From Frank K. Poor Copy 7-17-97

PARTIAL PT-7 SHOWS RX HEAD AREA CHECK.

ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 4

PROCEDURE NO. PT-7 REV. NO. 37

HYDRO TEST OF REACTOR COOLANT SYSTEM

MASTER COPY

PCN 89T 1153
PCN 89T 1155
PCN 89T 1157
PCN 89T 1159
PCN 89T 1166
PCN 89T 1168

TECHNICAL REVIEW

PORC REVIEW DATE 5/20/89

Thomas A. Marlow
PLANT SUPERINTENDENT

5-22-89
EFFECTIVE DATE

QA X NON-QA _____ CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 26 PAGES

FOR R&T USE ONLY

Routed To	PNC	Date	5-27-89
Routed To	Cordaro	Date	5-27-89
Master Sched.	[illegible]	Date	5-30-89
Date Trending	NA	Date	NA
Sched. Board (Orange)	[illegible]	Date	5-30-89
Central Records	_____	Date	_____

GINNA STATION

START:

DATE 5/23/89

TIME 1117

COMPLETED:

DATE 5-25-89

TIME: 1321

CHECK LIST #2
REACTOR COOLANT SYSTEM HYDRO - 10 YEAR ONLY

J.B. Pace Corp 7-17-97

INSPECTION ACCEPTANCE CRITERIA: A VT-2 Visual Examination of the Reactor Coolant System and items listed herein, shall be completed at the pressure indicated. No leakage shall be allowed through pipe, vessels, or valve bodies. Leakage through packing, flange gasketing, etc., shall be noted and quantified, if possible, for further evaluation by Operations or Plant Supervision. If test performance is not for 10 year hydro, mark N/A in 2352 psig inspection completed column.

		INSPECTION COMPLETED 2352 psig
1.	RCS Loop A Hot Leg to Steam Generator	X
2.	RCS Loop A Hot Leg Safety Injection Line to V878H	X
3.	RCS Loop A Hot Leg RHR Line to MOV 701	X
4.	RCS Loop A Hot Leg Sample Line to V998	X
5.	RCS Loop B Hot Leg to Steam Generator	X
6.	RCS Loop B Hot Leg Safety Injection Line to V878F	X
7.	RCS Loop B Hot Leg Sample Line to AOV 955	X
8.	RCS Loop B Hot Leg Charging Line to V9315	X
9.	RCS Loop A Crossover Pipe	X
10.	RCS Loop A Crossover Pipe Instrumentation Lines	X
11.	RCS Loop A Crossover Pipe Drain to V523 and V541	X
12.	RCS Loop A Crossover Pipe Excess Letdown Line to HCV 123	X
13.	RCS Loop B Crossover Pipe	X
J	RCS Loop B Crossover Pipe Instrumentation Lines	X
	RCS Loop B Crossover Pipe Drain to V540	X
	RCS Loop B Crossover Pipe Letdown Line to AOV 200A, B, 202	X
17.	RCS LOOP A Cold Leg to Reactor Coolant Pump	X
18.	RCS Loop A Cold Leg Safety Injection Line to AOV 8408, V842B, 878B	X
19.	RCS Loop A Cold Leg Alternate Charging Line to AOV 392B	X
20.	RCS Loop B Cold Leg to Reactor Coolant Pump	X
21.	RCS Loop B Cold Leg Safety Injection Line to AOV 839B, V842A, 878D	X
22.	RCS Loop B Cold Leg RHR Line to MOV 720	X
23.	RCS Loop B Cold Leg Charging Line to V9314	X
24.	Pressurizer	X
25.	Pressurizer Instrumentation Lines	X
26.	Pressurizer Surge Line to RCS Loop B Hot Leg	X
27.	Pressurizer Spray Line to RCS Loop A Cold Leg	X
28.	Pressurizer Spray Line to RCS Loop B Cold Leg	X
29.	Pressurizer Mini Spray Line around PCV 431A	X
30.	Pressurizer Mini Spray Line around PCV 431B	X
31.	Pressurizer Auxiliary Spray Line to V9313	X
32.	Pressurizer Steam Space Sample Line to AOV 951	X
33.	Pressurizer Liquid Space Sample Line to AOV 953	X
34.	Reactor Vessel to MOV 852A	X
35.	Reactor Vessel to MOV 852B	X
36.	Reactor Vessel Head Vent Line to SV 590, 591	X
37.	Reactor Vessel Level Instrumentation Line to V599	X
38.	Reactor Vessel Head Closure Seal Leakoff Connections	X

Poor copy adb 4-17-97

CHECK LIST #2 (Continued)
REACTOR COOLANT SYSTEM HYDRO - 10 YEAR ONLY

INSPECTION ACCEPTANCE CRITERIA: A VT-2 Visual Examination of the Reactor Coolant System and items listed herein, shall be completed at the pressure indicated. No leakage shall be allowed through pipe, vessels, or valve bodies. Leakage through packing, flange gasketing, etc., shall be noted and quantified, if possible, for further evaluation by Operations or Plant Supervision. If test performance is not for 10 year hydro, mark N/A in 2352 psig inspection completed column.

	INSPECTION COMPLETED 2352 psig
39. Accessible surfaces on the Reactor Vessel Head	X
40. Reactor Vessel Incore Penetrations in Sump A	X
41. Check all accessible major components for leakage (i.e. Reactor Vessel, Steam Generators, etc.) within the Reactor Coolant System Boundary, which were not mentioned in preceding steps.	X

REMARKS:

Inspected By: Wm J Shumaker Paul A Lewis Date: 05/24/89
VT-2, Level II Inspector

L. Smith
Operations Personnel

Reviewed By: Frank Klesachi for Date: 08/29/89
Materials Engineering Supervision

Reviewed By: J Shumaker Date: 08/24/89
QC Supervision

Enclosure 3
ISI UT/PT Inspection on Bi-Metalic Wleds

1979 = Penetration 26, 27, 34

1988 = Penetration 16, 32

Examination Area Identification	Page Number	Examination Method	Procedure Number/Revision	Examination Sheet Number	Calibration Sheet Number	Indications: No Recordable	Indications: Insignificant	Indications: Geometric	Indications: Other	Remarks
#26-27 & 34	104	UT	SWRI 800-57/0	45°-1012	01293 SS Side	X				
"	"	"	"	45°-1011	01292	X				
"	"	"	"	45°T-1011 0010 0011 0012	Inc. Side 0005 0°LS & 0° Attn	X				
PL-FW-XI-PR	105	VT	NDE 100-1	20061	—	X				
RC-1000-LSW-1-PH	106	VT	NDE 100-1	20066	—	X				
RC-1000k-PR	107	VT	NDE 100-1	20064	—	X				
AS-1001-23-PR	108	VT	NDE 100-1	20067	—	X				
RC-1000-HSW-1-PR	109	VT	NDE 100-1	20065	—	X				
PL-FW-XII-PR	110	VT	NDE 100-1	20060	—	X				
RC-1001-C-PH	111	VT	NDE 100-1	340136	—				X	Pipehanger NOT Installed per Drawing QCN#14
AS-1001-13-PR	112	VT	NDE 100-1	340168	—	X				
AS-1001-9-PR-1	113	VT	NDE 100-1	340177	—	X				
RC-FW-C-PH-1	114	VT	NDE 100-1	340147	—				X	Pipehanger not in location shown on Drawing QCN#13
SI-100S-GSW-1-PH	115	VT	NDE 100-1	340134	—				X	Pipehanger not built per Drawing QCN#15

ROCHESTER GAS AND ELECTRIC
INSTRUMENT CALIBRATION RECORD

Sheet No. 01293

Maint. Proc. No.	Location: GINNA SGA	Date: 3-5-79	Time: (24 clock) 2000
Examiner: S.A. DELEO	SNT Level I	Instrument: Bronson 303 ☐ Sonic Mk1 ☑	
Examiner: Rod Shedden	SNT Level I	Serial No. 774106	Procedure No: SWRI (RE) NDT XX-57
		Rev: 0	

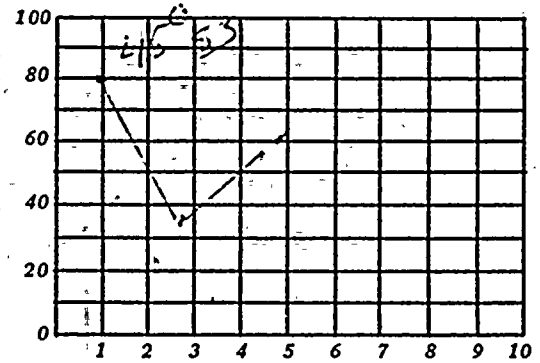
CALIBRATION VERIFICATION

Time:	1100	1245	/	1				
Initials	SD	RCS	FW					

☐ water ☐ exosen ☐ other GEL (specify)

