



December 22, 1995

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, DC 20555

Attn: Document Control Desk

Subject: Byron Unit 1 Pull Tube Eddy Current Inspection Results
NRC Docket Number 50-454

Reference: December 20, 1995, Meeting between the Commonwealth Edison Company (ComEd) and the Nuclear Regulatory Commission (NRC) Pertaining to Circumferential Indications at Braidwood Unit 1 and Byron Unit 1

During the Reference meeting, the Commonwealth Edison Company (ComEd) discussed with the Nuclear Regulatory Commission (NRC) recent results from the Braidwood Unit 1 and Byron Unit 1 1995 Fall outages. Part of that discussion centered around the Byron tube pull effort. This information along with subsequent submittals will be used as input in determining the appropriate cycle length for Braidwood Unit 1. Additionally, this information will also be used in the development of the ComEd/EPRI Alternate Repair Criteria for circumferential indications which will be submitted to the Staff in the Summer of 1996.

Attached is the field eddy current testing (ECT) data of the Byron tube pull available as of December 21, 1996. Specifically enclosed is:

Attachment 1: ComEd Byron Tube Pull ECT Sizing Results Summary

When reviewing Attachment 1, please note that the following table cross references the specific tube and its classification.

	<u>Classification</u>	<u>Row</u>	<u>Column</u>
-	Largest Amplitude	38	55
-	Smallest Crack	28	68
-	Largest +Point W/O Confirmation	20	85
-	Shallow Phase	38	44
-	Deepest In-Service (Broken in 2 Sections)	23	43
-	Prob. NDD	24	91
-	0.115" Crack, NDD 0.080"	14	93
-	Small Amplitude	27	48
-	Mixed Mode (Broken 1 Section)	24	42
-	Largest Circ. Extent (Broken 1 Section)	14	37

Attachment 1 will be supplemented when the various vendor complete the sizing of indications.

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Attachment 2: One set of eddy current profiles

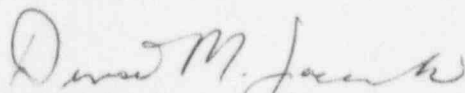
For Attachment 2, it should be noted that for that particular vendor, a 25% through wall depth was assigned when depth could not be determined.

The graphic profiles of the individual indications will be maintained at the EPRI NDE Center in Charlotte, N.C.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other ComEd employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

If you have any questions concerning this correspondence, please contact this office.

Sincerely,



Denise M. Saccomando
Nuclear Licensing Administrator



Jacqueline T. Evans 12/22/95

Attachment

cc: D. Lynch, Senior Project Manager-NRR
G. Dick, Byron Project Manager-NRR
H. Peterson, Senior Resident Inspector-Byron
H. Miller, Regional Administrator-RIII
Office of Nuclear Safety-IDNS

ATTACHMENT 1

ComEd Byron Tube Pull ECT Indication Sizing Results Summary

ATTACHMENT

ComEd BYRON TUBE PULL ECT SIZING RESULTS SUMMARY

BYRON PULLED TUBES (12/95)							
Probe Analyzed / Cal Group(s)		Plus Point 300 kHz		205,207,209			
Vendor		A					
Brief Description of Technique		Axial scan line filter phase measurement with filter applied					
ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	82	40	8.8			Best Effort on Depth
28	88	28	76	4.7	40	0.18	
20	85	156 / 20 / 5	89	24.3			
38	44	70	40	7.8			Best Effort on Depth
23	43	87 / 59 / 22 / 39	86	26			
24	42	145	99	35.6	74	0.18	
14	93	251	83	41.8	98 / 99 / 88	.25 / .25 / .20	
27	48	58	40	6.4			Best Effort on Depth
38	55	310	88	43.9			
14	37	310	99	61.1			

BYRON PULLED TUBES (12/95)							
Probe Analyzed / Cal Group(s)		Plus Pt. Gimbaled 300 kHz		197			
Vendor		A					
Brief Description of Technique		Axial scan line filter applied (Length measurement only)					
ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	187	40	18.77			
28	88	41	40	4.89	52	0.33	
20	85	293	87	32.92			
38	44	44	40	3.71			
23	43	97,174	100,96	55.07			
24	42	177	89	33.07	80	0.19	
14	93	286	88	43.94			
27	48	232	51	23.72			
38	55	316	41	25.24			
14	37	304	98	48.77			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209 0.080 pancake
 Vendor B
 Brief Description of Technique 0.080 mr pancake using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	88	40	84	8.22			
20	85	0	0	0			
38	44	0	0	0			
23	43	70,80	85,100	18.94			
24	42	80,90	95,99	20.64			
14	93	120	100	15.64			
27	48	0	0	0			
38	55	120	99	22.06			
14	37	220	99	27.33			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 207,205,209
 Vendor B
 Brief Description of Technique .115 pancake using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	88	40	20	1.67			
20	85	40	99	8.19			
38	44	40	20	1.67			
23	43	100,180	99,92	39.06			
24	42	80,90	96,99	33.97			
14	93	130	79	11.31			
27	48	40	95	6.31			
38	55	40, 140	52,90	27.06			
14	37	140,70,30,20	96,99,34,20	25.89			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Groups) 205,207,209
 Vendor B
 Brief Description of Technique Plus point using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	80	96	10			
28	68	40	45	2.36			
20	85	30,20	90,86	7.19			
38	44	30	80	3.83			
23	43	70,40,40,60,20	89,98,89,96,70	38.80			
24	42	170	96	34.44			
14	93	100	91	18.44			
27	48	90	89	18.5			
38	55	60,120,40	95,98,99	40.58			
14	37	40,80,40,20	78,84,75,86	20.03			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Groups) 205,207,209
 Vendor C
 Brief Description of Technique Cross Correlation Filtering

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	68	40	26	1.77			
20	85	40	42	2.47			
38	44	80	69	8			
23	43	340	97	27.27			
24	42	149	86	28.14	90	0.21	
14	93	300	100	27.87			
27	48	150	25	9.64			
38	55	290	55	19.11			
14	37	340	54	25.89			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 197
 Vendor C
 Brief Description of Technique Band Pass Filtering Plus Pt. 300 kHz

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	180	29	11.92			
26	66	40	34	1.72			
20	95	70	41	3.32			
38	44	60	25	2.42			
23	43	350	98	43.22			
24	42	180	97	34.64	72	0.25	
14	93	268	25	17.82			
27	48	170	59	12.99			
36	55	309	75	25.43			
14	37	350	97	39.38			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
 Vendor D
 Brief Description of Technique .080 MR 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0				
28	66	0	0				
20	95	0	0				
38	44	68	0				
23	43	360	78				
24	42	180	80		86	0.29	
14	93	148	0				
27	48	0	0				
36	55	360	90				
14	37	338	70				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
 Vendor D
 Brief Description of Technique .080 MR 300 kHz EDDYNET SOFTWARE

