

CALVERT CLIFFS
UNIT 1
INSPECTION OF
STEAM GENERATORS 11 AND 12

Final Report
OCTOBER, 1983

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Prepared for
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I. INTRODUCTION

Zetec, Inc. was contracted in October, 1983 by Baltimore Gas and Electric to provide six people to assist BG&E personnel with the eddy current examination of the Calvert Cliffs Unit 1 steam generators in Lusby, Maryland. In addition, Zetec, Inc. provided a Level IIA Data Interpreter to evaluate the test results.

II. DISCUSSION

The MIZ-12 Eddy Current System was used to inspect the Calvert Cliffs Unit 1 Steam Generators 11 and 12. The MIZ-12 uses eddy currents as the probing media to measure variations in effective conductivity and/or permeability of the tube being tested.

An alternating voltage is impressed across the test coil. The magnetic field developed by current flow in the test coil causes eddy currents to flow in the tube wall. The corresponding magnetic field caused by eddy current flow in the tube wall is out of phase with the field developed by the current in the test coil. Since these fields tend to cancel one another, the coil voltage is decreased in proportion to the magnitude of eddy current flow in the test piece. The magnitude of eddy currents in the test piece, thus the coil voltage, is dependent on the electrical properties of the tube being tested. The electrical properties which affect the flow of eddy currents are permeability and conductivity. In non-magnetic materials,

such as inconel and 300 series stainless steel, conductivity is usually the only significant variable. When the effective conductivity decreases due to a discontinuity in the tube wall, the coil voltage increases in direct relationship with the effective conductivity change. Thus, the amount of increase in coil voltage is related to the size of the discontinuity. The coil voltage is sinusoidal, thus it can be described with a single vector having magnitude and phase.

The MIZ-12 is a four-frequency system with signal mixing and manipulation capabilities. This allows simultaneous investigation of a part with up to four frequencies on a single scan of the test probe. In addition, data can be manipulated via a mixer module to reduce or eliminate unwanted signals such as surface noise, fill factor variation, lift off, tube support, tube sheet and other similar signals. With this capability, the system can be considered more multi-parameter since it provides more qualitative and quantitative information than was available in previous systems.

A differential test coil probe having a diameter of .560" was used to inspect Calvert Cliffs Unit I Steam Generators 11 and 12. Channel one of the MIZ-12 tester was set at 400 KHz differential. This is the optimum frequency for defect information. Channel two of the tester was set at 100 KHz differential. Channel three was set at 400 KHz low gain differential for dent magnitude evaluation. For tubes

in rows 89 and less, channel three was set at 25 KHz for sludge height measurements. Channel four was set at 100 KHz absolute.

Channel one (400 KHz DIFF) was mixed with channel two (100 KHz DIFF) to suppress unwanted signals originating on the outside of the tube such as supports and tube sheet influences. Channel three, when run at 400 KHz-low gain, was used to evaluate the voltage amplitude of dents observed that were large enough to saturate channel one (400 KHz-high gain).

The eddy current testing performed exceeded the requirements of Calvert Cliffs Unit I Technical Specifications. Three (3) tubes were found to be defective, one (1) in 11 steam generator and two (2) in 12 steam generator. These tubes exceeded the plugging limit of 40% loss of nominal wall thickness. In steam generator 11 tube number line 23 row 136 quad 2 had an indication of 48% wall loss. In steam generator 12 tube numbers line 7 row 124 quad 3 and line 13 row 96 quad 3 had indications of tube wall loss of 45% and 46% respectively. The flaws were small volume, small area flaws. The flaws were not located in the sludge pile area of the steam generators nor were they in the area of a tube support.

In addition to the three (3) defective tubes, sixteen (16) degraded tubes were discovered. A degraded tube contains imperfection/s greater than or equal to 20% of the nominal tube wall thickness. Ten (10) degraded tubes were

found in steam generator 11 and six (6) in steam generator 12. These indications were also small in volume and area.

The following is a summary of eddy current indications:

<u>S/G 11</u>	<u>DEPTH OF INDICATIONS</u>	<u>S/G 12</u>
7	<20%	9
10	20-39%	6
1	≥40%	2

Maximum sludge height observed in Steam Generator 12 was approximately 6 inches. Maximum in Steam Generator 11 was approximately 6 inches.

More detailed results can be found in the appendices as outlined below:

Appendix I	Contains test results for Steam Generator 11
Appendix II	Contains test results for Steam Generator 12
Appendix III	Contains a listing for all tubes inspected in Steam Generator 11
Appendix IV	Contains a listing for all tubes inspected in Steam Generator 12
Appendix V	Contains a specific calibration sheet and data reduction curves
Appendix VI	Contains personnel certifications