SEARCH UNITS				Verification Blk S/N:			
Nominal Angle	45°G			Measured Angle:	45°		
Measured Angle	45°G			Signal Amplitude:	80		
Manufacturer:	Serial Number:			(Screen Divisions)	8		
SIUR E	192			Signal Distance (in):	1		
				Screen Divisions:	2		
				Coarse Range:	5		
Size:	1/4"			db coarse:	50		
Nominal Frequency (MHZ)	1.5			db fine:	8		

INSTRUMENT SETTINGS			
Reject:	0		
Dec:	N/A		
Fine db:	6		
Coarse db:	70		
Frequency:	1		
Delay:	1.57		
Mat'l Cal:	2.84		
Range:	5		
Damping:	MED		
Rep Rate:	1K		
Video:	NORM		
Filter:	OUT		
S.U. CABLE			
Length:	6'		
Type:	4.21		



10 screen division = 5 in. of metal

Long ☐ Shear ☑

Basic Cal. Block No: CROSSING ZERO

Reviewed by: Michael J. Saporito

Q.C. REVIEW (WHERE REQUIRED):

Examination Area:

CONTROL Rods on HEAD (SS. SIDE)

TO # 27-26-34.

Control Rod Housing Pressure Boundry Welds. (mrs)

Remarks:

1 Track in normal position (THRU Twins)

Exam Sheet No 1012 (mrs)

REVIEWED BY K.T. Patch

DATE 3-6-79

SNT Level: III Date: 3-6-79

Date:

RGAE -NDER-600-1

REV. 6/77 (45-79)

104

ROCHESTER GAS AND ELECTRIC

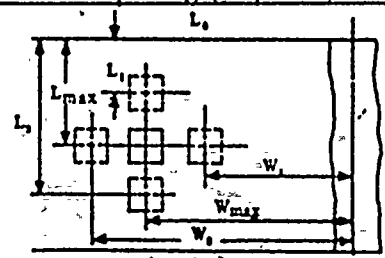
ULTRASONIC PIPE WELD EXAMINATION RECORD

Sheet No. 1012

Job No:		Location: Ginna STA		Date: 3-5-79	Time (24 hr clock): 2115								
System: CONTROL Rod DRIVE Housing		Line: CONTROL Rod (SS SIDE)		Indentification: #27 #26 #34									
Thickness (Nominal): 5/8"	Diameter (Nominal): 4"	Examiner: SAL DELEO		SNT Level: II	Lo Location: —					Wo Location: Cofferdam			
Weld Length: 12.76"		Examiner: Ron Shackleus		SNT Level: II	Angle Used	0°	45°	45 T	60°				
Weld Type: (—Flow→): BUTT — N/A		Procedure No: NDT 800-5?	Rev.: 0	Calib Sheet No: 01293	Scanning dB: 6		74/92						

Remarks:

Examination Area Limitations (If none, so state): NONE



IND. NO.	% OF DAC	50% DAC W_1	50% DAC MP	W MAX W_2	W MAX MP	50% DAC W_2	50% DAC MP	L_1 50% DAC	L_1 100% DAC	L MAX	L_2 100% DAC	L_2 50% DAC			DAMPS (IF YES, EXPLAIN)	REMARKS:	IN.
					No Recordable				Indications						45°	#26	RRS
					No Recordable				Indications						45°	#27	RRS
					No Recordable				Indications						45°	#34	RRS
																REVIEWED BY R. J. Hatch 3-6-79	

Reviewed by: Michael J Sapinski | SNT Level: III | Date: 3-6-79

QC Review (Where Required) | Date:

45-70 R1.6 2/78

ROCHESTER AND ELECTRIC
INSTRUMENT CALIBRATION RECORD

Sheet No. 01292

Maint. Proc. No.	Location:	Date:	Time: (24 clock)
	GINNA STA.	3-5-79	2200

Examiner:	SNT Level	Instrument:
SAL DELEO	I	Bronson 303 ☐ Sonic Mkl ☑
Examiner: Ron Shackelers	SNT Level I	Serial No. 774106 / Procedure No: SwRI (MTS) NDT 800-57 / Rev: 0

45° CALIBRATION VERIFICATION

Time:	2200	/		2230	2330	/	
Initials	SD	[illegible]		SD	SD	[illegible]	

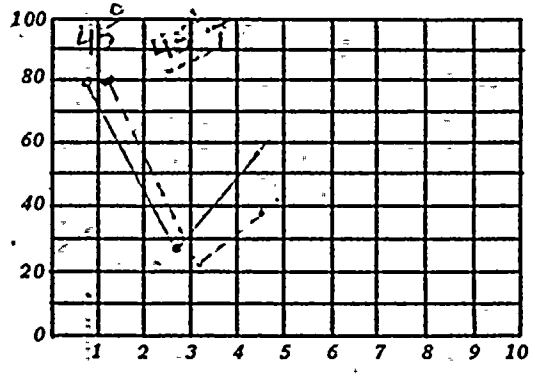
☐ water ☐ exosen ____ ☑ other (specify) Gly.

SEARCH UNITS				Verification Blk S/N: 55 DC #4			
Nominal Angle	45°			Measured Angle:	45°	45°T	
Measured Angle	45°			Signal Amplitude: (Screen Divisions)	80	80	
Manufacturer:	Serial Number:				8	8	
SwRI	192			Signal Distance (in):	1	1	
				Screen Divisions:	2	2	
				Coarse Range:	5	5	
Size:	1/4"			db coarse:	50	50	
Nominal Frequency (MHz)	2.5			db fine:	8	8	

Examination Area:

Control Rods on Head (INC. SIDE.)
TD # 27-26-34
Control Rod Housing Pressure Boundry Welds (MTS)

INSTRUMENT SETTINGS			
Reject:	0		
Dec:	N/A		
Fine db:	6		
Coarse db:	70		
Frequency:	1		
Delay:	1.57		
Mat'l Cal:	2.74		
Range:	.5		
Damping:	MIN		
Rep Rate:	1K		
Video:	NORM.		
Filter:	OUT		



10 screen division = 5 in. of metal

Long ☐ Shear ☑

Basic Cal. Block No: CRD 55 N/156 Rb-1

Reviewed by: Michael J. Spinetta

Q.C. REVIEW (WHERE REQUIRED)

Remarks:

R Sack in Nozzle Position (THRU TRANS.)

Exam Sheet No. 1011 (MTS)

PERFORMED BY: R. T. Peterson
DATE: 3-6-79
[illegible]

SNT Level: III Date: 3-6-79
Date:

S.U. CABLE			
Length:	6'		
Type:	U 21		

RGE AND

ROCHESTER G[illegible] AND ELECTRIC

ULTRASONIC PIPE WELD EXAMINATION RECORD

Sheet No. 1011

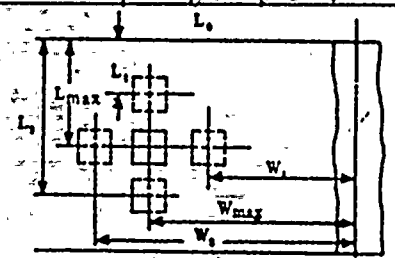
Job No:	Location: GINNA STA.	Date: 3-5-77	Time (24 hr clock): 2200
System: CONTROL Rod HOUSINGS.	Line: CONTROL Rod INSIDE	Indentification: #26 #27 #34	
Thickness (Nominal): 5/8"	Diameter (Nominal): 4"	Examiner: SAL DELEO	SNT Level: II
Weld Length: 12.76"	Examiner: Ron Shaddeleer	SNT Level: II	
Weld Type: (—Flow→): 13.TT - N/A	Procedure No: NDT 800-57	Rev.: 0	Calib Sheet No: 01292

Lo Location	Wo Location
—	Ground

Angle Used	0°	45°	45 T	60°	
Scanning dB		76/82	76/82		

Remarks:

Examination Area Limitations (If none, so state): NONE



IND. NO.	% OF DAC	50% DAC W1	50% DAC MP	W MAX W2	W MAX MP	50% DAC W2	50% DAC MP	L1 50% DAC	L1 100% DAC	L MAX	L2 100% DAC	L2 50% DAC			DAMPS (IF YES, EXPLAIN)	REMARKS:	IN 1
				NO	Reccordable		Indications								45°0 #27		Ref
				NO	Recordable		Indications								45°0 #26		Ref
				NO	Recordable		Indications								45°0 #34		Ref
					—												
				NO	Recordable		Indications								45°T #27		Ref
				NO	Recordable		Indications								45°T #26		Ref
				NO	Recordable		Indications								45°T #34		Ref
					Clutch												

Reviewed by: Michael J. Lapaits SNT Level: III Date: 3-6-77

QC Review (Where Required) Date:

[illegible] 3-6-77

[illegible] CO.

