

1³

The second

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION FACIL:50- AUTH.NAM	NBR:950 220 Nir E)3210177 ne Mile Po AUTHOR	DOC. oint Nu AFFILI	DATE: 9 clear 9 ATION	95/03/13 NOTARIZED Station, Unit 1, Nia	: YES agara Powe	DOCKET # 05000220
TERRY,C.D RECIP.NA). ME	Niagara RECIPII	Mohawk ENT AFF	Power ILIATI	Corp. N		Р
	Cash-mit-	Docume	ent Con	trol B	ranch (Document Cont	trol Desk)	R
SUBJECT:	& certa Shrouds	in vertions in BWRs	cal wel	ds,per	GL 94-03, "IGSCC o	f Core	9
DISTRIBUT TITLE: GL	NON COE 94-03	DE: A018D Intergram	COPIE nular S	S RECE: tress (IVED:LTR / ENCL / Corrosion Cracking (SIZE: 30 of Core Shro	uds in B O
NOTES:							R
P	RECIE ID COE M/BRINE	PIENT DE/NAME MAN,D.	COPI LTTR 1	ES ENCL 1	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	I
INTERNAL: F	ILE CEN	ITER 01	1	1	NRR/DE/EMCB	1 1	Т
N N	IRR/DE/E IRR/DSSA	EMEB A/SRXB	1 1	1 1	NRR/DOPS/OECB	1 1 1	Y
EXTERNAL: N	IRC PDR		1	1			1
						_	
v						·	D
							0
							С
							U
					`		Μ
					•		E
							Ν
							Т
NOTE TO PLE DES DIS	O ALL "RID ASE HELP SK, ROOM P TRIBUTION	DS" RECIPIENT US TO REDUC 1-37 (EXT: 504- N LISTS FOR I	TS: CE WASTE! 2083) TO E DOCUMENT	CONTACT LIMINATE I'S YOU DO	T THE DOCUMENT CONTROL 2 YOUR NAME FROM DN'T NEED!		,

TOTAL NUMBER OF COPIES REQUIRED: LTTR 7 ENCL

.

_____ Ş į ì Ý ¥., ž Ç Ċ ۰. ب , í . • • * 5

,

-

• . . . **,** ,

•

•

5

, A





NIAGARA MOHAWK POWER CORPORATION/NINE MILE POINT NUCLEAR STATION, P.O. BOX 63, LYCOMING, N.Y.13093 /TEL. (315) 349-7263 FAX (315) 349-4753

CARL D. TERRY Vice President Nuclear Engineering March 13, 1995 NMP1L 0916

U.S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, DC 20555

> RE: Nine Mile Point Unit 1 Docket No. 50-220 DPR-63

Subject: Generic Letter 94-03, "Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors" (TAC No. M90102)

Gentlemen:

Generic Letter 94-03, "Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors," in part, requested that licensees perform inspections of the core shrouds in their plants and/or perform repairs. Reporting Requirement No. 3 requested that licensees provide the results of the inspections performed within 30 days of completing the inspections. Niagara Mohawk has completed its required inspections of the Nine Mile Point Unit 1 core shroud welds H8, H9 and certain vertical welds. Specifically, inspections of the H8 weld consisted of an ultrasonic examination (UT) and, because of interferences, supplemental enhanced visual inspections (EVT) for those areas not accessible with the UT equipment. In support of the core shroud H1 through H7 weld repair (i.e., installation of tie rods), Niagara Mohawk performed EVT inspections of the shroud H9 weld and certain vertical welds. All inspections were performed and evaluated in accordance with the BWRVIP criteria provided by "Core Shroud NDE Uncertainty and Procedure Standard," dated November 21, 1994, except where indicated. The purpose of this letter is to submit the results of these inspections.

Attachment 1 to this letter provides a summary of the weld inspections. Attachment 2 provides the H8 weld UT inspection data package which includes details of the scans performed, inspection findings, scan plans, and a description of interferences where they limited O.D. tracker accessibility. Attachment 3 provides the H8 weld and vertical weld EVT data sheets which includes details of the areas inspected visually and associated inspection findings. Attachment 4 contains the EVT data sheet of the H9 weld. Attachment 5 provides the basis for the welds selected and inspection scope to support the tie rod repair.

Very truly yours,

C. D. Terry Vice President - Nuclear Engineering





e S

• .

•

ц.,

*

•

Page 2

3

-яў 6 -х

> CDT/JMT/lmc Attachments

Regional Administrator, Region I
Mr. L. B. Marsh, Director, Project Directorate I-1, NRR
Mr. D. S. Brinkman, Senior Project Manager, NRR
Mr. B. S. Norris, Senior Resident Inspector
Records Management

. . • • • . . •

UNITED STATES NUCLEAR REGULATORY COMMISSION

))

)

)

)

In the Matter of Niagara Mohawk Power Corporation Nine Mile Point Unit 1

£).,

Docket No. 50-220

C. D. Terry, being duly sworn, states that he is Vice President - Nuclear Engineering of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the document attached hereto; and that the document is true and correct to the best of his knowledge, information and belief.

C. D. Terry Vice President - Nuclear Engineering

Subscribed and sworn before me, in and for the State of New York and the County of (Muneo), this $\frac{9}{10}$ day of $\frac{14000}{1000}$, 1995

NOTARY PUBLIC # 01 8050 3825 2 Hours 1/23/97

ب ب

· · ·

. .

ATTACHMENT 1

INSPECTION SUMMARY

Executive Summary

6 0

Niagara Mohawk Power Corporation (NMPC) has completed its required inspections of the Nine Mile Point Unit 1 core shroud welds H8, H9 and certain vertical welds. Specifically, inspections of the H8 weld consisted of an ultrasonic examination (UT) and, because of interferences, supplemental enhanced visual inspections (EVT) for those areas not accessible with the UT equipment. In support of the core shroud H1 through H7 weld repair (i.e., installation of tie rods), Niagara Mohawk performed EVT inspections of the shroud H9 weld and vertical welds.

The H8 inspection successfully examined approximately 45% cumulatively of the weld circumference by volumetric means. The inspection accessed all four quadrants of the weld circumference and therefore provided a comprehensive, distributed, sampling of the weld condition. One localized indication was found by UT and has been determined to be structurally not significant. The visual inspection examined an additional 27% cumulatively of the weld circumference. The visual inspection was in two sectors, one in each half of the weld circumference. The inspection found five minor indications grouped in a 20 degree sector. The cumulative length of indications seen visually is approximately 3 inches of the total of 160 inches of weld circumference inspected visually. Utilizing conservative assumptions and uncertainty factors as described below, NMPC has evaluated these indications as meeting the screening criteria. Based on the inspection results, NMPC has concluded that the H8 weld is structurally sound. NMPC will visually reinspect the indications found by EVT at the next refueling outage to confirm the continued integrity of the weld until crack growth predictions are confirmed and continued inspection is not warranted. The EVT inspections of the top surface of the H9 weld and vertical welds V9, V10, and V11 found no recordable indications and therefore, support the installation of the H1 through H7 weld repair.

NMPC will factor these inspections into the ongoing BWRVIP work on shroud weld reinspection requirements and their applicability to NMP1. Once the BWRVIP work on weld reinspection is complete, NMPC will establish plans for reinspection.

Inspection Limitations H8

The cumulative inspection coverage by UT examination was 45.32% (260.59 inches) of the weld circumference. This was calculated based on the total coverage achieved by any one of the three transducers on the inspection tool (O.D. tracker). Coverage based on all three transducers passing any given point on the weld circumference was 37.93% (218.11 inches). Attachment 2 includes a coverage plot which describes the volume of support plate, weldment, and shroud support ring interrogated by the combination of UT beams. Areas not

र्षे इ . .

. . .

.

•

inspected by the beams have not been included in the evaluation for structural integrity. Areas below the lower 45 degree shear wave at the bottom of the shroud support ring, on the lower weld underside radius, and above the upper OD creeping wave, are evaluated as if cracked. NRC accepted crack growth rates applied to these theoretical cracks result in a margin of approximately 1.90 inches remaining within the thickness of the shroud support ring after one operating cycle. The limitations on the extent of UT coverage by invessel interferences are also documented in Attachment 2.

The cumulative inspection coverage by EVT examination was 27% of the weld circumference (160 inches). Approximately 64 inches of EVT inspected the weld and both upper and lower heat affected zone (HAZs). Approximately 96 inches of the EVT inspected the weld and the upper HAZ only.

Use of the 45 degree shear wave (S), 60 degree refracted longitudinal wave (RL) and OD creeping wave transducers was qualified to the Core Shroud NDE Uncertainty and Procedure Standard by the inspection contractor on BWRVIP mock-up BWRVIP-A. Although the mock-up differs in that the plate to ring angle is different, this variable is considered not relevant in terms of indication detection and sizing uncertainty.

The H8 weld is bi-metallic whereas the BWRVIP-A mock-up is comprised of Type 304 plate material with Type 308 weldment. The materials are acoustically similar such that this variable is considered not relevant. Examination of bi-metallic welds, directly analogous to the H8 bi-metallic configuration, utilizing 45S and 60RL UT beams, is common industry practice and is well understood. There is limited industry experience in use of creeping waves on Alloy 600 and Inconel 182 materials, although the acoustic similarity of the materials suggests that this variable supports the creeping wave qualification.

H9/Vertical Welds

θi

In support of the core shroud H1 through H7 weld repair by installation of tie rods, NMPC planned shroud weld EVT inspections as follows; the top surface of the H9 weld at four (4) 26 inch long locations, a six inch section each of the vertical seam welds V9, V10, V11, V12 as they intersect weld H5, from the inside surface, and the ring segment welds V5, V6 from the top surface of the plate ring. The 26 inch length of the H9 weld inspection was based on the weld adjacent to the two toggles (12 inches) plus an additional 7 inches on each side of the toggles. The additional 7 inches provides sufficient length for stress attenuation from the tie rods. The 6 inch length of the vertical weld inspections was determined adequate considering the effects of radiation on residual stresses and the fact that vertical welds have lower residual stresses as compared to horizontal welds.

The inspection scope for vertical welds V9, V10, and V11 was completed as planned. Inspection personnel were unable to locate the V12 weld, nor either the V5 or V6 welds. Considerable effort was expended in attempting to locate these welds. The top guide support ring was machined following fabrication and welding. Because of this post fabrication machining, inspectors were unable to locate the plate ring welds V5 and V6. The as built weld map appears to be accurate because welds V9, V10 and V11 were found at the

. ۶ ۲ ۰

۰ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ ۲ •

۲. .

. .

· · · ·

approximate locations specified. The inspectors looked for evidence of V5 and V6 at the 0 degrees and 180 degrees azimuths as indicated on the weld map. The inside surface and outside surface of the edges of the ring at 0 degrees and 180 degrees were also examined in an attempt to locate the welds. The top ring surface was cleaned and inspected over more than 180 degrees with particular attention directed at the expected locations of V5 and V6. No degraded condition was seen. NMPC has concluded that examinations were conducted at the appropriate locations and that no evidence of cracking was seen. Concerning the V12 weld, inspections of the other vertical welds (V9, V10, and V11) were completed and no indications found. Niagara Mohawk considers this a representative sample of the NMP1 shroud vertical welds. Accordingly, no additional efforts were made to locate V12. Attachment 5 provides the basis for the welds selected and inspection scope required to support the tie rod repair.

