

CALVERT CLIFFS

UNIT #1

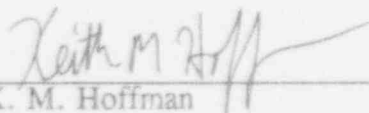
STEAM GENERATORS #11 AND #12

EDDY CURRENT TESTING

FINAL REPORT

APRIL/MAY 1992

Approved by:


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Principal Engineer

Prepared by:

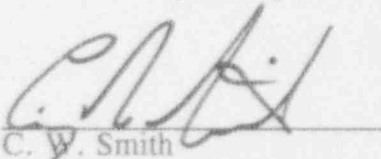

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I. INTRODUCTION

This report summarizes the April/May 1992 eddy current inspection results of the Calvert Cliffs Unit #1 Steam Generators. The report contains a brief description of the inspection plan, written and tabular summaries of the inspection results, and detailed lists of all indications found.

II. DISCUSSION

The Zetec, Inc. MIZ-18A digital data acquisition system was used to examine the U-tubes of the Unit #1 Steam Generators.

The primary analysis frequency selected was 400 KHz. Frequencies of 800, 100 and 30 KHz were also selected to enhance the data analysis. All eddy current data collected received both a primary and a secondary analysis in addition to an independent third party review. Zetec, Inc. was contracted to perform the primary analysis. The secondary analysis was performed by Computer Data Screening (CDS). NDE Technology served as the independent, third party reviewer.

Prior to conducting data analysis, all of the analysts, including the CDS system, were required to pass a site specific examination.

The scope of the inspection plan was a full length bobbin coil examination of all the in-service tubes in both steam generators. In addition to the 100% bobbin coil inspection, a motorized rotating pancake coil (MRPC) was used to perform more detailed examinations at selected locations in both steam generators. MRPC was used to examine 25% of the tubes in each steam generator at the hot leg tubesheet expansion zone. This examination was designed to look for circumferential cracking identified at plants of similar design and age. No circumferential cracking was found. MRPC examination was also performed on 100 tubes in each steam generator at dent locations adjacent to the solid tube support plates. No circumferential cracking was found at these locations. All of the distorted indications from the bobbin coil examination were further characterized by MRPC examination.

Table II-1 summarizes the Unit #1 April/May 1992 Eddy Current Examination results. Appendices I and II contain detailed lists of all eddy current indications found during this examination. All indications were on the outside surfaces of the tubes. The examination results were consistent with the known, active corrosion mechanisms present in the steam generators. There were no noteworthy or unexpected results.

As a result of eddy current examination and analysis, eleven (11) tubes in the #11 Steam Generator and seven (7) tubes in the #12 Steam Generator were removed from service by inserting mechanical tube plugs. In addition, one (1) mechanical tube plug was installed on the #12 Steam Generator hot leg tubesheet opposite a cold leg plug that had been placed in a wrong location in 1986.

TABLE II - I

Unit One Eddy Current Inspection Results

	SG #11	SG #12
Number of In-service Tubes	8412	8450
Percent of In-service Tubes Inspected	100%	100%
Number of Indications < 20% (Imperfections)	209	236
Number of Tubes with < 20% Indications	166	181
Percent of Tubes with < 20% Indications	1.97%	2.14%
Number of Indications 20-39% (Degraded)	112	120
Number of Tubes with 20-39% Indications	102	114
Percent of Tubes with 20-39% Indications	1.21%	1.35%
Number of Indications > 39% (Defective)	12	5
Number of Tubes with > 39% Indications	10	5
Percent of Tubes with > 39% Indications	0.19%	0.06%
Number of Tubes Plugged this Outage	11	8
Total Tubes Plugged	118	77
Percent of Tubes Plugged	1.40%	0.91%

NOTE: Tubes which contained more than one indication in more than one category (< 20%, 20-39%, and > 39% are listed in all appropriate categories.

APPENDIX I

Eddy Current Test Results for #11 Steam Generator

- A. Plot with List of All Indications April/May 1992
- B. Plot with List of < 20% Indications April/May 1992
- C. Plot with List of 20% - 39% Indications April/May 1992
- D. Plot with List of > 39% Indications April/May 1992
- E. Plot with List of Dented Tubes April/May 1992
- F. Plot with List of Tubes Plugged April/May 1992
- G. Plot with List of All Tubes Plugged All Outages April/May 1992

STEAM GENERATOR #11

A. Plot with List of All Indications April/May 1992

ALL EDDY CURRENT INDICATIONS - ALL LOCATIONS

PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 4/92

GENERATOR: 11

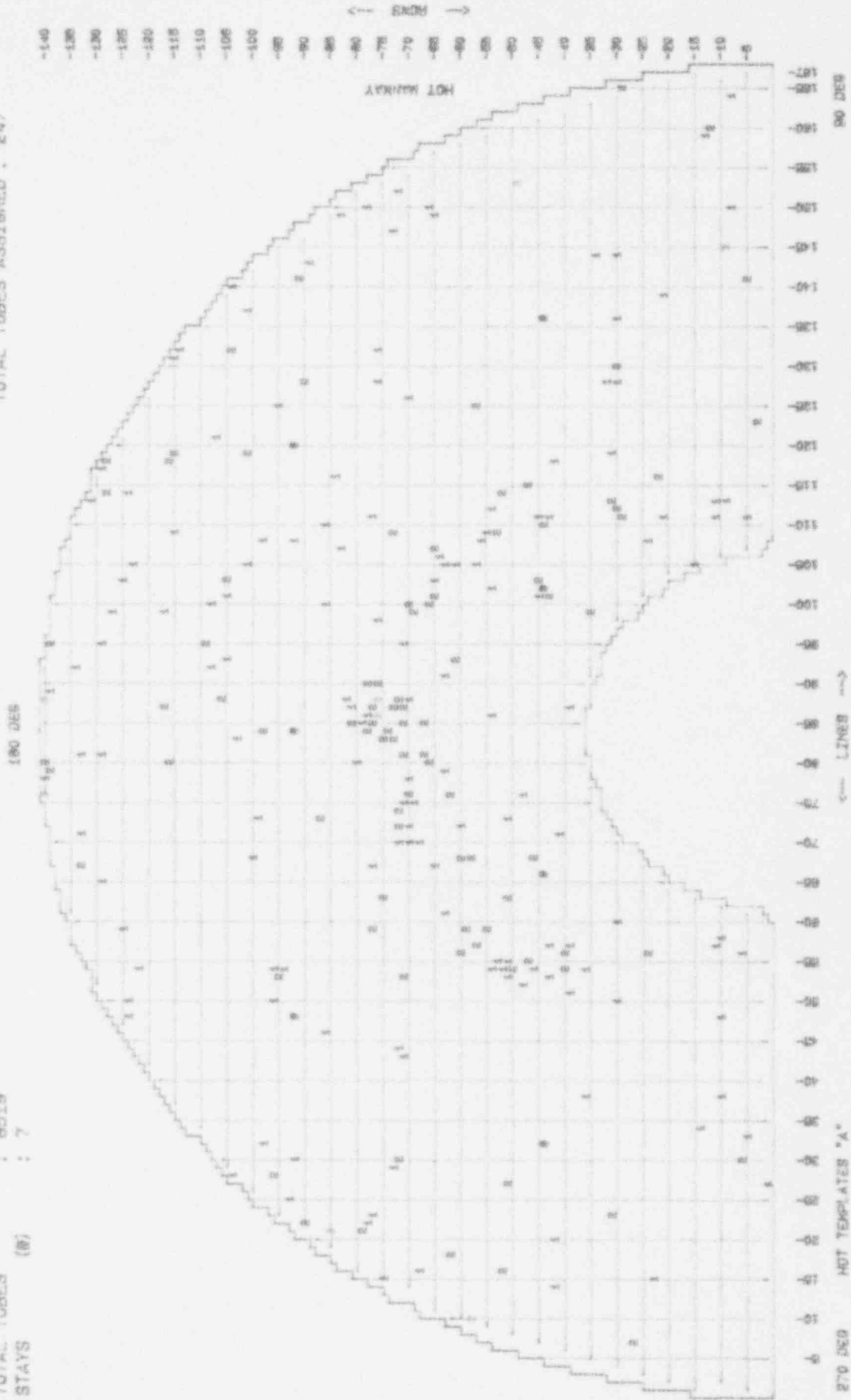
1 = <20 (1.48)

2 = 20-39 (0.1)

3 = >39 (8)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 247



Plant: CALVERT CLIFFS UNIT 1
Outage: 4/92

Steam Generator: 11

QUERY: ALL ENDY CURRENT INDICATIONS - ALL LOCATIONS

ROW	LINE	OUTAGE	INDICATION	VALUE	WOLTS	LOCATION	INCHES	COMMENTS	NEEL
47	115	4/92	OD	31 % TW	0.57	HTS-SF	+ 0.80		H35
22	116	4/92	OD	24 % TW	1.96	H1	+33.58		Z3A
	4/92	OD	29 % TW	0.83	C4		+37.18		Z3A
84	116	4/92	OD	15 % TW	0.58	CTS-SF	+28.62		C24
129	117	4/92	OD	6 % TW	0.74	C7	+21.84		C23
42	118	4/92	OD	16 % TW	0.92	HTS-SF	+ 1.72		H26
116	118	4/92	OD	37 % TW	0.69	C9	+11.28		C23
	4/92	OD	S/N	1.72	C9		+11.28		C23
128	118	4/92	OD	30 % TW	0.86	C6	+ 8.28		C23
	4/92	OD	S/N	2.19	C8		+ 8.28		C23
31	119	4/92	OD	11 % TW	1.38	HTS-SF	+ 0.12		C22
101	119	4/92	OD	30 % TW	0.67	H4	- 0.55		C22
118	119	4/92	OD	23 % TW	0.47	H9			C27
107	120	4/92	OD	19 % TW	0.59	VB	+ 5.98		C21
	4/92	OD	S/N	1.33	VB		+ 5.98		C21
3	123	4/92	OD	36 % TW	0.71	CTS-SF	+ 7.18		H48
87	125	4/92	OD	25 % TW	0.49	HTS-SF	+19.83		H38
95	125	4/92	OD	21 % TW	0.89	H5	- 0.08		C19
	4/92	OD	14 % TW	0.92	H3		+28.70		C19
	4/92	OD	S/N	1.95	H3		+28.70		C19
70	126	4/92	OD	6 % TW	1.25	C1	+25.95		H36
30	128	4/92	OD	16 % TW	0.84	HTS-SF	+ 0.76		C16
32	128	4/92	OD	16 % TW	0.44	HTS-SF	+ 0.64		C16
76	128	4/92	OD	14 % TW	0.53	H4	+ 4.85		C18
	4/92	OD	S/N	1.18	H4		+ 4.85		C18
90	128	4/92	OD	20 % TW	0.99	H5	+ 4.89		C18
30	130	4/92	OD	26 % TW	1.13	H5	+ 5.80		C17
	4/92	OD	21 % TW	0.91	H6		+ 5.97		C17
115	131	4/92	OD	10 % TW	1.51	C9	+21.39		C16
76	132	4/92	OD	28 % TW	0.88	H4	+ 4.79		C16
	4/92	OD	S/N	1.56	H8		+ 4.19		C16
	4/92	OD	15 % TW	1.28	H4		+11.64		C16
	4/92	OD	27 % TW	1.62	H4		+22.48		C16
	4/92	OD	16 % TW	0.50	H5		+ 5.89		C16
	4/92	OD	S/N	1.19	H5		+ 5.85		C16
	4/92	OD	8 % TW	1.28	H5		+28.11		C16
104	132	4/92	OD	21 % TW	1.03	H3	+ 5.42		C16
	4/92	OD	S/N	2.05	H3		+ 5.43		C16
114	132	4/92	OD	17 % TW	1.87	H4	+20.85		C16
	4/92	OD	32 % TW	1.72	H5		+25.71		C16
50	136	4/92	OD	17 % TW	0.93	C2	+21.95		C14
101	137	4/92	OD	1 % TW	1.88	C2	+29.82		C14
21	139	4/92	OD	17 % TW	0.98	HTS-SF	- 0.26		C12
104	140	4/92	OD	5 % TW	1.83	C9	+28.49		C11
3	141	4/92	OD	29 % TW	1.09	C2	+ 5.39		H5A
91	141	4/92	OD	22 % TW	0.87	H3	+31.83		C11
	4/92	OD	S/N	0.89	H3		+27.00		C11
89	143	4/92	OD	5 % TW	1.17	H2	+18.83		C10
30	144	4/92	OD	11 % TW	1.45	C9	+26.68		C9A
34	144	4/92	OD	15 % TW	1.60	C4	+27.27		C9A
9	145	4/92	OD	91 % TW	0.81	VB			C09
73	147	4/92	OD	18 % TW	0.86	HTS-SF	+25.37		C08
65	149	4/92	OD	S/N	1.32	H4	+24.11		C07
	4/92	OD	11 % TW	0.98	H4		+24.11		C07
85	149	4/92	OD	16 % TW	0.70	H2	+ 7.93		C07
	4/92	OD	S/N	0.54	H2		+ 7.93		C07
8	150	4/92	OD	4 % TW	1.74	VB		APT AT VB	H1A
66	150	4/92	OD	14 % TW	2.18	DM	+12.41		C06
78	150	4/92	OD	3 % TW	1.40	C7	+22.50		C06
72	152	4/92	OD	3 % TW	1.53	H3	+22.26		C06
49	153	4/92	OD	61 % TW	0.70	H2	- 0.60		C5A
13	159	4/92	OD	12 % TW	1.28	C2	+28.99		C03
12	160	4/92	OD	23 % TW	1.18	H2	+ 4.12		C02
8	164	4/92	OD	10 % TW	1.53	C4	+18.62		C09
29	165	4/92	OD	28 % TW	0.74	HTS-SF	+20.70	HRH HTS-SF + 21.2"	C01