45-70 REV 9/78

RG AND E

Rochester Gas and E[...]ric Corporation

INSTRUMENT CALIBRATION RECORD FOR ATTENUATION/LAMINATION EXAMINATION

Sheet No. 0005

Maint. Proc. No.	Location: GINNA STA	Date: 3-5-79	Time: 1730	Calibration Verification

Examiner	SNT Level	Instrument		Calibration Verification
SAL DELEO	I	Branson [ ]	Sonic MK1 [x]	Time: 2000
Ron Shackleford	I	Serial No: 774106	Procedure No: SWRI NDT 800-57 (MJS) Rev: 0	Initials: RRS

SEARCH UNITS

	0° (L.S.)	0° (ATT.)
Brand	Serial Number	
Aerotech	B16522	B16522
Size	1/4"	1/4"
Nominal Frequency	2.25	2.25

INSTRUMENT SETTINGS

	SS	INC	SS	INC
Gain		79	79	77
Frequency	2	2	2	2
Delay	1.53	1.53	1.53	1.53
Matl. Cal	1.07	1.07	1.07	1.07
Range	1	1	1	1
Damping	min	min	min	min
Rep Rate	1K	1K	1K	1K
Reject	off	off	off	off
Filter	out	out	out	out

VERIFICATION BLOCK S/N

	0° (L.S.)	0° (ATT.)
Signal Amplitude (Screen Divisions)	80% 8	80% 8
Signal Distance (in)	1"	1"
Screen Divisions Course Range	10 1 RRS	10 1 RRS
dB IN:	74	74

BASIC CALIBRATION BLOCK NO. CRD-SS-IN-.656-28 REC (MJS)

LONGITUDINAL ATTENUATION

	SS	INC		SS	INC	
1st. Echo	79	77	dB	8	8	lines of Amplitude
2nd. Echo	48	46	dB	8	8	lines of Amplitude
ΔdB	9	9	(1st. - 2nd. Echo)			

10 Screen Divisions : 1 Inches of Metal

Mode: Longitudinal

Water ______ Exosen ______ Other Gly

Examination Area: CONTROL Rods ON HEAD SS and INC SIDE ID # 27-26-34

Remarks: T Sock in norm position

Exam Sheet No's 0010 (MJS) 0011 (MJS) 0012 (MJS)

Reviewed by: Michael J Saporito	SNT Level: III	Date: 3-6-79
QC Review (Where Required)		Date:

REVIEWED BY R.F. Patch

DATE 3-6-79

[illegible] CO.

42-130

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ROCHESTER GAS AND ELECTRIC

ULTRASONIC BASE METAL LIMATION RECORD

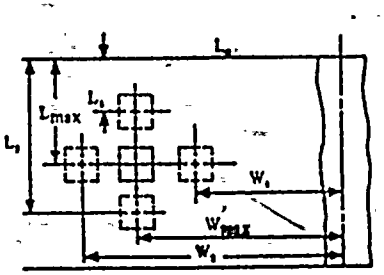
Sheet No. 0012

Maint. Proc. No.:	Location: Genna STA.	Date: 3-5-79	Time (24 hr clock): 1825
System: Control Rod Drive Housing	Line: Control Rod	Identification: #34	
Thickness (Nominal): 5/8" / Diameter (Nominal): 4"	Examiner: SAL DELEO	SNT Level: II	Lo Location: — / Wo Location: Cofweld
Weld Length: 12.76"	Examiner: Ron Skadders	SNT Level: II	Attenuation: Up 55 / Down inc
Weld Type (Flow): Butt - N/A	Procedure No: NDT 80C-57 / Rev: 0	Calb. Sheet No: 0015	8 / 9

Remarks:

Measured Thk. Up	℄	Down	Crown Height: machined
5/8	5/8	5/8	Crown Width: 7/8"

Examination Area Limitations (If none, so state): NONE



IND NO.	% LOSS OF BW	IND AMP % FS	POSITION 1 L1	W1	W2	MP	POSITION MAX LM	W1	W2	MP	POSITION 2 L	W1	W2	MP	SEARCH UNIT LOCATION	REMARKS:	IN 1
						180	Recordables									INC. SIDE.	1825
						180	Recordables									SS SIDE.	1825

Reviewed by: Michael J. Lynott — SNT Level: III — Date: 3-6-79

QC Review (Where Required) — Date:

B.T. Patch

Date: 3-6-79

45-69 REV. 2/78

104

ROCHESTER GAS AND ELECTRIC

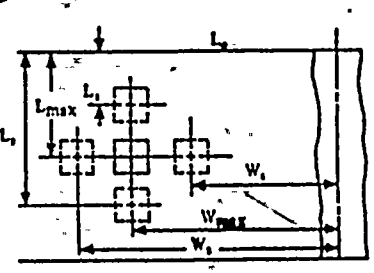
ULTRASONIC BASE METAL LIMATION RECORD

Sheet No. 0011

Maint. Proc. No.:	Location: GINNA STA	Date: 3-5-79	Time (24 hr clock): 1820
System: CONTROL ROD DRIVE HOUSING	Line: CONTROL ROD	Identification: #26	
Thickness (Nominal): 5/8" / Diameter (Nominal): 4"	Examiner: SAL DELEO	SNT Level: I	Lo Location: — / Wo Location: to of weld
Weld Length: 12.76"	Examiner: RON Stubblers	SNT Level: I	Attenuation: Up 55 / Down INC
Weld Type (Flow): BUTT - N/A	Procedure No: NDT 200-5 Rev: 0	Calb. Sheet No: C005	9 / 7

Remarks:

Measured Thk. Up	℄	Down	Crown Height
55. .650	.640	.640 (MISS)	machined (MISS)
			Crown Width 7/8" (MISS)



Examination Area Limitations (If none, so state): NONE.

IND NO.	% LOSS OF BW	IND AMP % FS	POSITION 1 L1	W1	W2	MP	POSITION MAX LM	W1	W2	MP	POSITION 2 L	W1	W2	MP	SEARCH UNIT LOCATION	REMARKS:	IN I
					NO	Recordables										INC SIDE	RRS
					NO	Recordables										SS SIDE	RRS

R.A. Patel
DATE 3-6-79

Reviewed by: Michael J. Laporte	SNT Level: III	Date: 3-6-79
QC Review (Where Required)		Date:

45-69 REV. 2/78 04

ROCHESTER GAS AND ELECTRIC

ULTRASONIC BASE METAL LIMATION RECORD

Sheet No. 0010

Maint. Proc. No.:	Location: GINNA STA.	Date: 3-5-79	Time (24 hr clock): 1815
System: CONTROL Rod DRIVE HOUSING	Line: CONTROL Rod	Identification: #27	
Thickness (Nominal): 5/8" / Diameter (Nominal): 4"	Examiner: SAL DELEO	SNT Level: I	Lo Location: — / Wo Location: ℄ of weld
Weld Length: 12.76"	Examiner: Ron Shedaker's	SNT Level: I	Attenuation: Up / Down
Weld Type (Flow): BUTT - N/A	Procedure No: NOT 800-57 / Rev: 0	Calb. Sheet No: 0005	8 / 7

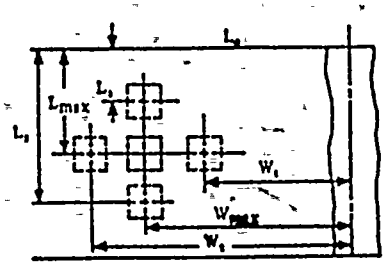
Remarks:

Measured Thk. Up	Measured Thk. ℄	Measured Thk. Down	Crown Height
.635	.640	.640	machined

Crown Width: 7/8"

Examination Area Limitations (If none, so state): NONE

IND NO.	% LOSS OF BW	IND AMP % FS	POSITION 1 L_1	POSITION 1 W_1	POSITION 1 W_2	POSITION 1 MP	POSITION MAX L_M	POSITION MAX W_1	POSITION MAX W_2	POSITION MAX MP	POSITION 2 L	POSITION 2 W_1	POSITION 2 W_2	POSITION 2 MP	SEARCH UNIT LOCATION	REMARKS:	IN↑
SEE 1						NO	Recordable Lies									INT. SIDE	RB3
						NO	Recordable Lies									SS SIDE	RB5