<u>Inspection Findings</u> <u>H8</u>

5 5

One recordable indication was found by UT on the underside of the shroud support cone. The indication is located at the presumed interface of the lower weld and support plate base material. The indication is sized as 0.5 inches deep, 3.12 inches long and is located at nominally 127 degrees azimuth. Applying the measurement uncertainty provided by the Core Shroud NDE Uncertainty and Procedure Standard for UT sizing, the indication, when evaluated by NMPC was assumed to be 0.65 inches deep and 3.92 inches in length. NMPC's screening criteria as outlined in our submittal dated February 14, 1995, is met with significant margin. An evaluation of the probable root cause of the indication presuming it to be IGSCC has been performed. The evaluation concluded that: such cracking is consistent with laboratory and field experience, that the initiation site is associated with the Alloy 182 weld metal with propagation into the Alloy 600 conical support, and that the local initiator was probably a weld lack of fusion site. The evaluation further concludes that, once initiated, the early crack growth through these materials was probably significantly higher than present, due to early plant water conductivity. Based on the current plant water conductivity, crack growth is assessed as much slower. The indication as found is consistent with this understanding of initiation and plant history. Based on this evaluation, and NMPC's acceptance criteria, the indication is considered to be not structurally significant.

Five recordable indications were found by enhanced visual inspection on the vertical surface of the shroud support ring. The indications may be in the upper HAZ of H8 or the lower HAZ of H7 and exhibit the characteristics of tight IGSCC cracking. The indications range in length from approximately 0.5 inches to 0.75 inches. Lengths were estimated by the examiner based on local benchmarks such as the weld crown width. Four of the indications are grouped in one region between azimuths 348 degrees through 356 degrees. One indication is located at azimuth 5 degrees. Applying the measurement uncertainty provided by the above referenced standard for visual inspection measurement, NMPC has conservatively evaluated the four indications grouped together as one flaw. The resultant assumed flaw, plus the measurement uncertainty value of 1.25 inches added to each end, results in an assumed total flaw length of 15.3 inches. The referenced uncertainty standard does not address short individual indications in terms of length measurement uncertainty.

. ×

.

.

ŧ

x

۰. ۲

ı

н н **н**

For the purposes of evaluating the lone indication at azimuth 5 degrees, NMPC assumed an indication length of 1.0 inch. The indications as described have been evaluated and found to meet NMPC's screening criteria with significant margin. An evaluation of probable root cause has been conducted for these indications. The indications are surface connected on 'furnace sensitized stainless Type 304 material. As discussed in earlier submittals, IGSCC is not unexpected in this material. The indications may be a result of residual fit-up or fabrication stresses in the H7 weld HAZ or localized cold work of the forged ring adjacent to the H8 weld. Either initiating condition would be consistent with the indications as found. The IGSCC might be expected to arrest or propagate depending on the residual stresses in the area and plant water chemistry. Crack propagation utilizing NRC accepted values will result in no significant reduction in the structural margin through several cycles. NMPC will visually reinspect the indications at the next refueling outage to confirm that the assumptions in the evaluation with regard to postulated crack growth remain bounding.

<u>H9/Vertical</u>

9.

The EVT inspections of the top surface of the H9 weld and vertical welds V9, V10, and V11 found no recordable indications. Attachments 3 and 4 contain the examination data sheets documenting these inspections. As previously indicated, inspections of the H9 weld involved a top surface examination at four locations of at least 26 inches. A basis for the 26 inch length was also provided. However, because of a field installation error that resulted in a mislocated tie rod, Niagara Mohawk will re-evaluate the inspection performed at this tie rod to determine its adequacy. The results of this assessment will be submitted to the Commission.

·

, ,

•

<i>%</i>		н 1 1 - В. С. В. 1 - Б. 2 - С. 2 - Б. 2			аттасние	NT 2	-				
	B		GEA	luclear	Energy	EXAMIN	IATION	SUMMAR	Y SHEE	T	REPORT NO.: R-001
	PROJECT:	NMP-1 S	HROUI)		PROCEDURE:	_UT-NMP-5	503V3	. REV:_0	. FRF	R: <u>NMP-2</u> N/A
	SYSTEM:	HROUD							REV:_N/A	, FRF	2: <u>N/A</u>
	WELD NO .:.	<u>H-8</u>									N/A
	CONFIGUR	ATION:_SU	IPPORT	RING TO CO	DNESKIRT		<u>N/A</u>		REV:N/A	, FRF	2:N/A N/A N/A
	EXAMINER:	CHARLES	VANHEC	KE. LEVE	L:				- 10		
	EXAMINER:	_MARK SEE	BY	LEVE	:L:_II						
	EXAMINER:	_N/A	•	LEVE	L:_N/A	WELD TYPE:				THEF	R_N/A
ľ	DATA SHEET	 NO.(S): 	2-001, D-0	02. D-003.	D-004	CAL SHEET	NO.(S):	C-001, C-002,	C-003		
	During the ultrason system utilizing a 4 This indication has	nic examination 45° shear way s the following	on of the a ve, OD cro g paramet	above refere eeping wave ers:	enced weld, o e and 60° refr	I ne (1) indication a acted longitudinal	issociated v (RL) wave	vith IGSCC was search units.	recorded by	the S	SMART 2000
	Indication Number	*Distance fr Vessel '0'	rom '	Total ['] Length	Flaw Depth	Remaining Ligament	Side of Weld	Surface Connection	Flaw Type	S.	earch Jnit
	1).	126.92 * / 20	3.1" 1.	95*/3.12*	0.50"	1.0"	Lower	ID	IGSCC	45° SI OD	HR, 60°RL CR
	*Measurement	in degrees / li	nches			-					
	The 45° shear way abov e .	/e search unit	t did re∞ı	rd non-relev	ant Indication	s, weld discontinu	ities and we	eld interface alo	ng with the I	ndicat	ion referenced
ŀ	The 60° RL search	n unit did reco	ord non-re	levant Indica	ations and we	ld interface along	with the inc	lication reference	ed above.		
.	The OD creeping v	wave search u	unit did re	cord non-re	levant Indicat	ions along with th	e shear con	nponent to the i	ndication ref	erence	ed above.
- ^c	Circumferential (L)	dimensions (were reco	rded in ang	ular units. Th	e conversion fact	or for linear	units is 1,60 lnc	ches per deg	ree,	
t	This exam was lim lowncomers, core he scan plan.	ited to the are spray billows	eas scann s and vibr	ied due to o ation instrum	bstructions fro nentation test	om the guide rods brackets. For mo	s, shroud lift bre details s	ing lugs, specin ee drawings NM	ven holders, AP-01-ROLL	core s , NMP	pray 2-01-TPVW and
1	Exam Area: Exami vere not examined	ined 13 lug se due to inacc	ets for a to cessibility,	otal area sca	inned of 163.	16*. Of the 163.1	6*, 136.56*	was interrogate	d by all tran	sduce	rs. 23 lug sets
											b i
										H	
						1					
	0							•			
ľ	Acon Et	up to	$-\pi$	7-72-94				1	·		
1	SUMMARY	BY L	EVEL	DATE	GE IN	IDEPENDENT REV	1EW 2	DATE -28-95	DAC	e. 1	05: 17
Ľ	GE REVIEWED	BY L	EVEL	DATE		UTILITY REVIEW	- <u>-</u>	DATE			FORMUT-OUREY.4

۲ 5.5

بد ا

. •



:

PORM VT-13 REV. 1



. .

.

• • • • • • • • · ·



FORM UT-13 REV. 1

¢

. • •





· ·

,

4

.



ULTRASONIC SCAN DATA PRINT SHEET (AUTOMATED WITH Smart 2000)

1	90		^M			<u></u>		<u>ן</u> אפן אין
····· 8	50 70 50 50							Y <u>M</u> 66 ∆Y 16
4 3 10 1	10 30 10 10 10		Min	A A FAC	\	hytertyres,	<u>mannen manet</u>	w.
×	0.000		1/1		9.416	in	Half Path	A ₅ : 1261
122.	21131:Cs P1	XR	3.767] XM	4.929 AX	<u>1.162 i Z</u>	2.291 11	<u>0</u>	Y _R 127.
		<u>126.92</u> *						VM 129. ∆Y 1.
		_ <u>128.87°</u>	Total L Conver	ength 1.95° or 3 rsion Factor = 1	3.12" .60" per degr	9 0		
136.	75							
deg	0.000		ocated i	n the pla	ate mat	erial.	Half Path	
	Indicati	$\sin \#1$ is ic						
	Indicati	ion #1 is ic						
	Indicati	ion #1 is ic	Juliu					
	Indicati	ion #1 is k	Juliu					
	Indicati	ion #1 is ic						

`; ;

. ï

1



.