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	81						DATA TOO NOISY
28	88						
20	85						
38	44						
23	43	72,47,58	98	34.1	91 MAX, 88 AVG.	0.27	
24	42	46,100,72	98	42.5			MIXED MODE IND
14	93	222,28	80	17.3			
27	48						
38	55	305	88	28.2			
14	37	250,25	94	41.3			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
 Vendor D
 Brief Description of Technique Axial sensitive coil 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91						
28	88						
20	85						Some residual
38	44						
23	43						Some residual
24	42				81	0.35	Some residual
14	93						Some residual
27	48						
38	55						Some residual
14	37						

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
 Vendor D
 Brief Description of Technique Circumferential sensitive coil 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0				
28	88	32	11				
20	85	37,78	49,32				Multiple
38	44	34,67	34,42				Multiple
23	43	108,138	66,46				Multiple
24	42	191	79				
14	93	119	0				
27	48	298	49				
38	55	360	81				
14	37	303	86				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
 Vendor D
 Brief Description of Technique 115 MR 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	81	108	0				
28	88	51	0				
20	85	62,127	0,18				
38	44	211	0				
23	43	355	78				
24	42	186	80		71	0.20	
14	93	184	19				
27	48	223	0				
38	55	225	72				
14	37	335	57				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
 Vendor D
 Brief Description of Technique Plus Pt. 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	81	158	0				
28	88	67	40				
20	85	104,43	44,18				Multiple
38	44	50,31	13,0				Multiple
23	43	360	74				
24	42	196	82		75	0.2	
14	93	300	33				
27	48	97	38				
38	55	353	57				
14	37	360	64				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 203
 Vendor D
 Brief Description of Technique .080 HF 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	98	0				
28	68	41	0				
20	85	152,38	0,0				Multiple
38	44	192	0				
23	43	349	74				
24	42	185	84		73	0.26	
14	93	152	0				
27	48	246	0				
38	55	339	69				
14	37	295	43				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 197
 Vendor D
 Brief Description of Technique Gimballed Plus Pt. 300 kHz conventional analysis not using axial view

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	225	62				
28	68	39	20				
20	85	241	40				
38	44	72	25				
23	43	120, 46	89	21.7			
24	42	198	88	48.3	87	0.2	
14	93	289	0				
27	48	201	47				
38	55	335	84				
14	37	360	70				

BYRON PULLED TUBES (12/95)

Probe Analyzed
 Vendor D
 Brief Description of Technique Cerco-5 Compensation Mix

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	NDD	0				
28	68	NDD	0				
20	85	NDD	0				
38	44	NDD	0				
23	43	45,23	78,58				
24	42	45,45	40,20				
14	93	45	30				
27	48	NDD	0				
38	55	80	50				
14	37	23	20				

BYRON PULLED TUBES (12/95)

Probe Analyzed Vendor D
 Brief Description of Technique UTEC

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	NDD					
28	68	97	30	7.2			Intermittent
20	85	300	not measurable				Intermittent
38	44	10, 10	not measurable				
23	43	97 (35,31), 42, 17	85	12			97 includes 2 axially separated Ind's
24	42	206	80	26	not measurable	0.25	Intermittent
14	93	NDD					
27	48	NDD					
38	55	310	not measurable				Intermittent Ind. below bottom roll trans.
14	37	360	not measurable				Intermittent

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
 Vendor E
 Brief Description of Technique Plus Pt 300 kHz

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	180	80				
28	68	145	90		80,80	.17,.29	
20	85	380	90				
38	44	219	90				
23	43	360	100				
24	42	253	100		100	0.21	
14	93	360	90				
27	48	304	90		80	0.25	
38	55	360	90				
14	37	360	100				

ATTACHMENT 2

Byron Tube Pull ECT Indication Profiles

R24 CS1

Plus Point Gimbaled Probe 300 kHz

Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 23.83%

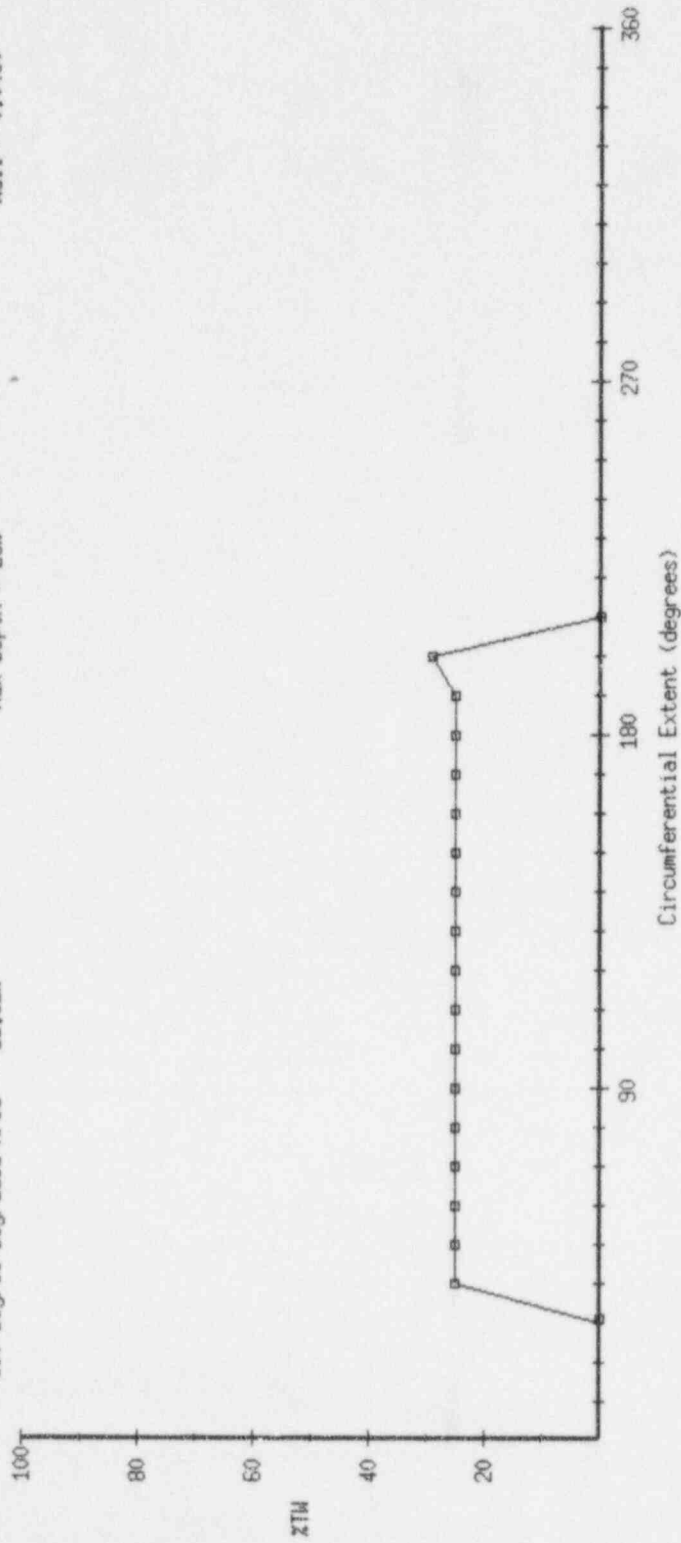
360 Degree Degraded Area = 11.92%

Length = 180 deg.