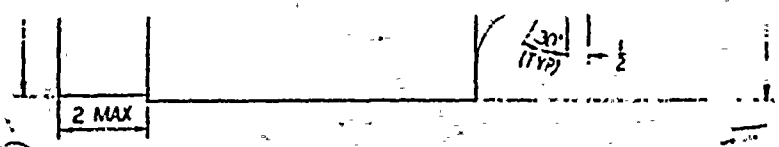


Reviewed by: Michael J Saporito — SNT Level: III — Date: 3-6-79

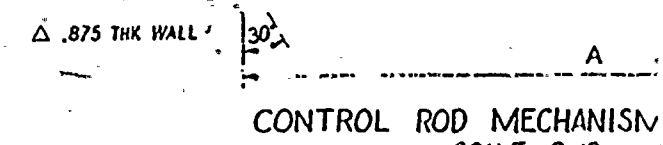
QC Review (Where Required) — Date:

3-6-79

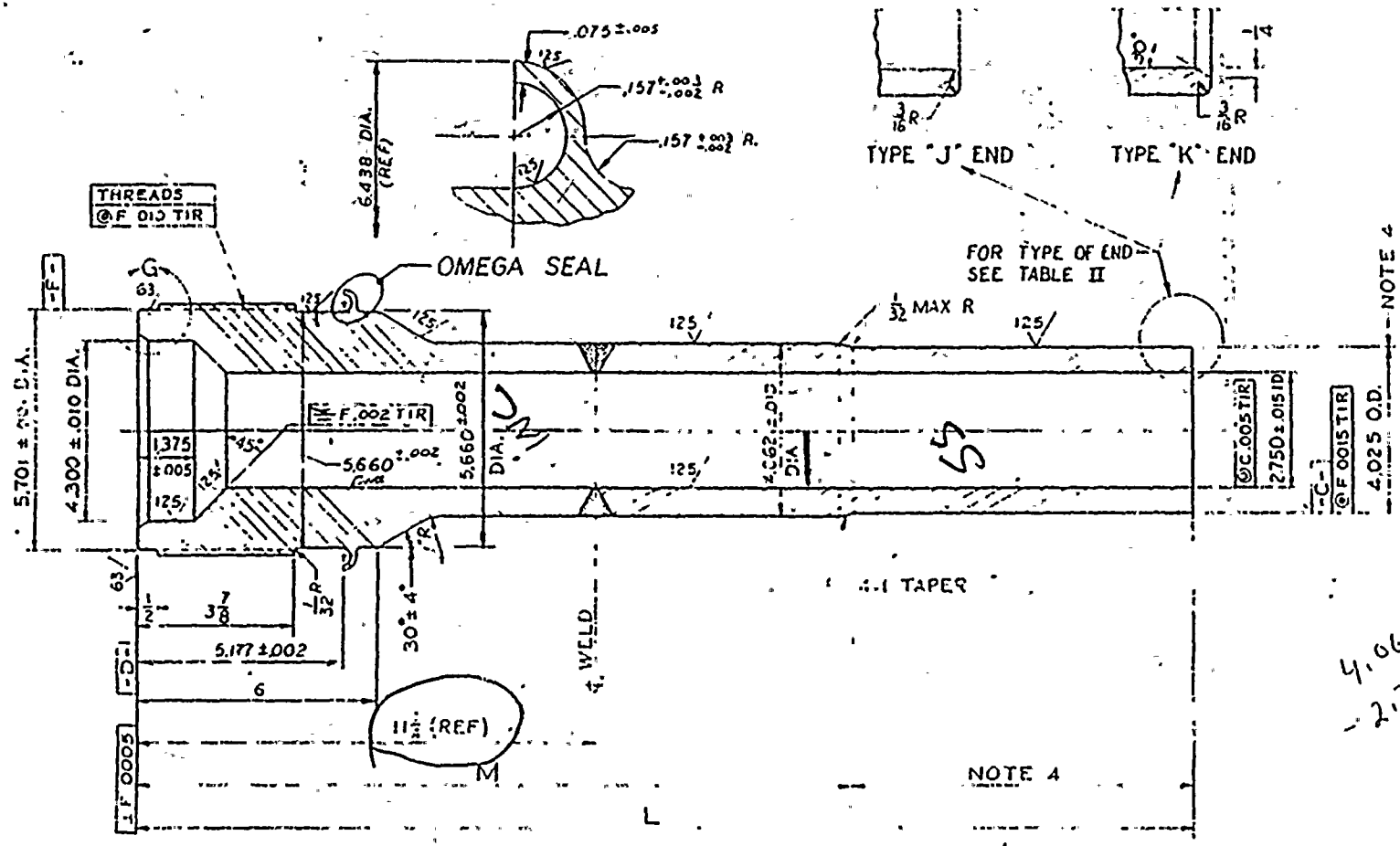
45-69 REV. 2/78/10Y



(32) CONTROL ROD MECHANISM HOUSING ADAPTER
SCALE 6=12



CONTROL ROD MECHANISM
SCALE 6=12



MACHINING OF CONTROL ROD MECHANISM HOUSING
SCALE 6-12

WIRE SIZE .11548 DIA.
FOR THD. INSPECTION

FOR THD REMOVAL
SEE DETAIL 14

.0005 PRE PLATING

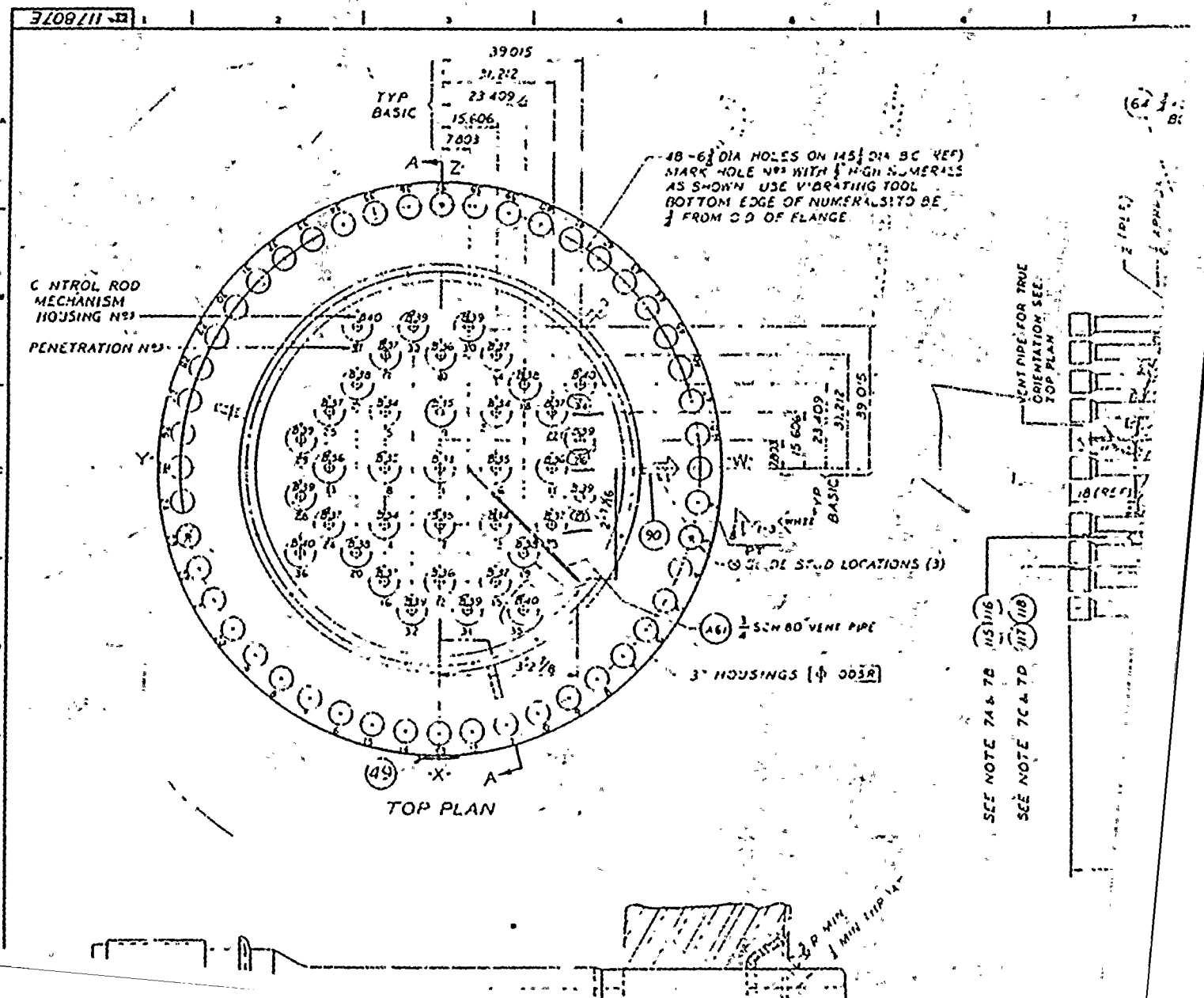
.0.0 ± .002 R
BEFORE PLATING

BEGINNING AT POINT WHERE THREAD RUNS OUT AT ROOT DIA., REMOVE IMPERFECT THREADS FOR 225° TOP

1,312
.656

4.062
150
6.37
4.062
- 2.750

104


39.015
31.212
TYP BASIC
23.409
15.606
7.803
A
Z
48 - 6 DIA HOLES ON 145 DIA BC (REF)
MARK HOLE Nos WITH ¼ HIGH NUMERALS AS SHOWN USE VIBRATING TOOL
BOTTOM EDGE OF NUMERALS TO BE ¼ FROM O.D. OF FLANGE
CONTROL ROD MECHANISM HOUSING Nos
PENETRATION Nos
Y
W
TYP BASIC
SEAL WELD LOCATIONS (3)
¼ SCH 80 VENT PIPE
3" HOUSINGS (ϕ 005R)
49
X
A
TOP PLAN
VENT PIPE FOR TRUE ORIENTATION SEE TOP PLAN
SEE NOTE 7A & 7B
SEE NOTE 7C & 7D

RGE

Sheet # 88001813

MATERIALS ENGINEERING AND INSPECTION SERVICES
RG&E EXAMINATION SUMMARY RECORD

45-13

Examination for: ISI: X Maint: _____ Other: _____

Site: GINNA STATION System: REACTOR PRESSURE VESSEL

ID: DRIVE #32 Description: CONTROL ROD DRIVE HOUSING

Exam Type	Exam Rec. #	Examiner	Date	Results: No Rec	Ins ig	Geom	Other	Rej	Remarks
PT	110010	MWK	2/13/88	X					
UTOL	180078	MWK	2/13/88	X					
UT45	890043	MWK	2/13/88	X					
UT45T	890043	MWK	2/13/88	X					

9A1C 22.2 2-18-88

Summarized By: JR Ingamells SNT Level I Date: 2/15/88

Reviewed By: Paul R. Lewis SNT Level II Date: 2/15/88 WJS

Sw.R.I. LIQUID PENETRANT EXAMINATION RECORD

PROJECT NO.	SITE:	DATE: (DAY-MON.-YR.)	W₀ LOCATION:	SHEET NO.:
17-2099	R. E. GINNA	13 FEB 88	FUSION LINE SS SIDE	110010
EXAMINATION AREA: (SYSTEM/COMPONENT)	**LINE/SUBASSEMBLY**	**(IDENTIFICATION)**	**L₀ LOCATION:**	**WELD TYPE:(-FLOW→)**
R.P.V. CLOSURE HEAD	C.R.D. HOUSING	32	IN LINE WITH ℄ OF BOLT HOLES	CRD HOUSING

EXAMINER:	SNT LEVEL	PROCEDURE	SURFACE TEMPERATURE:	THERMOMETER SERIAL NUMBER
M. KLEINIAN	II	NO. 200-1 REV. 68 DEV. 3	76°F	SWRI 159
EXAMINER:	**SNT LEVEL**		**SURFACE FINISH:**	**WELD LENGTH**
VIC MORTON / J. INGRAMELLS	II / II		MACHINED	2 1/4

PRE CLEANER		PENETRANT		REMOVER		DEVELOPER	
BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX
TYPE:	SKC-S	TYPE:	SKL-HF/S	TYPE:	SKC-S	TYPE:	SKD-S
BATCH NO.:	87H067	BATCH NO.:	84L058	BATCH NO.:	87H067	BATCH NO.:	87K004