* • • • • • • •

t b L ^a ⊾ v ^a	⁶ ×	, × 5,			• •		1 1 0 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1		t tragge
	<u>)</u>	<u>GE</u> N	luclear	Energy		SH (AUTC	ROUD UL L MATED W	TRASONIC EXAMINATION DATA SHEET vith Smart 2000 OD Tracker)
SITE:_ UNIT:_ PROJE	NINE MIL 1 CT NO.:	E POINT		- PROCED - REVISIO	₩1 DURE NO.: N NO.:Q()	UT-NMP- ERR#NMI	503V3	REPORT NO.: <u>R-001</u> DATA SHEET NO.: <u>D-001</u> CALIBRATION SHEET NO.: <u>C-001, C-</u> <u>C-003</u>	.002
Weld ID:		<u>H-8</u>		Exam Su	rface:	QI	<u> </u>	Crown Width:1.5" (Appro	x)
Search I	Unit Separ	ation (From	nt To From	t): File Name	N/A	Calm	Wo Lo	cation:X-DUCER FRONT @ DNST	TOE
Set Up	Time	Unit Start:	Scanned	and Disk/Side:	Unit	dB	(See Legend)	Comments:	
Cyfinder		39.55			45° LKDN	N/A	N/A	NONE	
cw ccw Lua Sel #	11/109	45*			45° LKUP	41	C	-	
5,	_2/23/95_ Date	<u>38.21</u>	<u></u>		60° LKDN	N/A	N/A		·
Lug Side	MTS	26.90		D 04/A	60° LKUP	56	C		
	Examiners	ODCR	Index Arm		ODCR LKDN	N/A	N/A		
CW CCW			Start		OUCR LKOP	42	C		
ð Ö	<u>2332</u>	<u>46.05</u> 45•			45° LKDN	N/A	N/A	NONE	
cw ccw Lug Set #					45° LKUP	91		•	
5	 Date	<u>44.71</u> 60*	7.0	_ <u>H8043053</u> _	60° LKDN	NA	N/A		
Lug Side	MSS	43.39	6.5	D-04/A	60° LKUP	<u>20</u> N/A	<u> </u>		
	Examiner's	ODCR	Index Arm		COCR LKUP	42	KA		
Of the			Start			76	¥	······································	
	0018	<u> </u>			45° LKDN	N/A	N/A	NONE	
cwiccw Lua:Set≇					45° LKUP	41	Ç	-	
5	<u>2/24/95</u> Date	<u>51.21</u> 60*	2.0	_ <u>H8050055</u> _	EO+ LKDN	N/A	N/A		
Lug Side	MJJ	49 89	13.0	D-04/A	60° LKUP	56	C		
	Examiner's	ODCR	Index Arm		ODCR LKDN.	N/A	N/A		
CW CCW	IIIKIAIS		Start		ODCR LKUP	42	Ç	-	
	<u>1240</u>	73.11			45° LKDN	N/A	N/A	_ SPECIAL SETUP-CCW.CYLINDER.ON.CCV	V SIDE OF
cw ccw	TATIO	70			45° LKUP	41	F.C	CWLUG.	
8	<u>2/22/95</u> Date	71.77 60*	7.0		60° LKDN	N/A	N/A		
Lug Side	CVH	70 45	0.0	D-01/A	60° LKUP	56	Ç		
	Examiner's	ODCR	Index Arm			N/A	NA		
			Start		COCK LKOP				
0	ALIOKA II	JN GAIN:				EX	AMINA HON RE	ESULIS LEGEND:	
45° LKON	<u></u> 25	60° LKUP		A - NO RECO	RDABLE INDICA	TIONS	D - ACOUSTI	CINTERFACE G • WELD DISCON	MNUITY
45° LKUP	<u>N/A</u>	ODCR LKI	DN <u>N/A</u> JP <u>34</u>	B . NON-GEC	METRIC INDICA	TIONS	E - INSIDE SU	IRFACE GEOMETRY H - WELD CROWN	GEOMETR
05144				C - NON-REL	EVANT INDICATI	ONS	F - OUTSIDE:	SURFACE J - OTHER (SEE (COMMENT
KEMA	KKS: TE	MPERATI	IRE READ	ING OBTAIN	ED FROM CO	ONTROL	ROOM OF 103*	· · · · · · · · · · · · · · · · · · ·	
··				·····					
	<u>`</u>							·····	
charl		Jelo -		-22-95					
	ANNER		FVEL C	DATE	GEINDE	PENDEN	REVIEW	DATE	
Store	Edda	Jr. Ett	Ш г.	27-95				17 17	
GERE	EVIEWED B	Y L	EVEL	DATE	UTI	LITY REV	EW	DATE PAGE:OF:	FORMUT

,

• • •

.

. A

. .

	8	<u> </u>	luclear	Eлergy	(A	SH UTO	ROUD UL L MATED w	TRASON DATA SHE vith Smart	IC EXAMIN) ET 2000 OD TI	ATION racker)	
SITE:_ UNIT:_ PROJE Weld ID:	NINE_MIL ECT NO.: :	E POINT		PROCED REVISIO	URE NO.: <u>UT</u> N NO.: <u>0 (ER</u> face:	<u>NMP-</u> R#NM 0[503V3 P-2)	REPORT NO.: DATA SHEET CALIBRATION Crown N	R-001 No.:02 N SHEET NO.:0 Width:1	C-001, C-0 C-003 5" (Approx)	02
Position/ Set Up	Scan Time	Search Unit Start:	Total • Scanned	File Name and Disk/Side:	Search G Unit	Gain dB	Results: (See Legend)		Comments	<u>@_DAS1_1</u>	
Cyfinder W CCW Lug Set # Lug Side Dug Side	<u>1315</u> Time <u>2/22/95</u> Date <u>C.V.H</u> Examiner's	<u>79.61</u> 45* <u>78.27</u> 60* <u>76.95</u> ODCR	4.0 6.5 Index Arm	_H3077074_ D_01/A	45° LKDN 45° LKUP 60° LKDN 60° LKUP ODCR LKDN	NVA _41 NVA _56 NVA	N/A C N/A C N/A	_ <u>SPECIAL_SI</u> _ <u>CWLUG</u> 	TUP-CCW.CYLIND		<u>'SID</u>
Cyfander Cyfander Cw ccw Lug Set # 9 Lug Side	<u>1100</u> Time <u>2/22/95</u> Date <u>CVH</u> Examiner's	<u>83.11</u> 45* <u>81.77</u> 60* <u>80.45</u> ODCR	7.0	_H3080090_ D-01/A	45° LKDN 45° LKUP 60° LKUP 60° LKUP ODCR LKDN	-12 N/A N/A 56 N/A	N/A F.C N/A C N/A	NONE			
Cyfinder	Initials <u>1215</u> Time <u>2/22/95</u> Date <u>CVH</u> Examiner's Initials	<u>89.61</u> 45° <u>88.27</u> 60° <u>86.95</u> ODCR		H8087094_ D-01/A	45° LKDN	42 N/A 41 N/A \$6 N/A	C C C C N/A	NONE			
Cyfinder Dyfinder Dyfinder Cwr ccwr Lug Set # 10 Lug Side Cwr ccwr	1345 Time 2022/95 Date CVH Examiner's Initials	<u>93.86</u> 45* <u>92.52</u> 60* <u>91.20</u> ODCR		_H3091101_ D-01/A	45° LKDN 45° LKUP 60° LKUP 60° LKUP ODCR LKUP ODCR LKUP	 	N/A F.C N/A C	NONE	•		
C 45° LKDN 45° LKUP 60° LKDN		ON GAIN: 60° LKUP ODCR LKI ODCR LKI	48 DNN/A JP34	A - NO RECO B - NON-GEO C - NON-RELI	RDABLE INDICATIO METRIC INDICATIO EVANT INDICATION	EX EX MS NS IS	AMINATION RE D - Acoustia E - Inside Su F - Outside	ESULTS LEGEN CINTERFACE URFACE GEOMETR' SURFACE	ND: G - We Y H - WE J - OT	eld disconti LD crown g Her (See CC	ENUIT EOMI
		EMPERAT	URE REA	DING OBTAIL		NTROL	ROOM OF 103	<u>.</u>			
Clarks!	1. J.J.J.J.	4 T	Σ EVEL	22.95 DATE	GE INDEPE	ENDENT	REVIEW	DATE			

5.5

•

.

.

	1				11 T. (*	, *1			и	و - بر - بر	
C	ð	<u>GE</u> N	uclear	Energy		SH (AUTO	ROUD UL L MATED w	TRASC DATA S vith Sma	DNIC E HEET art 200	EXAMINATION 00 OD Tracker)	
SITE: UNIT:_ PROJE	_NINE MIL _1 CT NO.:	E POINT		PROCED	URE NO.: N NO.:0 (UT-NMP- ERR#NM	503V3 2.2)	REPORT N DATA SHE CALIBRAT	10.: <u>R</u> Et no.: Non Sh	001 _D-003 EET NO.:C-001, C-002, C-003	
Weld ID:	·	Н-8		Exam Sur	face:	0	<u> </u>	Crow	wn Width	1.5" (Approx)	
Search l	Unit Separ	ation (Froi	nt To Fron	i):	N/A		Wo Lo	cation:	<u>x-DUC</u>	ER FRONT @ DNST TOE	
Position/ Set Up	Scan Time	Search Unit Start:	Total * Scanned	File Name and Disk/Side:	Search Unit	Gain dB	Results: (See Legend)			Comments:	
Cylinder	<u>1415</u> Time	<u>_100.36</u> 45*		ę	45° LKDN 45° LKUP	N/A		_ NONE			
10 Lug Side	 Date K	<u>99.02</u> 60* <u>97.70</u>	4.0 10.81	_H8098104_	60° LKDN 60° LKUP ODCR LKDN	56 56	C	-	•		
	Examiners Initials	ODCR	Index Arm Start		ODCR LKUP	42	C	<u>- </u>			
Cylinder	<u>1450</u> Time <u>2/22/95</u>	103.86 45* 102.52	7.0	<u></u>	45* LKDN 45* LKUP 60* LKDN		N/A A N/A	NONE 			
	<u>CVR</u> Examiner's Initials	00" 101.20 ODCR	<u>4.31</u> Index Arm Start	D-02/A	60° LIKUP ODCR LIKDN ODCR LIKUP	56 N/A 42	C C	-			;
Cylinder	1524 Time 2/22/95	<u>110.36</u> 45*	4.0	<u>_H8108114_</u>	45° LKDN 45° LKUP 60° LKDN	N/A 41 N/A	N/A A N/A	NONE			
Lug Side	Date <u>CVR</u> Examiner's Initials	00° 107.70 ODCR	<u>10.81</u> Index Arm Start	D_02/A	60° LIKUP ODCR LIKDN ODCR LIKUP	56 IN/A '42	<u> </u>	-			
Cylinder	<u>1550</u> Time	<u>113.86</u> 45°			45° LKDN 45° LKUP	N/A	N/A C	NONE_			
Lug Side	 Date H	<u>112.52</u> 60* <u>111.20</u>	7.0 4.30	_H8111121_	60° LKDN 60° LKUP ODCR LKDN	N/A 56	N/A C N/A	-			
CW CCW	Initials		Index Arm Start		ODCR LKUP	42	C				
c	ALIBRATI	on gain:				EX	AMINATION R	ESULTS LE	GEND:		
45° LKDN 45° LKUP 60° LKDN		60° LKUP ODCR LKI ODCR LKI	<u>48</u> DN <u>N/A</u> UP <u>34</u>	A - NO RECO B - NON-GEO C - NON-REL	RDABLE INDICA METRIC INDICA EVANT INDICAT	ations ations fions	d - Acousti E - Inside S F - Outside	C INTERFACE URFACE GEON SURFACE	AETRY	G - WELD DISCONTINU H - WELD CROWN GEO J - OTHER (SEE COMJ	rty Metry Ments)
REMA	RKS: T	EMPERAT	URE REAL	ING OBTAIN	NED FROM	CONTROL	ROOM OF 103	•			
	·										
Charles Louge	Van Laho XAMINER E Deck	Je Con	EVEL , TT Z	22-95 DATE 27-95	GE IND	EPENDEN	T REVIEW	DATE		PAGE: 9 OF: 17	
GER	EVIEWED	3Y L	EVEL	DATE	ិហ	ILITY REV	IEW	DATE	_!		LINIM UT 12_R