Max Depth = 29%

Dia. = 0.7500

Wall = 0.0430



13:47 12/16/95 (ver 02)

DEGREES	TW	ESTIMATE
030	00	0.00
040	25	250.00
050	25	250.00
060	25	250.00
070	25	250.00
080	25	250.00
090	25	250.00
100	25	250.00
110	25	250.00
120	25	250.00
130	25	250.00
140	25	250.00
150	25	250.00
160	25	250.00
170	25	250.00
180	25	250.00
190	25	250.00
200	29	290.00
030	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 23.83%

360 Degree Degraded Area = 11.92%

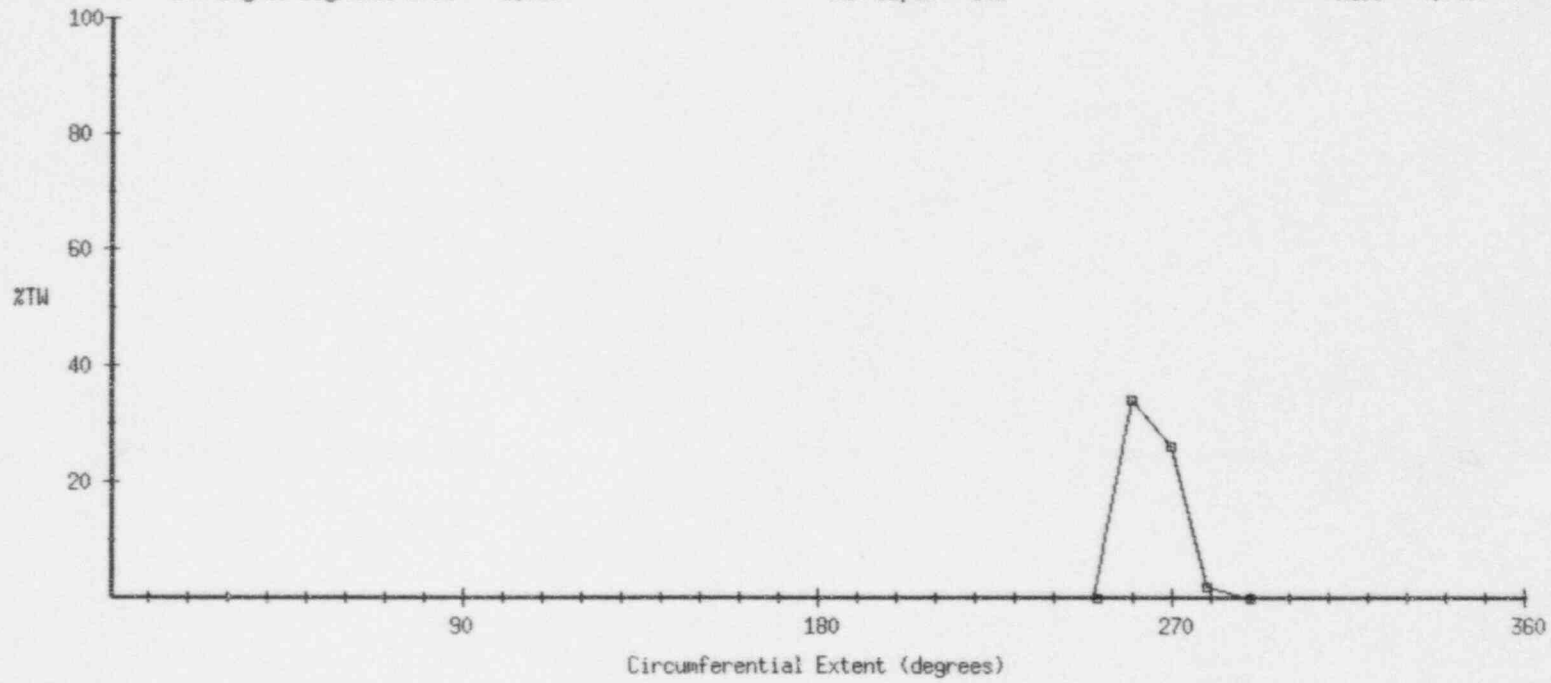
R28 C68

Plus Point Gimbaled Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 15.45%
350 Degree Degraded Area = 1.72%

Length = 040 deg.
Max Depth = 34%

Dia. = 0.7500
Wall = 0.0430



06:11 12/12/95 (ver 01)

R28 C68

DEGREES	TW	ESTIMATE
250	00	0.00
260	34	340.00
270	26	260.00
279	02	18.00
250	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 15.45%

360 Degree Degraded Area = 1.72%

R20 C85

Plus Point Gimbale Probe 300 kHz

Band Pass Filtering (low 17, high 105, 23 coef)

Flow Length Degraded Area = 5.03%

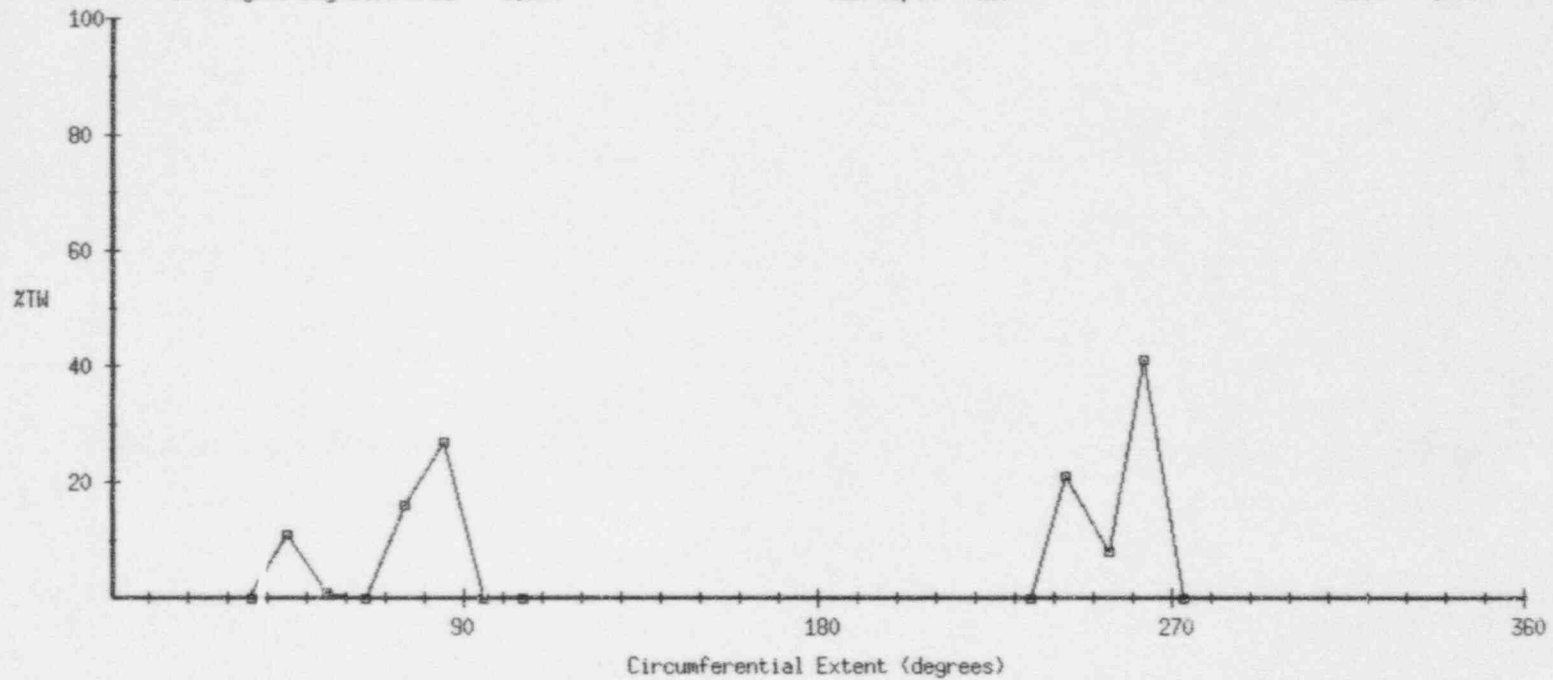
Length = ~~228~~⁷⁰ deg.