TOTAL TUBES FOUND = 247
TOTAL INDICATIONS FOUND = 353

TOTAL TUBES IN INPUT FILE = 8519
TOTAL TUBES INSPECTED = 8412

STEAM GENERATOR #11

B. Plot with List of <20% Indications April/May 1992

< 20% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

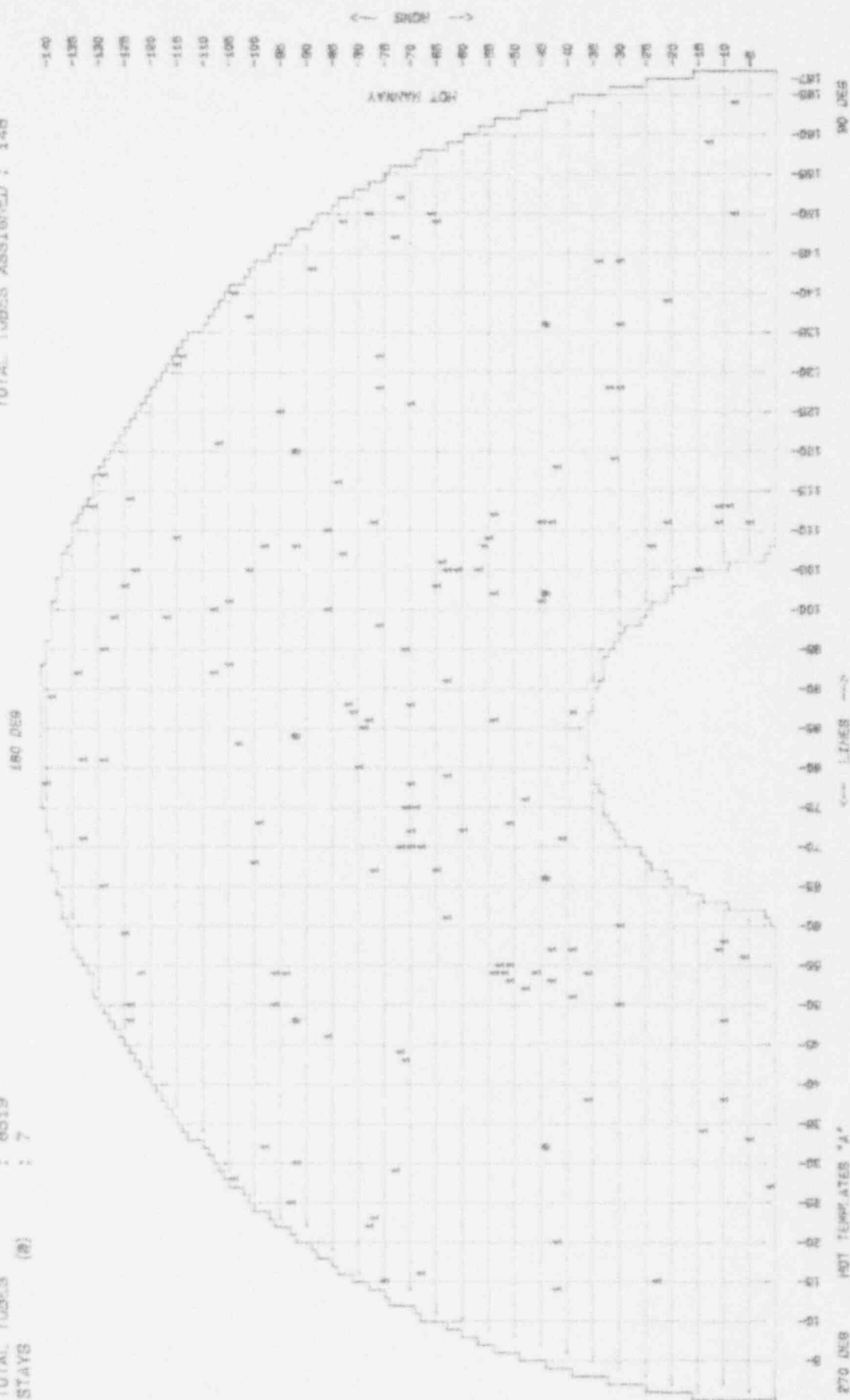
PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 4/92

GENERATOR 11

1 - <20 (148)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 148



STEAM GENERATOR #11

C. Plot with List of 20% - 39% Indications April/May 1992

20% - 39% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

PLANT: CALVERT CLIFFS UNIT 1

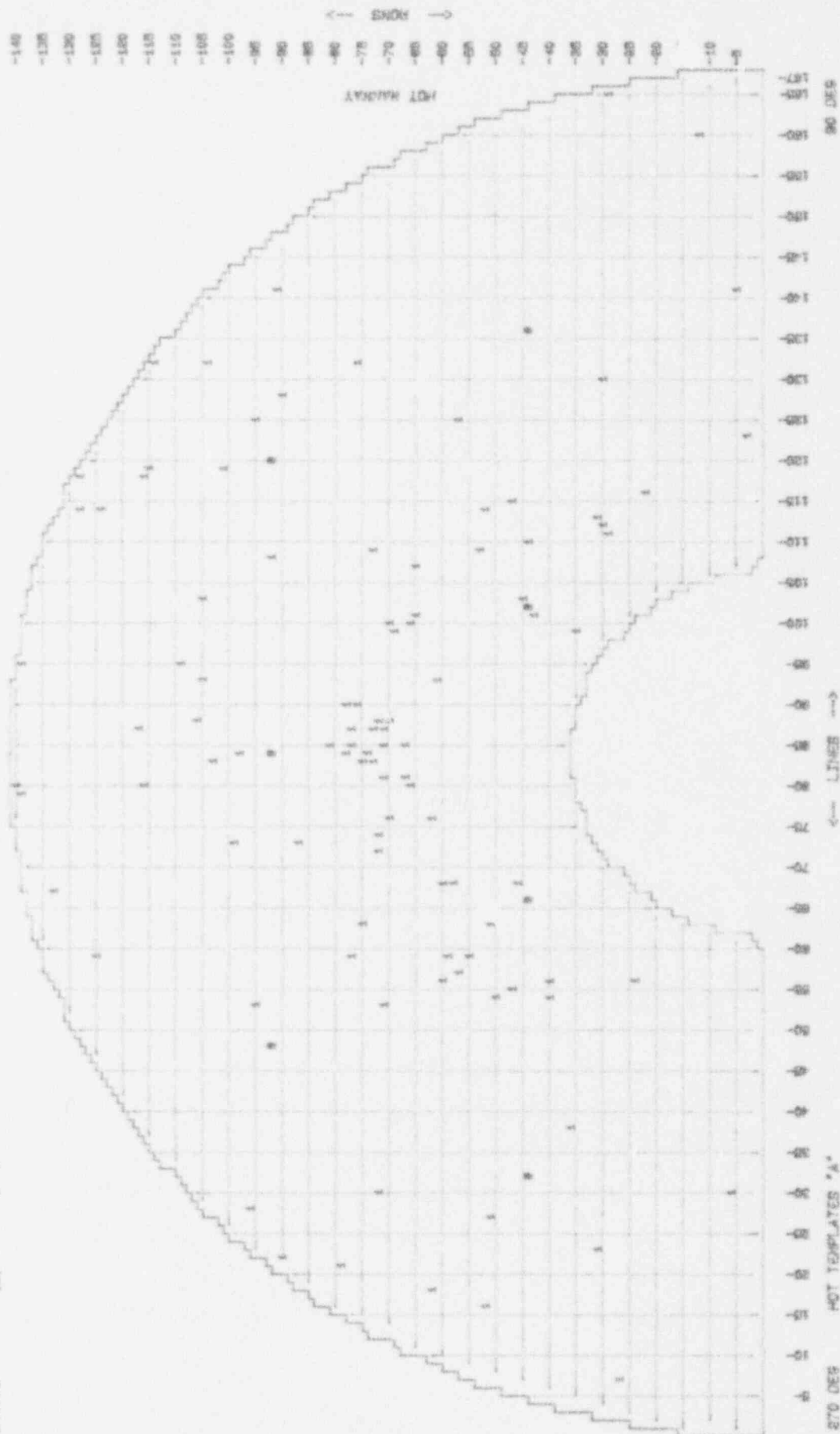
GENERATOR: 11

OUTAGE: 4/92

1 - 20-39 (102)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 102



STEAM GENERATOR #11

D. Plot with List of >39% Indications April/May 1992

> 39% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

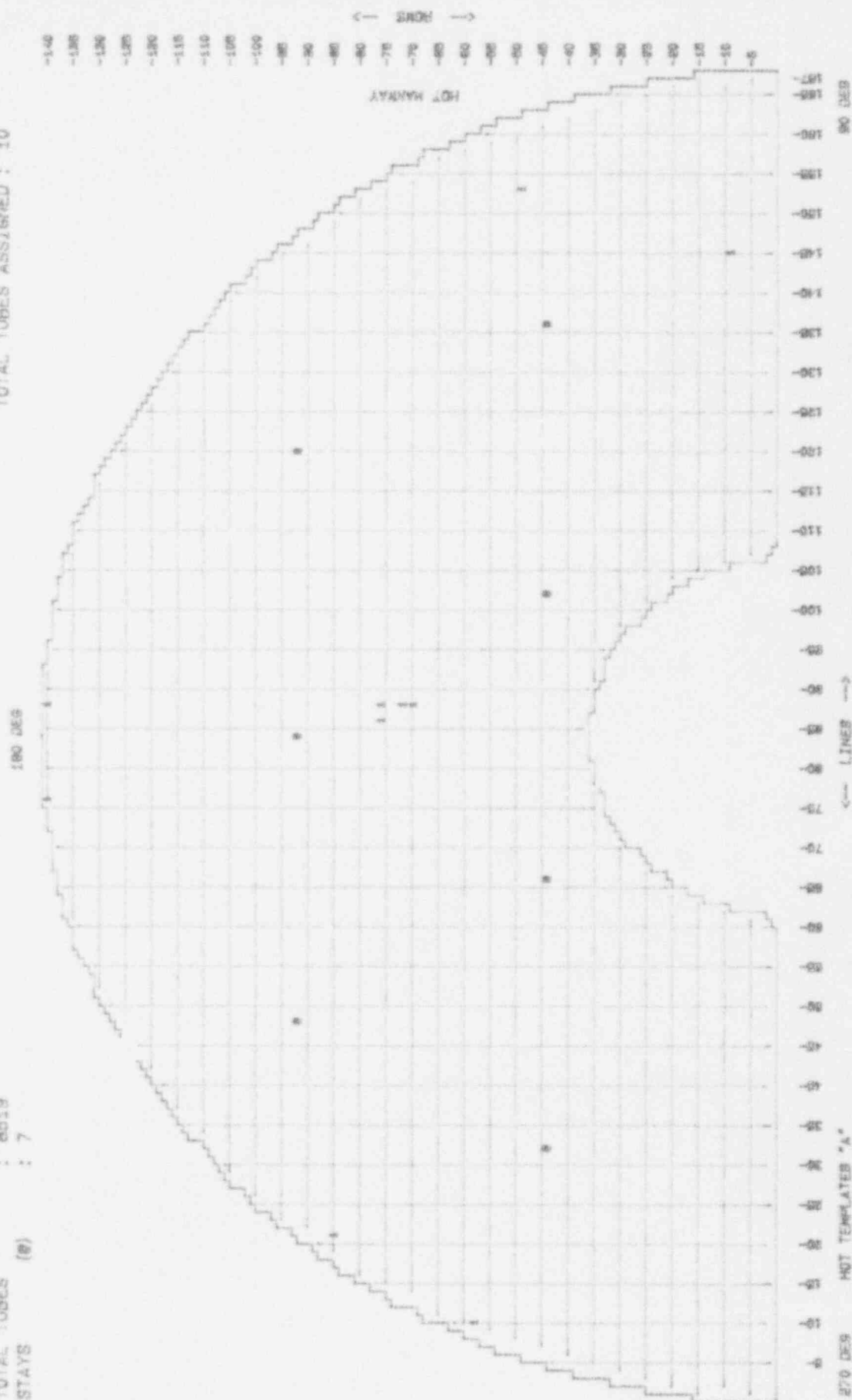
PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 4/92

GENERATOR 11

1 = >39 (10)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 10



STEAM GENERATOR #11

E. Plot with List of Dented Tubes April/May 1992

ALL DENT INDICATIONS - ALL ELEVATIONS

PLANT: CALVERT CLIFFS UNIT 1

GENERATOR: 11

OUTAGE: 4/92

1 = >49.99 (238)
4 = 20.00-29.99 (540)
5 = 0.00-9.99 (1)