*

· ·

•

,

Æ	3	65 3	livalaa	Caaraa		SH	IROUD UI	LTRASONI	IC EXAN	NINATION
		GE	lucieal			(AUTC	MATED W	vith Smart	2000 O	D Tracker)
SITE:		<u>e point</u>			OURE NO.:	UT-NMP-	503V3	REPORT NO.:	R-001	
PROJ	ECT NO.:	1ETED		- - REVISIO	N NO.:0	(ERR#NM	<u>P-2)</u>	CALIBRATION	NO.:D-DO).:001, C-002, C-003
Weid ID	:	H-8	• • •	Exam Su	rface:	0	D	Crown V	Vidth:	1.5" (Approx)
Search	Unit Separ	ation (Fro	nt To Fron	it):	N/A		Wo Lo	cation:X	DUCER ER	ONT @ DNST TOE
Position/ Set Up	Scan Time	Search Unit Start:	Total • Scanned	File Name and Disk/Side:	Search Unit	Gain dB	Results: (See Legend)		Com	ments:
Cylinder	4675	120.26			45° LKDN	N/A	N/A	NONE		·····
521 LL cw_ccw	Time	45*	1		45° LKUP	41	A	_		
Lug Set #			4.0	_H8188124_	60° LKDN	N/A	N/A			
12 Lua Sida	Date	60*			60° LKUP	56	¢		· · · · · ·	
	Examiner's	 ODCR	<u>10.81</u> Index Arm	D_02/A	ODCR LKDN	N/A	N/A	-		• ·····
	Initials		Start		ODCR LKUP	42	C	=	· · ·	
Cylinder	<u>1740</u>	123.86		- -	45° LKDN	N/A	N/A			
cw ccw Lug Set #	IMINO	43			45° LKUP	41	B			
13	<u>2/22/95_</u> Date	<u>122.52</u> 60*		_H8121131_	60° LKDN	N/A	<u>NVA</u>		7.	
Lug Side	CVH	121.20	0.0	D-02/A	60° LKUP	N/A	<u>0</u>	120.32120.0	1	· · · · · · · · · · · · · · · · · · ·
CW CCW	Examiner's	ODCR	Index Arm Start		ODCR LKUP	42	c			
Cylinder	4000			-		N/A	N/A	NONE		
	1820 Time	45*			45° LKON	41	A			
Lug Set #	_2/22/95_	129.02	4.0	<u>_H8128134</u>	60*1 KDN	N/A	N/A	_		
<u>13</u>	Date	60*			60° LKUP	56	c			
	Examiner's	<u>127.70</u> _ ODCR	6.5 Index Arm	D_02/A	ODCR LKDN.	N/A	N/A			
CW CCW	Initials		Start		ODCR LKUP	42	C	-	·	
Cylinder		133.86			45° LKDN	N/A	<u>·N/A</u>	NONE	·	
CW COW	14176	45			45° LKUP	41	<u> </u>		····	
13		<u>132.52</u> 60*	5.31	_H8131139_	60° LKDN	N/A	N/A	-		
Lug Side	WZZ			D-02/A	60° LKUP	56	¢	-		h
	Examiner's	ODCR	Index Arm Start		ODCR LKDN	NA	N/A	-		l n
						<u></u>				
C	ацвка П	JN GAIN:				EX	AMINA HON RE	ESUL IS LEGEN	U:	
45° LKDN	<u>N/A</u> 25	60* LKUP	48	A - NO RECO	RDABLE INDICA	TIONS	D - Acousti	C INTERFACE	c	- WELD DISCONTINUITY
60. TKDN	N/A	ODCR LK	UP34	B . NON-GEO	EVANT INDICAT	TIONS		JRFACE GEOMETRY SURFACE	۲ ۲ ۱.	• WELD CROWN GEOMETR
REMA	RKS: TE			ING ORTAIN	ED EPON O					
		· · · · · · · · · · · · · · · · · · ·								
) ^	0.0 00	,						<u> </u>		
Mall	1/ All	<u>,</u> -}	ZZ 2/	122/95	GE INDE	PENDEN	REVIEW	DATE		
J., . /	FALL.	æ.	TT 7	77 92	35 1101					-
GER	EVIEWED B	<u> </u>		27-13 DATE	UTI		FW	DATE	PAGE:_	10 OF: 17 10001

; ;

• ·
0 § 4			h.								
S	3	<u>GE</u> N	luclear	Energy		SH	ROUD UL	TRASONIC EXAMINATION			
				1		(AUTC					
SITE:		E POINT_		_				REPORT NO.:			
UNIT	1				URE NO.: _	UT-NMP-	<u>503V3</u>	DATA SHEET NO.: D-005			
PROJ	ECT NO.:	1ETED		- REVISIO	N NO.: <u>0</u>	(ERR#NM	<u>P-2)</u>	CALIBRATION SHEET NO.:C-001, C-002, C-003			
Weld II):	<u>H-8</u>		Exam Su	face:		<u> </u>	Crown Width:1.5" (Approx)			
Search	Unit Separ	ation (Fro	nt To Fron	it):	N/A	· \	Wo Lo	cation:X-DUCER FRONT @ DNST_TOE			
Position Set Up	/ Scan Time	Search Unit Start:	Total*	File Name and	Search	Gain dB	Results:	Comments:			
Cylinder			Connica	Diskolde.		N/A	N/A	SPECIAL SETUP-CW CYLINDER ON CCW SIDE OF			
	1400 Time	<u>161.04</u> 45*				41	Α	CWLUG.			
Lug Set #	2/24/95	159 70	70	H8158168		N/A	N/A				
17	Date	60*			60° LKUP	56	C				
	Examiner		0.0	D-03/8	ODCR LKDN	N/A	N/A				
CW CCW	/ Initials		Start		ODCR LKUP	42	C				
Cylinder		167.54			45° LKDN	N/A	N/A	SPECIAL SETUP-CW.CYLINDER ON CCW.SIDE.OF			
CW CCW	Time	45*			45° LKUP	41	A	_ CWLUG			
Lug Set #	2/24/95	165.20	7.0	_ <u>H8165175</u> _	60° LKDN	N/A	N/A				
Lug Side		60*			60. TKAb	56	C				
	Examiner's	164.85 ODCR	<u>6,5</u> Index Arm	<u>D-03/8</u>	ODCRLKDN	IN/A	N/A				
<u>CW CCW</u>	, Initials		Start		ODCR LKUP	42	C	•			
Cylinder		174.04			45° LKDN	N/A	N/A	SPECIAL SETUP-CW.CYLINDER ON CCW SIDE OF			
CW CCW	- Time	45*			45° LKUP		A	_ CWLUG			
17		172.70 60*	2.5	<u>_H8171177_</u>	60° LKDN	N/A	N/A				
Lug Side	CNH	171 35	13.0	D.03/8	60° LKUP	56	C	-			
	Examiners	ODCR	Index Arm		ODCR LKDN	IN/A	NA				
CW CCW	inicais		Start		ODCR LKUP	42	Ç				
	<u>2300</u>				45° LKDN	N/A	NA	SPECIAL SETUP-CCW.CYLINDER ON CCW.SIDE OF			
CW CCW					45° LKUP						
26	Date	50*	7.75	<u>_H8261250</u> _	60° LKDN	N/A	N/A				
Lug Side	MSS		0.0	D_02/A		<u>20</u>	V				
	lixaminers Initials	OOCR	Index Arm Start		ODCR LKUP	42	c				
	CALIBRATI	ON GAIN:				EX	AMINATION RE	ESULTS LEGEND:			
45*1 KDA	I N/A	CON 1 1/1 1D	19			TIONS	D . ACOUSTIC	G - WELD DISCONTINUITY			
45° LKUP	25	ODCR LKI	M_NA	B - NON-GEO	METRIC INDICA	ATIONS	E - INSIDE SU	IRFACE GEOMETRY H • WELD CROWN GEOMETRY			
60° LKD	·		JP <u>34</u>	C - NON-REL	EVANT INDICAT	TONS	F - OUTSIDE	SURFACE J - OTHER (SEE COMMENTS)			
REMA	RKS: T	EMPERAT	URE REA	DING OBTAI	NED FROM	CONTROL	ROOM OF 103	39			
	······································										
Lail			ZT 2, EVEL	/22/95 DATE	GE IND	EPENDEN	r review	DATE			
CE	REVIEWED B		EVEL	DATE		ILITY REV	EW	DATE PAGE: // OF: /7 FORMUTELE			



я.

- •
- **N**
- ֥

- :
- . .

- . 8
- -2, vr 1 +2,u 1 ≠4, v 1 ≠4, v

- r .

 - - · · ·
 - .

• •													
	3	<u>GE</u> N	luclear	Energy		SHROUD ULTRASONIC EXAMINATION DATA SHEET (AUTOMATED with Smart 2000 OD Tracker)							
SITE:_ UNIT:_ PROJE	NINEI ECT NO.:	E POINT		PROCED	©URE NO.: N NO.:0	UT-NMP- (ERR#NM	503V3	REPORT NO.: <u>R-001</u> DATA SHEET NO.: <u>D-006</u> CALIBRATION SHEET NO.: <u>C-001, C-002</u>					
Weid ID:	:	<u> </u>		Exam Su	face:	0	I	Crown Width:1.5" (Approx)					
Search	Unit Separ	ation (Fro	nt To Fron	t):	N/A		Wo Lo	cation:X-	DUCER FRONT @ DN	IST TOE			
Position/ Set Up	Scan Time	Search Unit Start:	Total • Scanned	File Name and Disk/Side:	Search Unit	Gain dB	Results: (See Legend)		Comments:				
Cylinder	0003	260.36			45° LKDN	N/A	N/A	EILENAME SH	OULD BE: H8258268				
	Time	45*			45* LKUP	41	¢	·					
Lug Set#		259.02	7.0	_H8258271_	60° LKDN	N/A	N/A			·			
	Date	60*			60° LKUP	56	c						
	MSS_	257.70	<u>0.81</u>	D-02/A	ODCR LKDN	N/A	N/A						
	Initials		Start		ODCR LKUP	42	C			<u></u>			
Cylinder	0100	266.85			45° LKDN	N/A	N/A	NONE					
	Time	45*			45° LKUP	41	Ç						
Lug Set #	2/23/95	265.52	4.0	H8264271	60° LKDN	N/A	N/A						
7	Date	60*			60° LKUP	56	C	<u> </u>					
Lug Side	MJS	264.20	7.31	D-02/A	ODCR LKDN	N/A	N/A						
CW CCW	Initials	ODCR	Index Arm Start		ODCR LKUP	42	c						
Cvinder				<u> </u>				NONE					
	0200 Time	<u>270.35</u> 45°			45° LKDN	N/A	N/A						
CW CCW	20205			10000077	45° LKUP	<u>41</u>	<u>.</u>	-					
28	Date	60*	7.0		60° LKDN	N/A		-					
Lug Side	W22	267.70	0.81	D_03/A	60° LKUP		N/A						
	Examiner's Initials	ODCR	Index Arm Start			42	C	-	·····	······································			
Cvinder				····	COURLEROF	<u> </u>	<u></u>	-		······································			
	0235 Time	<u>276.86</u> 45*			45° LKDN	N/A	N/A	- NONE					
cw cow Lug Set #					45° LKUP	41	U						
28	 Date		4.0	_ <u>H82/4281_</u>	60° LKDN	N/A		-	<u></u>				
Lug Side	MJS	274.20		 	60° LKUP	20	<u>_</u>	-					
	Examiner's Initials	ODCR	Index Arm Start		ODCR LKUN	N/A		-	e				
C	ALIBRATIO	ON GAIN:				94 EX	AMINATION RE	- SULTS LEGENI	D:				
45° DKDN 45° DKDP	25	60° LKUP	<u>48</u> N N/A	A + NO RECO	RDABLE INDICA	TIONS				WN GEOMETRY			
60° LICON	<u>N/A</u>	ODCR LK	IP34	C - NON-REL	EVANT INDICATI	IONS	F - OUTSIDE:	SURFACE	J + OTHER (SEE COMMENTS)			
REMA	REMARKS: TEMPERATURE READING OBTAINED FROM CONTROL ROOM OF 103*												
	••••••••••••••••••••••••••••••••••••••				<u> </u>								
Lund	ARTINER E. Hut	A CONTRACT	ZZ 2, EVEL 71 2-	23/95 DATE 27-95	GE INDE	EPENDENT	REVIEW	DATE	17				
GER	GEREVIEWED BY LEVEL DATE UTILITY REVIEW DATE PAGE: 12 OF: 17 10000112.00												

- i, p

.