Dia. = 0.7500

360 Degree Degraded Area = 3.32%

Max Depth = 41%

Wall = 0.0430



06:07 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
035	00	0.00
045	11	110.00
055	01	10.00
065	00	0.00
075	16	160.00
085	27	270.00
095	00	0.00
105	00	0.00
234	00	0.00
243	21	189.00
254	08	88.00
263	41	369.00
035	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 5.03%

360 Degree Degraded Area = 3.32%

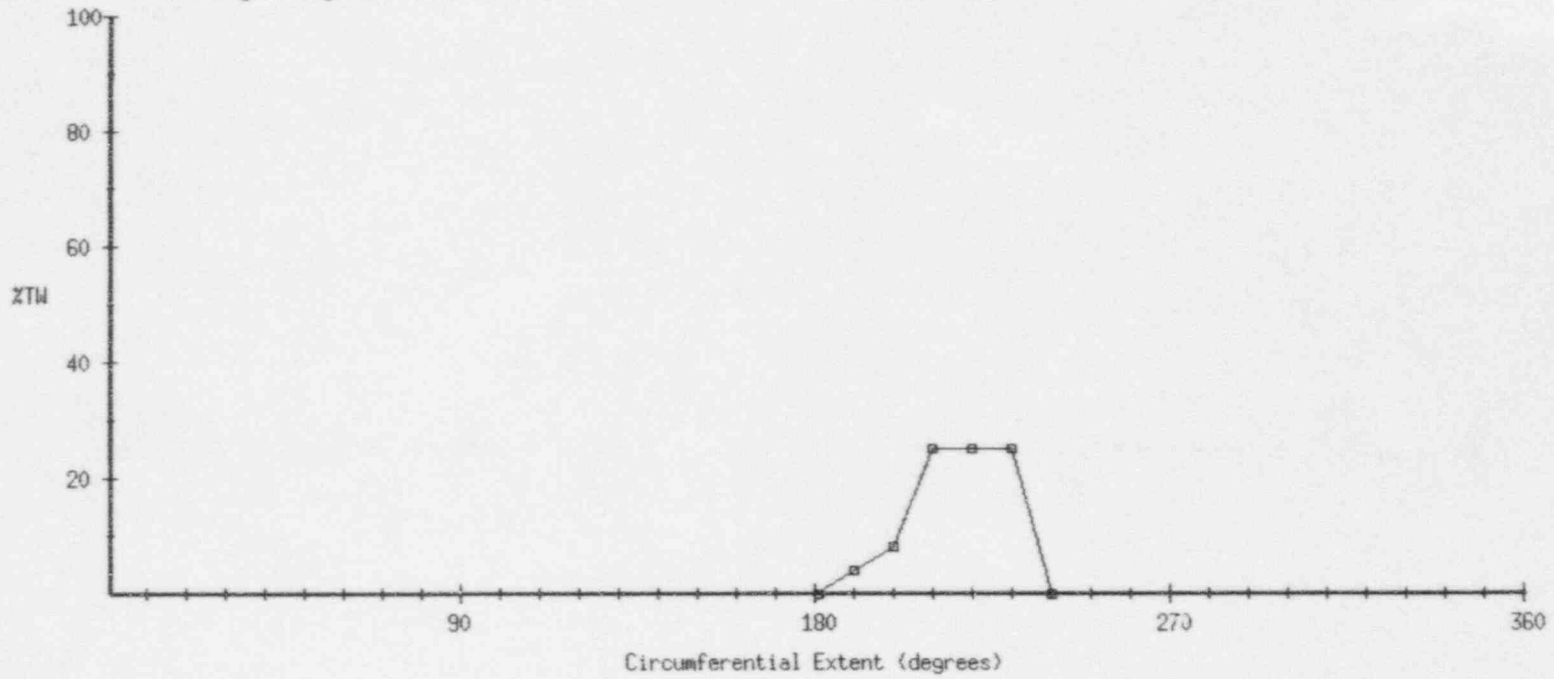
R38 C44

Plus Point Gimbaled Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 14.50%
360 Degree Degraded Area = 2.42%

Length = 060 deg.
Max Depth = 25%

Dia. = 0.7500
Wall = 0.0430



06:17 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
180	00	0.00
190	04	40.00
200	08	80.00
210	25	250.00
220	25	250.00
230	25	250.00
180	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Final Length Degraded Area = 14.50%