APPENDIX I
EDDY CURRENT TEST RESULTS
STEAM GENERATOR 11

- I. DENT INDICATIONS
- II. OTHER INDICATIONS
- III. SLUDGE HEIGHT LEVELS

STEAM GENERATOR No 11
EDDY CURRENT TEST RESULTS

I. DENT INDICATIONS

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
28	91	2		1.2	#9 TSP HL	1
29	92	2		< 1.0	#9 TSP HL	1
30	91	2		1.0	#9 TSP HL	1
31	92	2		1.2	#9 TSP HL	1
35	100	2	3.6		#9 TSP HL	1
36	99	2		< 1.0	#9 TSP HL	1
36	91	2	6.4	< 1.0	#9 TSP CL	1
37	98	2		< 1.0	#9 TSP HL	1
37	100	2	3.4		#9 TSP HL	1
38	95	2	5		#9 TSP HL	1
38	93	2		1.8	#9 TSP HL	1
38	91	2		< 1.0	#9 TSP HL & CL	1
39	92	2		2.3	#9 TSP HL	1
39	94	2		1.9	#9 TSP HL	1
39	96	2		< 1.0	#9 TSP HL	1
39	98	2	3		#9 TSP HL	1
39	100	2	4		#9 TSP HL	1
40	97	2		< 1.0	#9 TSP HL	1
40	95	2		< 1.0	#9 TSP HL	1
40	93	2		1.5	#9 TSP HL	1
40	91	2		1.4	#9 TSP HL	1

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
41	92	2		2.9	#9 TSP HL	1
42	91	2		1.4	#9 TSP HL	1
44	91	2		1.7	#9 TSP HL	1
45	92	2		1.2	#9 TSP HL	1
46	91	2	9		#9 TSP HL	1
48	91	2	4.6		#9 TSP HL	1
60	99	2	3		#9 TSP HL	1
59	100	2	3.4		#3 BW	1
42	121	2		<1.0	24" A #6 EC HL	3
22	123	2	4.0		#10 TSP HL	4
22	121	2		<1.0	#10 TSP HL	4
22	119	2		<1.0	#10 TSP HL	4
22	101	2		<1.0	#9 TSP HL	4
22	99	2		<1.0	#9 TSP HL	4
22	97	2		2.6	#9 TSP HL	4
22	95	2		1.2	#9 TSP HL	4
22	93	2		2.0	#9 TSP HL	4
22	91	2		1.6	#9 TSP HL	4
21	92	2		1.4	#9 TSP HL	4
21	94	2		2.8	#9 TSP HL	4
21	96	2		2.2	#9 TSP HL	4
21	98	2		1.6	#9 TSP HL	4
21	102	2	5.0		#9 TSP HL	4
20	103	2		<1.0	#9 TSP HL	4
19	102	2		3.0	#9 TSP HL	4
18	103	2		2.1	#9 TSP HL	4

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>+00 HG</u>	<u>400 LG</u>		
18	105	2		1.0	#9 TSP HL	4
19	106	2		1.2	#9 TSP HL	4
20	103	2		1.6	#9 TSP HL	4
21	106	2		1.6	#9 TSP HL	4
11	122	2	3.4		#10 TSP HL	5
2	127	2	3		#9 TSP HL	6
2	121	2	6.6		#9 TSP HL	6
3	122	2	4.6		#9 TSP HL	6
2	109	2		1.1	#9 TSP HL	6
2	105	2		< 1.0	#9 TSP HL	6
2	103	2		< 1.0	#9 TSP HL	6
2	101	2		< 1.0	#9 TSP HL	6
2	99	2		2.2	#9 TSP HL	6
2	97	2		2.1	#9 TSP HL	6
2	95	2		1.4	#9 TSP HL	6
2	93	2		1.6	#9 TSP HL	6
1	94	CTR		< 1.0	#9 TSP HL	6
1	96	CTR		2.4	#9 TSP HL	6
1	98	CTR		2.8	#9 TSP HL	6
1	100	CTR		2.2	#9 TSP HL	6
1	102	CTR		< 1.0	#9 TSP HL	6
1	104	CTR		< 1.0	#9 TSP HL	6
1	108	CTR		1.3	#9 TSP HL	6
1	110	CTR		< 1.0	#9 TSP HL	6
4	121	3		< 1.0	#9 TSP HL	7
3	120	3		< 1.0	#9 TSP HL	7

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
3	114	3	4		#9 TSP HL	7
3	112	3	4.4		#9 TSP HL	7
3	110	3	10		#9 TSP HL	7
3	108	3		1.7	#9 TSP HL	7
3	104	3		< 1.0	#9 TSP HL	7
3	102	3		< 1.0	#9 TSP HL	7
3	100	3		3.8	#9 TSP HL	7
3	98	3		2.8	#9 TSP HL	7
3	96	3		4.2	#9 TSP HL	7
3	94	3		2.1	#9 TSP HL	7
3	92	3		< 1.0	#9 TSP HL	7
5	92	3		1.2	#9 TSP HL	7
5	94	3		1.5	#9 TSP HL	7
5	96	3		1.6	#9 TSP HL	7
5	98	3	6		#9 TSP HL	7
5	100	3	7		#9 TSP HL	7
5	102	3	8		#9 TSP HL	7
5	104	3	6		#9 TSP HL	7
5	106	3	4		#9 TSP CL	7
5	110	3	7.6		#9 TSP HL	7
7	132	3		< 1.0	#5 BW	8
7	114	3	4		#9 TSP HL	8
7	110	3	7.5		#9 TSP HL	8
7	102	3		< 1.0	#9 TSP HL	8
7	100	3	3.5		#9 TSP HL	8
7	94	3		1.0	#9 TSP HL	8