• •

; · ·

· · 5 • • at a

1									1 ^{1 1 K} , K		
) .	GEŅ	luclear	Energy		SH (AUTC	ROUD UI I MATED w	LTRASON DATA SHI vith Smar	<i>IIC EXAMINATION EET t 2000 OD Tracker</i>))	
SITE: UNIT:_ PROJE	<u>NINE MIL</u> 1	E POINT		PROCEE REVISIO	DURE NO.: N NO.:0	UT-NMP- (ERR#NM	503V3 P-2)	REPORT NO.: R-001 DATA SHEET NO.: D-007 CALIBRATION SHEET NO.: C-001, C-002,			
Weld ID:		<u>. H-8</u>		Exam Surface:OD				Crown Width:1.5" (Approx)			
Search	Unit Separ	ation (Fro	nt To Fron	nt):N/A			Wo Lo	cation:	X-DUCER FRONT @ DNST		
Position/ Set Up	sition/ Scan Search Total* et Up Time Unit Start: Scanned				Search Unit	Gain dB	Results: (See Logend)		Comments:		
Cylinder	0300 Time	<u>280.36</u>			45° LKDN 45° LKUP	N/A	<u>N/A</u> C				
Lug Set #		<u>279.02</u>	7.0	<u>_H8278287_</u>	60° LKDN	N/A	N/A	-			
Lug Side	MOS	277 70	0.81	D-03/B	60° LKUP		<u> </u>	-			
	Examiner's	ODCR	Index Arm		ODCR LKUR	N/A	C	-			
Cylinder			_Stan			N/A	N/A	NONE			
	0345 Timo	<u></u>		•	45° LKON	0/0	IVA			······	
Lug Set #	203/05	205.52		U0004004	45° LKUP	 N/A	N/A				
29	Date	60*	9.V		60° LKUN	56	c				
Lug Side	MOS			D03/8	ODCR LKDN	N/A	N/A				
	Examiners Initials	ODCR	Index Arm Start		ODCR LKUP	42	C				
Cylinder	0800	311.79			45° LKDN	N/A	N/A	_ SPECIAL S	ETUP-CW CYLINDER ON CW S		
CW CCW	une	45*			45° LKUP	41	C	_ CWLUG			
22		310.45	7.0	<u>H8309319</u>	60° LKDN	N/A	N/A			<u> </u>	
Lug Side	C.J.H.	200 13	0.0	D-04/A	60° LKUP	56	C	-			
	Examiner's	ODCR	Index Arm		ODCR LKDN	N/A	N/A		<u></u>	······································	
CW CCW	nuais		Start		ODCR LKUP	42	C				
	0832 Time	<u>318.29</u> 45*			45° LKDN	N/A	N/A C	SPECIAL S	ETUP-CWCYLINDER ON CWS	IDE OF	
Lug Set #	2/24/95	317.95	70	H8316325	45° LKUP	 N/A	Í N/A				
32	Date	60*			60° LKUP	56	С				
Lug Side	Examiner's	315.63	<u>6.5</u>	D_04/A	ODCR LKDN	N/A	N/A	_			
CW CCW	Initials		Start		ODCR LKUP	42	<u> </u>	_			
С	ALIBRATI	on gain:				EX	AMINATION R	ESULTS LEGE	END:		
45° LKDN	N/A	60° I KUP	48	A - NO RECO	RDABLE INDICA	TIONS	D - ACOUSTI	C INTERFACE	G - WELD DISCON	TINUTY	
45* LKUP	25	ODCR LK		B - NON-GEO	METRIC INDICA	TIONS	E - INSIDE S	URFACE GEOMETI	RY H • WELD CROWN (GEOMETRY	
DEMA			UP34	C - NON-REL	EVANT INDICAT	10NS	F - OUTSIDE	SURFACE	J - OTHER (SEE C	OMMENTS)	
	<u></u>	TEMPER	ATURE RI	ADING OBT	AINED FRO	M CONTR	OL ROOM OF	103•			
								<u>.</u>			
		· · · _ · · · · · · · · · · · · · · · ·							·····		
									· · · · · · · · · · · · · · · · · · ·		
Charles	Uchlecke KAMINER /	1	EVEL 2	-24-95 DATE	GE IND	EPENDEN	r Review	DATE			
Acar	EAA	4 CTO	<u></u> Z	-27.95					12 14		
GER	EVIEWED B		EVEL	DATE	TU	ILITY REV	EW	DATE	PAGE: 13 OF: 11	FORM UT 32_R	

κ ≪ n κ

.

1	ž									a su the p		
ι. ·)	<u></u> 6 <u>_</u> N	luclear	Energy	(A	SH UTC	ROUD UL D MATED w	TRASON DATA SHE ith Smart	C EXAMINATION ET 2000 OD Tracker)		
'n	SITE:_ UNIT:_ PROJE	NINE MIL 1 CT NO.:	E POINT		PROCED	URE NO.: <u>UT</u> N NO.: <u>0 (</u> EE	<u>-nmp-</u> R#NM	503V3 P-2)	REPORT NO.: DATA SHEET CALIBRATION			
	Weld ID:		H-8	nt To Front	Exam Sur	face:	0	<u> </u>	Crown Width: <u>1.5" (Approx)</u>			
	Search	l Separ	auon (Fro. 1			N/A			cation:A	DOCER FRONT & DIST TOE		
	Position/ Set Up	Scan Time	Search Unit Start:	Total * Scanned	File Name and Disk/Side:	Search G Unit	Fain dB	Results: (See Legend)		Comments:		
	Cylinder	<u>0910</u>	<u>324.79</u>			45° LKDN —	N/A	N/A	SPECIAL SE	TUP-CW CYLINDER ON CW SIDE OF		
	cw ccw Lug Sel #		323,45	2.5	H8322327	45° LKUP	41 N/A	C N/A	CWLUG	· · · · · · · · · · · · · · · · · · ·		
	32 Lug Side	Date	60*			60° LKUP	.56	C		·····		
		Examiner's	322_13 ODCR	13.0 Index Arm	D-04/A	ODCR LKDN	N/A	N/A C	•			
		N/A	N/A	Otan		45° LKDN	N/A	N/A	N/A			
	CW COW	Time	45*		`	45° LKUP —	N/A	N/A	.			
	N/A	<u> </u>	N/A 60*	N/A	N/A	60° LKDN	N/A	N/A	•			
	Lug Side	Examiner's		N/A	N/A	ODCR LKDN	N/A	N/A		i		
	CW 00W	Initials		Start		ODCR LKUP	N/A	N/A				
	Cylinder	<u>N/A</u>	N/A			45° LKDN	N/A_	N/A	N/A			
	cw cow Lug Set \$		45*			45° LKUP —	N/A	N/A	·			
	N/A	Date	60*	N/A	<u> </u>	60° LKDN	NVA N/A	N/A				
		Examiner's	N/A ODCR	<u>N/A</u> Index Arm	N/A	ODCR LKDN	N/A	N/A	.	· · · · · · · · · · · · · · · · · · ·		
	CW CCW	Initials		Start		ODCR LKUP	N/A	N/A	•			
		<u>N/A</u> Time	<u>N/A</u> 45*			45° LKDN	N/A	N/A N/A	. <u>N/A</u>			
	Lug Set #	N/A	N/A	N/A	N/A	60° LKDN	N/A_	N/A				
	Lug Side	Date	60°	NIA	N//A	60° LKUP	N/A	N/A	·	······································		
		Examiner's Initials	ODCR	Index Arm Start		ODCR LKDN	N/A	N/A	·			
	 C/	ALIBRATIO	ON GAIN:				EX	AMINATION RE	SULTS LEGEN	D:		
	45° LKDN 45° LKUP 60° LKDN		60° LKUP ODCR LKU ODCR LKU	48 DNN/A JP34	A - NO RECOR B - NON-GEOR C - NON-RELE	RDABLE INDICATION METRIC INDICATION WANT INDICATION	NS NS S	D - ACOUSTIC E - INSIDE SU F - OUTSIDE S	INTERFACE RFACE GEOMETRY JURFACE	G • WELD DISCONTINUITY H • WELD CROWN GEOMETRY J • OTHER (SEE COMMENTS)		
ł	KEMA	(15:	TEMPER	RATURE R	EADING OBT	AINED FROM	CONTR	ROL ROOM OF	103*			
F									· · · · · · · · · · · · · · · · · · ·			
	Charles H EX	J.U culler AMINER	he The second	EVEL	24-95 DATE	GE INDEPE						
X	GERE	WEWED B	<u>y</u>	VEL I	DATE	UTILIT	Y REVI	EW	DATE	PAGE: 14 OF: 17 PORMUTE		

•1 1

•

ę

2 6 c													
E	G	E Nucl	ear En	ergy	ULTR	JLTRASONIC CALIBRATION DATA SHEET (AUTOMATED WITH Smart 2000)							
SITE:_	NINE MI	LE POIN	IT	UNIT:	1	_ CALIBRATION SHEET NO.:_C-001							
PROJE	CT NO.:	1ETED)			LINEARITY SHEET NO.: <u>L-001</u>							
PROCE	DURE N	10.:_UT	NMP-50)3V3	F	REVISION:_0 FRR:NMP-2							
Instrume	ntR	& D TECH	TOMOS	CAN		<u>TTS10089119</u>							
Search U	nit	Manusco SIGI	MA		3510-9402	System Serial No. 25(4x.25)"2.25_MHz45/SHR0.35"							
Cable		<u>RG_174</u>	curer	2	25	Size Freq. Angle/Mode Incident to wedge front							
Calibratio	on Standar	Type rd	_SHRD-0	دەمچ 40	<u>SS</u>	No. of Connectors							
Thermorr	neter	14576	Serial No. 51		Material	Thickness Temp. ,							
Couplant	DEA		o. R	-	N/A								
		Туре		Ba	atch No.	•							
			CALIBR	ATION		BASIC SETTINGS							
ORIENTA	TION: _	CRC				1. DELAY:0.6656_in							
TYPE:	-		DICH_	EDM.OD.NC	DICH_	2. TIMEBASE: 6.6500 in							
DEPTH:	-	0.75		0.30*_		3. FREQUENCY: (MHz)_5							
AMPLITU	DE: _	80%		80%		4. RATE: /S_20							
SWEEP:	-	2.156	•	4.390		5. UNITS:							
GAIN: (di	B) -	17		25		6. VELOCITY: 129881 In/s							
דם	IME		Depth	METAL	L PATH	7. SAMPLES: 512							
FIELD SIM	ULATOR:	_N/A	\$	s/n:n/a		PULSER / RECEIVER							
REFLECTOR	२:	*	N/A	N/A		1. MODE: D PULSE ECHO							
MAX AMPLI	TUDE		N/A	N/#		2. PULSER:P1 TOP1							
GAIN: (dB)	· · · · · · · · · · · · · · · · · · ·		 N/A	N/#	<u></u>	3. VOLTAGE: (v)400							
	CA	LIBRATIO	N VERIFIC	CATION		4. WIDTH: (Ns)240							
	ТІМЕ	DATE	OPER.	COMP.	REPORT	5. FILTER: 🗋 NONE 🗍 0.5 - 2 MHz 🔯 1 - 5 MHz							
INITIAL	14:45	02/18:95	1000	H-8	NO R-001	2 - 10 MHz 5 - 15 MHz							
VERIFIED						6. RECTIFICATION: NONE UNIPOLAR + UNIPOLAR -							
VERIFIED						🔁 BIPOLAR							
VERIFIED						7. SMOOTHING: NONE FAST SMEDIUM SLOW							
VERIFIED													
	<u>1 00:30</u>	02/25/95	MSS	 	R-001								
Arach EX	ADINER /		ZZ 2	<u>/18/95</u> date	GE INDEP	ENDENT REVIEW DATE							
Source	that	nt -	III Z.	27-95		PAGE: 15 OF: 17							
GE RE	VIEWED BY	r LI	EVEL	DATE	υτιμ	IT KEVIEW DATE FORMUT-BEREV.							