CLEANING COMPLETED	1010	TIME APPLIED:	~~1015~~ 1021	REMOVAL COMPLETED	1036	TIME APPLIED:	1046
		TIME REMOVED	1031			TIME READ:	1053

IND. NO.	L	W	LOCATION UP OR DOWN STREAM	TYPE ROUND OR LINEAR	SIZE DIA. OR LENGTH	REMARKS	INI.
	NO	RECORDABLE	INDICATIONS				VC

EXAMINATION AREA LIMITATION (IF NONE, SO STATE):

NONE VC

REVIEWED BY:	SNT LEVEL:	DATE:	PAGE 1 OF 1
MMDB	II	13 Feb 88	

FORM NO. Sw.R.I NDTR 17-11 (REV. 1-3-79)

Sw. R.I. STRAIGHT BEAM LAMINATION EXAMINATION RECORD

PROJECT No.	SITE:	DATE: (DAY – MON. – YR.)	TIME: (24 – HR. CLOCK)	SHEET No.
17-2099	R. E. GINNA	13 FEB 88	SHEET STARTED 1105 / SHEET ENDED 1110	180028

EXAMINATION AREA: (SYSTEM / COMPONENT)	(LINE / SUBASSEMBLY)	(IDENTIFICATION)	L_o LOCATION	W_o LOCATION
R.P.V. CLOSURE HEAD	C.R.D. HOUSING	32	IN LINE WITH ℄ OF STUD HOLES	FUSION LINE S.S. SIDE

EXAMINER:	SNT LEVEL	PROCEDURE	CALIBRATION SHEET (S)	MEASURED THICKNESS UP	MEASURED THICKNESS ℄	MEASURED THICKNESS DOWN	CROWN HEIGHT @	ATTENUATION UP	ATTENUATION DOWN	WELD TYPE (–FLOW→)
M. KLEINJAN / Vic MORTON	II / II	No. 800-57 DRVK 4 REV 2	250017	S.S. .66"	.66"	INC. .66"	FLUSH	S.S. 8DB	INC 6DB	C.R.D. HOUSING
EXAMINER: J. INGAMELLS	SNT LEVEL IT						CROWN WIDTH 3/4"			WELD LENGTH 21 3/4"

IND No.	% LOSS OF BW	IND AMP % F.S.	POSITION 1 L1	W1	W2	MP	POSITION L	W1	W2	MP	POSITION L	W1	W2	MP	POSITION 2 L2	W1	W2	MP	SEARCH UNIT LOCATION	REMARKS	INI.
				NO		RECORDABLE					INDICATIONS.								S.S. SIDE INC. SIDE		(M)

REMARKS:

EXAMINATION AREA LIMITATIONS: (IF NONE, SO STATE):

NONE (M)

REVIEWED BY:	SNT LEVEL:	DATE	PAGE 1 OF 1
Minor	II	13 Feb 88	

FORM No. Sw.R.I. NDTR 17-18 (REV.7-31-75)

SWRI MANUAL ULTRASONIC EXAMINATION RECORD

PROJECT No. 17-2099	SITE R. E. GINNA	DATE: (DAY-MON.-YR) 13 FEB 88	TIME: (24 HR CLK) EXAM STARTED 1179 23 / EXAM ENDED 1129	SHEET No. 890043
EXAMINATION AREA (SYST./COMP) R. P. V. CLOSURE HEAD	(LINE/SUBASSEMBLY) C.R.D. HOUSING	(IDENTIFICATION) 32	L_o LOCATION IN LINE WITH ℄ OF STUD HOLES	W_o LOCATION FUSION LINE SS. SIDE

EXAMINER M. KLEINJAN / VIC MORTON	SNT LEVEL II/II	PROCEDURE No. 800-57 REV. 2 DEV. 4	CALIBRATION SHEET(S) 190033	ANGLE USED	45°	N/ °	WELD TYPE CRD HOUSING
EXAMINER J. INGAMELLS	SNT LEVEL I T			SCANNING dB	11/70 * / 4/80 *	/A	WELD LENGTH 21 1/4"
							EXAM SURFACE TEMPERATURE. N/A °F

IND No.	% OF DAC MAX	W MAX W	W MAX MP	L_1 50% DAC	L_1 100% DAC	L MAX	L_2 100% DAC	L_2 50% DAC	SEARCH UNIT LOC.	SEARCH UNIT ANGLE	DAMPS (IF YES, EXPLAIN)	REMARKS	INI.
		NO RECORDABLE INDICATIONS							SS SIDE INC. SIDE	45°			(HH)
		NO RECORDABLE INDICATIONS							ON WELD SS SIDE INC SIDE	45° T		CW/CCW	(HH)
		NO RECORDABLE INDICATIONS							S.S. SIDE INC. SIDE	45° TAN		CW/CCW	(HH)