360 Degree Degraded Area = 2.42%

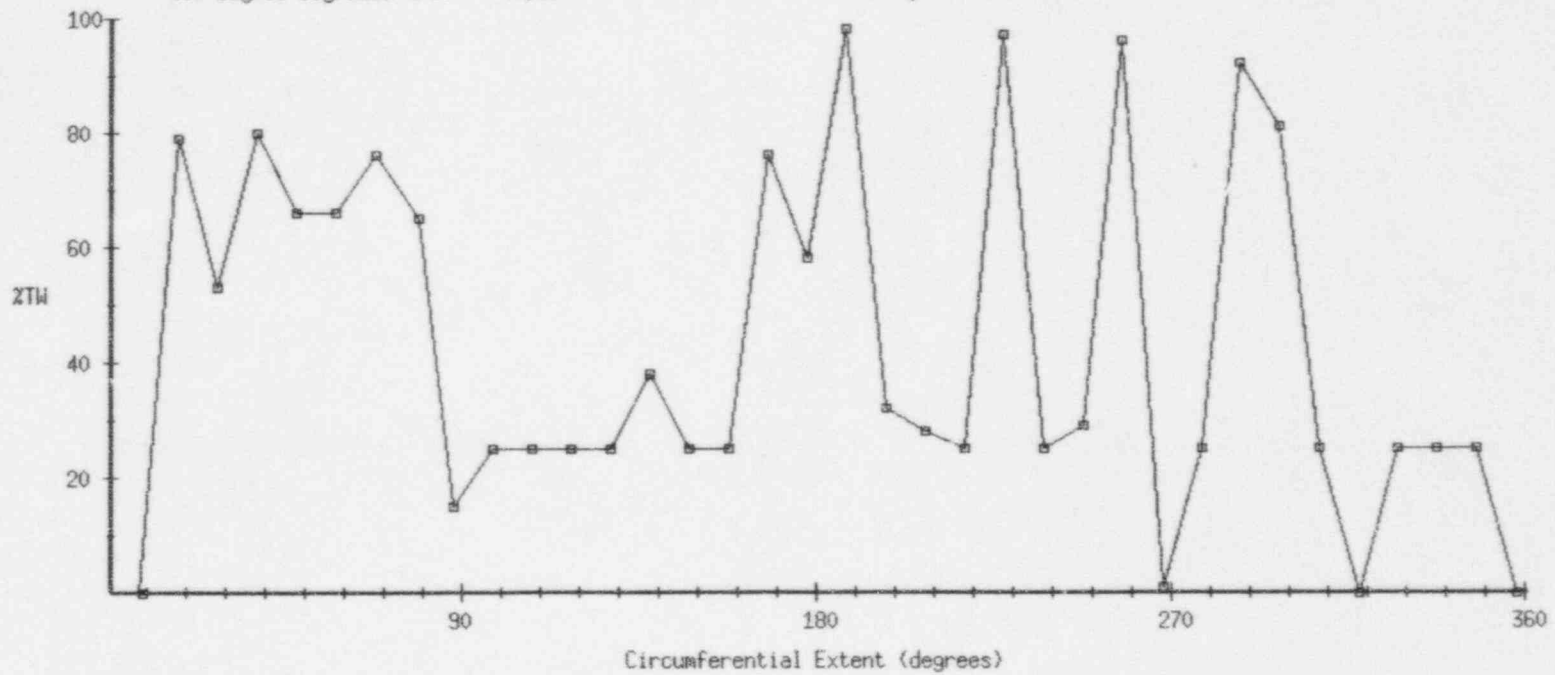
R23 C43

Plus Point Gimbale Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 44.46%
360 Degree Degraded Area = 43.22%

Length = 350 deg.
Max Depth = 98%

Dia. = 0.7500
Wall = 0.0430



06:18 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
008	00	0.00
018	79	790.00
028	53	530.00
038	80	800.00
048	66	660.00
058	66	660.00
068	76	760.00
079	65	715.00
088	15	135.00
098	25	250.00
108	25	250.00
118	25	250.00
128	25	250.00
138	38	380.00
148	25	250.00
158	25	250.00
168	76	760.00
178	58	580.00
188	98	980.00
198	32	320.00
208	28	280.00
218	25	250.00
228	97	970.00
238	25	250.00
248	29	290.00
258	96	960.00
268	01	10.00
278	25	250.00
288	92	920.00
298	81	810.00
308	25	250.00
318	00	0.00
328	25	250.00
338	25	250.00
348	25	250.00
008	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 44.46%

360 Degree Degraded Area = 43.22%

R24 C42

Plus Point Gimbale Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 69.28%

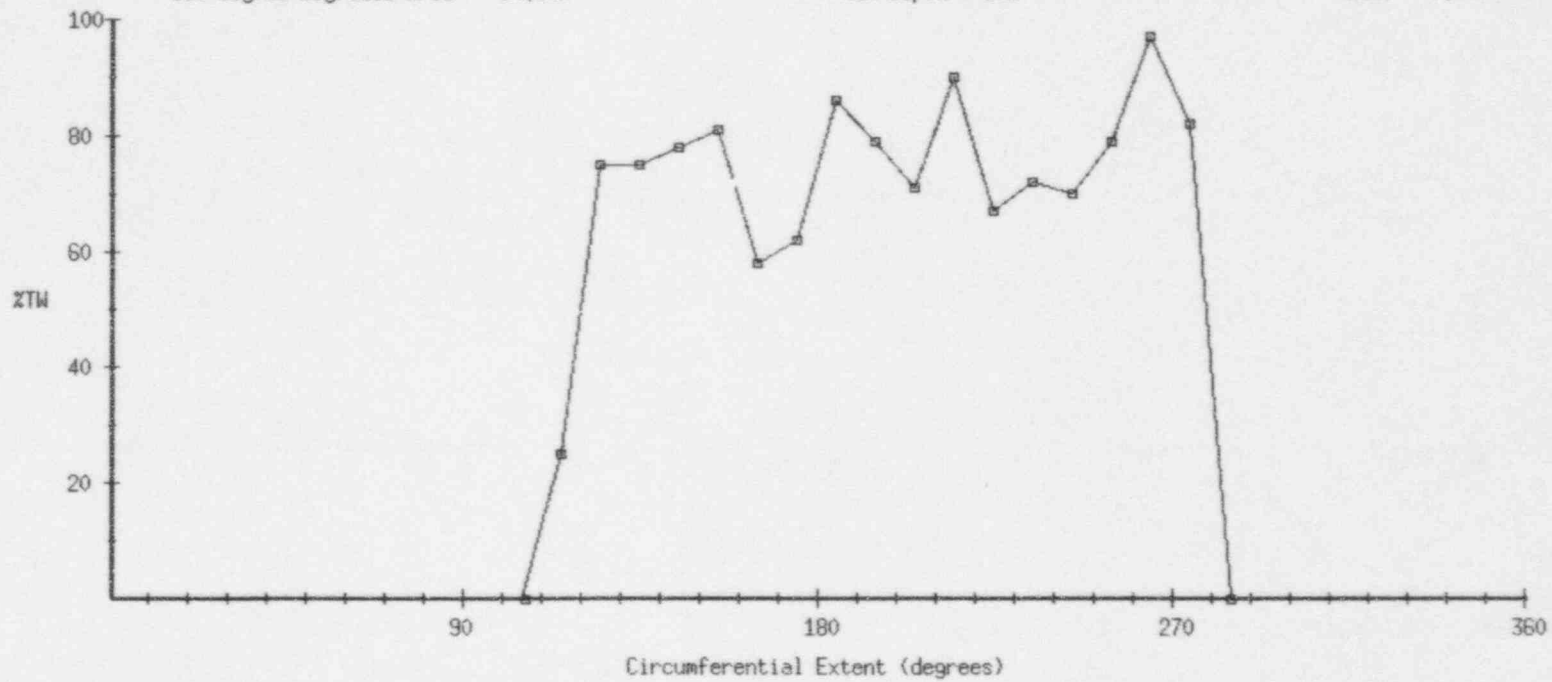
Length = 180 deg.