чн_{. 19} х. х

ţı,

* 1 1												
Ø	: G	E Nucl	ear En	ergy	ULTF	RASONIC CALIBRATION DATA SHEET (AUTOMATED WITH Smart 2000)						
SITE:_	NINE M	ILE POIN	NT	UNIT:	_1	_ CALIBRATION SHEET NO.: <u>C-002</u>						
PROJE	ECT NO.	:_1ETED	<u> </u>		LINEARITY SHEET NO.:_L-002							
PROCE	EDURE	NO.: UT	-NMP-5	03\/3		REVISION:_0 FRR: <u>NMP-2</u>						
Instrume	entR	& D TECH	/TOMOS	CAN		TTS10089119						
Search U	Init	SIG	MA		2298-940	41						
Cable		Manufa 	octurer		Serial No.	Size Freq. Angle/Mode Incident to wedge front						
Calibrati	an Standa	Type rd		Le	ingth CC	No, of Connectors						
Cambrau	un Stanua	iu	<u>Serial No.</u>	40	SS Material	Thickness Temp.						
Thermon	neter	1457 Serial N	<u>61</u> ю.									
Couplant	DE		R		N/A Batch No	_						
	<u> </u>		CALIBE	ATION		BASIC SETTINGS						
ORIENTA		CIRC	:	N/								
TYPE:	-	EDMID NOT	CH TIP	N//		1. DELAY:0.6667.in						
DEPTH:	-	0.75	,	N//	<u> </u>	3. FREQUENCY: (MHz)_6.25						
AMPLITU	DE: .	80%		N//		4. RATE: /s_20						
SWEEP:	-	1.545	•	N//		5. UNITS:						
GAIN: (di	B) .	48		N//		6. VELOCITY:229881_in/s						
ים	IME		DEPTH	MET	AL PATH	7. SAMPLES:_512						
FIELD SIM	ULATOR:	N/A		s/N:_N/A		PULSER / RECEIVER						
REFLECTO	ર:		 N/A	N	/A							
MAX AMPLI	TUDE:		N/A	N	/A							
SWEEP:			N/A	N	/A	2. PULSER: IUZ						
GAIN: (dB)			N/A	N	/A	3. VOETAGE: (V)400						
	<u>C/</u>	LIBRATIO	N VERIFI	CATION		4. WIDTH: (NS)188						
	TIME	DATE	OPER.	COMP.	REPORT	5. FILTER: NONE 0.5 - 2 MHz 2 1 - 5 MHz						
INITIAL	15:00	02/18/95	MOS	H-8	R-001	2 - 10 MHz 5 - 15 MHz						
VERIFIED			<u> </u>									
VERIFIĘD		<u> </u>		*								
VERIFIED						7. SMOOTHING: 🗌 NONE 🗌 FAST 🔯 MEDIUM 🗍 SLOW						
FINAL	00.05	007507										
		02/25/95	IW22	<u>ін-8</u>	18-001	I						
Aral	AMINER FALL		777 2, EVEL	1/8/95 DATE	ge indef	PENDENT REVIEW DATE						
GE RE	VIEWED B		<u>evel</u>	DATE	UTIL	TY REVIEW DATE PAGE: // OF: //						

*) iş

s. . .

- <u>1</u> - - 2													
<u>E</u>	G	<u>E</u> Nucl	ear En	ergy	ULTR/	ASONIC CALIBRATION DATA SHEET (AUTOMATED WITH Smart 2000)							
SITE:		LE POIN	IT	UNIT:	1	CALIBRATION SHEET NO.: <u>C-003</u>							
PROJE	CT NO.:)			LINEARITY SHEET NO.:L-003							
PROCE	DURE	10.:_UT	NMP-5)3V3	RE	EVISION:_0 FRR:NMP-2							
Instrume	ntR	& D TECH	/TOMOS	CAN		TTS10089119							
Search U	nit	Manufact	urer / Model		94-720	System Serial No. 2(6x22)mm2_MHzODCR0.65"							
Cable		Manuta 	cturer		Serial No.	Size Freq. Angle/Mode Incident to wedge front							
Calibratio	on Standai	Тур е rd	SHRD-0	40	յ տ <u>ՏՏ</u>	No. of Connectors							
Serial No. Material Thickness Temp. Thermometer145761													
Couplant	DEN	Sorial N MIN_WATEI	o. R		_N/A	<i>i</i>							
		Туре	CALIDO	B	atch No.								
ORIENTA		CIPC			1	<u>DAGIO SETTINOS</u>							
TYPE	_	EDM ID NOT		IVA		1. DELAY:0.8795 in							
DEPTH	-	1 207		N/A		2. TIMEBASE: <u>5.1281 in</u>							
	- ne•		`	170_		3. FREQUENCY: (MHz)_6.25							
SWEED.	-					5. UNITS:							
GAIN: (df	- 3)	0.351		N/A									
		 751	DEDTU		6. VELOCITY:_62598 in/s TAL PATH 7. SAMPI ES: 512								
	um C.					7. SAMPLES: <u>917.</u>							
FIELD SIM	ULATOR:	N/A		s/N:_N/A		PULSER / RECEIVER .							
REFLECTOR	Ľ		N/A	N//	\	1. MODE: DULSE ECHO DI THRU-TRANSMISSION							
MAX AMPLI			N/A	N//	<u>`</u>	2. PULSER:P3 TOP3							
GAIN: (dB)			N/A	N//	<u></u>	3. VOLTAGE: (v)_400							
	CA		N VERIFI			4. WIDTH: (Ns)240							
	TIME	DATE	OPER.	COMP.	REPORT	5. FILTER: 🗋 NONE 🛑 0.5 - 2 MHz 🔯 1 - 5 MHz							
INITIAL	15;15	02/18/95	MTG	H-8	NO R-001	2 - 10 MHz 5 - 15 MHz							
VERIFIED						6. RECTIFICATION: NONE UNIPOLAR + UNIPOLAR -							
VERIFIED													
VERIFIED						7. SMOOTHING: 🗌 NONE 🗍 FAST 🖾 MEDIUM 🔲 SLOW							
FINAL	00-40		1500		B-001								
		02/25/95	202	11-5	1	I							
Angeh	AMINER		Evel 24	<u>18/15</u> –	GE INDEPE	NDENT REVIEW DATE							
Store	Auk		III Z	-27-95		PAGE: 17 OF: 17							
GERE	VIEWED BI		EVEL	DATE	UTILITY	Y REVIEW DATE FORMUT-MIREY. 6							

,

8

.

م از رایه کام مرا

· · · ·

- 											
B	GE Nuclea		/	ULTRAS	SONIC INS	TRI	JMENT	QUAL	IFI	CATION	
SITE:_NME)	UNIT:	1		LINEARITY SHEET NO.:_L-001						
PROJECT					MFG.:_R&D_TECH MODEL.:TOMOSCAN						
PROJECT			-		INSTRUMENT SERIAL NO.: TTS10089119						
PROCEDUR	RE NO.:GE-A	DM-1001		RE	EVISION:_0 FRR:_N/A						
	CHANNEL	:1	INIT	AL	CHANNEL:						
	EQUI	PMENT					EQUIF	PMENT			
Block Identifie	cation: <u>ROM</u> Type	IPAS	CAL	RHOM-018_ Serial No.	Block Identific	cations	<u>ROM</u> Туре	PAS	CAL-	RHOM-018_ Serial No.	
Search Unit:	SIGMA		35	10-94058 Sedal No	Search Unit:				351	10-94058	
-	(.4x.25)*	2.25мн	L	_45/SHR	.	<u>(4</u>)	(.25)"	2.25мн	z	_45/SHR	
s	SZO CREEN HEIGHT		CHF	Angle/Mode CK		CRFF	ize N HEIGHT		CHF	Angle/Mode	
% FSH Larger	Signal	% FSH Sma	ller	Signal *	% FSH Larger	Signal		% FSH Sm	aller	Signal *	
	A	ctual		Limits			Ac	tual		Limits	
100%	5	50.2		45 - 55%	100%		, 4	9.8		45 - 55%	
90%	4	5.1		40 - 50%	90%	0% 4		5.1		40 - 50%	
80%	4	0%		35 - 45%	80%		40%			35 - 45%	
70%	;	35.3		30 - 40%	70%		3	5.3		30 - 40%	
60%		30.2		25 - 35%	60%		3	0.2		25 - 35%	
50%		27.5	20 - 30%		50%		2	5.1		20 - 30%	
40%		20.0	15 - 25%		40%		20.0			15 - 25%	
30%		15.3		10 - 20%	30%		15.2			10 - 20%	
20%		0.2		5 - 15%	20% 1			0.2 5 - 15%			
* The smaller sig	nal must be within	50% of the larg	er sig	nal within 6% FSH	* The smaller sig	ivaj ma	st be within 6	0% of the larg	ier sig	nal within 5% FSH	
AA	MPLITUDE CON	TROL LINEA	RM	/	A		UDE CON	ROL LINE	RITY		
Indication set at % of FSH	dB Control Change	Indi Actual	catio	n at FSH	Indication set at % of FSH	dB Ci	Control hange	Ind	icatio •	n at FSH	
80%	- 6 dB	40.8		32 - 48%	80%	 	6 dB		·	32 - 48%	
80%	-12 dB	20.8		16 - 24%	80%	-	12 dB	19.6	 }	16 - 24%	
40%	+ 6 dB	79.6		64 - 96%	40%		- 6 dB	80.0)	64 - 96%	
20%	+12 dB	78.9		64 - 96%	20%	+	12 dB	79.4	ł	64 - 96%	
Lunch (1 Jaly			2/18/45 DATE	hach		elf		1/	2/25/95 DATE	
	ENERALS .	<u>2-27-95</u> Date	DE DE NEWL LEVEL 2-2				<u>2-27-95</u> • date				
UTIL	JTY REVIEW	_		DATE	UTILITY REVIEW DATE						
L							· · · · ·			FORMUT-12 REV.7	

