		
IOTAL	COVERAGE	10 = 10	3 × 100% = 6	6.270	
•		<i>68</i>			
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\_\_Leyel: <u>N/A</u> Date: <u>N/A</u> Examiner: <u>N/A</u>

uthorized Inspection Agency: Role 5 D/Revel K. Schercu Date: 4-6-2009

Level: III Date: 4/6/09 Utility Reviewer: far Breen Level: \_\_\_ Date: 4/6



Page 3 0 F 5

A West	tinghouse NDE	Com	กสห่ง										•			:		
Plant:	D.C. Cook	00,7,12	, ,	;	บ	nit: 2				u	T No.	U2C18	3-UT-6	09-04	18			
Comp/System	2-SI-78-01		. '.		Ť							re No.			UT-2			Rev 4
ISO #:	A-47						• .	•	7	C	al Blo	k No.		917.				
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,			Thermo	meter S	/N	or SAP#:	10554	7	•	В	lock/C	omp Te	mp		80 <sup>0</sup> 1	779 °	F	
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Scan Angle:	60 °		Mode:	Long	s/	N - Step Wedge	102268	3	IDENT	Р	08	%	dB		Pos	%		N dB
Serial No.:	05-483		Mfg.	RŤD	1	SCAN A	REA		1.0" not	h	5	80		50	·			· /
Fixturing: .	Integral		Model:	TRL-2		0° WRV	· .									1		
Size:	2(8x14)		Shape:	Rect	1	0° BM		•	:				1					Α
Frequency:	2.0 MHz			•	]	⊥ To Weld	X		·		Ŋ		ŀ	•		1_		
Measured Ang	gle: 60 °					To Weld	٠	•				Α	<u>.</u>			1		
Cable Type:	RG-174			6'		Connectors	0 .			100	b							
Couplant Bran	nd:	Ultr	a Gel II		E:		N/A		_	90	-	┟┷┼	<del>  +</del>	┼			-	<del> </del>
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Filter: Fixed	Voltage: 450		Jack:	T&R	Ι,					S	creer	Division	ons, 1	0 =	3.961	0"		
₹ange	3.9610		Vel.	.2245		EXAMINA	ATION.		Rec	orda	able	5	can		l	•		
Swp Delay	7.5034		Zero	N/A		WELDIA	REA		Indi	cati	ons	Lin	nitatio	on		COM	ME	NTS
Gain 0° o	r II.	dΒ	50		_	-			Yes		No	Yes	1	Vo	1			
Gain		dB	N/A	1		2-SI-78-01				$\top$	X	X	1		Single	sided	acc	ess
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Scan S	Sensitivity	Axia	d = 56												valve	config	urat	ion.
	·	Circ	= N/A							$oxed{oxed}$					Maint	ained '	10 to	20%
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4		· · ·	9								
5			10								

AMPL CONT	<b>ROL LINEARITY</b>	
Initial	∆dB	Result
80	-6	
80	-12	N/
40	+6	A
20	+12	

Horizontal Linearity Performed N/A Acceptable

"A powerful part of your team"

A PER DIA DES	
WELD/AREA Indications Limitation	COMMENTS
Yes No Yes No	
2-SI-78-01 X X Single s	sided access
downst	ream due to
valve ce	onfiguration.
Maintai Maintai	ned 10 to 20%
ID roll fo	or exam.
50% C	man OHaired
P.	1. 4/20/09

Examiner Print

Examiner Print Level III Date Reviewer

04/04/2009 Date

Utility Review

Date

Authorized Inspection Agency Tulic Revel Kuschercce

Date

ADDITIONAL SHEETS? (Check Box) Continuation Beam Plot Supplements Other

### **ZWESDYNE**

verful part of your team"

A Westinghouse NDE Company

# ULTRASONIC EXAMINATION SUPPLEMENT SHEET

Page 4 of 5

/				
	· ·	•	UT No. U2 C18-	UT-09-09
Plant/Unit: DC Co	IOK UNITZ			
Comp/System: 2-51-7		Crown I Crown V	Width: 0.75"	
Weld / Component ID Nu	ımber: Oj	Diamete Weld Le		
VALVE		E.	ELBON	V
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Comp/System	2-SI-56-22						Procedu	ire No.	ISI-PDI-I	JT-2	Rev 4
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Serial No.:	05-483	Mfg.	RTD	SCAN A		1.5" notch		80	45		
Fixturing:	Integral	Mod		0° WRV			1				N
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	RG-174	Length	n: 6'	Connectors		ילו	50%				
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(	A Westinghouse NDE Company	UT No. U2C18- UT-09-863							
	WALL THICKNESS PROFILE SHEET	WELD NO.: 2-51-56-22							
	TOE* 6 1" NANANA  TOE* 6 1" NANANA  8 X  9 X  E16	component Component							
	Crown Height:	Diameter: 10"							
	Crown Width: 1.07"	Weld Length: 34.5"							
	Longseam: ///A	Iso Drawing: A-47							
	SINGLE SIDED COVERAGE, 50% Concease								
		PL 4/30/09							
	FLOW-	Lovel: T. Date: Allelee							
	Examiner:  Examiner:  Ruthull Imput	Level: <u>T</u> Date: <u>4 3 09</u> Level: <u>T</u> Date: 4/3/09							
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