REMARKS * + 60B SWITCH (HH)

EXAMINATION AREA LIMITATION (IF NONE, SO STATE

NONE (HH)

REVIEWED BY	SNT LEVEL	DATE	CONTINUED ON SHEET	
Miller	II	13 Feb 88	N/A	PAGE 1 OF 1

SWRI FORM No. NDTR 17-89 (05-04-82)

SwRI SONIC INSTRUMENT CALIBRATION RECORD

PROJECT NO.	SITE	DATE (DAY-MO-YR)	TIME (24 HR. CLOCK)	SHEET NO.
17-2099	R. E. GINNA	13 FEB 88	0906	190033

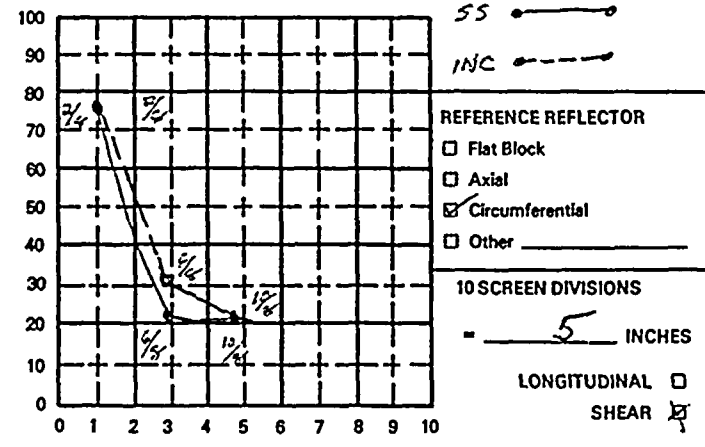
1) EXAMINER (SIGNATURE)	SNT LEVEL	PROCEDURE	INSTRUMENT / SERIAL NO.
Mike Klingaman / Vic Kantor	II / III	No. 800-57 Rev. 2 Dev. 4	SONIC ☒ I ☐ II ☐ III — SERIAL NO. 01114E
2) EXAMINER J. INGAMELLS	SNT LEVEL II		COUPLANT ☒ Glycerine ☐ Water ☐ Other (Specify)

CALIBRATION VERIFICATION

TIME	1146	F				
N/A ☐ TEMPERATURE		N A				
INITIALS	(illegible)	L				

SEARCH UNITS			REFERENCE BLOCK S/N: SS-DC-34		
NOMINAL ANGLE	45°	N/A	NOMINAL ANGLE	N/A	N/A
MEASURED ANGLE	44°	N/A	SIGNAL DISTANCE IN INCHES		
BRAND	SERIAL NUMBER(S)		SCREEN DISTANCE IN INCHES	✓	✓
SWRI	507	N/A			
SIZE	3/4 FD				
FREQUENCY (MHZ)	1.5	✓			

INSTRUMENT SETTINGS				
REJECT	0	N/A		
DEC	N/A			
FINE dB	118 **	4 *		
COARSE dB	70	40		
6 dB SWITCH	UP			
14 dB SWITCH	UP			
FREQUENCY	1			
DELAY	136-1			
MATL. CAL.	314			
RANGE	5			
DAMPING	MIN			
REP. RATE	3K			
FILTER	HI			
VIDEO	NORM			
TRAN. MODE	NORMAL			
JACK USED	R			
40 % + 6 dB =	46 %	80 %	%	%
METHOD: PRIMARY	6dB SWITCH			
SECONDARY	6dB SWITCH	✓		



REFERENCE REFLECTOR
- ☐ Flat Block
- ☐ Axial
- ☑ Circumferential
- ☐ Other

10 SCREEN DIVISIONS = 5 INCHES

LONGITUDINAL ☐
SHEAR ☒

ADDITIONAL INFORMATION

AMPLITUDE DETERMINATION 5/8 VEE-PATH

45°		60°	
3/8	N dB / % FSH	3/8	N dB / % FSH
5/8	dB A % FSH	5/8	dB A % FSH
Δ dB		Δ dB	

CABLE TYPE			
N/A		N/A	
RG 62	☐	RG 62	☐
RG 174	☐	RG 174	☐
Other:		Other:	
Length:	In.	Length:	In.

INITIAL CAL. BLOCK TEMP. N/A °F

PYROMETER S/N: N/A

INST. LINEARITY SHEET No.: ☑ N/A

BEAM SPREAD SHEET No(s).: ☑ N/A

BASIC CALIBRATION BLOCK NO. CRD-SS/IN-.656-28-REG

EXAMINATION AREA:

REMARKS: CALIBRATION REFLECTORS HAVE BEEN VERIFIED AT SCANNING SPEED (illegible)
* INCONEL SIDE (illegible)
** STAINLESS STEEL SIDE (illegible)

EXAMINATION AREA: R.P.V. CLOSURE HEAD - C.R.D. HOUSING - #32 (illegible)
" " " " " #16 (illegible)

REVIEWED BY: (signature) MINOR

SNT LEVEL: II

DATE: 13 Feb 88

SwRI FORM No. NDTR 17-19 (Rev. 12-1-83)

001814 001813

SW.R.I. SONIC INSTRUMENT CALIBRATION RECORD FOR ATTENUATION/LAMINATION EXAMINATION

PROJECT No.:	SITE:	DATE: (DAY-MON.-YR.)	TIME: (24 HR CLOCK)	SHEET No.:
17-2099	R. E. GINNA	13 FEB 88	0841	250017

EXAMINER: (SIGNATURE) [signature] / [signature]

EXAMINER: (OPERATOR) J. INGAMELLS

SNT LEVEL	PROCEDURE	INSTRUMENT SONIC MARK	SERIAL No.:	EXAMINATION AREA (S):
II / III	No. 800-57	I ☒ II ☐ III ☐	07010E	R.P.V. CLOSURE HEAD - C.R.D. HOUSING - #32 (M)
SNT LEVEL I	REV. 2 DEV. 4	COUPLANT: GLYCERINE ☑ WATER ☐ OTHER (SPECIFY)		" " " " " #16 (M)

SEARCH UNITS		
	0° (L.S.)	0° (ATT.)
BRAND	SERIAL NUMBER	
AEROTECH	D02607	D02607
SIZE	1/1 PC	1/1 PC
NOMINAL FREQ. (MHz)	2.25	2.25
INSTRUMENT SETTINGS		
REJECT	0	0
DEC:	N/A	N/A
FREQUENCY	2	2
DELAY	140-1	140-1
MATL. CAL:	106	106
RANGE	1	2
DAMPING:	MIN	MIN
REP RATE	3K	3K
VIDEO	NORM	NORM
FILTER:	HI	HI
JACK USED:	R & T	R & T
MODE OF TRANS	THRU	THRU

REFERENCE BLK. No.: SS-DC-34

CALIBRATION VERIFICATION

TIME	1141	FINAL				
INITIALS	(M)					
TIME						
INITIALS						

10 SCREEN DIVISIONS = 1 INCHES OF METAL

MODE: LONGITUDINAL

LONGITUDINAL ATTENUATION

BASIC CALIBRATION SS SIDE
BLOCK No. CRD-SS/IN-.656-28 REG

1 ST ECHO 95 dB 6 LINES OF AMPLITUDE
2 ND ECHO 104 dB 6 LINES OF AMPLITUDE
Δ dB 9 (2 ND ECHO - 1 ST ECHO)

BASIC CALIBRATION INC SIDE
BLOCK No. CRD-SS/IN-.656-28 REG

1 ST ECHO 94 dB 6 LINES OF AMPLITUDE
2 ND ECHO 103 dB 6 LINES OF AMPLITUDE
Δ dB 9 (2 ND ECHO - 1 ST ECHO)

REMARKS:

CABLE TYPE N/A
RG 174 ☐
RG 62 ☐
LENGTH ____ IN.
OTHER ____

BASIC CALIBRATION BLOCK No. N/A

1 ST ECHO ____ dB ____ LINES OF AMPLITUDE
2 ND ECHO ____ dB ____ LINES OF AMPLITUDE
Δ dB ____ (2 ND ECHO - 1 ST ECHO)

REVIEWED BY	SNT LEVEL:	DATE:
[signature] Minor	II	13 Feb 88

SwRI FORM No NDTR 17-25 (REV. 7-10-80)