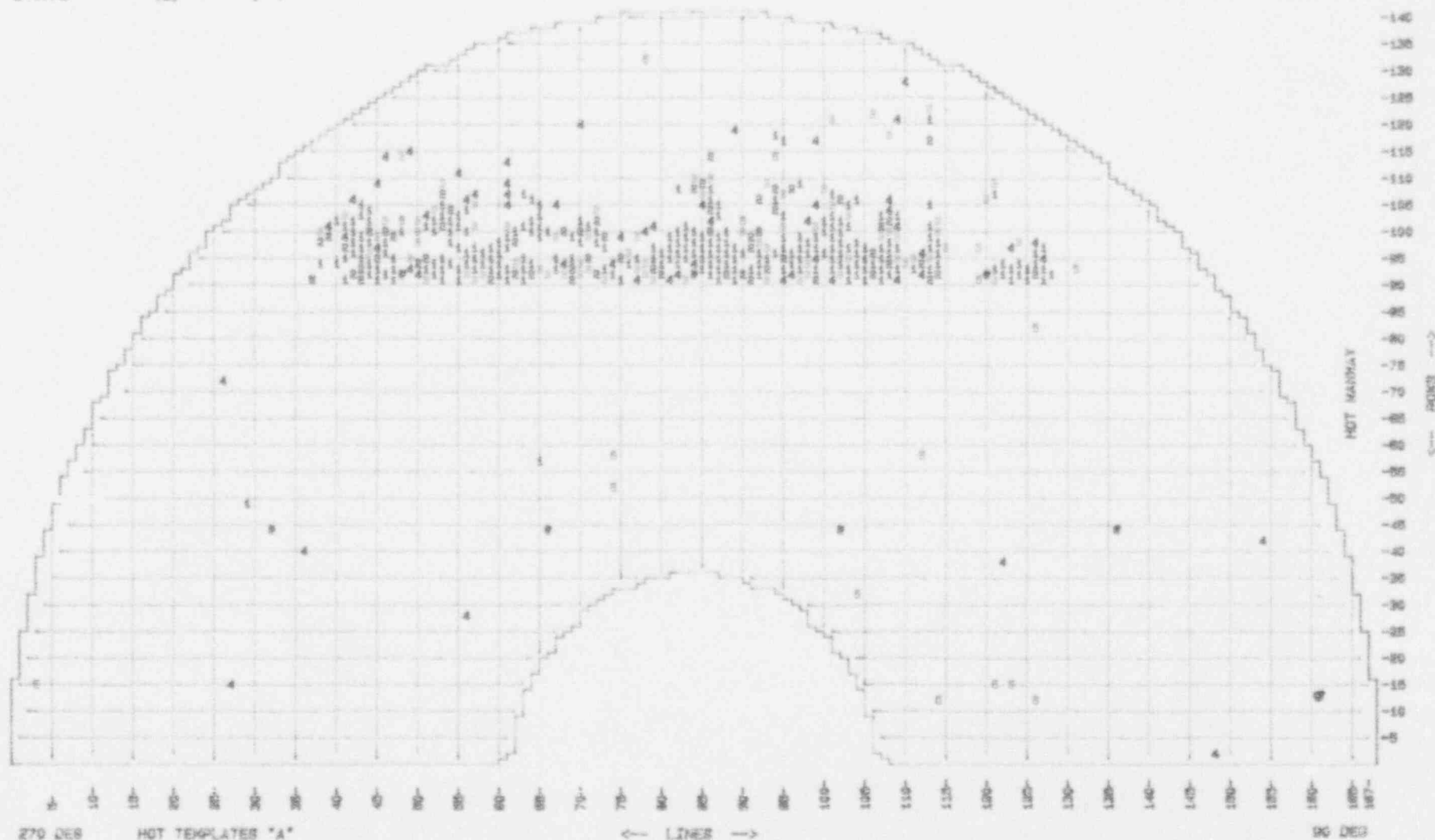
2 = 40.00-49.99 (60)
3 = 15.00-19.99 (16)
6 = <0.00 (0)

7 = 30.00-39.99 (78)
8 = 10.00-14.99 (1)

TOTAL TUBES : 8519
STAYS (8) : 7

TOTAL TUBES ASSIGNED : 447

180 DEG



STEAM GENERATOR #11

F. Plot with List of Tubes Plugged April/May 1992

TUBES PLUGGED IN 4/92 OUTAGE

PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 4/92

GENERATOR: 11

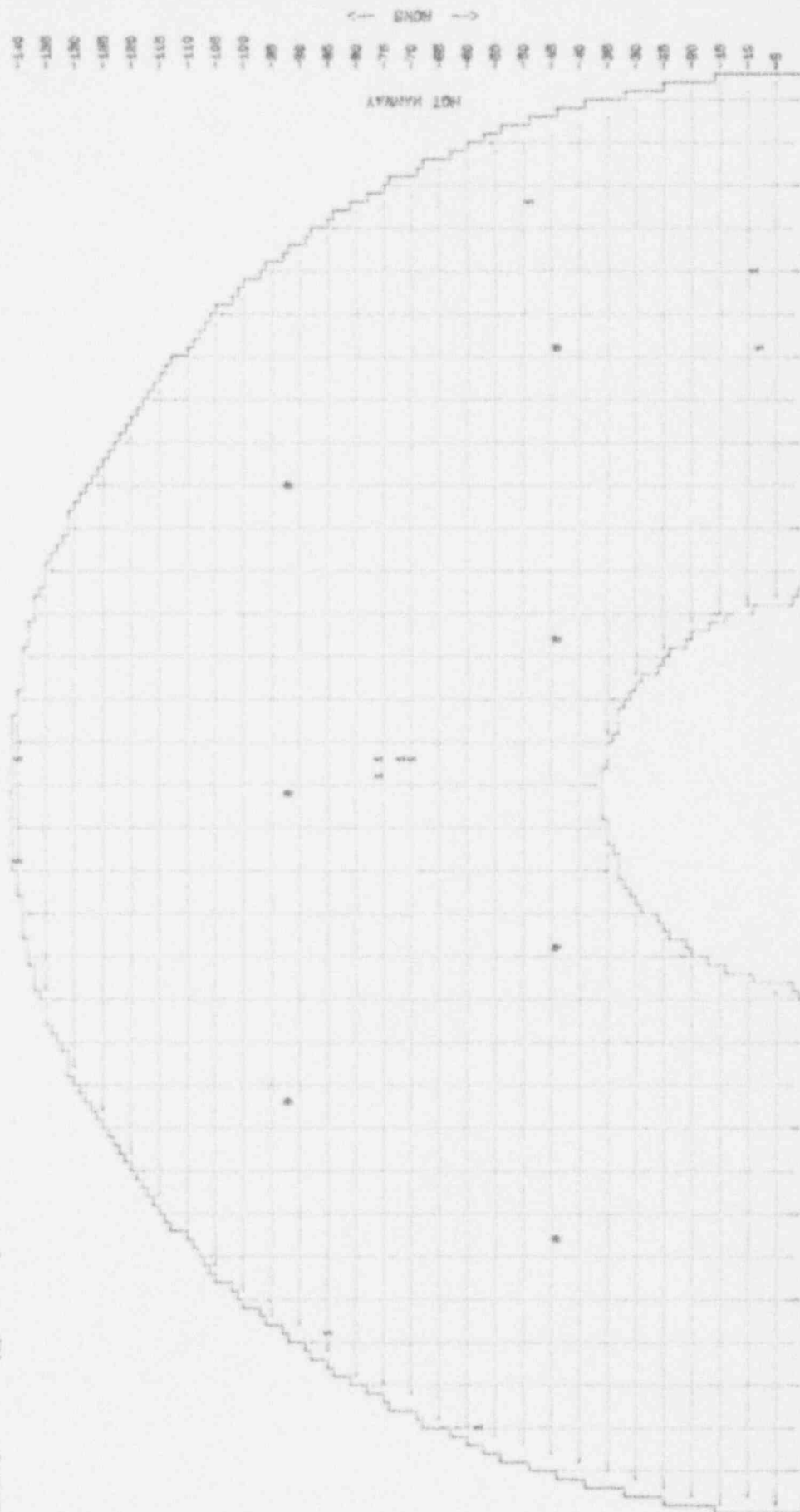
1 = MEAN (11)

2 = MEAN (11)

TOTAL TUBES : 8019
STAYS : 7

TOTAL TUBES ASSIGNED : 11

180 DEG



STEAM GENERATOR #11

G. Plot with List of All Tubes Plugged All Outages

ALL PLUGGED TUBES - ALL OUTAGES

PLANT: CALVERT CLIFFS UNIT 1

GENERATOR: 11

OUTAGES: 12/80 06/82 10/83 04/85 10/86 04/88 5/90 4/92

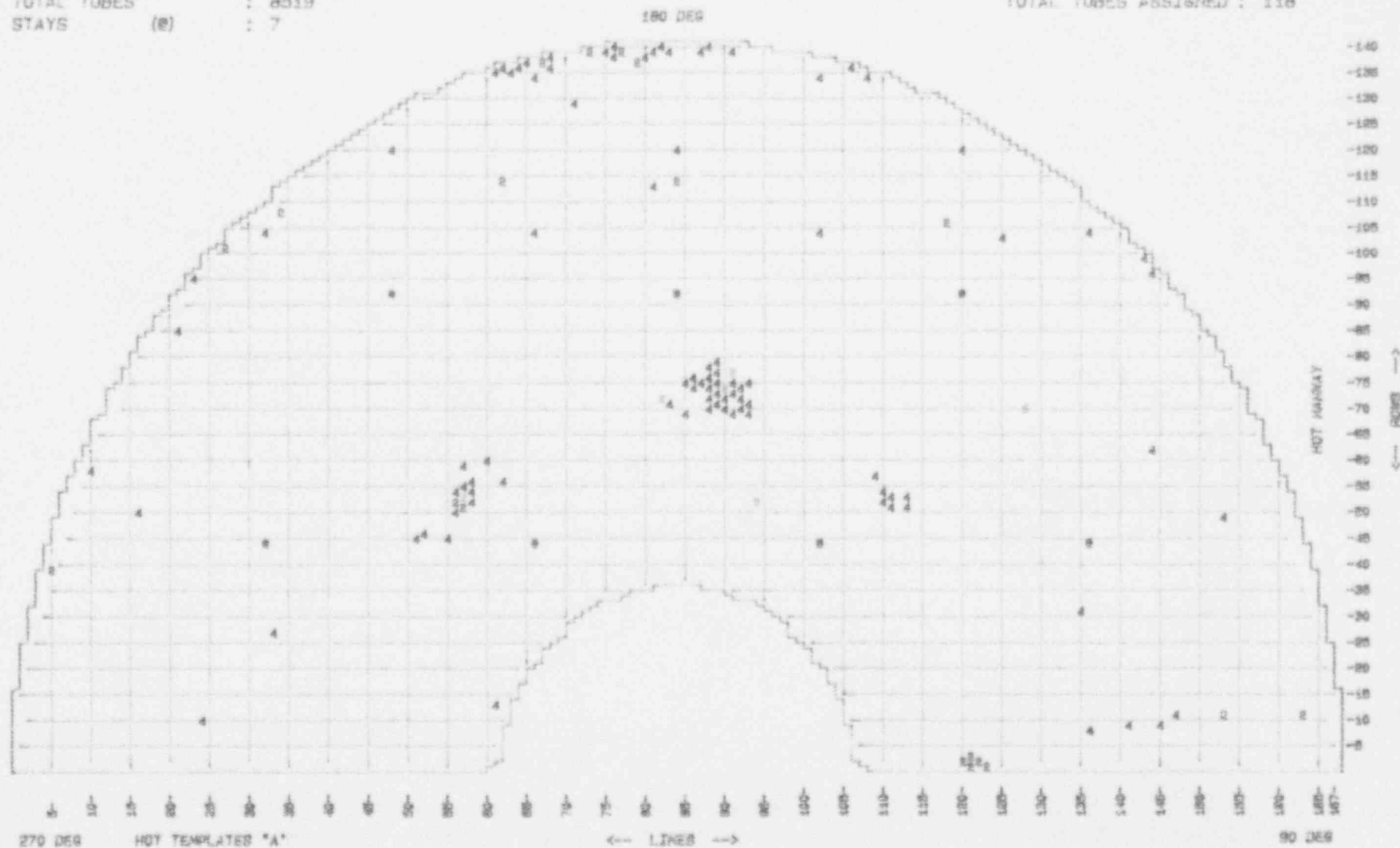
1 - CORST (0)
4 - MECH-M (83)

2 - MECH-DE (19)
5 - WELD-M (0)

3 - WELD-DE (8)

TOTAL TUBES : 8519
STAYS (e) : 7

TOTAL TUBES ASSIGNED : 118



Plant: CALVERT CLIFFS UNIT 1
 Outages: 12/80 04/82 10/83 04/85 10/86 04/88 5/90 4/92
 Steam Generator: 11

QUERY: ALL PLUGGED TUBES - ALL OUTAGES

ROW	LINE	OUTAGE	INDICATION	VALUE	WOLC LOCATION	INCHES	COMMENTS	WREL
30	5	10/86	PLUGGED	MECH-CE	HTS-PF			C88
		10/86	PLUGGED	MECH-CE	CTS-PF			
58	10	4/92	PLUGGED	MECH-W	HTS-PF			C79
		4/92	PLUGGED	MECH-W	CTS-PF			
50	16	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
85	21	4/92	PLUGGED	MECH-W	HTS-PF			C75
		4/92	PLUGGED	MECH-W	CTS-PF			
95	23	06/82	PLUGGED	MECH-W	1.00 CTS-PF		95% SATURATED	5.10
		06/82	PLUGGED	MECH-W	HTS-PF			
10	24	5/90	PLUGGED	MECH-W	HTS-PF			C09
		5/90	PLUGGED	MECH-W	CTS-PF			
31	27	10/86	PLUGGED	MECH-CE	HTS-PF			C23
		10/86	PLUGGED	MECH-CE	CTS-PF			
104	32	06/82	PLUGGED	MECH-W	CTS-PF		STAKING LOC. RIM CUT	5.9
		06/82	PLUGGED	MECH-W	HTS-PF			
27	33	04/88	PLUGGED	MECH-W	HTS-PF			C36
		04/88	PLUGGED	MECH-W	CTS-PF			
108	34	10/86	PLUGGED	MECH-CE	HTS-PF		LWB	C20
		10/86	PLUGGED	MECH-CE	CTS-PF			7
120	48	06/82	PLUGGED	MECH-W	CTS-PF		STAKING LOC. RIM CUT	8
		06/82	PLUGGED	MECH-W	HTS-PF			
45	51	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
46	52	04/88	PLUGGED	MECH-W	HTS-PF			C82
		04/88	PLUGGED	MECH-W	CTS-PF			
45	55	04/88	PLUGGED	MECH-W	HTS-PF			CR.H33
		04/88	PLUGGED	MECH-W	CTS-PF			
50	56	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
52	58	10/86	PLUGGED	MECH-CE	HTS-PF			C39
		10/86	PLUGGED	MECH-CE	CTS-PF			
54	58	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
51	57	10/86	PLUGGED	MECH-CE	HTS-PF			C39
		10/86	PLUGGED	MECH-CE	CTS-PF			
53	57	10/86	PLUGGED	WELD-CE	HTS-PF			C39
		10/86	PLUGGED	WELD-CE	CTS-PF			
55	57	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
59	57	04/88	PLUGGED	MECH-W	HTS-PF			C61/21
		04/88	PLUGGED	MECH-W	CTS-PF			
53	58	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
54	58	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
56	58	04/88	PLUGGED	MECH-W	HTS-PF			C2
		04/88	PLUGGED	MECH-W	CTS-PF			
60	60	5/90	PLUGGED	MECH-W	HTS-PF			C35
		5/90	PLUGGED	MECH-W	CTS-PF			
13	61	5/90	PLUGGED	MECH-W	HTS-PF		DISORTED ROLL TRANSITION HTS-PF	C36
		5/90	PLUGGED	MECH-W	CTS-PF			
135	63	04/82	PLUGGED	MECH-W	CTS-PF		RIM CUT PROBLEM	4
		06/82	PLUGGED	MECH-W	HTS-PF			5
56	63	04/88	PLUGGED	MECH-W	HTS-PF		1 INCH BULGE ABOVE TUBESHEET	C2W53
		04/88	PLUGGED	MECH-W	CTS-PF			
114	62	10/86	PLUGGED	MECH-CE	HTS-PF			C19
		10/86	PLUGGED	MECH-CE	CTS-PF			6
136	62	06/82	PLUGGED	MECH-W	CTS-PF		95% SATURATED	7
		06/82	PLUGGED	MECH-W	HTS-PF			6
135	63	06/82	PLUGGED	MECH-W	CTS-PF		RIM CUT PROBLEM	4
		06/82	PLUGGED	MECH-W	HTS-PF			5
136	64	06/82	PLUGGED	MECH-W	CTS-PF		RIM CUT PROBLEM	4
		06/82	PLUGGED	MECH-W	HTS-PF			5
137	65	06/82	PLUGGED	MECH-W	CTS-PF		RIM CUT PROBLEM	4
		06/82	PLUGGED	MECH-W	HTS-PF			5
104	66	06/82	PLUGGED	MECH-W	CTS-PF		STAKING LOC. RIM CUT	7