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
7	92	3		1.2	#9 TSP HL	8
8	92	3	2		#9 TSP HL	8
9	94	3		1.7	#9 TSP HL	8
9	96	3		<1.0	#9 TSP HL	8
9	110	3	10		#9 TSP HL	8
9	114	3	5		#9 TSP HL	8
11	110	3	4		#9 TSP HL	9
11	108	3	2.2		#9 TSP HL	9
11	102	3		<1.0	#9 TSP HL	9
11	94	3		<1.0	#9 TSP HL	9
11	92	3		1.2	#9 TSP HL	9
13	92	3		1.0	#9 TSP HL	9
13	98	3		2.4	#9 TSP HL	9
13	100	3		1.6	#9 TSP HL	9
13	102	3		1.1	#9 TSP HL	9
13	104	3		<1.0	#9 TSP HL	9
13	108	3	3		#9 TSP HL	9
13	110	3	9		#9 TSP HL	9
13	120	3		<1.0	#2 BW	9
15	120	3		<1.0	20" A #7 EC CL	10
15	110	3	4		#9 TSP HL	10
15	106	3	4		#9 TSP HL	10
15	102	3		2.2	#9 TSP HL	10
15	100	3		2.0	#9 TSP HL	10
15	98	3		2.6	#9 TSP HL	10
15	96	3		<1.0	#9 TSP HL	10

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
15	94	3		1.3	#9 TSP HL	10
15	92	3		1.1	#9 TSP HL	10
17	92	3		1.3	#9 TSP HL	10
17	94	3		1.0	#9 TSP HL	10
17	96	3	3.5		#9 TSP HL	10
17	100	3		1.4	#9 TSP HL	10
22	133	3	6		8" A #2 EC CL	11
19	110	3	5		#9 TSP HL	11
20	105	3		2.5	#9 TSP HL	11
20	103	3		2.6	#9 TSP HL	11
18	105	3		<1.0	#9 TSP HL	11
18	103	3		<1.0	#9 TSP HL	11
19	102	3		<1.0	#9 TSP HL	11
19	100	3		2.2	#9 TSP HL	11
19	98	3		<1.0	#9 TSP HL	11
19	96	3		<1.0	#9 TSP HL	11
19	92	3		1.3	#9 TSP HL	11
34	121	3	4		#10 TSP HL	11

II. OTHER INDICATIONS

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>	<u>TYPE/% WALL</u>	<u>LOCATION</u>	<u>REEL</u>	<u>INDEX</u>
61	96	2	Up to 2.0	Up to 22% OD	10" A #2 EC CL thru TS HL (26 indications)	1 RT 18	1250
60	99	2	1.1	20% OD	#3 BW	1	1343
58	91	2	0.72	20% OD	38" A #3 EC HL	2 RT 18	244 754
35	128	2	1.20	24% OD	10" A #6 EC CL	3 RT 18	1100 727
30	131	2	0.85	<20% OD	1/2" A #3 BW	3	1247
25	134	2	1.08	28% OD	14" A TS HL	4 RT 18	140 717
23	136	2	0.90	48% OD	24" A #6 EC HL	4 RT 18	418 691
18	105	2	1.15	21% OD	28" A #4 EC CL	4 RT 18	1095 642
20	105	2	0.77	<20% OD	12" A #7 EC HL	4 RT 12 RT 18	1135 867 669
8	139	2	2.56	24% OD	20" A TE HL	5 RT 18	1285 634
1	98	CTR	0.84	28% OD	30" A TS CL	6 RT 18	1195 595
1	114	CTR	1.28	21% OD	Top #2 BW	6 RT 18	1334 580
5	128	3	1.3, 1.4	<20% OD	24", 26" A #4 EC HL	7	1308
7	98	3	1.1	<20% OD	12" A #8 EC CL	8	807
9	106	3	1.2	<20% OD	10" A #1 BW	8	1017
13	92	3	0.88	<20% OD	18" A #2 EC CL	9	784

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>	<u>TYPE/%WALL</u>	<u>LOCATION</u>	<u>REEL</u>	<u>INDEX</u>
46	75	2		PV	#6 EC CL	15	
60	43	2		PV	#2 EC CL	16	
76	13	2	1.5	<20% OD	30" A #2 EC CL	17	177
3	140	3	2.0	36% OD	1" A TS CL	17	1256
7	140	2	1.6	<20% OD	Bottom #2 EC HL	18	519

III. SLUDGE TEST RESULTS

Steam Generator 11

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<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
19	60	3.5	1.0	3	12
19	62	3.0	1.5	3	12
19	64	3.5	1.5	3	12
19	66	3.0	1.5	3	12
19	68	2.5	1.5	3	12
19	70	2.5	2.0	3	12
19	72	2.0	2.0	3	12
19	74	1.5	2.0	3	12
19	76	1.0	2.0	3	12
19	78	.5	2.0	3	12
19	80	0	2.5	3	12
19	84	.5	2.5	3	12
19	86	1.0	2.5	3	12
19	88	1.5	2.0	3	12
19	90	2.0	3.5	3	12
20	105	1.5	1.5	2	12
17	90	2.0	2.5	3	12
15	90	2.0	2.0	3	12
13	90	2.0	2.0	3	12
11	90	2.0	2.0	3	12
9	90	2.0	2.5	3	12
7	90	1.5	2.0	3	12