Dia. = 0.7500

360 Degree Degraded Area = 34.64%

Max Depth = 97%

Wall = 0.0430



06:21 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
105	00	0.00
115	25	250.00
125	75	750.00
135	75	750.00
145	78	780.00
155	81	810.00
165	58	580.00
175	62	620.00
185	86	860.00
195	79	790.00
205	71	710.00
215	90	900.00
225	67	670.00
235	72	720.00
245	70	700.00
255	79	790.00
265	97	970.00
275	82	820.00
105	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 69.28%

360 Degree Degraded Area = 34.64%

R24 C42 (Intersect circ. at 270 deg)

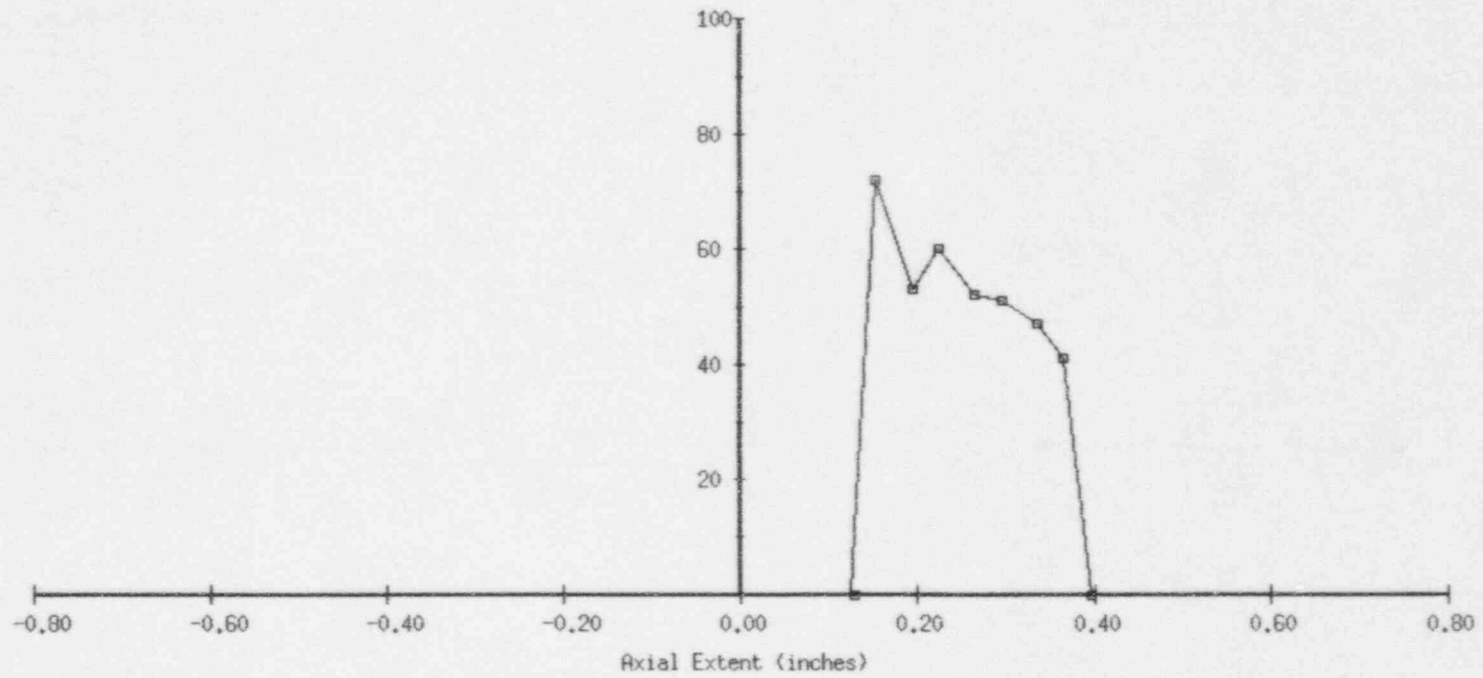
Plus Point Gimbaled Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 47.41%

Max Depth = 72%

Wall = 0.0430

ZTW



06:23 12/12/95 (ver 01)

R24 C42 (Intersect circ. at 270 deg)

LOCATION	TW	ESTIMATE
000	00	0.00
000	72	2.16
000	53	2.12
000	60	1.80
000	52	2.08
000	51	1.53
000	47	1.88
000	41	1.23
000	00	0.00

Wall Thickness = 0.0430

Flaw Length Degraded Area = 47.41%

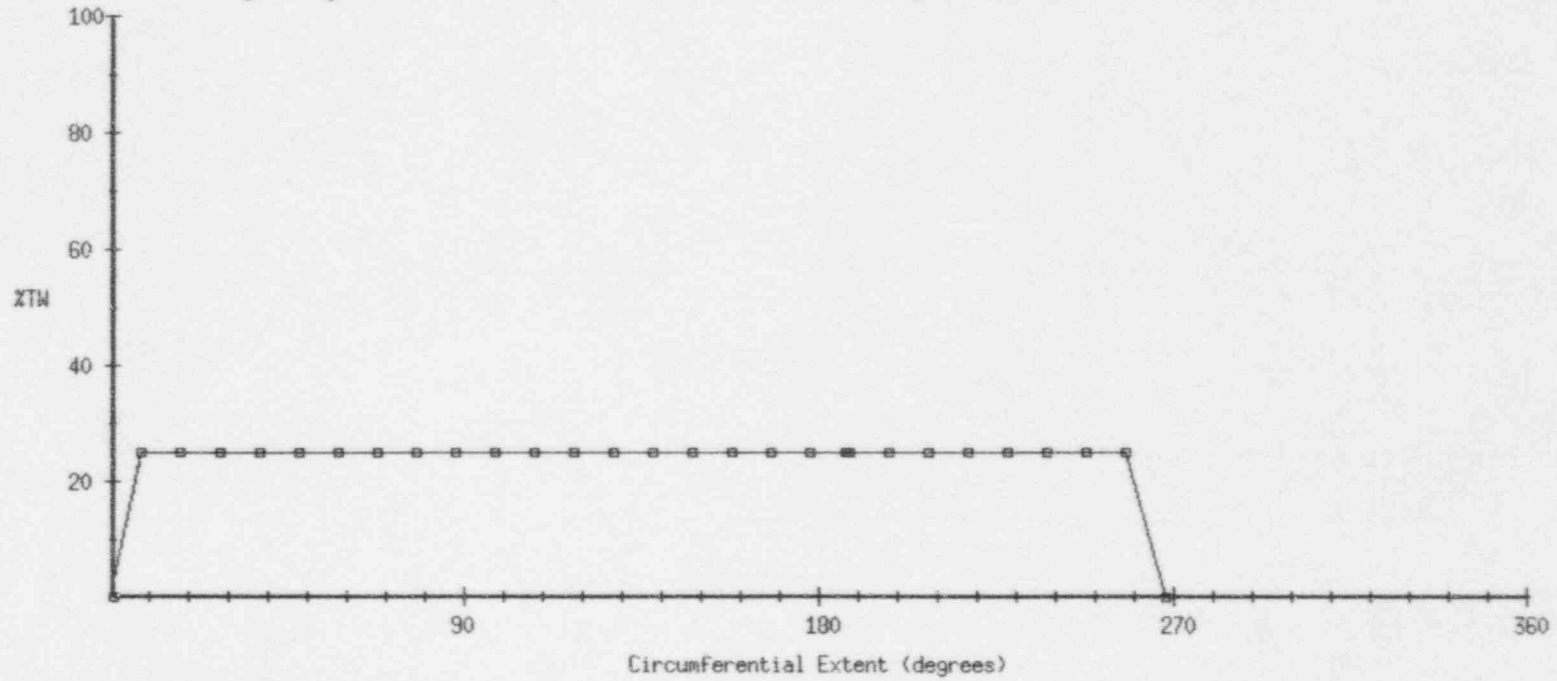
R14 C93

Plus Point Gimbaled Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 24.07%
360 Degree Degraded Area = 17.92%