Plant: CALVERT CLIFFS UNIT 1
Outages: 12/80 06/82 10/83 04/85 10/86 04/88 5/90 4/92 Steam Generator: 11

QUERY: ALL PLUGGED TUBES - ALL OUTAGES

ROW	LINE	OUTAGE	INDICATION	VALVE	VOLTS	LOCATION	INCHES	COMMENTS	FEEL
134	66	06/82	PLUGGED	MECH-W	HTS-PF				
	66	06/82	PLUGGED	MECH-W	CTS-PF	STAKING LOC. RIM CUT			4
	66	06/82	PLUGGED	MECH-W	HTS-PF				4
137	67	10/86	PLUGGED	MECH-CE	HTS-PF				C86
	67	10/86	PLUGGED	MECH-CE	CTS-PF				4
136	66	04/88	PLUGGED	MECH-W	HTS-PF				C4
	66	04/88	PLUGGED	MECH-W	CTS-PF				5
138	68	04/88	PLUGGED	MECH-W	HTS-PF				C4
	68	04/88	PLUGGED	MECH-W	CTS-PF				5
139	71	5/90	PLUGGED	MECH-W	HTS-PF				C43
	71	5/90	PLUGGED	MECH-W	CTS-PF				5
139	73	10/86	PLUGGED	MECH-CE	HTS-PF				C86
	73	10/86	PLUGGED	MECH-CE	CTS-PF				5
139	75	04/88	PLUGGED	MECH-W	HTS-PF	SQR HTS-SF-1.0, NRH HTS-SF-21.5			C4853
	75	04/88	PLUGGED	MECH-W	CTS-PF				5
138	76	04/88	PLUGGED	MECH-W	HTS-PF				C4
	76	04/88	PLUGGED	MECH-W	CTS-PF				5
140	76	4/92	PLUGGED	MECH-W	HTS-PF	POSS. FOREIGN GRS CONTACTING TUBE			C51
	76	4/92	PLUGGED	MECH-W	CTS-PF				5
139	77	10/86	PLUGGED	MECH-CE	HTS-PF	FID			C2
	77	10/86	PLUGGED	MECH-CE	CTS-PF				5
137	79	10/86	PLUGGED	MECH-CE	HTS-PF	FID			C2
	79	10/86	PLUGGED	MECH-CE	CTS-PF				5
138	80	04/85	PLUGGED	MECH-W	CTS-PF	CTS+19.7			20
	80	04/85	PLUGGED	MECH-W	HTS-PF				5
113	81	5/90	PLUGGED	MECH-W	HTS-PF	DISTORTED BOLL TRANSITION HTS-SF			C50
	81	5/90	PLUGGED	MECH-W	CTS-PF				5
139	81	04/85	PLUGGED	MECH-W	CTS-PF	HTS NOT ROLLED: CTS+19.5 MULTIPLE			30
	81	04/85	PLUGGED	MECH-W	HTS-PF				5
72	82	10/86	PLUGGED	WELD-CE	HTS-PF				C14
	82	10/86	PLUGGED	WELD-CE	CTS-PF				5
140	82	04/85	PLUGGED	MECH-W	CTS-PF	CTS+0.5			30
	82	04/85	PLUGGED	MECH-W	HTS-PF				5
71	83	04/88	PLUGGED	MECH-W	HTS-PF				C6
	83	04/88	PLUGGED	MECH-W	CTS-PF				5
139	83	5/90	PLUGGED	MECH-W	HTS-PF	NRH HTS-PF SEE OTHER			M01
	83	5/90	PLUGGED	MECH-W	CTS-PF				5
114	84	10/86	PLUGGED	MECH-CE	HTS-PF				C4
	84	10/86	PLUGGED	MECH-CE	CTS-PF				4
120	84	06/82	PLUGGED	MECH-W	CTS-PF	STAKING LOC. RIM CUT			10
	84	06/82	PLUGGED	MECH-W	HTS-PF				4
69	85	04/88	PLUGGED	MECH-W	HTS-PF				C7
	85	04/88	PLUGGED	MECH-W	CTS-PF				5
75	85	04/88	PLUGGED	MECH-W	HTS-PF				C6, H53
	85	04/88	PLUGGED	MECH-W	CTS-PF				5
74	86	04/88	PLUGGED	MECH-W	HTS-PF				C6
	86	04/88	PLUGGED	MECH-W	CTS-PF				5
76	86	4/92	PLUGGED	MECH-W	HTS-PF				H21
	86	4/92	PLUGGED	MECH-W	CTS-PF				5
75	87	04/85	PLUGGED	MECH-W	CTS-PF	HTS+0.6			56
	87	04/85	PLUGGED	MECH-W	HTS-PF				5
139	67	04/88	PLUGGED	MECH-W	HTS-PF	SQR HTS-SF-2.0, NRH HTS-SF-21.5			C4853
	67	04/88	PLUGGED	MECH-W	CTS-PF				4
70	88	4/92	PLUGGED	MECH-W	HTS-PF				21H
	88	4/92	PLUGGED	MECH-W	CTS-PF				5
72	88	4/92	PLUGGED	MECH-W	HTS-PF				21H
	88	4/92	PLUGGED	MECH-W	CTS-PF				5
74	88	04/88	PLUGGED	MECH-W	HTS-PF				C6
	88	04/88	PLUGGED	MECH-W	CTS-PF				5
76	88	4/92	PLUGGED	MECH-W	HTS-PF				21H
	88	4/92	PLUGGED	MECH-W	CTS-PF				5
78	88	04/88	PLUGGED	MECH-W	HTS-PF				C6
	88	04/88	PLUGGED	MECH-W	CTS-PF				5
140	88	4/92	PLUGGED	MECH-W	HTS-PF				C54
	88	4/92	PLUGGED	MECH-W	CTS-PF				4
71	89	04/88	PLUGGED	MECH-W	HTS-PF				C6
	89	04/88	PLUGGED	MECH-W	CTS-PF				5

APPENDIX II

Eddy Current Test Results for #12 Steam Generator

- A. Plot with List of All Indications April/May 1992
- B. Plot with List of < 20% Indications April/May 1992
- C. Plot with List of 20% - 39% Indications April/May 1992
- D. Plot with List of > 39% Indications April/May 1992
- E. Plot with List of Dented Tubes April/May 1992
- F. Plot with List of Tubes Plugged April/May 1992
- G. Plot with List of All Tubes Plugged All Outages April/May 1992

STEAM GENERATOR #12

A. Plot with List of All Indications April/May 1992

ALL EDDY CURRENT INDICATIONS - ALL LOCATIONS

PLANT: GALVERT CLIFFS UNIT 1
OUTAGE: 5/92

GENERATOR 12

1 = <20 (163)

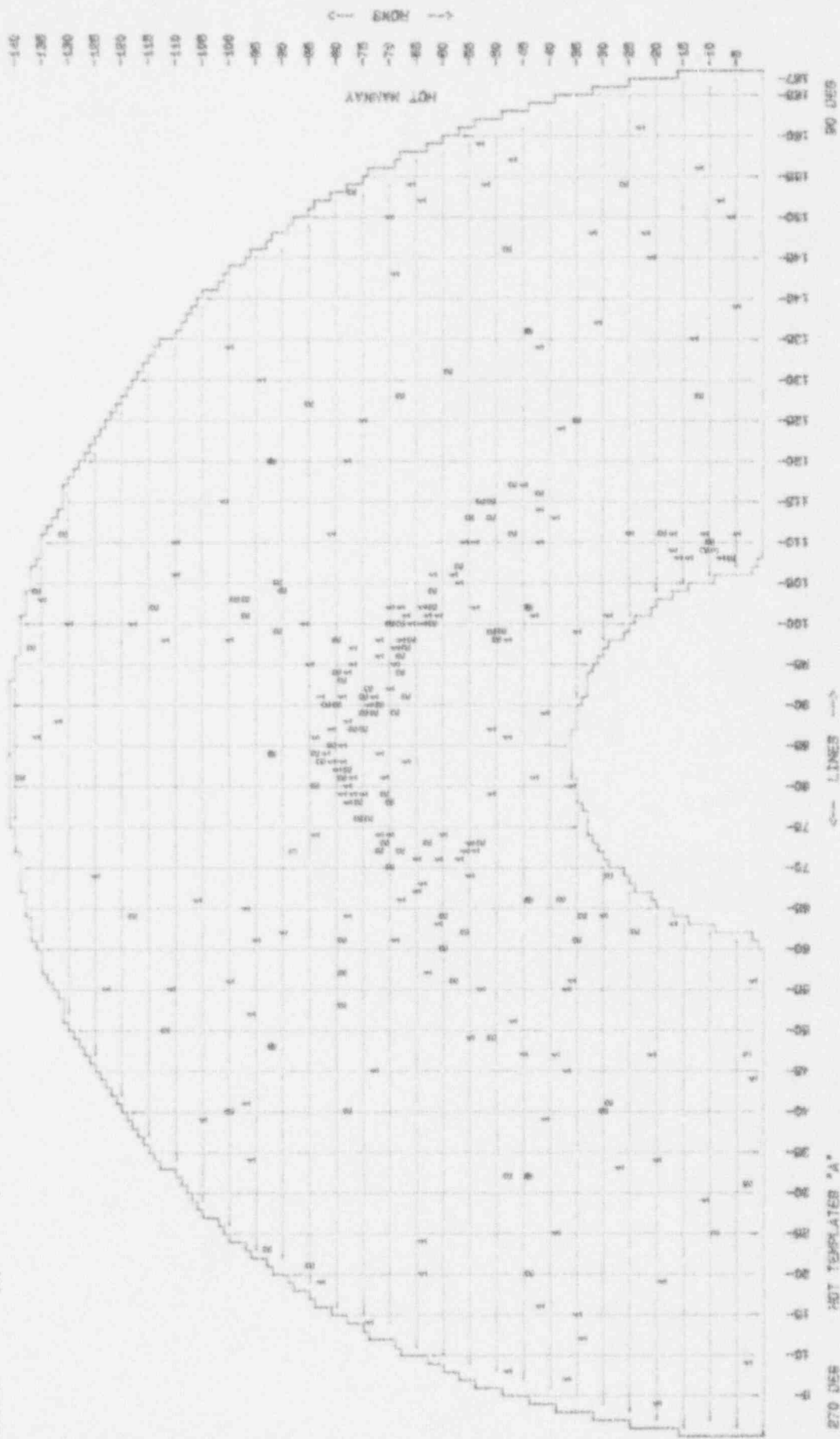
2 = 20-39 (94)