001814 001813

RGE

Sheet # 88001814

MATERIALS ENGINEERING AND INSPECTION SERVICES
RG&E EXAMINATION SUMMARY RECORD

45-13

Examination for: ISI: X Maint: _____ Other: _____

Site: GINNA STATION System: REACTOR PRESSURE VESSEL

ID: DRIVE #16 Description: CONTROL ROD DRIVE HOUSING

Exam Type	Exam Rec. #	Examiner	Date	Results: No Rec	Results: Insig	Results: Geom	Results: Other	Results: Rej	Remarks
PT	110009	MWK	2/13/88	X					
UTOL	180021	MWK	2/13/88	X					
UT45	890042	MWK	2/13/88	X					
UT45T	890042	MWK	2/13/88	X					

22.2
JAK 2-18-88

Examined By: JR Ingarella Level II Date: 2/15/88

Reviewed By: [signature] Level III Date: 2/15/88 TWJS

Sw.R.I. LIQUID PENETRANT EXAMINATION RECORD

PROJECT NO.	SITE:	DATE: (DAY-MON.-YR.)	W$_o$ LOCATION:	SHEET NO.:
17-2099	R. E. GINNA	13 FEB 88	FUSION LINE SS SIDE	110009
EXAMINATION AREA: (SYSTEM/COMPONENT)	**LINE/SUBASSEMBLY (IDENTIFICATION)**		**L$_o$ LOCATION:**	**WELD TYPE: (-FLOW→)**
R.P.V. CLOSURE HEAD	C.R.D. HOUSING 16		IN LINE WITH ℄ OF BOLT HOLES	CRD HOUSING

EXAMINER:	SNT LEVEL	PROCEDURE	SURFACE TEMPERATURE:	THERMOMETER SERIAL NUMBER
M. KLEINJAN	II	NO. 200-1 REV. 68 DEV. 3	76 °F	SWRI 159
EXAMINER:	**SNT LEVEL**		**SURFACE FINISH:**	**WELD LENGTH**
VIC MORTON / J. INGAMELLS	II / II		MACHINED	21 3/4"

PRE CLEANER		PENETRANT		REMOVER		DEVELOPER	
BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX	BRAND:	MAGNAFLUX
TYPE:	SKC-S	TYPE:	SKL-HF/S	TYPE:	SKC-S	TYPE:	SKD-S
BATCH NO.:	87H067	BATCH NO.:	84L058	BATCH NO.:	87H067	BATCH NO.:	87K004
CLEANING COMPLETED	1010	TIME APPLIED:	~~1015~~ 1021	REMOVAL COMPLETED	1036	TIME APPLIED:	1046
		TIME REMOVED	1031			TIME READ:	1053

IND. NO.	L	W	LOCATION UP OR DOWN STREAM	TYPE ROUND OR LINEAR	SIZE DIA. OR LENGTH	REMARKS	INI.
						NO RECORDABLE INDICATIONS	(illegible)

EXAMINATION AREA LIMITATION (IF NONE, SO STATE):

NONE (illegible)

REVIEWED BY:	SNT LEVEL:	DATE:	PAGE 1 OF 1
C. J. N. Minor	II	13 Feb 88	

FORM NO. Sw.R.I NDTR 17-11 (REV. 1-3-79)

001814

Sw. R.I. STRAIGHT BEAM LAMINATION EXAMINATION RECORD

PROJECT No.	SITE:	DATE: (DAY – MON. – YR.)	TIME: (24-HR. CLOCK)	SHEET No.
17-2099	R. E. GINNA	13 FEB 88	SHEET STARTED 1100 / SHEET ENDED 1105	180027

EXAMINATION AREA: (SYSTEM / COMPONENT)	(LINE / SUBASSEMBLY)	(IDENTIFICATION)	L_o LOCATION	W_o LOCATION
R.P.V. CLOSURE HEAD	C.R.D. HOUSING	16	IN LINE WITH ℄ OF BOLT HOLES.	FUSION LINE S.S. SIDE

EXAMINER:	SNT LEVEL	PROCEDURE	CALIBRATION SHEET (S)	MEASURED THICKNESS @ UP	MEASURED THICKNESS @ ℄	MEASURED THICKNESS @ DOWN	CROWN HEIGHT	ATTENUATION @ UP	ATTENUATION @ DOWN	WELD TYPE (–FLOW→)
M. KLEINJAN / VIC MORTON	II II	No. 800-57 REV 4 REV 2	250017	S.S. .66"	.66"	INC. .66"	FLUSH	S.S. 8 DB	INC. 6 DB	C.R.D. HOUSING
EXAMINER: J. INGAMELLS	SNT LEVEL: IT						CROWN WIDTH: 3/4"			WELD LENGTH: 21 3/4"

IND No.	% LOSS OF BW	IND AMP % F.S.	POSITION 1 L1	W1	W2	MP	POSITION L	W1	W2	MP	POSITION L	W1	W2	MP	POSITION 2 L2	W1	W2	MP	SEARCH UNIT LOCATION	REMARKS	INI.
					NO RECORDABLE		INDICATIONS												SS SIDE INC. SIDE		VA

REMARKS:

EXAMINATION AREA LIMITATIONS: (IF NONE, SO STATE):

NONE VA

REVIEWED BY:	SNT LEVEL:	DATE	PAGE 1 OF 1
Minor	II	13 Feb 88	

FORM No. Sw.R.I. NDTR 17-18 (REV. 7-31-75)

001814

S W R I MANUAL ULTRASONIC EXAMINATION RECORD

PROJECT No. 17-2099	SITE R. E. GINNA	DATE: (DAY- MON.- YR) 13 FEB 88	TIME: (24 HR CLK) EXAM STARTED 1115 / EXAM ENDED 1148	SHEET No. 890042
EXAMINATION AREA(SYST. / COMP) R.P.V. CLOSURE HEAD	(LINE /SUBASSEMBLY) C.R.D. HOUSING	(IDENTIFICATION) 16	L_o LOCATION IN LINE WITH ℄ OF STUD HOLES	W_o LOCATION FUSION LINE S.S. SIDE
EXAMINER M. KLEINJAN / VIC MORTON	SNT LEVEL II / III	PROCEDURE No. 800-57 REV. 2 DEV. 4	CALIBRATION SHEET(S) 190033	ANGLE USED 45° / N/A °
EXAMINER J. INGAMELLS	SNT LEVEL II		SCANNING dB 11/70 * / 4/80 *	WELD TYPE C.R.D. HOUSING
				WELD LENGTH 21 1/4"
				EXAM SURFACE TEMPERATURE. N/A °F

IND No.	% OF DAC MAX	W MAX W	W MAX MP	L_1 50% DAC	L_1 100% DAC	L MAX	L_2 100% DAC	L_2 50% DAC	SEARCH UNIT LOC.	SEARCH UNIT ANGLE	DAMPS (IF YES, EXPLAIN)	REMARKS	INI.
		NO RECORDABLE INDICATIONS							SS SIDE INC. SIDE	45°			(VM)
		NO RECORDABLE INDICATIONS							ON WELD S.S. SIDE INC. SIDE	45° T		CW/CCW	(VM)
		NO RECORDABLE INDICATIONS							S.S. SIDE INC. SIDE	45° TAN		CW/CCW	(VM)

REMARKS * + 6DB SWITCH (VM)

EXAMINATION AREA LIMITATION (IF NONE, SO STATE

NONE (VM)

REVIEWED BY	SNT LEVEL	DATE	CONTINUED ON SHEET	
Minor	II	13 Feb 88	N/A	PAGE 1 OF 1

SWRI FORM No. NDTR 17-89 (05-04-82)

001814

SwRI SONIC INSTRUMENT CALIBRATION RECORD

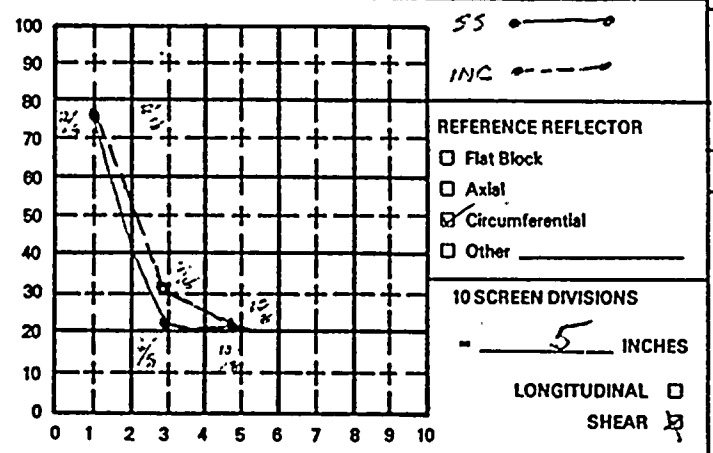
PROJECT NO.	SITE	DATE (DAY-MO-YR)	TIME (24 HR. CLOCK)	SHEET NO.
17-2099	R. E. GINNA	13 FEB 88	0706	130.33