Length = 268 deg.
Max Depth = 25%

Dia. = 0.7500
Wall = 0.0430



05:45 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
000	00	0.00
008	25	200.00
018	25	250.00
028	25	250.00
038	25	250.00
048	25	250.00
058	25	250.00
068	25	250.00
068	25	0.00
078	25	250.00
078	25	0.00
088	25	250.00
088	25	0.00
098	25	250.00
108	25	250.00
118	25	250.00
128	25	250.00
138	25	250.00
148	25	250.00
158	25	250.00
168	25	250.00
178	25	250.00
187	25	225.00
188	25	25.00
198	25	250.00
208	25	250.00
218	25	250.00
228	25	250.00
238	25	250.00
248	25	250.00
258	25	250.00
000	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 24.07%

360 Degree Degraded Area = 17.92%

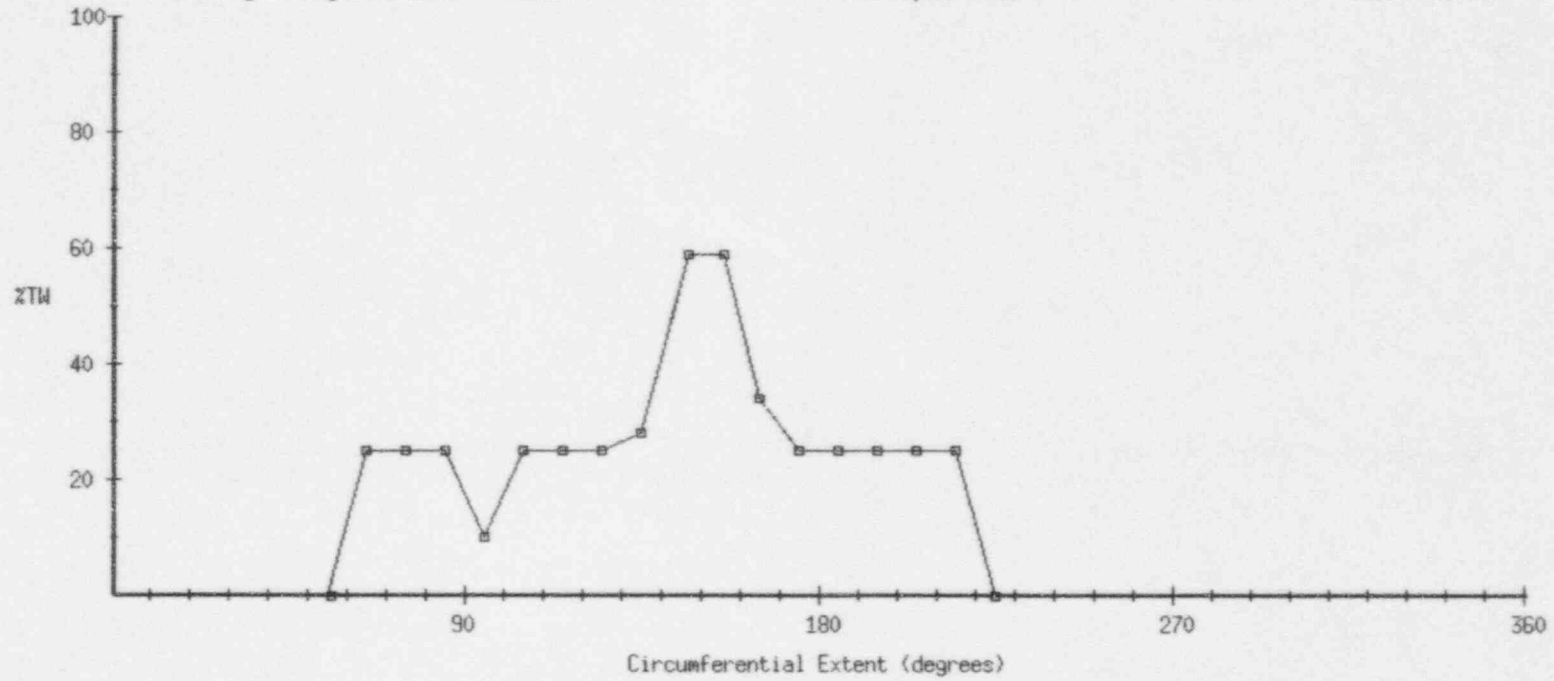
R27 C46

Plus Point Gimbaled Probe 300 MHz
Band Pass Filtering (low 17, high i05, 23 coef)

Flaw Length Degraded Area = 27.50%
360 Degree Degraded Area = 12.99%

Length = 170 deg.
Max Depth = 59%

Dia. = 0.7500
Wall = 0.0430



06:12 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
055	00	0.00
065	25	250.00
075	25	250.00
085	25	250.00
095	10	100.00
105	25	250.00
115	25	250.00
125	25	250.00
135	28	280.00
147	59	708.00
156	59	531.00
165	34	306.00
175	25	250.00
185	25	250.00
195	25	250.00
205	25	250.00
215	25	250.00
055	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 27.50%