(\$₁

1k

• • •

• •

• • • • •

* * * * * * * * * *

· ·

GE Nuclear: Energy	ULTRASONIC INSTRUMENT	QUALIFICATION
--------------------	-----------------------	---------------

SITE: NMP_

11.6

 U	VIT:_1	

888.)/

LINEARITY SHEET NO .: _L-002_ MFG .: _R & D_TECH____ MODEL :____TOMOSCAN_

PROJECT NO .: 1ETED

PROCEDURE NO .: _ GE-ADM-1001

INSTRUMENT SERIAL NO .: TTS10089119_ REVISION:_0_

FRR:__N/A_

		CHANNEL:	2	INITIA	NL			CHANNEL:	2I	FINAL	•	
		EQUI	MENT		4			EQUIP	MENT			
Block Identific	ation:	ROM	PAS	CAL-I	RHOM-018 Serial No.	Block Identific	ation:	ROMP Type	AS	CAL-R Si	RHOM-018 erial No.	
Search Unit:			<u></u>	351	10-94058	Search Unit:SIGMA				<u>3510-94058</u>		
	(.4)	(.25)"	2.25		45/SHR							
	s	ize	Freq.		AngleMode	Size Freq. AngleMode						
\$	CREE	N HEIGHT	LINEARITY	CHE	СК	S	CREE	N HEIGHT	LINEARITY	CHEC	Ж	
% FSH Larger S	Signal		% FSH Sma	aller (Signal •	% FSH Larger S	Signal		FSH Sma	iller Signal *		
		AC	tual					AC	luai			
100%		4	8.5		45 - 55%	100%		5	0.2		45 - 55%	
90%	90% 44.0				40 - 50%	90%		4	4.5		40 - 50%	
80%	80% 40%				35 - 45%	80%		40)%		35 - 45%	
70%	70% 34.0				30 - 40%	70%		34	4.5		30 - 40%	
60%		2	9.2		25 - 35%	60%		29	9.8		25 - 35%	
50%	50% 24.1				20 - 30%	50%		24.0			20 - 30%	
40%	40% 19.0		9.0		15 - 25%	40%		19	9.2		15 - 25%	
30%		1	4.3		10 - 20%	30%		14	4.9		10 - 20%	
20%		-	9.2		5 - 15%	20%		9	.6		5 - 15%	
* The smaller sig	inal mu	st be within l	50% of the larg	jer sig	nai within 5% FSH	* The smaller sig	inal mu	st be within 5	0% of the larg	ger sig	nal within 6% FSH	
A	MPLIT	UDE CON	TROL LINE	RITY	·	A	MPLI	UDE CONT	ROL LINE	ARITY	•	
Indication set	dB	Control	Ind	icatio	n at FSH	Indication set dB		Control	Indicatio		n at FSH	
			Actua	1	Limits				Actua	<u> </u>	Limits	
80%		12 dB	40.4	}	32 - 48%	80%	·	• 5 aB	41.0) ;	16 - 24%	
40%		- 6 dB	80.0	,)	64 - 96%	40%		- 6 dB	80.6	, 	64 - 96%	
20%	+	12 dB	80.0	,)	64 - 96%	20%	+	12 dB	78.8	<u> </u>	64 - 96%	
hul (hul Any T					hel fr		ア	H LEVE		2/25/95 DATE	
GERPLARY LEVEL DATE						200	ERENT	wennen		ı.	<u>2-27-95</u> date	
UTI	UTILITY REVIEW DATE						LITY REV	NEW			DATE	
											FORMUT-12 REV.7	

· · · · · ·

• • • •

•

¥

.

.

, , · - - · · ·

•))						· ····	_					
L	8	GE	Nuclea	∙r∙Energy	/	ULTRAS	SONIC INS	TRUME	NT	QUALI	FIC	CATION	
	SITE: NMP)		LINIT.	1		LINEARITY SHEET NO .:003						
	· · · · · · · · · · · · · · · · · · ·			01111.			MFG.:_R&D.TECHMODEL.:TOMOSCAN						
	PROJECT	10.:_	1ETED		-		INSTRUMENT SERIAL NO.: TTS10089119						
	PROCEDUR).:GE-A	DM-1001		RE	VISION: 0 FRR: N/A						
			CHANNEL	• 3	INITI	AL							
			EQUI	PMENT			EQUIPMENT						
	Block Identific	ation:	ROM	PAS	CAL-	RHOM-018_ Serial No.	Block Identification: <u>ROMPAS</u> <u>CAL-RHOM</u>			RHOM-018 erial No.			
	Search Unit:		SIGMA		35	10-94058	Search Unit:	SIGN	IA	<u> </u>	_351	0-94058	
	_		Manuracture (.25)"	г 2.25мн	·	- 45/SHR		Manuta (.4x.25)"	cturer	2.25 NH-	, s	enal No. 45/SHR	
		s	ize	Freq.		Angle/Mode		Sze		Freq.		ngla/Mode	
	K ESH Lamor (CREE	N HEIGHT	LINEARITY	CHE		S	CREEN HEIG	HT	LINEARITY			
	W FOR Larger a	signai	A	tual	ner	Limits	% FSH Larger 3	signal	7 Ac	tual	lier s	Limits	
	100%	5	0.0		45 - 55%	100%		4	9.4		45 - 55%		
	90%	90% 45.0		5.0	40 - 50%		90%		44	44.7		40 - 50%	
	80%	80% 40%		0%		35 - 45%	80%		40	40%		35 - 45%	
	70%	70% 3:		5.3		30 - 40%	70%		34.7			30 - 40%	
	60%		3	0.2		25 - 35%	60%		29.8			25 - 35%	
	50%		2	25.1		20 - 30%	. 50%		24	4.8		20 - 30%	
	40%		2	20.0		15 - 25%	40% 1		19	9.4		15 - 25%	
	30%		1	5.3		10 - 20%	30%		14	1.9		10 - 20%	
	20%		1	0.2		5 - 15%	20% 9		9	.8		5 - 15%	
	* The smaller sig	nal mu	st be within (50% of the larg	er sig	nal within 6% FSH	• The smaller signal must be within 60% of the larger signal within 6% FSH						
	A	MPLI	UDE CON	TROL LINEA	RIT	(AA	MPLITUDE C	ONT	ROL LINEA	RITY		
	Indication set at % of FSH	dB C	Control hange	Indi	catio	on at FSH	Indication set	dB Contro	4	Indi	catio	n at FSH	
	80%		• 6 dB		• • •	32 - 48%	80%	- 6 dB				32 - 48%	
	80%		12 dB	19.2	 }	16 - 24%	80%	-12 dB		20,4		16 - 24%	
	40%	+	- 6 dB	78.0)	64 - 96%	40%	+ 6 d B		80.0	•	64 - 96%	
	20%	+	12 dB	78.0)	64 - 96%	20%	+12 dE	3	80.2		64 - 96%	
	hach flor 7					2/18/95_ date	head of	AMDIER	-		-	2/25/95 DATE	
	Set BEVIEW LET				 L	<u>2-27-95</u> date		Sellen	<u> </u>	LEVEL	•	<u>2-27-95</u> date	
	UTIL	ITY REV	/IEW	_		DATE	UTIL	ITY REVIEW		_		DATE	
L	<u>_</u>											FORMUT-12 MEX. 7	

. **.** u I . • •

Nine Mile Point 1 - O.D. Tracker H8 Scan Plan

Nine Mile 1 - H8 Weld Total Effective Scan					
(all transducers pass area)					
(0 deg. to 360 deg.)					
Total Length Scanned (deg.): 136.56					
Total Length Scanned (inch):	218.11				
Total Percentage Scanned:	37.93%				

Nine Mile 1 - H8 Weld Total Scan Area						
(any transducer passes area)						
(0 deg. to 360 deg.)						
Total Length Scanned (deg.):	163.16					
Total Length Scanned (inch):	260.59					
Total Percentage Scanned:	45.32%					

۰ ۰ ۰

т

• • • .

· ·

Nine Mile Point 1 - O.D. Tracker H8 Scan Plan

	Luo	Position	Tool	1							Total Angle	
Lug	Azimuth	Setup	Azimuth	45 Start	45 End	60 Start	60 End	Creep Start	Creep End	Scan Start	Scanned	Overlap
	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)
1	5.00	-	and a finite of a state of any line of	1 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9 - 9 -		an an ann an suis an ann an	rian ana at any inany any inana	* # * \$ #* \$ \$ _ 164 + 18 - carra \$6, 17	n na hann a' fan mar Anna yn yn	1 4 2 15 (St. 1 7 1 7 7 1 1 7 1 1 1 1 1 1 1 1 1 1 1	1	
·					OVET							
×2	15.00	GU	NDF K	OD RKV	CKEI,	SHROU		NG LUC	5 & SPI	CIVIEN	HOLDI	=K
		и Ş										
3	25.00	2										2345
							I				200-C 200	Å.
5	45.00	•2.15	42.85	39,55	46.55	38.21	45.21	36.89	43,89	0,00%	7.00	0.00
				<u></u>								
5	45.00	-2.15	42.85	46.05	53.05	44.71	51.71	43.39	50.39	6.50	7.00	0.50
20. – 19.	W. 65' 0.0 %	200402	X A O YOF	COTT N	***********	CT 480 498	X 50'01W		0C1300%	×12:00×		XOXEO X
5	45.00	-2.15	42.85	02:55	254.55	51.21	53.21	49.89	\$1,89	13.00	2.00	0.50
7	65.00		S.1.80920983	,						<i>1990-61491006.</i>		
1 '	05.00				CO	RE SPH	iay du	WNCO	NEK			6.
88	\$75.00	+1.41	76.41	\$7311	83.61	%71%77 %	82 27	70.45	80.95	%0.00 %	10.50	0.00
9	85.00	-2.15	82.85	83.11	94.36	81.77	93.02	80.45	91.70	3,56	11.25	0.50
10	×95.00	-2.15	92.85	93.86	104.36	92.52	103.02	91.20	101.70	4:31	10.50	0.50
11	105.00	-2.15	102.85	103.86	114.36	102.52	113.02	101.20	111.70	4.31	10.50	0.50
\$12 \$	115.00	.2.15	112.85	113.86	124.36	112,52	123.02	111.20	121.70	4.31	10.50	0.50
				<u> ())))))))))))))))))))))))))))))))))))</u>								
13	125.00	+2.16	127.16	123.86	134.36	122.52	133.02	121.20	131.70	0.00	10.50	0.50
(14 A)	(l'aminai	XCO4XOO	Sec. Con	×10/00×		NO TO
13	125.00	+ 2.16	127:16	133,86	139:16	132.52	137.82	131:20	136,50	10.00	5:30	0.50
	105.00			Manager	******			10004006			Stations:	
14	135.00			CORE	SPRAY	BILLO	WS & G	UIDE R	OD BR/	ACKET		
817	165.00	-0.66	164.34	161,04	168.04	159.70	166.70	158,38	165.38	0.00	7.00	0.00
17	165.00	-0.66	164.34	167.54	174.54	166.20	173.20	164.88	171.88	6.50	7.00	0.50
		<u>،</u>					<u> </u>	•				
17	165.00	-0.66	164.34	174.04	176.54	172.70	175.20	171.38	173.88	00 %	2.50	0.50
	7.000000000			22222								XXXX//X

(0 deg. to 180 deg.)