1) EXAMINER (SIGNATURE)	SNT LEVEL	PROCEDURE	INSTRUMENT SONIC MARK	SERIAL NO.
Mike Klingerman / Will Kline	II / III	No. 830-57	☒ I ☐ II ☐ III	01114E
2) EXAMINER T. INCAMELLS	SNT LEVEL II	Rev. 2 Dev. 4	COUPLANT ☒ Glycerine ☐ Water ☐ Other (Specify)	

SEARCH UNITS		
NOMINAL ANGLE	45°	N/A
MEASURED ANGLE	44°	N/A
BRAND	SERIAL NUMBER(S)	
SWRT	507	N/A
SIZE	3/4 IMD	
FREQUENCY (MHZ)	1.5	

INSTRUMENT SETTINGS				
REJECT	0		N/A	
DEC	N/A			
FINE dB	118 **	4 *		
COARSE dB	70	40		
6 dB SWITCH	UP			
14 dB SWITCH	UP			
FREQUENCY	1			
DELAY	136-1			
MATL. CAL.	314			
RANGE	5			
DAMPING	MIN			
REP. RATE	3K			
FILTER	HI			
VIDEO	NORM			
TRAN. MODE	NORMAL			
JACK USED	R			
-6 % +6 dB =	40%	80%	%	%
METHOD: PRIMARY	6dB SWITCH			
SECONDARY	6dB SWITCH			
REVIEWED BY:				

REFERENCE BLOCK S/N: SS-DC-34		
NOMINAL ANGLE	N/A	N/A
SIGNAL DISTANCE IN INCHES		
SCREEN DISTANCE IN INCHES	✓	✓



REFERENCE REFLECTOR
- ☐ Flat Block
- ☐ Axial
- ☑ Circumferential
- ☐ Other

10 SCREEN DIVISIONS = 5 INCHES

LONGITUDINAL ☐ SHEAR ☒

CALIBRATION VERIFICATION						
TIME	1146	F I N A L				
N/A ☐ TEMPERATURE						
INITIALS	WH					

ADDITIONAL INFORMATION

AMPLITUDE DETERMINATION 5/8 VEE-PATH

45°	60°
3/8 N dB / % FSH	3/8 N dB / % FSH
5/8 dB A % FSH	5/8 dB A % FSH
Δ dB	Δ dB

CABLE TYPE		INITIAL CAL. BLOCK TEMP. N/A °F
N/A	N/A	
RG 62 ☐ RG 174 ☐	RG 62 ☐ RG 174 ☐	PYROMETER S/N: N/A
Other:	Other:	INST. LINEARITY SHEET No.: ~~N/A~~
Length: in.	Length: in.	BEAM SPREAD SHEET No(s).: ~~N/A~~

BASIC CALIBRATION BLOCK NO. CRD-SS-IN-.656-38-PEG

EXAMINATION AREA:

REMARKS: CALIBRATION REFLECTORS HAVE BEEN VERIFIED AT SCANNING SPEED (WH)
(*) INCONEL SIDE (WH)
(**) STAINLESS STEEL SIDE (WH)

R.P.V. CLOSURE HEAD - C.R.D. HOUSING - #32 (WH)
" " " " " #16 (WH)

SNT LEVEL: II DATE: 13 Feb 88

SwRI FORM No. NDTR 17-19 (Rev. 12-1-83)

001814 001813

Sw.R.I. SONIC INSTRUMENT CALIBRATION RECORD FOR ATTENUATION/LAMINATION EXAMINATION

PROJECT No.:	SITE:	DATE: (DAY-MON.-YR.)	TIME: (24 HR CLOCK)	SHEET No.:
17-2099	R. E. GINNA	13 FEB 88	0841	250017

EXAMINER: (SIGNATURE) [signature] / [signature]

EXAMINER: (OPERATOR) J. INGAMELLS

SNT LEVEL II / III — PROCEDURE No. 80C-57 REV. 2 DEV. 4

SNT LEVEL I

INSTRUMENT SONIC MARK I ☒ II ☐ III ☐

SERIAL No.: 07C1CE

COUPLANT: GLYCERINE ☑ WATER ☐ OTHER (SPECIFY) _____

EXAMINATION AREA (S): R.P.V. CLOSURE HEAD - C.R.D. HOUSING - #32 (IN)

" " " " " #16 (IN)

REFERENCE BLK. No.: 55-DC-34

SEARCH UNITS	0° (L.S.)	0° (ATT.)
BRAND	AEROTECH	AEROTECH
SERIAL NUMBER	D02607	D02607
SIZE	½I PC	½I PC
NOMINAL FREQ. (MHz)	2.25	2.25

CALIBRATION VERIFICATION

TIME	1141	FINAL				
INITIALS	(IN)					
TIME						
INITIALS						

INSTRUMENT SETTINGS

REJECT	0	0
DEC:	N/A	N/A
FREQUENCY	2	2
DELAY	140-1	140-1
MATL. CAL:	106	106
RANGE	1	2
DAMPING:	MIN	MIN
REP RATE	3K	3K
VIDEO	NORM	VERT
FILTER:	HI	HI
JACK USED:	R&T	R&T
MODE OF TRANS	THRU	THRU

10 SCREEN DIVISIONS = 1 INCHES OF METAL

MODE: LONGITUDINAL

LONGITUDINAL ATTENUATION

BASIC CALIBRATION 55 SIDE
BLOCK No. CRD-55/IN-.656-28 REG

1 ST ECHO 95 dB 6 LINES OF AMPLITUDE
2 ND ECHO 104 dB 6 LINES OF AMPLITUDE
Δ dB 9 (2 ND ECHO - 1 ST ECHO)

BASIC CALIBRATION INC SIDE
BLOCK No. CRD-55/IN-.656-28 REG

1 ST ECHO 94 dB 6 LINES OF AMPLITUDE
2 ND ECHO 103 dB 6 LINES OF AMPLITUDE
Δ dB 9 (2 ND ECHO - 1 ST ECHO)

REMARKS:

CABLE TYPE N/A
RG 174 ☐
RG 62 ☐
LENGTH ____ IN.
OTHER ____

BASIC CALIBRATION BLOCK No. N/A

1 ST ECHO ____ dB ____ LINES OF AMPLITUDE
2 ND ECHO ____ dB ____ LINES OF AMPLITUDE
Δ dB ____ (2 ND ECHO - 1 ST ECHO)

REVIEWED BY [signature] MARK

SNT LEVEL: II

DATE: 13 Feb 88

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Enclosure 4
Ginna Strategic Plan

The purpose of the Ginna Strategic plan was to provide crack initiation and growth predictions for Ginna CRDM nozzles and combine the results with a an economic analyses which could be used as the basis for addressing the CRDM Alloy 600 issue at Ginna Station.

The Strategic plan uses a combination of Finite element modeling (ANSYS 5.0), Statistical Analysis and a computer program which evaluates alternative strategies to address the CRDM issue, CIRSE (CRDM Nozzle Inspection and Repair Strategic Evaluation).

The finite elements analysis utilizes Ginna specific data supplied by B&W Nuclear Technologies, in 1994. This included Ginna specific list of materials, material certifications, list of welds, welds data sheets; procedure qualifications, weld wire certifications, applicable fabrication drawings, as-built drawings and contract variations.

The statistical analysis using a Weibull distribution approach is performed using the industry inspection data provided by past inspection experience, including the sample plant inspection which included the same heats of material from the Ginna vessel head. Differences in material susceptibility, stress and temperature are addressed. Note that the analysis conservatively assumes a crack occurs in the sample plant inspected (which contained the same material heat numbers as Ginna) immediately following the inspection.

The CIRSE model utilizes the information developed in the finite element model, the statistical analysis and others to evaluate the alternative scenarios for responding to the issue of CRDM nozzle cracking. The program input and output are processed using EXCEL. The analysis approach consists of: establishing the input parameters, predicting crack initiation and growth at each planned refueling outage, assessing the total number of nozzles requiring corrective action at each refueling outage, calculating the cost of any planned inspections and remedial measures plus any required repairs at each refueling outage. Present worth of the future costs are also tabulated.