360 Degree Degraded Area = 12.99%

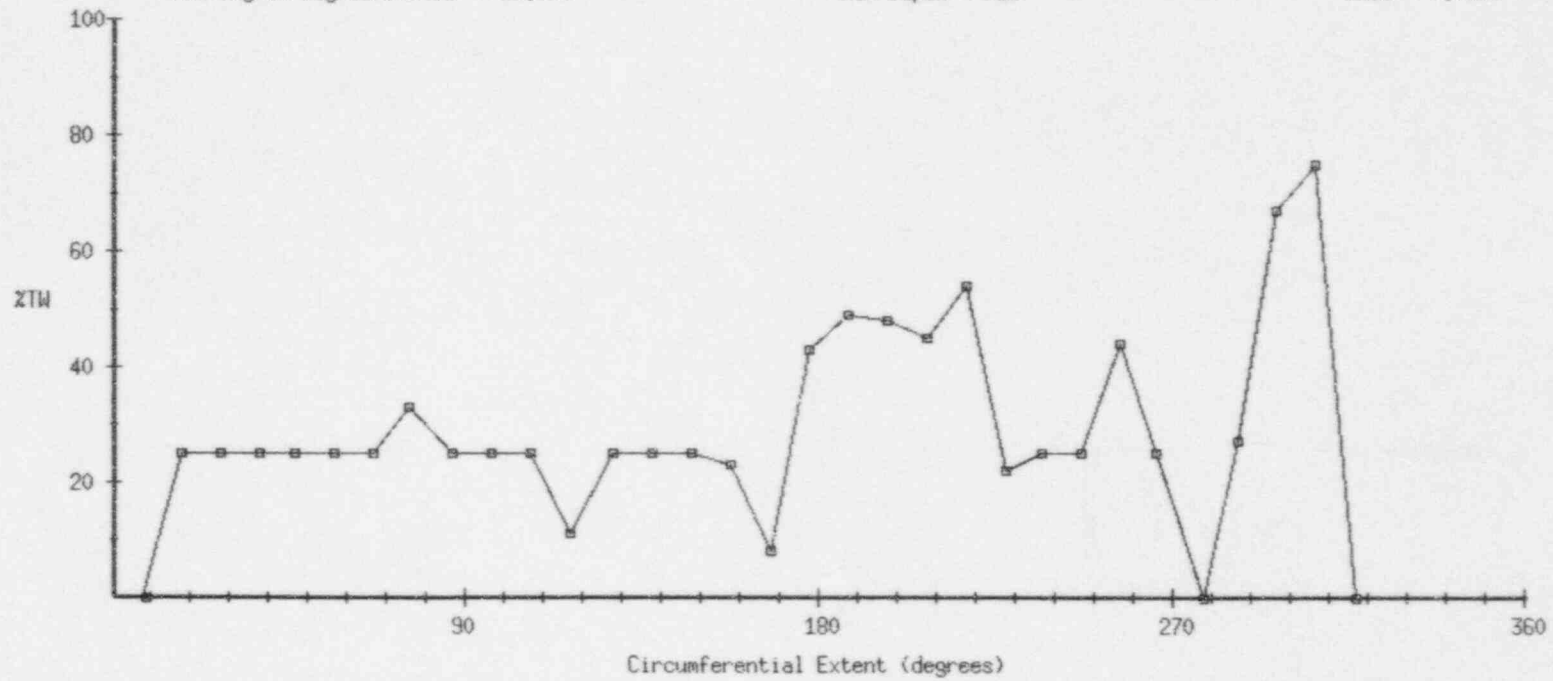
R38 C55

Plus Point Gimbaled Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 29.63%
360 Degree Degraded Area = 25.43%

Length = 309 deg.
Max Depth = 75%

Dia. = 0.7500
Wall = 0.0430



06:15 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
008	00	0.00
018	25	250.00
028	25	250.00
038	25	250.00
047	25	225.00
057	25	250.00
067	25	250.00
076	33	297.00
087	25	275.00
097	25	250.00
107	25	250.00
117	11	110.00
128	25	275.00
138	25	250.00
148	25	250.00
158	23	230.00
168	08	80.00
178	43	430.00
188	49	490.00
198	48	480.00
208	45	450.00
218	54	540.00
228	22	220.00
237	25	225.00
247	25	250.00
257	44	440.00
266	25	225.00
278	00	0.00
287	27	243.00
297	67	670.00
307	75	750.00
008	00	0.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 29.63%

360 Degree Degraded Area = 25.43%

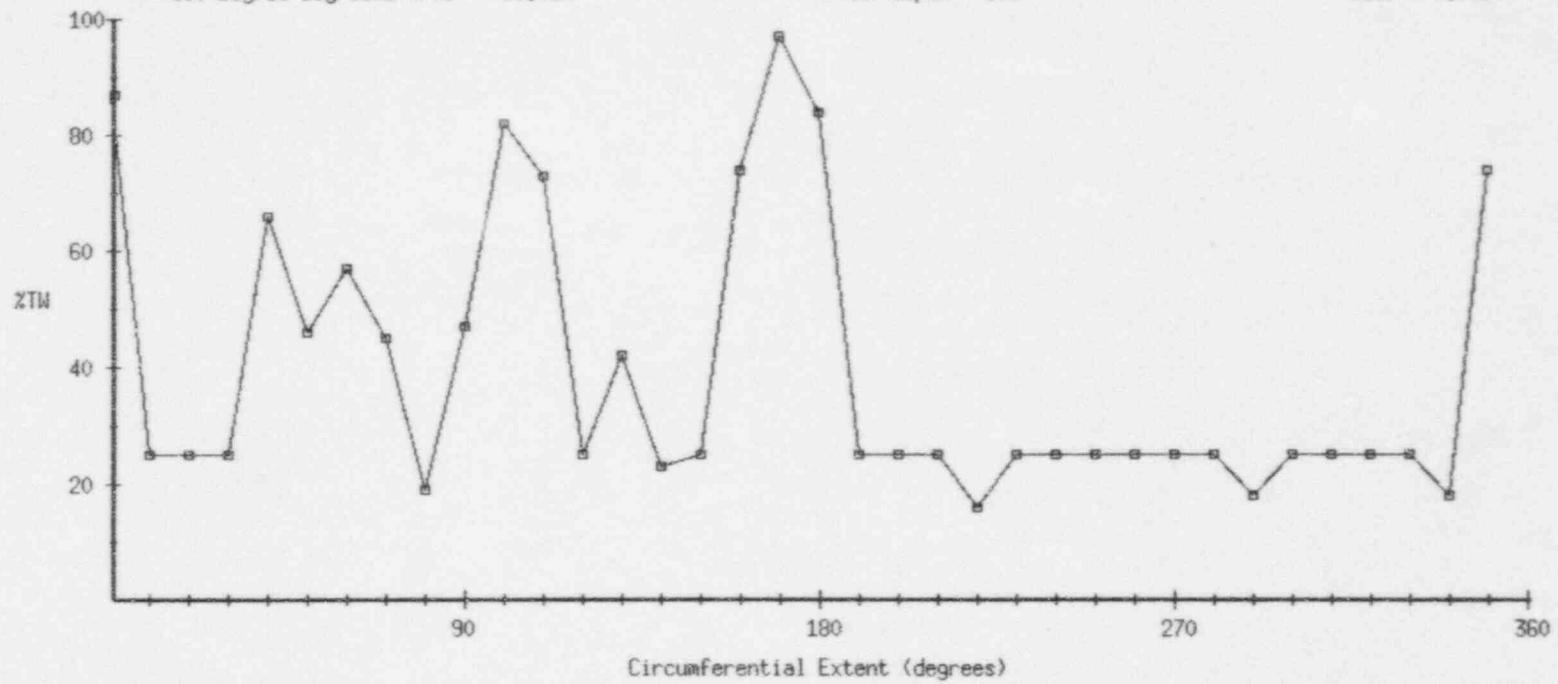
R14 C37

Plus Point Gimbale Probe 300 kHz
Band Pass Filtering (low 17, high 105, 23 coef)

Flaw Length Degraded Area = 40.51%
360 Degree Degraded Area = 39.39%

Length = 350 deg.
Max Depth = 97%

Dia. = 0.7500
Wall = 0.0430



06:26 12/12/95 (ver 01)

DEGREES	TW	ESTIMATE
000	87	870.00
010	25	250.00
020	25	250.00
030	25	250.00
040	66	660.00
050	46	460.00
060	57	570.00
070	45	450.00
080	19	190.00
090	47	470.00
100	82	820.00
110	73	730.00
120	25	250.00
130	42	420.00
140	23	230.00
150	25	250.00
160	74	740.00
170	97	970.00
180	84	840.00
190	25	250.00
200	25	250.00
210	25	250.00
220	16	160.00
230	25	250.00
240	25	250.00
250	25	250.00
260	25	250.00
270	25	250.00
280	25	250.00
290	18	180.00
300	25	250.00
310	25	250.00
320	25	250.00
330	25	250.00
340	18	180.00
000	87	740.00

Tube Dia. = 0.7500

Wall Thickness = 0.0430

Flaw Length Degraded Area = 40.51%

360 Degree Degraded Area = 39.39%