III. SLUDGE TEST RESULTS

Steam Generator 11

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<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
5	90	1.0	2.0	3	12
3	90	1.5	2.5	3	12
1	88	2.0	2.0	CTR	12
1	86	2.5	2.0	CTR	12
1	84	2.5	1.5	CTR	12
1	82	2.5	1.5	CTR	12
1	80	3.0	1.5	CTR	12
1	78	3.0	1.0	CTR	12
1	76	4.0	1.0	CTR	12
1	74	4.0	1.0	CTR	12
1	72	4.5	1.0	CTR	12
1	70	4.5	.5	CTR	12
1	68	3.5	.5	CTR	12
1	66	3.0	.5	CTR	12
1	64	2.5	.5	CTR	12
1	62	2.0	.5	CTR	12
1	60	1.5	--	CTR	12
1	58	1.0	.5	CTR	12
3	58	--	1.5	2	12
5	58	1.0	1.5	2	12
7	58	1.0	1.0	2	13
9	58	1.0	1.5	2	13

III. SLUDGE TEST RESULTS

Steam Generator 11

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<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
11	58	1.5	1.0	2	13
11	60	2.0	1.0	2	13
11	62	2.5	1.0	2	13
11	64	3.5	1.0	2	13
11	66	4.5	1.0	2	13
11	68	4.5	1.5	2	13
11	70	5.0	1.5	2	13
11	72	5.0	1.5	2	13
11	74	4.5	2.0	2	13
11	76	3.5	2.0	2	13
11	78	3.0	2.0	2	13
13	78	2.5	2.0	2	13
15	78	2.5	2.0	2	13
17	78	2.5	2.0	2	13
19	78	2.0	2.0	2	13
21	78	1.0	2.0	2	13
22	77	1.0	1.5	2	13
22	75	1.0	1.5	2	13
22	73	1.5	1.5	2	13
22	71	1.5	1.5	2	13
22	69	2.5	1.0	2	13
22	67	2.5	1.0	2	13

III. SLUDGE TEST RESULTS

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<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
22	65	3.5	.5	2	13
22	63	3.5	0	2	13
22	61	3.5	0	2	13
22	59	4.5	0	2	13
22	57	3.5	0	2	13
22	55	3.5	0	2	13
22	53	3.0	.5	2	13
22	51	2.5	1.0	2	13
22	49	2.5	1.5	2	13
22	47	2.5	1.0	2	13
22	45	2.0	1.5	2	13
22	43	1.5	1.0	2	13
22	41	.5	1.0	2	13
22	39	0	1.5	2	13
23	38	.5	1.5	2	13
24	37	1.0	1.5	2	13
25	36	1.0	1.0	2	13
26	35	2.0	1.0	2	13
27	34	2.0	1.0	2	13
28	33	2.5	1.5	2	13
29	32	2.5	1.5	2	13
30	31	2.5	1.5	2	13

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<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
31	30	2.5	1.5	2	13
31	32	2.5	1.5	2	13
31	34	2.5	1.5	2	13
31	36	3.0	1.5	2	13
31	38	3.0	1.5	2	13
31	40	4.0	1.5	2	13
31	42	4.0	1.5	2	13
31	44	5.0	1.0	2	13
31	46	5.5	1.0	2	13
31	48	5.5	.5	2	13
31	50	5.0	0	2	13
31	52	4.5	.5	2	13
31	54	3.5	1.0	2	13
31	56	3.0	1.0	2	13
31	58	2.5	1.0	2	13
31	60	2.0	1.0	2	13
31	62	1.5	1.0	2	13
31	64	1.0	1.5	2	13
33	64	1.5	1.5	2	13
35	64	1.0	1.5	2	13
37	64	.5	2.0	2	13
39	64	1.0	2.5	2	13

III. SLUDGE TEST RESULTS

Steam Generator 11

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
40	63	1.5	2.0	2	13
40	61	1.0	2.0	2	13
40	59	1.0	1.5	2	14
40	57	.5	1.5	2	14
40	55	1.0	1.5	2	14
40	53	1.0	2.0	2	14
40	51	1.0	1.5	2	14
40	49	1.5	1.5	2	14
40	47	2.0	1.5	2	14
40	45	2.5	1.5	2	14
40	43	2.0	1.5	2	14
40	41	2.5	1.5	2	14
40	39	2.5	1.5	2	14
40	37	2.5	1.5	2	14
40	35	2.0	1.5	2	14
40	33	2.0	1.5	2	14
40	31	1.5	2.0	2	14
40	29	1.5	2.5	2	14
40	27	1.5	2.5	2	14
40	25	1.5	3.5	2	14
40	23	1.5	4.0	2	14
40	21	1.5	4.0	2	14

111. SLUDGE TEST RESULTS

Steam Generator 11

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
40	19	1.5	3.5	2	14
40	17	1.0	2.0	2	14
40	15	.5	1.5	2	14
40	13	.5	1.5	2	14
40	11	0	1.0	2	14
40	9	0	0	2	14
39	8	0	0	2	14
39	10	0	0	2	14
39	12	0	.5	2	14
38	13	0	1.0	2	14
38	11	0	.5	2	14
38	9	0	0	2	14
37	8	0	0	2	14
37	10	0	0	2	14
37	12	0	.5	2	14
36	13	.5	1.0	2	14
36	11	0	0	2	14
36	9	0	0	2	14
35	8	0	0	2	14
35	10	0	0	2	14
35	12	.5	1.0	2	14
46	9	.5	0	2	15