3 = >39 (4)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 265

180 DEG



Plant: CALVERT CLIFFS UNIT 1
Outage: 5/92

Steam Generator: 12

QUERY: ALL EDDY CURRENT INDICATIONS - ALL LOCATIONS

ROW	LINE	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES	COMMENTS	REEL
20	4	5/92	OD	13 % TW	0.68	C2	+20.47		C01
27	7	5/92	OD	16 % TW	0.52	H2	+15.94		C1A
		5/92	OD	S/N	0.57	H2	+15.94		C1A
48	8	5/92	OD	7 % TW	1.25	H5	+4.81		C02
3	9	5/92	OD	14 % TW	1.79	C5	+4.23		C0A
34	12	5/92	OD	15 % TW	0.97	HTS-SF	+31.40		C03
74	14	5/92	OD	5 % TW	1.03	HTS-SF	+15.49		C04
35	15	5/92	OD	10 % TW	0.48	HTS-SF	+3.36		C04
		5/92	OD	S/N	0.91	HTS-SF	+3.36		C04
42	16	5/92	OD	16 % TW	1.28	H1	+17.42		C00
		5/92	OD	S/N	1.45	H1	+17.42		C00
18	19	5/92	OD	10 % TW	1.31	HTS-SF	+13.14		C04
		5/92	OD	S/N	0.93	HTS-SF	+13.14		C04
83	19	5/92	OD	S/N	1.88	H6	+22.24		C04
		5/92	OD	37 % TW	1.55	H7	+3.42		C04
		5/92	OD	10 % TW	0.86	H7	+10.82		C04
		5/92	OD	S/N	1.10	H7	+10.82		C04
44	20	5/92	OD	32 % TW	0.87	H5	+12.90		C07
64	20	5/92	OD	14 % TW	0.57	F5	+25.86		C01
		5/92	OD	S/N	0.66	H5	+14.56		C07
85	21	5/92	OD	39 % TW	1.72	H5	+11.81		C07
93	23	5/92	OD	33 % TW	0.40	C8	+5.02		C08
84	24	5/92	OD	10 % TW	0.61	H5	+11.24		C09
		5/92	OD	S/N	0.95	H5	+11.24		C09
		5/92	OD	20 % TW	2.59	H6	+9.95		C09
		5/92	OD	S/N	0.68	H5	+9.95		C09
		5/92	OD	10 % TW	0.75	H6	+19.44		C09
		5/92	OD	S/N	1.02	H6	+19.44		C09
9	25	5/92	OD	56 % TW	0.78	FM		FLG	61A
39	25	5/92	OD	4 % TW	0.99	CTS-SF	+19.43		C09
11	26	5/92	OD	17 % TW	0.59	C1	+1.71		61A
9	31	5/92	OD	20 % TW	0.44	CTS-SF	+25.93		C09
48	32	5/92	OD	24 % TW	2.37	UH	+1.80		68A
21	33	5/92	OD	19 % TW	0.54	H5	+37.59		C14
		5/92	OD	S/N	1.02	H5	+37.69		C14
30	34	5/92	OD	9 % TW	1.07	HTS-SF	+31.69		C14
66	34	5/92	OD	18 % TW	1.31	C7	+1.41		C14
		5/92	OD	15 % TW	1.26	C6	+20.78		C14
		5/92	OD	S/N	1.15	C4	+22.78		C14
41	39	5/92	OD	9 % TW	1.07	H5	+3.03		H02
105	39	5/92	OD	11 % TW	1.31	H7	+3.18		C17
		5/92	OD	S/N	1.47	H1	+3.18		C17
30	40	5/92	OD	22 % TW	1.37	HTS-SF	+8.81		H02
78	40	5/92	OD	25 % TW	2.06	HTS-SF	+8.85		C17
100	40	5/92	OD	24 % TW	1.24	C5	+1.46		C17
		5/92	OD	S/N	2.20	C5	+1.46		C17
39	41	5/92	OD	29 % TW	0.75	HTS-SF	+0.79		H02
97	41	5/92	OD	1 % TW	0.81	C5	+2.46		C18
2	44	5/92	OD	32 % TW	0.42	HTS-SF	+1.51		65A
		5/92	OD	16 % TW	1.81	CTS-SF	+11.50		69A
37	45	5/92	OD	17 % TW	1.09	HTS-SF	+0.31		C20
73	45	5/92	OD	5 % TW	0.93	H9	+17.79		C20
3	47	5/92	OD	45 % TW	0.45	HTS-SF	+5.65	FLG	C49
21	47	5/92	OD	15 % TW	0.54	C3	+14.82		C21
		5/92	OD	S/N	0.77	C3	+14.81		C21
39	47	5/92	OD	16 % TW	0.57	C3	+11.05		C21
		5/92	OD	S/N	0.47	C9	+11.05		C21
45	47	5/92	OD	14 % TW	0.91	C3	+24.28		H03
		5/92	OD	S/N	1.16	C3	+24.28		H03
81	49	5/92	OD	23 % TW	1.38	H4	+24.91		H04
56	49	5/92	OD	11 % TW	0.72	DC	+5.18		H3H
		5/92	OD	S/N	0.65	DC	+5.18		H3H
112	50	5/92	OD	36 % TW	0.72	H6	+13.89		C23
47	51	5/92	OD	12 % TW	2.32	FM	+5.74		H04
96	52	5/92	OD	14 % TW	1.52	C5	+13.18		C24
79	53	5/92	OD	21 % TW	0.58	C4	+25.30		C24
		5/92	OD	S/N	0.43	C4	+25.30		C24

STEAM GENERATOR #12

B. Plot with List of <20% Indications April/May 1992

< 20% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

PLANT: CALVERT CLIFFS UNIT 1

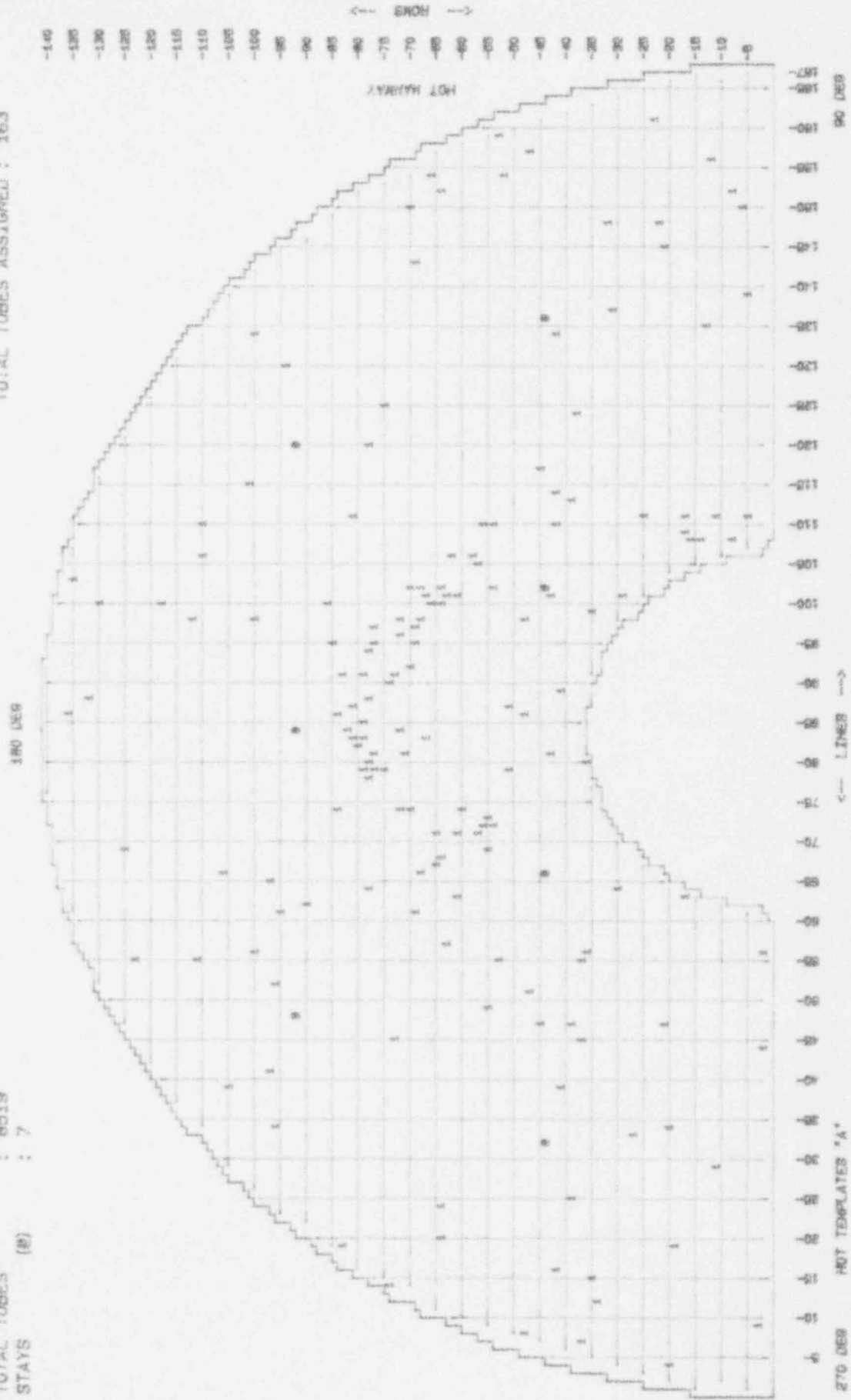
GENERATOR 12

OUTAGE: 5/92

1 = <20 (163)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 163



Plant: CALVERT CLIFFS UNIT 1
Outage: 5/92

Steam Generator: 12

QUERY: (204 EDDY CURRENT INDICATIONS - ALL ELEVATIONS

ROW	LINE	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES	COMMENTS	HEEL
90	82	5/92	OD	15 A TW	0.78	C4	+24.33		H07
		5/92	OD	S/N	1.00	C4	+24.33		H07
17	83	5/92	OD	1 A TW	1.24	C2	+24.27		C84
41	83	5/92	OD	18 A TW	0.82	HTS-SF	+17.86		H07
		5/92	OD	S/N	0.84	HTS-SF	+17.86		H07
30	84	5/92	OD	4 A TW	0.95	C2	+29.17		C30
78	84	5/92	OD	14 A TW	0.95	C7	+ 1.01		H08
118	84	5/92	OD	S/N	0.97	H9	+20.69		C30
97	85	5/92	OD	18 A TW	0.82	DM	+12.14		H08
66	86	5/92	OD	13 A TW	0.82	HTS-SF	+ 0.94		H09
104	86	5/92	OD	18 A TW	0.68	H4	+18.88		C30
		5/92	OD	S/N	0.12	H4	+18.88		C30
65	87	5/92	OD	13 A TW	0.54	HTS-SF	+ 1.29		H11
64	88	5/92	OD	13 A TW	0.52	HTS-SF	+ 1.44		10M
29	89	5/92	OD	S/N	0.84	H8	+ 4.12		C84
56	89	5/92	OD	13 A TW	0.78	HTS-SF	+ 1.85		H10
129	89	5/92	OD	18 A TW	1.82	VC	+ 7.45		C32
		5/92	OD	S/N	4.41	VC	+ 7.45		C32
57	71	5/92	OD	13 A TW	0.57	HTS-SF	+ 1.58		H11
61	71	5/92	OD	19 A TW	0.4	-SF	+ 2.25		H12
65	71	5/92	OD	13 A TW	0.70	A-SF	+ 7.35		H13
54	72	5/92	OD	15 A TW	0.43	HTS-SF	+ 0.67		H11
56	72	5/92	OD	15 A TW	0.66	HTS-SF	+ 1.50		H11
55	73	5/92	OD	15 A TW	0.45	HTS-SF	+ 0.70		12M
60	74	5/92	OD	15 A TW	0.57	HTS-SF	+ 1.06		12M
70	74	5/92	OD	18 A TW	0.50	HTS-SF	+ 2.15		12M
72	74	5/92	OD	15 A TW	1.80	HTS-SF	+ 1.07		12M
64	74	5/92	OD	1 A TW	1.76	H8	+29.77		12M
78	76	5/92	OD	19 A TW	1.21	H4	+17.74		H34
51	79	5/92	OD	14 A TW	1.37	C4	+ 6.65		H15
75	79	5/92	OD	10 A TW	0.62	HTS-SF	+ 1.41		H15
77	79	5/92	OD	16 A TW	0.68	HTS-SF	+ 1.65		H15
79	79	5/92	OD	14 A TW	1.04	C2	+16.93		H15
		5/92	OD	16 A TW	0.45	HTS-SF	+ 1.29		H15
38	80	5/92	OD	11 A TW	0.56	H2	+14.40		C30
78	80	5/92	OD	18 A TW	1.07	C5	+24.91		16M
		5/92	OD	S/N	1.04	C5	+24.91		16M
84	80	5/92	OD	S/N	1.45	H3	+24.62		15M
42	81	5/92	OD	13 A TW	0.68	HTS-SF	+27.71		H16
		5/92	OD	S/N	0.48	HTS-SF	+27.11		H16
71	81	5/92	OD	13 A TW	2.04	HTS-SF	+ 0.94		H16
77	81	5/92	OD	10 A TW	0.71	HTS-SF	+ 1.28		H16
78	82	5/92	OD	S/N	0.43	HTS-SF	+ 2.50		H16
80	82	5/92	OD	14 A TW	0.61	HTS-SF	+ 1.18		H16
		5/92	OD	S/N	1.55	HTS-SF	+ 1.13		H16
67	83	5/92	OD	11 A TW	0.75	HTS-SF	+ 7.66		H17
74	83	5/92	OD	15 A TW	0.49	HTS-SF	+ 2.63		H17
81	83	5/92	OD	16 A TW	0.51	HTS-SF	+ 1.85		H17
72	84	5/92	OD	13 A TW	0.64	HTS-SF	+ 1.51		H17
82	84	5/92	OD	10 A TW	1.34	HTS-SF	+ 1.16		H17
79	85	5/92	OD	28 A TW	0.66	HTS-SF	+ 2.17		H17
48	86	5/92	OD	1 A TW	7.01	C9	+29.41		H18
64	86	5/92	OD	15 A TW	0.55	HTS-SF	+ 0.21		H18
136	86	5/92	OD	14 A TW	0.63	H7	+16.54		C37
		5/92	OD	S/N	1.00	H7	+16.54		C37
51	87	5/92	OD	11 A TW	0.58	C1	+18.65		H19
		5/92	OD	S/N	0.84	C1	+18.65		H19
		5/92	OD	S/N	1.02	C1	+29.94		H19
51	87	5/92	C2	13 A TW	1.10	HTS-SF	+ 1.94		H19
		5/92	OD	15 A TW	1.45	HTS-SF	+ 2.66		H19
78	88	5/92	OD	14 A TW	1.96	HTS-SF	+ 2.67		19M
132	88	5/92	OD	16 A TW	0.63	H5	+ 0.49		C83
41	89	5/92	OD	2 A TW	0.68	H1	+20.78		19M
74	90	5/92	OD	14 A TW	0.62	HTS-SF	+ 1.79		H20
		5/92	OD	16 A TW	1.01	HTS-SF	+ 1.88		H20
67	91	5/92	OD	S/N	0.10	H3	+ 0.13		H20
73	91	5/92	OD	19 A TW	1.28	HTS-SF	+ 1.90		H20