Overlap on each end of scan (deg) - try to get as close to 0.5 as possible from picks of scan start and total angle scanned Total Carriage Travel (deg) Scanner Offset for CW Cyl. Postioned on CW side of CW Lug (deg) NEGATIVE # Scanner Offset for CCW Cyl. Postioned on CW side of CW Lug (deg) POSITIVE # H8 Leading Transducer MEDIAN Offset from Center Line (deg) POSITIVE# H8 Center Transducer MEDIAN Offset from Center Line (deg) POSITIVE# H8 Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# H8 Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# H8 Weld MEAN Outside Radius (nch) MEDIAN linches per deoree 0.50 15.56 -2.15 2.15

)

Q 2 3

>

4.48 3.14 1.82

91.51 1.60 0.63 **MEDIAN Inches per degree**

MEDIAN Degrees per inch [Note: 'deg' units represent degrees on shroud] [Note: 'Scan Start' is referenced from the physical limit of motion on the tool. The operator should not run the tool outside of the range 0.00 to 15.56 other than a one time motion control calibration, Repeatedly driving to the "hard-stops" will damage the tool.]

-•

Nine Mile Point 1 - O.D. Tracker H8 Scan Plan

	1 uo	Position	Tool					r	· · · · ·		Total Anole	
Lug	Azimuth	Setup	Azimuth	45 Start	45 End	60 Start	60 End	Creep Start	Creep End	Scan Start	Scanned	Overlap
	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)	(deg)
19	185.00			100 Carlos Carlo								
											-	
20	(195.00)											
200		5										
21	205.00	5707										R
									-			. 1
22	215.00	H GU	IDE RC	DD BRA	CKET, S	SHROU	D LIFTI	NG LUG	, spec	IMEN H	OLDER	, & j
XX (2)		5			CO	RE SPR	AY DO	WNCON	/IER			
23	225.00	11										
									-			
23	225.00											
24	235.00											
		S	***********	ACTOR SALES	MUTER LAND LAND ROOM		ALAS 20 ANN 14	1236 TO AL ST 760 110	au 27,00,00 mm 100,000,0	AN TRAIL CONTRACTOR		
26	255.00	91.41	256.41	253,11	260.86	251.77	259.52	250.45	258.20	0.00	7.75	0.00
								(
27	265.00	-2.15	262.85	260.36	270.86	259.02	269.52	257.70	268.20	0.81	10.50	0.50
28	275.00	-2.15	272.85	270:36	280.86	269.02	279,52	267.70	278.20	0.81	0.50	0.50
									332 <u>3</u> 2222			
29	285.00	-2.15	282.85	280.36	290.86	279.02	289.52	277.70	288.20	0.81	10.50	0.50
30)	295.00	(IDED 2			NCTRIN	AERITA'			r l
-			Dreuin		LDEN O			45100	NENTA		MONE	
31	305.00											
			e a posta versi en sta an sta								ana ana 22 an ing taon taon taon	
32	315.00	+0.09	315.09	311:79	319.79	310.45	318.45	309.13	317.13	0.00	8.00	8 0.00 8
	200200000											
32	315.00	+0.09	315.09	319.29	327.35	317:95	326.01	316.63	324.69	7.50	8.06	0.50
33	325.00											
		1										
34	335.00			CORE	SPRAY	RILLO	ws & G	JUIDE R	OD BR/	ACKET		
		,							,		•	ž
(35)	345.00	1										
2000	30.5999.6398										and the second second	

(180 deg. to 360 deg.)

Overlap on each end of scan (deg) - try to get as close to 0.5 as possible from picks of scan start and total angle scanned Total Carriage Travel (deg) Scanner Offset for CW Cyl. Positioned on CCW side of CCW Lug (deg) NEGATIVE # Scanner Offset for CCW Cyl. Positioned on CW side of CW Lug (deg) POSITIVE # HB Leading Transducer MEDIAN Offset from Center Line (deg) POSITIVE# HB Center Transducer MEDIAN Offset from Center Line (deg) POSITIVE# HB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# HB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# HB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# MB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# MB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# MB Trailing Transducer MEDIAN Offset from Center Line (deg) POSITIVE# MBDIAN Inches per degree MEDIAN Degrees per inch 0.50 15.56 -2.15

2.15 4.48 3.14

1.82

91.51 1.60 0.63

MEDIAN Degrees per loch MEDIAN Degrees per loch [Note: 'deg' units represent degrees on shroud] [Note: 'Scan Start' Is referenced from the physical limit of motion on the tool. The operator should not run the tool outside of the range 0.00 to 15.56 other than a one time motion control calibration. Repeatedly driving to the "hard-stops" will damage the tool.]

.

·*) Ø

\$ 14

> 19

` •

• .

***** ,



4

, .

.

3.



·

•

-.

v

e ta mum to





	ATTACHMENT 3	1			
<u>GE</u> Nuclear Energ	INVE:	SSEL VISU	AL EXAMINAT	ION DATA	A SHEET
SITE: Nine Mile UNIT: PROJECT NUMBER: 1ETE	1 CAMERA RESOL D .001" Diameter V .0005" Diameter 1/32" Black Lir	UTION Wire Wire 1e Il Procedure N	TYPE OF VISU	JAL EXAMII JAL EXAMII JAL EXAMII JAL EXAMII	NATION DIRECT REMOTE
ETV-1250 Underwater Camera with Super VHS Recorder	a twin 50's	Revision No. FRR No.	. 0 NMP-006		
Component / Area Viewed	Description of Recordable Indicatior	ns Ind. No.	Accept	Reject	Film Footage
Resolution check			· X		0:00:00
H8 335 [°] - 360 [°] upper & lower HAZ	4 circ. cracks, upper H (see page 2)	IAZ 1,2,3	3;4	x	0:01:24
H8 240 [°] - 180 [°] upper HAZ			X		0:45:21
V10 @ 200 [°] (ID exam)			X		1:03:44
$V11 @ 110^{\circ}$ (ID exam)			X		1:09:40
Unknown vertical weld (ID exam)	NOT CLEANED FOR INSPECTION	2	INFO ONLY		1:12:48
V9 @ 10 [°] (ID exam)			X		1:16:24
Resolution check			X		1:24:20
H8 0° - 15° Upper and lower HAZ	1 circ crack, upper HA (see page 2)	Z 5		X ·	1:25:20
H9 160 [°] - 180 [°]			X		1:32:50
Search for V5 & V6 (ID)			INFO ONLY		1:44:20
Resolution check			X	1	1:56:22
					EOT
Examined by: Level	COMMENTS: W	elds cleaned	prior to inspec	tion	
Wayne FarrellIIDave NeauIIMike ArmstrongII					

2 %

.

	`		
Rhor)S	$\widehat{I_{II}}$	NEC
Reviewed		vel	Date
V	•		

Level

ILL

Stellen

Ed

Reviewed

<u>3/6/95</u> Date

Π

Date Performed: February 23, 1995

Kirk Robideau

Report Number Tape Number

<u>9509</u>

95-09

ı .

•

,



TAPE COUNT 00:31:00 A.5" LONG
TAPE COUNT 00:33:00 A.5" LONG
TAPE COUNT 00:33:00 A.5" LONG
TAPE COUNT 00:38:00 A.5" LONG
TAPE COUNT 00:30:03 A.75" LONG
TAPE COUNT 00:30:03 A.5" LONG

Report 95-09 pg 2of 2

TEd Stores L-III 3/6/95

,

,

٩

٩

٠ **、**

.



• • • • • •

ATTACHMENT 4	
--------------	--

INVESSEL VISUAL	EXAMINATION	DATA SHEET

<u>GE</u> Nuclear Energy

1,053

88

• >

SITE: Nine Mile UNIT	TYPE OF VISUAL EXAMINATION				
PROJECT NUMBER: 1ETE	□ · VT-1 □ VT-3 ■ ENHANCED	□ ■ VT-1	DIRECT REMOTE		
Equipment Used During the Examina ETV-1250 Underwater Camera with tw Super VHS Recorder	Procedure N Revision No. FRR No.	o. VT-NMP-201V(0 NMP-006)		
Component / Area Viewed	Description of Recordable Indicati	ons No	. Accept	Reject	Film Footage
Resolution check			X	1	0:00:00
Weld H9 at 270 ⁰			X	1	0:00:39
Resolution check			X		0:23:00
Weld H9 at 90 [°] (RPV side)			X		0:23:29
Weld H9 at 90° (shroud side)			X		0:55:55
Resolution check			X		1:02:50
Weld H9 at 350 ^o (RPV side)			X		1:03:44
Weld H9 at 350 [°] (shroud side)	я		. X		1:22:26
Resolution check			X		1:38:43
					EOT
	·			ļ	_
			·		
Y	COMMENTS				

Examined by:	Level	COMMENTS:	
Wayne Farrell	II T		
Date Performed:	February 25, 1995		
	/	TRISIE IT ANULAN	
		Reviewed AU Level Date	0507
	<i>ن</i>	<u>'Ed Struth III 3/6/95</u> Tape Number	<u>9507</u> 95-07
L		Reviewed Level Date	

-



C

.

4

^ · **x**

.

τ

•

a
GENERAL ELECTRIC CO. San Jose, California

February 20, 1995

cc: Peter Walier Sam Ranganath

Roy Corieri Niagara Mohawk Power corporation Nine Mile Point, Box 63 Lycoming, NY 13093

Subject: Core Shroud Inspections Supporting Repair

Reference: Letter to Mr. Tom Gleason, "Core Shroud Inspections Supporting Repair", dated February 15, 1995

ATTACHMENT 5

Dear Roy:

The recommendations for the shroud weld inspections is provided below. Any suspected cracks or anomalies will be dispositioned by GE when they are reported.

1. Basis for H9 Weld Inspection

A VT-1 inspection is recommended for a 26 inch length of the exposed surface of the H9 weld adjacent to each lower support. Weld H9 is part of the load path from the tie rods to the reactor pressure vessel. The 26 inch weld length includes the weld adjacent to the two toggles (12 inches) plus an additional 7 inches on each side of the toggles. The additional 7 inches provides sufficient length for stress attenuation.

2. Basis for Vertical Weld Inspection

A VT-1 examination is recommended for a 6 inch length of vertical welds, V9, V10, V11 and V12, on the inside surface at the intersection of the H5 weld. The H5 weld is in a high radiation region and is susceptible to cracking. Finding acceptable welds in this region provides confidence that the other vertical weld are acceptable. The hoop stresses in the shroud sections are low and very little vertical weld is required to keep the sections cylindrical as required for the shroud repair design.

3. Recommendations for Top Guide Support Ring Inspection

A VT-1 inspection on the inside diameter of the two vertical welds (V5 and V6) in the top guide support ring is recommended. Structural integrity of this ring is required since it is a contributor to the overall shroud stiffness required to maintain preload.

T.E. Gleason TE Alleson



+

٠

a 5 41 ş

•

,

.

и 🖣

F

י יישי ייש