III. SLUDGE TEST RESULTS

Steam Generator 11

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
46	11	.5	1.0	2	15
46	13	.5	2.0	2	15
46	15	1.0	3.5	2	15
46	17	1.5	4.5	2	15
46	19	1.5	4.5	2	15
46	21	1.5	4.5	2	15
46	23	2.0	4.0	2	15
46	25	1.5	3.5	2	15
46	27	1.5	3.0	2	15
46	29	2.0	2.5	2	15
46	31	2.0	2.5	2	15
46	33	2.0	2.5	2	15
46	35	2.0	2.0	2	15
46	37	1.5	2.0	2	15
46	39	1.0	2.0	2	15
46	41	1.0	2.0	2	15
46	43	.5	2.0	2	15
46	45	.5	2.5	2	15
46	47	.5	2.0	2	15
46	49	.5	2.5	2	15
46	51	0	2.0	2	15
46	53	0	2.5	2	15

III. SLUDGE TEST RESULTS

Steam Generator 11

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
46	55	.5	2.5	2	15
46	57	.5	2.0	2	15
46	59	1.0	2.0	2	15
46	61	1.0	2.0	2	15
46	63	1.0	2.0	2	15
46	65	1.5	2.0	2	15
46	67	1.0	2.5	2	15
46	69	1.5	2.0	2	15
46	71	1.5	2.0	2	15
46	73	1.5	2.0	2	15
46	75	1.0	1.5	2	15
46	77	1.0	1.5	2	15
46	79	.5	1.5	2	15
46	81	0	1.0	2	15
46	85	0	0	2	15
46	87	0	0	2	15
46	89	0	0	2	15
60	9	0	0	2	16
60	11	0	1.0	2	16
60	13	1.0	2.0	2	16
60	15	1.5	2.5	2	16
60	17	2.0	2.5	2	16

III. SLUDGE TEST RESULTS

Steam Generator 11

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
60	19	2.0	2.5	2	16
60	21	2.5	2.5	2	16
60	23	2.0	1.5	2	16
60	27	2.0	1.5	2	16
60	29	1.5	1.5	2	16
60	31	1.5	1.0	2	16
60	33	1.0	1.0	2	16
60	35	.5	1.0	2	16
60	37	.5	1.0	2	16
60	39	0	1.0	2	16
60	41	0	1.0	2	16
60	43	0	.5	2	16
60	45	0	1.0	2	16
60	47	0	.5	2	16
60	49	0	0	2	16
60	51	0	0	2	16
60	53	0	0	2	16
60	55	0	0	2	16

APPENDIX II
EDDY CURRENT TEST RESULTS
STEAM GENERATOR 12

- I. DENT INDICATIONS
- II. OTHER INDICATIONS
- III. SLUDGE HEIGHT LEVELS

STEAM GENERATOR NO 12
EDDY CURRENT TEST RESULTS

I. DENT INDICATIONS

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
28	91	2		2.1	#9 TSP HL	1
29	92	2		2.4	#9 TSP HL	1
30	91	2		<1.0	#9 TSP HL & #9 TSP CL	1
31	92	2		2.5	#9 TSP HL	1
32	91	2		1.4	#9 TSP HL	1
33	92	2		3.0	#9 TSP HL	1
35	92	2		1.7	#9 TSP HL	1
35	94	2		1.8	#9 TSP HL	1
35	96	2		3.3	#9 TSP HL	1
35	98	2		2.1	#9 TSP HL	1
35	100	2		1.6	#9 TSP HL	1
36	99	2		2.8	#9 TSP HL	1
36	95	2		1.0	#9 TSP HL	1
37	94	2		1.2	#9 TSP HL	1
37	96	2		1.7	#9 TSP HL	1
37	98	2		1.2	#9 TSP HL	1
37	100	2		3.4	#9 TSP HL	1
38	99	2		<1.0	#9 TSP HL	1
38	97	2		2.0	#9 TSP HL	1
38	95	2		2.7	#9 TSP HL	1
38	93	2		2.4	#9 TSP HL	1

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
38	91	2	5.0		#9 TSP HL	1
39	92	2		2.6	#9 TSP HL	1
39	94	2		2.1	#9 TSP HL	1
39	96	2		1.6	#9 TSP HL	1
39	98	2		1.8	#9 TSP HL	1
39	100	2		<1.0	#9 TSP HL	1
40	99	2		3.8	#9 TSP HL	1
40	97	2		1.0	#9 TSP HL	1
40	95	2		<1.0	#9 TSP HL	1
40	93	2		1.3	#9 TSP HL	1
41	92	2		<1.0	#9 TSP HL	1
44	91	2		1.2	#9 TSP HL	1
45	92	2		5.6	#9 TSP HL	1
46	91	2		3.7, <1.0	#9 TSP HL & TSP CL	1
48	91	2		4.4	#9 TSP HL	1
49	92	2		2.7	#9 TSP HL	1
59	98	2	10		#3 BW	2
59	92	2	4.5		#3 BW	2
57	94	2	6.4		30" A #1 EC CL	2
55	102	2	4.0		24" A #4 EC HL	2
47	114	2	7.0		#3 BW	2
43	116	2	2.4		#9 TSP HL	3
43	112	2	2.5		#9 TSP HL	3
43	110	2		<1.0	#9 TSP HL	3
39	118	2	4.5		26" A #3 EC CL	3
38	123	2		<1.0	30" A #6 EC CL	3