STEAM GENERATOR #12

C. Plot with List of 20% - 39% Indications April/May 1992

20% - 39% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 5/92

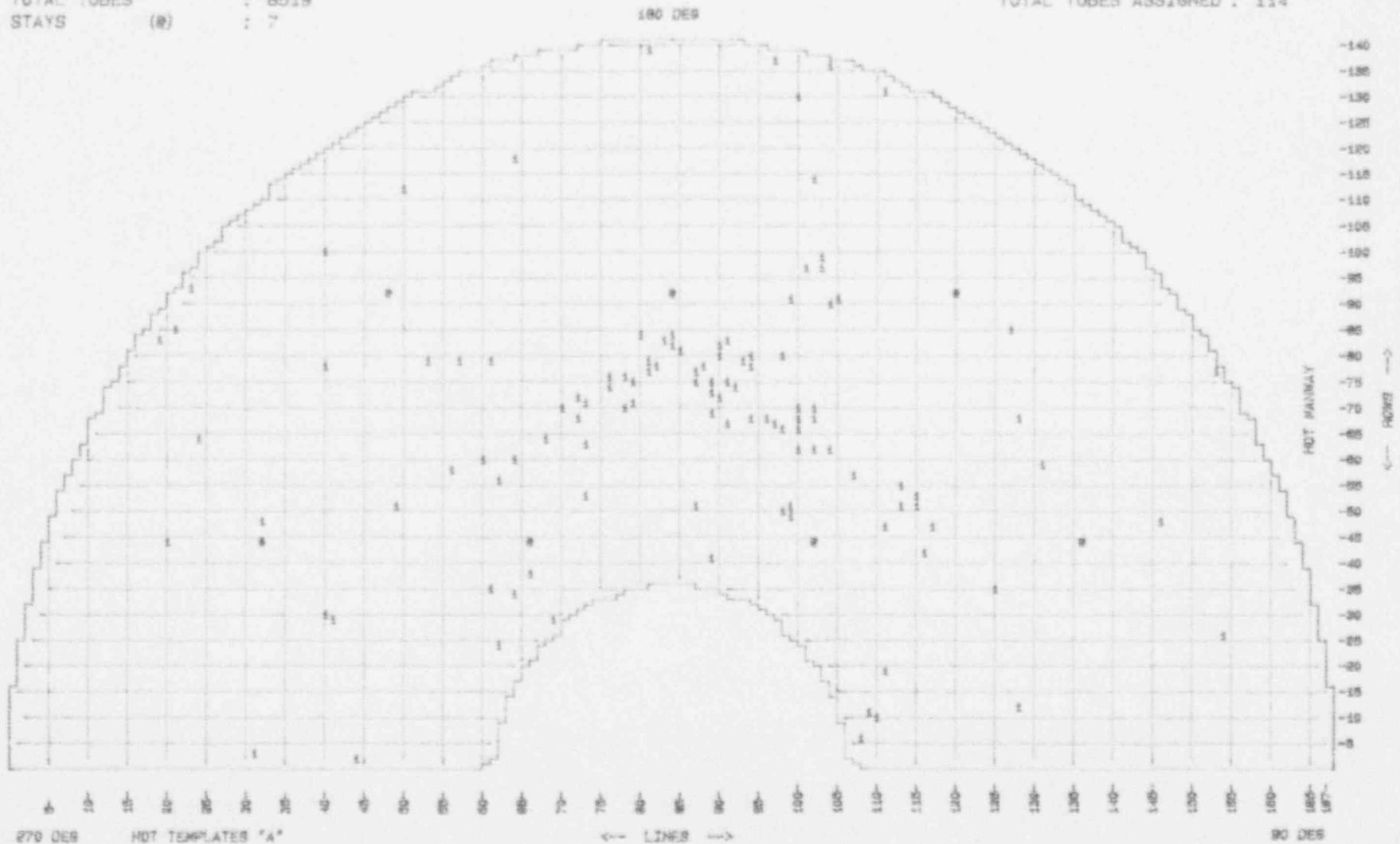
GENERATOR: 12

1 - 20-39 (114)

TOTAL TUBES : 8519
STAYS (8) : 7

TOTAL TUBES ASSIGNED : 114

see 84486 TUBES (T) VERN. 3.0 Tuesday November 20, 1990 102 08 PM 98



STEAM GENERATOR #12

D. Plot with List of $> 39\%$ Indications April/May 1992

> 39% EDDY CURRENT INDICATIONS - ALL ELEVATIONS

PLANT: CALVERT CLIFFS UNIT 1

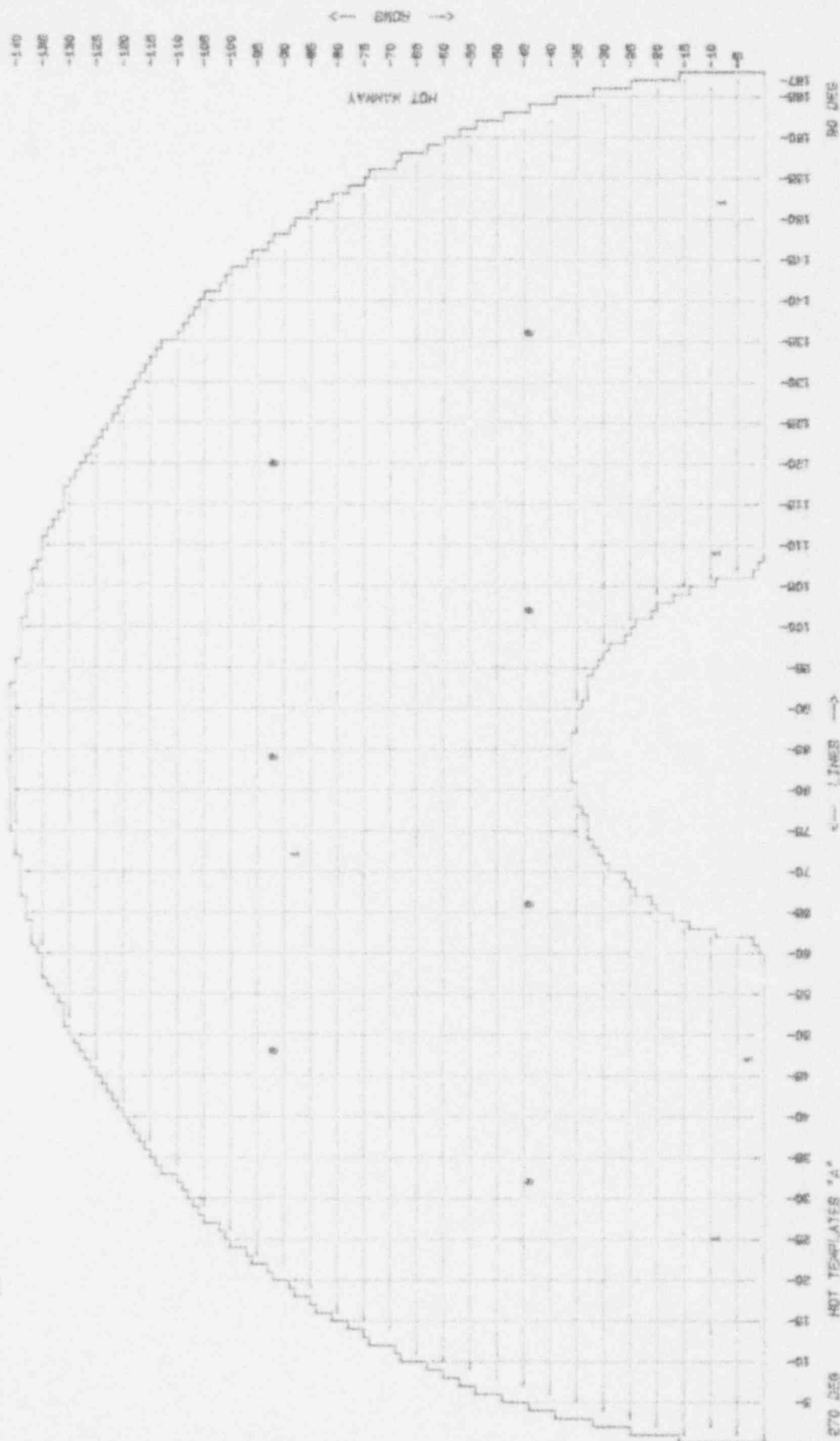
GENERATOR: 12

OUTAGE: 5/92

1 - > 39 (R)

TOTAL TUBES : 8519
STAYS : 7

TOTAL TUBES ASSIGNED : 5



STEAM GENERATOR #12

E. Plot with List of Dented Tubes April/May 1992

ALL DENT INDICATIONS - ALL LOCATIONS

PLANT: CALVERT CLIFFS UNIT 1
OUTAGE: 5/92

GENERATOR: 12

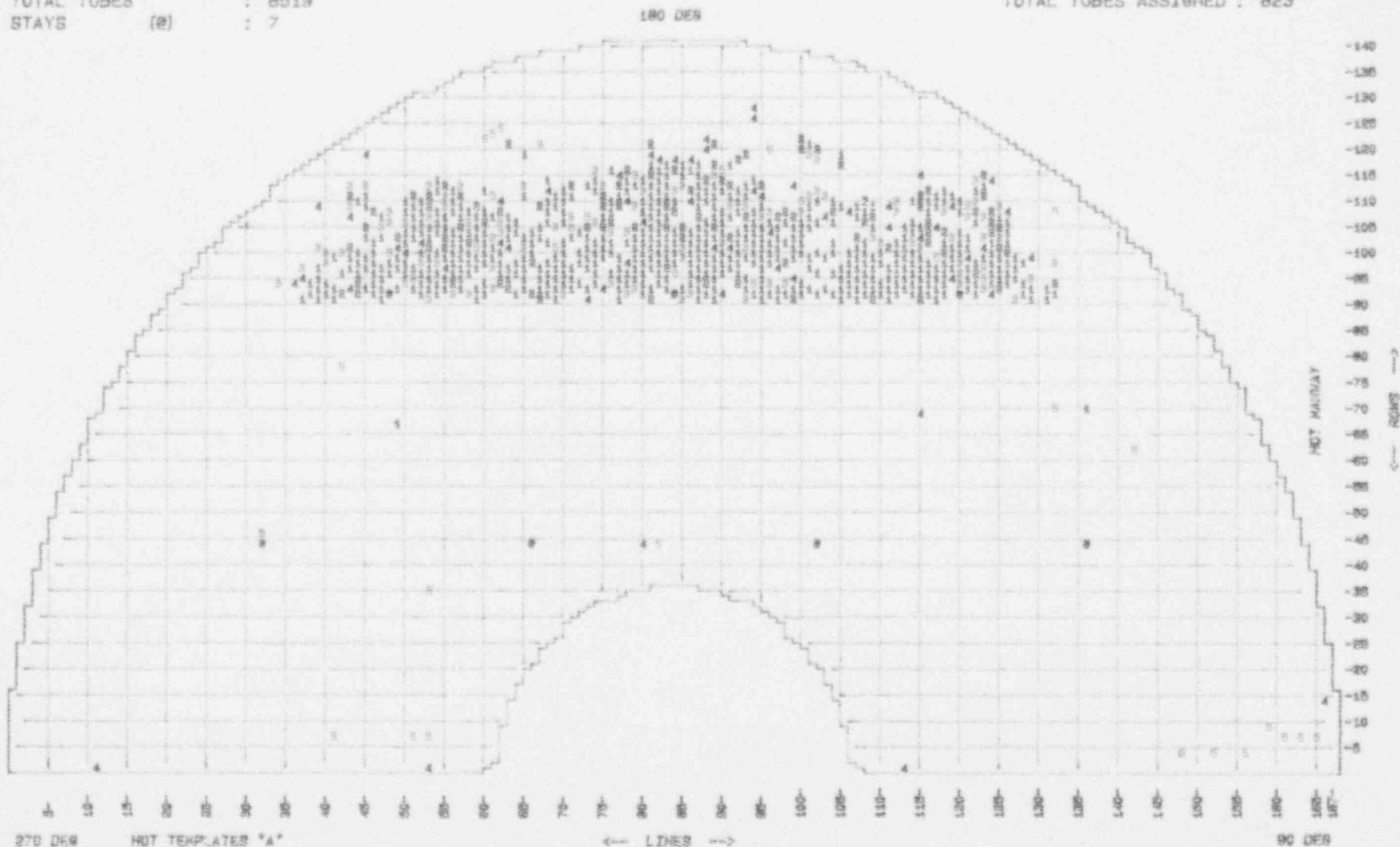
1 = >49.99 (536)
4 = 20.00-29.99 (59)
5 = 5.00-9.99 (0)

2 = 40.00-49.99 (101)
3 = 15.00-19.99 (32)
8 = <5.00 (0)

6 = 30.00-39.99 (95)
7 = 10.00-14.99 (0)

TOTAL TUBES : 8519
STAYS (2) : 7

TOTAL TUBES ASSIGNED : 823



Plant: CALVERT CLIFFS UNIT 1
Outage: 5/92

Steam Generator: 12

QUERY: ALL DENT INDICATIONS - ALL LOCATIONS

ROW	LINE	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES	COMMENTS	DEEL
109	69	5/92	DENT	93.15	H9		- 0.02		C32
111	69	5/92	DENT	72.39	H9				C32
92	70	5/92	DENT	39.10	H9		- 0.31		H9H
94	70	5/92	DENT	65.63	H9		- 0.06		H9H
96	70	5/92	DENT	238.00	H9		- 0.12		H9H
98	70	5/92	DENT	123.80	H9		- 0.08		H9H
100	70	5/92	DENT	55.32	H9		+ 0.17		H9H
102	70	5/92	DENT	51.82	H9		- 0.25		H9H
106	70	5/92	DENT	50.49	H9		- 0.17		C32
108	70	5/92	DENT	72.55	H9		- 0.29		C32
110	70	5/92	DENT	123.70	H9		- 0.06		C32
112	70	5/92	DENT	66.59	H9		- 0.20		C32
93	71	5/92	DENT	73.67	H9		- 0.17		H11
95	71	5/92	DENT	101.90	H9		+ 0.03		H11
97	71	5/92	DENT	144.70	H9		- 0.17		H11
103	71	5/92	DENT	101.10	H9		+ 0.11		H11
105	71	5/92	DENT	30.08	H9		- 0.06		H11
107	71	5/92	DENT	37.38	H9		- 0.09	nrh hts-ef - 1.36	C33
111	71	5/92	DENT	87.15	H9		- 0.06		C33
113	71	5/92	DENT	44.83	H9		- 0.20		C33
94	72	5/92	DENT	61.07	H9		+ 0.15		H12
96	72	5/92	DENT	145.60	H9		- 0.17	NRH HTS-PT + 20.4	H12
100	72	5/92	DENT	134.40	H9		- 0.20		H12
104	72	5/92	DENT	73.56	H9				H12
91	73	5/92	DENT	22.18	H9				H12
93	73	5/92	DENT	98.77	H9		+ 0.14		H12
97	73	5/92	DENT	67.75	H9		- 0.11		H12
99	73	5/92	DENT	165.70	H9		- 0.11		H12
101	73	5/92	DENT	94.62	H9				H12
103	73	5/92	DENT	96.81	H9		- 0.11		H12
105	73	5/92	DENT	46.50	H9				H12
107	73	5/92	DENT	18.50	H9		- 0.22		C33
113	73	5/92	DENT	71.77	H9		- 0.08		C33
94	74	5/92	DENT	65.76	H9		+ 0.14		12N
96	74	5/92	DENT	129.30	H9		+ 1.14		12N
98	74	5/92	DENT	94.22	H9		- 0.14		12N
100	74	5/92	DENT	138.00	H9		+ 0.09		12N
102	74	5/92	DENT	96.36	H9		- 0.11		H13
106	74	5/92	DENT	51.32	H9		- 0.19		C33
112	74	5/92	DENT	71.71	H9		- 0.06		C33
114	74	5/92	DENT	77.18	H9		- 0.06		C33
116	74	5/92	DENT	32.97	H9		- 0.06		C33
93	75	5/92	DENT	25.27	H9		+ 0.08		H13
99	75	5/92	DENT	111.70	H9		+ 0.26		H13
101	75	5/92	DENT	60.69	H9				H13
103	75	5/92	DENT	90.10	H9		+ 0.17		H13
105	75	5/92	DENT	45.72	H9		+ 0.14		H13
107	75	5/92	DENT	74.23	H9		- 0.12		C34
109	75	5/92	DENT	45.29	H9		- 0.03		C34
111	75	5/92	DENT	47.46	H9		- 0.06		C34
113	75	5/92	DENT	38.06	H9		- 0.17		C34
94	76	5/92	DENT	37.66	H9				13N
96	76	5/92	DENT	54.97	H9				13N
100	76	5/92	DENT	107.00	H9		- 0.17		13N
102	76	5/92	DENT	55.44	H9		- 0.06		13N
104	76	5/92	DENT	33.37	H9		- 1.06		H14
106	76	5/92	DENT	41.67	H9		- 0.02		C34
108	76	5/92	DENT	53.61	H9		- 0.62		C34
110	76	5/92	DENT	93.04	H9				C34
116	76	5/92	DENT	50.47	H9		- 1.14		C34
91	77	5/92	DENT	52.01	H9		- 0.28		H14
93	77	5/92	DENT	16.68	C9		- 0.05		H14
		5/92	DENT	50.37	H9		- 0.02		H14
95	77	5/92	DENT	104.50	H9		- 0.11		H14
97	77	5/92	DENT	65.97	H9		- 0.08		H14
99	77	5/92	DENT	61.11	H9		+ 0.03		H14
109	77	5/92	DENT	44.19	H9		- 0.26		C34

Plant: CALVERT CLIFFS UNIT 1
Outage: 5/92

Steam Generator: 12

QUERY: ALL DENT INDICATIONS - ALL LOCATIONS

ROW	LINE	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES	COMMENTS	REEL
111	77	5/92	DENT		91.61	H9	- 0.03		C34
113	77	5/92	DENT		46.72	H9	- 0.03		C34
115	77	5/92	DENT		27.01	H9	- 0.14		C34
92	78	5/92	DENT		30.73	H9	+ 0.06		H34
94	78	5/92	DENT		73.02	H9	- 0.25		H34
96	78	5/92	DENT		94.17	H9	+ 0.03		H34
98	78	5/92	DENT		29.30	H9	+ 0.11		H34
102	78	5/92	DENT		32.29	H9	+ 0.17		H34
104	78	5/92	DENT		37.53	H9	+ 0.06		H34
110	78	5/92	DENT		25.79	H9	- 0.05		C83
		5/92	DENT		27.03	H9			C83
112	78	5/92	DENT		50.37	H9	- 0.17		C34
114	78	5/92	DENT		64.07	H9	- 0.03		C34
116	78	5/92	DENT		46.68	H9	- 0.23		C34
93	79	5/92	DENT		39.15	H9	+ 0.08		H15
95	79	5/92	DENT		59.42	H9	+ 0.11		H34
97	79	5/92	DENT		105.30	H9	- 0.11		H34
99	79	5/92	DENT		90.73	H9	- 0.09		H34
101	79	5/92	DENT		51.12	H9	- 0.11		H34
103	79	5/92	DENT		77.53	H9	- 0.11		H34
105	79	5/92	DENT		43.98	H9	- 0.17		H34
109	79	5/92	DENT		36.37	H9	- 0.26		C35
113	79	5/92	DENT		103.60	H9	- 0.05		C35
115	79	5/92	DENT		31.99	H9	- 0.31		C35
44	80	5/92	DENT		20.94	H7	+10.22		15H
92	80	5/92	DENT		110.40	H8	+19.11		15H
94	80	5/92	DENT		236.70	H9	+ 0.58		15H
96	80	5/92	DENT		167.90	H9	+ 0.31		15H
98	80	5/92	DENT		176.90	H9	- 0.14		15H
100	80	5/92	DENT		144.50	H9			15H
102	80	5/92	DENT		120.30	H9	+ 0.22		15H
104	80	5/92	DENT		195.20	H9	+ 0.35		15H
106	80	5/92	DENT		21.48	H9	- 0.11		C35
108	80	5/92	DENT		91.67	H4	- 0.02	NRH NTS-SF -1.39"	C35
110	80	5/92	DENT		53.46	H9	- 0.14		C35
		5/92	DENT		35.74	H9	- 0.35		C35
112	80	5/92	DENT		34.80	H9	- 0.14		C35
114	80	5/92	DENT		75.00	H9	- 0.20		C35
91	81	5/92	DENT		44.69	H9	+ 0.06		H16
93	81	5/92	DENT		50.02	H9	+ 0.28		H16
97	81	5/92	DENT		82.76	H9	+ 0.17		15H
99	81	5/92	DENT		88.75	H9	+ 0.06		15H
101	81	5/92	DENT		83.01	H9			15H
103	81	5/92	DENT		67.31	H9	- 0.03		5H
105	81	5/92	DENT		95.12	H9	+ 0.17		15H
107	81	5/92	DENT		95.70	H9	- 0.14		C35
109	81	5/92	DENT		152.30	H9	- 0.28		C35
111	81	5/92	DENT		116.30	H9	- 0.03		C35
113	81	5/92	DENT		88.87	H9	- 0.17		C35
115	81	5/92	DENT		80.29	H9	- 0.26		C35
117	81	5/92	DENT		74.53	H9	+ 0.05		C35
119	81	5/92	DENT		22.65	H10	+ 0.14		C35
121	81	5/92	DENT		40.30	H10	+ 0.26		C35
44	82	5/92	DENT		16.89	H6	+12.25		H16
94	82	5/92	DENT		80.18	H9	+ 0.06		H16
96	82	5/92	DENT		63.26	H9	- 0.12		H16
98	82	5/92	DENT		101.80	H9	+ 0.03		H16
100	82	5/92	DENT		133.00	H9	- 0.20		H16
102	82	5/92	DENT		95.36	H9	+ 0.06		H16
104	82	5/92	DENT		126.30	H9	- 0.17		H16
106	82	5/92	DENT		76.74	H9	- 0.09		C35
		5/92	DENT		77.79	H9	- 0.20		C35
108	82	5/92	DENT		93.50	H9	- 0.03	NRH NTS-SF -1.41"	C35
110	82	5/92	DENT		97.76	H9	- 0.03		C35
112	82	5/92	DENT		87.74	H9	- 0.06		C35
114	82	5/92	DENT		129.90	H9	- 0.11		C36
116	82	5/92	DENT		81.69	H9	- 0.03		C36

STEAM GENERATOR #12

F. Plot with List of Tubes Plugged April/May 1992

TUBES PLUGGED IN 5/92 OUTAGE]

PLANT: CALVERT CLIFFS UNIT 1
 OUTAGE: 5/92

GENERATOR 12

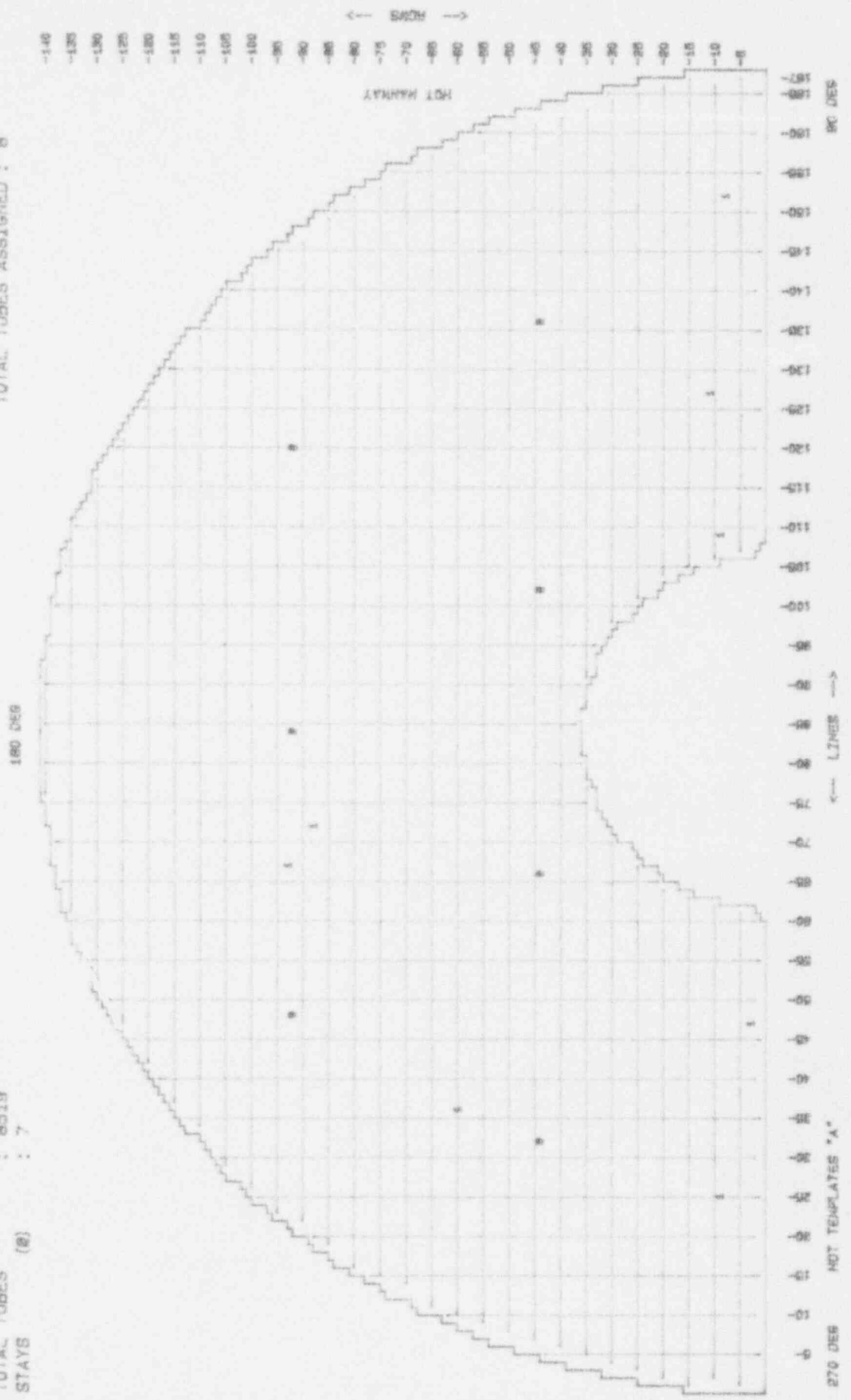
1 = NEG-M (8)
 4 = WELD-CE (0)

2 = WELD-M (0)

3 = WELD-CE (0)

TOTAL TUBES : 8519
 STAYS : 7

TOTAL TUBES ASSIGNED : 8



Plant: CALVERT CLIFFS UNIT 1
Outage: 5/92

Steam Generator: 13

QUERY: TUBES PLUGGED IN 5/92 OUTAGE

ROW	LINE	OUTAGE	INDICATION	VALVE	VALVE LOCATION	TACHEL	COMMENTS	SYSL
9	25	5/92	PLUGGED	MECH-W	HTS-PF		PLG	618
		5/92	PLUGGED	MECH-W	CTS-PF		PLG	618
60	36	5/92	PLUGGED	MECH-W	HTS-PF		SAT FROM RPC DETEST	C15
		5/92	PLUGGED	MECH-W	CTS-PF		SAT FROM RPC DETEST	C15
7	47	5/92	PLUGGED	MECH-W	HTS-PF		PLG	C69
		5/92	PLUGGED	MECH-W	CTS-PF		PLG	C69
93	67	5/92	PLUGGED	MECH-W	HTS-PF		NOT LEG PLUGGED, C/L YLO IN 1986	H24
58	72	5/92	PLUGGED	MECH-W	HTS-PF		PLG	H12
		5/92	PLUGGED	MECH-W	CTS-PF		PLG	H12
9	108	5/92	PLUGGED	MECH-W	HTS-PF		PLG	C65
		5/92	PLUGGED	MECH-W	CTS-PF		PLG	C65
11	127	5/92	PLUGGED	MECH-W	HTS-PF		APT AT VM STEAM BLANKET REGION	626
		5/92	PLUGGED	MECH-W	CTS-PF		APT AT VM STEAM BLANKET REGION	626
8	152	5/92	PLUGGED	MECH-W	HTS-PF		PLG	72A
		5/92	PLUGGED	MECH-W	CTS-PF		PLG	72A