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REFL</u>
			<u>400 HG</u>	<u>400 LG</u>		
34	129	2	5.4		22" A #5 EC HL	3
24	135	2	10		#3 BW	3
22	135	2	4.4		#9 TSP HL	4
22	119	2		2.0	#10 TSP HL	4
22	117	2		1.6	#10 TSP HL	4
22	111	2	10		#2 BW	4
22	109	2		2.1	#9 TSP HL	4
22	103	2		2.0	#9 TSP HL	4
22	101	2		2.4	#9 TSP HL	4
22	99	2		3.0	#9 TSP HL	4
22	97	2		3.6	#9 TSP HL	4
22	95	2		3.8	#9 TSP HL	4
22	93	2		2.6	#9 TSP HL	4
22	91	2		3.4	#9 TSP HL	4
21	92	2		2.0	#9 TSP HL	4
21	96	2		3.0	#9 TSP HL	4
21	98	2		<1.0	#9 TSP HL	4
21	100	2		4.0	#9 TSP HL	4
21	102	2		2.8	#9 TSP HL	4
20	103	2		<1.0	#9 TSP HL	4
18	105	2		2.5	#9 TSP HL	4
19	106	2		2.2	#9 TSP HL	4
19	104	2		<1.0	#9 TSP HL	4
21	106	2		3.6	#9 TSP HL	4
21	108	2		1.6	#9 TSP HL	4
21	110	2		2.7	#9 TSP HL	4

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>4</u>	<u>P</u> <u>G</u>	<u>LOCATION</u>	<u>REEL</u>
21	120	2	6.0		30" A #4 EC HL	4
21	122	2	10.0		#10 TSP HL	4
12	133	2	5.0		10" A #4 BW	5
11	126	2		<1.0	#4 BW	5
11	128	2		1.1	#4 BW	5
11	130	2		<1.0	#4 BW	5
11	132	2	8.6		#4 BW	5
2	121	2	5.4		#10 TSP HL	6
4	119	2		<1.0	#9 TSP HL	6
3	118	2		<1.0	#9 TSP HL	6
2	119	2		<1.0	#9 TSP HL	6
2	117	2		2.1	#9 TSP HL	6
2	115	2		2.2	#9 TSP HL	6
2	113	2		1.3	#9 TSP HL	6
2	109	2		<1.0	#9 TSP HL	6
2	105	2		1.2	#9 TSP HL	6
2	103	2		1.5	#9 TSP HL	6
2	101	2		1.2	#9 TSP HL	6
2	99	2		<1.0	#9 TSP HL	6
2	97	2		<1.0	#9 TSP HL	6
2	95	2		<1.0	#9 TSP HL	6
2	93	2		1.8	#9 TSP HL	6
2	91	2		1.1	#9 TSP HL	6
1	96	CTR		<1.0	#9 TSP HL	6
1	98	CTR		2.2	#9 TSP HL	6
1	100	CTR		4.2	#9 TSP HL	6

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
1	102	CTR		4.9	#9 TSP HL	6
1	104	CTR		1.7	#9 TSP HL	6
1	106	CTR		<1.0	#9 TSP HL	6
1	108	CTR		1.8	#9 TSP HL	6
1	110	CTR		2.2	#9 TSP HL	6
1	112	CTR		1.1	#9 TSP HL	6
1	114	CTR		< 1.0	#9 TSP HL	6
1	116	CTR		1.4	#9 TSP HL	6
1	118	CTR		<1.0	#9 TSP HL	6
4	121	3		1.3	#10 TSP HL	7
4	119	3		<1.0	#10 TSP HL	7
3	118	3		1.0	#9 TSP HL	7
3	116	3		2.8	#9 TSP HL	7
3	114	3		4.9	#9 TSP HL	7
3	112	3		3.5	#9 TSP HL	7
3	110	3		3.8	#9 TSP HL	7
3	108	3		3.4	#9 TSP HL	7
3	106	3		3.0	#9 TSP HL	7
3	104	3		4.8	#9 TSP HL	7
3	102	3		3.6	#9 TSP HL	7
3	100	3		5.0	#9 TSP HL	7
3	98	3		3.7	#9 TSP HL	7
3	96	3		2.1	#9 TSP HL	7
3	94	3		2.6	#9 TSP HL	7
5	92	3		3.7	#9 TSP HL	7
5	94	3		8.8	#9 TSP HL	7

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
5	96	3		6.0	#9 TSP HL	7
5	98	3		6.5	#9 TSP HL	7
5	100	3		5.2	#9 TSP HL	7
5	102	3		4.6	#9 TSP HL	7
5	104	3		7.2	#9 TSP HL	7
5	106	3		<1.0	#9 TSP HL	7
5	108	3		3.4	#9 TSP HL	7
5	110	3		3.0	#9 TSP HL	7
5	112	3		1.2	#9 TSP HL	7
5	114	3		2.8	#9 TSP HL	7
5	116	3		<1.0	#9 TSP HL	7
5	118	3	7.0		#9 TSP HL	7
5	120	3	7.0		#9 TSP HL	7
7	116	3		1.8	#9 TSP HL	8
7	114	3		2.4	#9 TSP HL	8
7	110	3		1.0	#9 TSP HL	8
7	104	3		1.6	#9 TSP HL	8
7	102	3		2.7	#9 TSP HL	8
7	100	3		<1.0	#9 TSP HL	8
7	98	3		1.2	#9 TSP HL	8
7	96	3		3.2	#9 TSP HL	8
7	94	3		2.5	#9 TSP HL	8
7	92	3		1.1	#9 TSP HL	8
9	94	3		1.1	#9 TSP HL	8
9	96	3		2.8	#9 TSP HL	8
9	98	3		<1.0	#9 TSP HL	8

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
9	100	3		4.0	#9 TSP HL	8
9	102	3		2.2	#9 TSP HL	8
9	104	3		1.4	#9 TSP HL	8
9	106	3		1.6	#9 TSP HL	8
9	108	3		2.2	#9 TSP HL	8
9	110	3		3.6	#9 TSP HL	8
9	114	3		<1.0	26" A TS HL	8
9	116	3		1.8	#9 TSP HL	8
9	122	3		<1.0	#10 TSP HL	8
11	116	3		1.4	#9 TSP HL	8
11	114	3		3.2	#9 TSP HL	8
11	112	3		2.7	#9 TSP HL	8
11	110	3		<1.0	#9 TSP HL	8
11	108	3		<1.0	#9 TSP HL	8
11	106	3		1.2	#9 TSP HL	8
11	104	3		<1.0	#9 TSP HL	8
11	102	3		3.6	#9 TSP HL	8
11	100	3		4.2	#9 TSP HL	8
11	98	3		3.4	#9 TSP HL	8
11	96	3		4.4	#9 TSP HL	8
11	94	3		2.2	#9 TSP HL	9
13	94	3		2.9	#9 TSP HL	9
13	96	3		4.2	#9 TSP HL	9
13	98	3		4.6	#9 TSP HL	9
13	100	3		5.1	#9 TSP HL	9
13	104	3		2.8	#9 TSP HL	9

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
13	108	3		<1.0	#9 TSP HL	9
13	110	3		1.5	#9 TSP HL	9
13	114	3		1.4	#9 TSP HL	9
13	116	3		<1.0	#9 TSP HL	9
15	120	3		<1.0	#10 TSP HL	9
15	112	3		2.4	#9 TSP HL	9
15	110	3		4.6	#9 TSP HL	9
15	108	3		2.6	#9 TSP HL	9
15	106	3		2.0	#9 TSP HL	9
15	104	3		<1.0	#9 TSP HL	9
15	102	3		2.4	#9 TSP HL	9
15	100	3		2.7	#9 TSP HL	9
15	98	3		6.0	#9 TSP HL	9
15	96	3		10.0	#9 TSP HL	9
15	94	3		3.2	#9 TSP HL	9
15	92	3		1.8	#9 TSP HL	9
17	92	3		3.5	#9 TSP HL	9
17	94	3		2.9	#9 TSP HL	9
17	96	3		4.9	#9 TSP HL	9
17	98	3		6.5	#9 TSP HL	9
17	100	3		<1.0	#9 TSP HL	9
17	102	3		2.8	#9 TSP HL	9
16	105	3		1.6	#9 TSP HL	9
17	106	3		5.2	#9 TSP HL	9
17	108	3		5.3	#9 TSP HL	9
17	112	3		1.4	#9 TSP HL	9

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>		<u>LOCATION</u>	<u>REEL</u>
			<u>400 HG</u>	<u>400 LG</u>		
17	114	3		2.8	#9 TSP HL	9
19	120	3		2.2	#10 TSP HL	10
19	110	3		5.6	#9 TSP HL	10
19	108	3		3.1	#9 TSP HL	10
19	106	3		<1.0	#9 TSP HL	10
20	105	3	7.4		#9 TSP HL	10
20	103	3		5.0	#9 TSP HL	10
19	104	3		7.1	#9 TSP HL	10
18	105	3		4.5	#9 TSP HL	10
18	103	3		6.6	#9 TSP HL	10
19	102	3		5.4	#9 TSP HL	10
19	100	3		7.0	#9 TSP HL	10
19	98	3		2.6, <1.0	#9 TSP HL, #9 TSP CL	10
19	94	3		2.3	#9 TSP HL	10
19	92	3		2.6	#9 TSP HL	11
19	90	3	6.4		#3 BW	11
1	86	CTR	2.4		#8 EC HL	11

II. OTHER INDICATIONS

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>VOLTS P-P</u>	<u>TYPE/%WALL</u>	<u>LOCATION</u>	<u>REEL</u>	<u>INDEX</u>
60	97	2	2.3	<20% OD	1" below #3 BW	2	151
48	111	2	1.65	<20% OD	36" A #4 EC HL	2	1187
46	117	2	0.96	21% OD	22" A TS HL	2	1292
						RT 16	785
						RT 17	192
41	120	2	1.9	<20% OD	2" A #2 EC HL	3	418
40	121	2	1.1	<20% OD	4" A #6 EC HL	3	488
21	92	2	1.2	<20% OD	12" A #3 EC HL	4	756
4	139	3	0.84	<20% OD	#5 EC CL	7	1131
7	124	3	1.36	45% OD	12" A #8 EC CL	7	1317
						RT 16	926
						RT 17	91
13	96	3	0.68	46% OD	30" A #1 EC CL	9	187
				<20% OD	12" A TS HL	RT 16	
						RT 17	347
17	106	3	1.2	23% OD	20" A #5 EC HL	9	1320
						RT 17	74
19	134	3	2.1	<20% OD	4" A TS HL	10	634
21	78	2	1.44	29% OD	Bottom #7 EC CL	12	553
						RT 17	154
31	42	2	1.36	21% OD	10" A #1 EC HL	12	1100
						RT 17	201
31	64	2	2.2	<20% OD	Bottom #7 EC CL	12	1236
46	71	2		PV	#4 EC HL	14	
46	85	2	1.44	<20% OD	4" A TS HL	14	555
52	13	2	1.55	25% OD	12" A #5 EC CL	14	945
						RT 17	215
73	12	2	1.20	21% OD	24" A #2 EC CL	15	782
						RT 17	234
5	62	2		PV	#3 EC to #4 EC CL	16	