TOTAL TUBES FOUND = 6

TOTAL INDICATIONS FOUND = 15

TOTAL TUBES IN INPUT FILE = 8519

TOTAL TUBES INSPECTED = 8450

STEAM GENERATOR #12

G. Plot with List of All Tubes Plugged All Outages

ALL PLUGGED TUBES - ALL OUTAGES

PLANT: CALVERT CLIFFS UNIT 1

GENERATOR 12

OUTAGES: 01/79 06/82 10/83 04/85 10/86 04/88 5/90 5/92

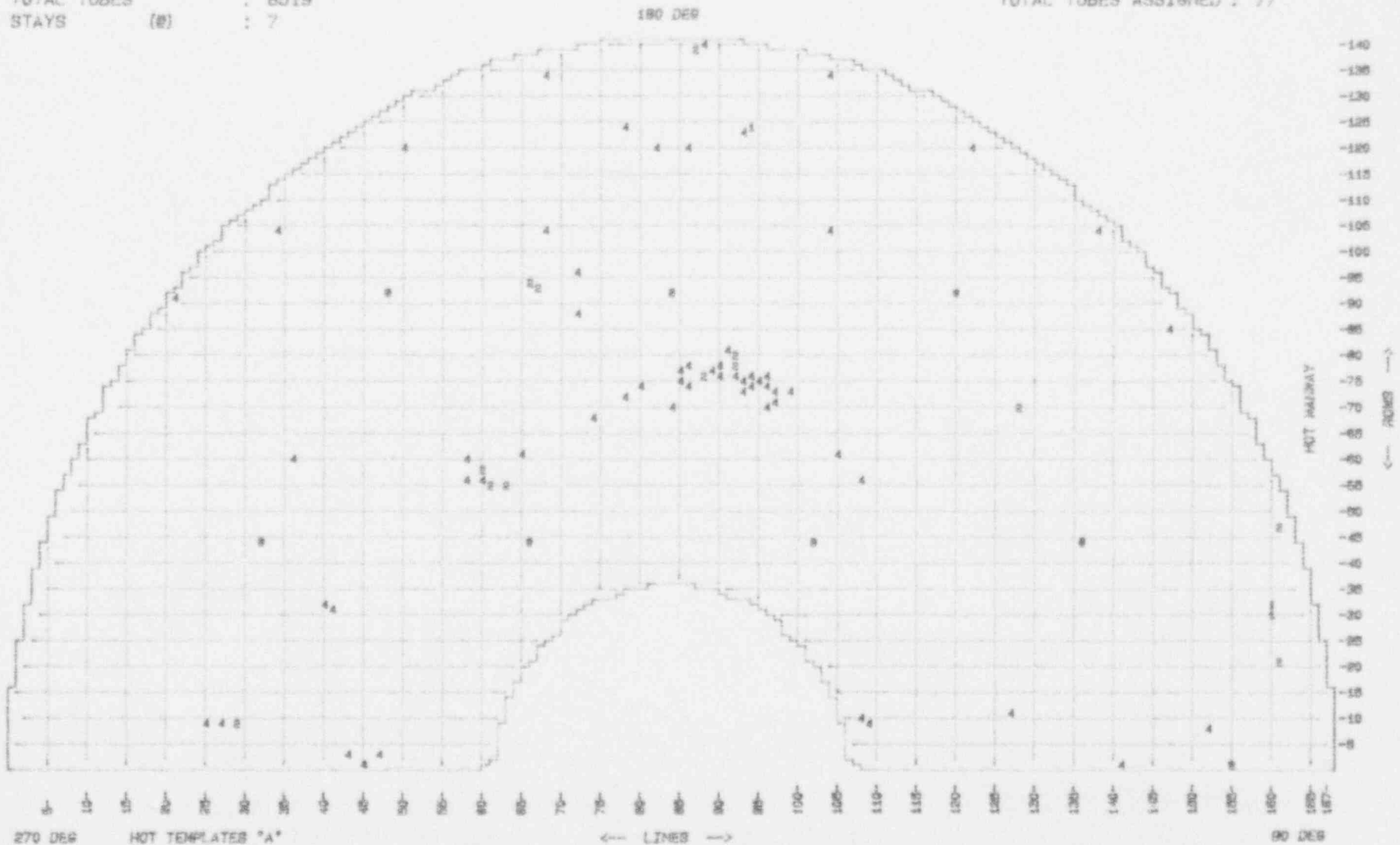
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1 = CONST (3)
4 = MECH-W (10)
```

2 = MECH-GE (14)
3 = WELD-M (0)

2 - WELD-CE (Q)

TOTAL TUBES	:	8519
STAYS (E)	:	7

TOTAL TUBES ASSIGNED : 77



Plant: CALVERT CLIFFS UNIT 1
 Outages: 01/79 06/82 10/82 04/85 10/86 04/88 5/90 5/92
 Steam Generator: 12

QUERY: ALL PLUGGED TUBES - ALL OUTAGES

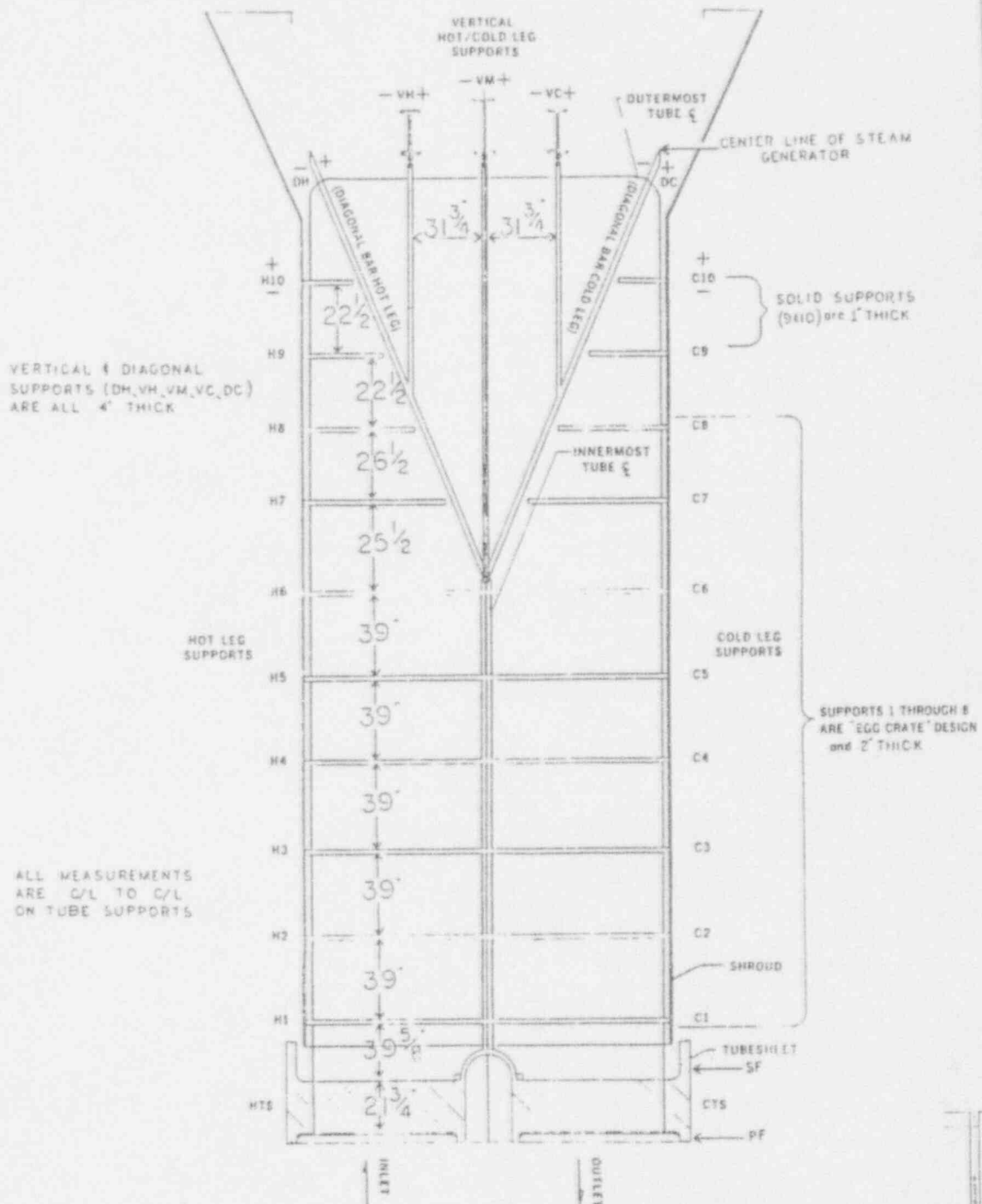
ROW	LINE	OUTAGE	INDICATION	VALUE	VALUES LOCATION	INCHES	REMARKS	REEL
75	84	04/88	PLUGGED	MECH-W	CTS-PF			
76	84	04/88	PLUGGED	MECH-W	HTS-PF			C7
120	84	04/88	PLUGGED	MECH-W	CTS-PF			
120	84	06/82	PLUGGED	MECH-W	CTS-PF		RIM CUT STAKING LOC.	10
139	87	10/86	PLUGGED	MECH-W	HTS-PF			C12
76	88	10/86	PLUGGED	MECH-CE	CTS-PF			C5
140	88	04/85	PLUGGED	MECH-W	HTS-PF		HTS+20.3	23
77	89	04/88	PLUGGED	MECH-W	HTS-PF			C7
76	90	04/88	PLUGGED	MECH-W	HTS-PF		INF AT HTS-SF+0.80	C7
78	90	04/88	PLUGGED	MECH-W	CTS-PF			C7
81	91	04/88	PLUGGED	MECH-W	HTS-PF			C6
78	92	04/88	PLUGGED	MECH-W	HTS-PF			C7
78	92	10/86	PLUGGED	MECH-CE	HTS-PF			C3
80	92	10/86	PLUGGED	MECH-CE	CTS-PF			C3
73	93	04/88	PLUGGED	MECH-W	HTS-PF		VER AT HTS-SF + 0.7	C7
75	93	04/88	PLUGGED	MECH-W	HTS-PF		NOG H56, REEFAL 558 8/89, PLUGGED 9/23	C7, H56
123	93	5/90	PLUGGED	MECH-W	HTS-PF			H51
74	94	04/88	PLUGGED	MECH-W	HTS-PF			C7
76	94	04/85	PLUGGED	MECH-W	CTS-PF		HTS+0.5; HTS+1.0	50
124	94	04/85	PLUGGED	CONST	CTS-PF		CONST PLOGS IDENTIFIED IN 4/88 OUTAGE	34
75	95	04/88	PLUGGED	MECH-W	HTS-PF		CONSTRUCTION PLOG	C7, H52
70	96	04/88	PLUGGED	MECH-W	HTS-PF			C8
74	96	04/88	PLUGGED	MECH-W	HTS-PF			C7
76	96	04/85	PLUGGED	MECH-W	CTS-PF		HTS+0.4	50
71	97	04/88	PLUGGED	MECH-W	HTS-PF			C8
73	97	04/88	PLUGGED	MECH-W	HTS-PF			C7
73	99	04/88	PLUGGED	MECH-W	HTS-PF		DI CONFIRMED ON TAPE H56	C7, H56
104	104	06/82	PLUGGED	MECH-W	CTS-PF		RIM CUT STAKING LOC.	9
134	104	06/82	PLUGGED	MECH-W	HTS-PF		RIM CUT STAKING LOC.	7
81	105	04/88	PLUGGED	MECH-W	HTS-PF			H6
10	108	04/88	PLUGGED	MECH-W	HTS-PF			C59
56	108	04/88	PLUGGED	MECH-W	HTS-PF		PROF GOOD TUBE, TS FINGERPRINT	H10, 94
9	109	5/92	PLUGGED	MECH-W	HTS-PF		RLG	C65
120	120	06/82	PLUGGED	MECH-W	HTS-PF		RIM CUT STAKING LOC.	7
11	127	5/92	PLUGGED	MECH-W	HTS-PF		APT AT VM STRAM BLANKET REGION	426

APPENDIX III

Steam Generator Inspection Information

- A. Steam Generator Support Locations and Nomenclature
- B. Eddy Current Inspection Acronyms

STEAM GENERATORS CCNPP 1 & 2



Rows Contacting Supports Above 6th TS

ROWS	NO. OF SUPPORTS	SUPPORT DESIGNATIONS
1-9	1	VM
10-35	3	DH, VM, DC
36-65	5	H7, DH, VM, DC, C7
66-73	7	H8, H7, DH, VM, DC, C7, C8
74-89	9	VM, H8, H7, DH, VM, DC, C7, C8, VC
90-115	11	H9, VM, H8, H7, DH, VM, DC, C7, C8, VC, C9
116-140	13	H10, H9, VM, H8, H7, DH, VM, DC, C7, C8, VC, C9, C10

ACCEPTABLE 3-LETTER CODES

DNT	-	Dent	NT	-	No Test
PLG	-	Plug	CU	-	Copper
PV	-	Permeability Variation	FIX	-	Fixture
INC	-	Incomplete	TP	-	Template Plug
RT	-	Retest	BLG	-	Bulge
RES	-	Restricted	IDI	-	ID Indication
RBD	-	Retest Bad Data	ADS	-	Absolute Drift Signal
SLV	-	Sleeve	SLG	-	Sludge
INR	-	Indication Not Reportable	RTI	-	Retest Incomplete
INF	-	Indication Not Found	APT	-	Absolute Positive Trace
SQR	-	Squirrel	NRH	-	No Roll Hot
PID	-	Positive ID	NRC	-	No Roll Cold
DI	-	Distorted			