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
19	76	.5	1.0	3	11
19	78	0	1.0	3	11
19	80	0	1.0	3	11
19	82	.5	1.5	3	11
19	84	.5	1.5	3	11
19	86	.5	1.5	3	11
19	88	1.0	2.0	3	11
19	90	1.5	2.0	3	11
17	90	1.0	2.0	3	11
15	90	1.0	1.5	3	11
13	90	1.5	1.5	3	11
11	90	1.0	1.5	3	11
9	90	1.0	1.5	3	11
7	90	.5	1.0	3	11
5	90	.5	1.0	3	11
3	90	1.0	1.0	3	11
1	90	2.0	1.5	CTR	11
1	86	2.5	1.0	CTR	11
1	84	3.0	1.0	CTR	11
1	82	3.0	1.0	CTR	11
1	80	4.5	1.0	CTR	11
1	78	5.5	1.0	CTR	12

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
1	76	6.0	1.0	CTR	12
1	74	5.5	.5	CTR	12
1	72	4.5	.5	CTR	12
1	70	3.5	.5	CTR	12
1	68	3.5	.5	CTR	12
1	66	2.5	.5	CTR	12
1	62	1.5	1.0	CTR	12
1	60	.5	1.0	CTR	12
1	58	.5	1.0	CTR	12
3	58	.5	1.0	2	12
11	70	4.0	1.0	2	12
11	72	4.0	1.0	2	12
11	74	3.5	1.0	2	12
11	76	3.0	1.0	2	12
11	78	2.5	1.0	2	12
13	78	2.0	1.0	2	12
15	78	2.0	1.0	2	12
17	78	1.0	1.0	2	12
19	78	0	1.0	2	12
21	78	0	1.0	2	12
22	77	.5	1.0	2	12
22	75	1.5	1.0	2	12

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
22	73	1.5	1.0	2	12
22	71	2.0	1.0	2	12
22	69	2.5	.5	2	12
22	67	3.0	1.0	2	12
22	65	4.0	.5	2	12
22	63	4.0	0	2	12
22	61	3.5	0	2	12
22	59	3.5	0	2	12
22	57	3.0	0	2	12
22	55	2.5	0	2	12
22	53	2.5	0	2	12
22	51	2.0	.5	2	12
22	49	1.5	.5	2	12
22	47	1.5	1.0	2	12
22	45	1.0	1.0	2	12
22	43	.5	1.0	2	12
22	41	0	1.0	2	12
22	39	.5	1.0	2	12
23	38	0	1.0	2	12
24	37	1.0	1.0	2	12
25	36	1.0	1.0	2	12
26	35	1.0	1.0	2	12

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
27	34	1.5	1.0	2	12
28	33	--	1.0	2	12
39	32	2.0	1.0	2	12
30	31	2.5	1.5	2	12
31	30	2.5	1.0	2	12
31	32	3.0	1.0	2	12
31	34	3.0	1.0	2	12
31	36	2.5	1.0	2	12
31	38	3.0	1.0	2	12
31	40	4.0	.5	2	12
31	42	4.0	.5	2	12
31	44	5.0	.5	2	12
31	46	5.0	.5	2	12
31	48	5.5	0	2	12
31	50	5.5	.5	2	12
31	52	5.5	.5	2	12
31	54	5.0	.5	2	12
31	56	4.0	0	2	12
31	58	3.0	0	2	12
31	60	2.0	0	2	12
31	62	1.5	.5	2	12
31	64	1.0	.5	2	12

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
33	64	.5	1.0	2	12
35	64	0	1.0	2	12
37	64	0	1.0	2	12
39	64	.5	1.5	2	12
40	63	.5	1.5	2	12
40	61	.5	1.5	2	12
40	59	.5	1.0	2	12
40	57	.5	1.0	2	12
40	55	1.0	1.0	2	12
40	53	1.0	.5	2	12
40	51	1.5	1.0	2	12
40	49	1.5	.5	2	13
40	47	2.0	.5	2	13
40	45	2.0	.5	2	13
40	43	2.5	.5	2	13
40	41	3.0	.5	2	13
40	39	3.5	.5	2	13
40	37	3.0	.5	2	13
40	35	2.5	.5	2	13
40	33	2.0	.5	2	13
40	31	2.0	.5	2	13
40	29	1.5	1.0	2	13

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
40	27	1.0	1.0	2	13
40	25	1.0	1.0	2	13
40	23	.5	1.5	2	13
40	21	.5	2.0	2	13
40	19	0	2.0	2	13
40	17	0	2.5	2	13
40	15	0	2.5	2	13
40	13	.5	2.0	2	13
40	11	0	1.0	2	13
40	9	0	.5	2	13
39	8	0	0	2	13
39	10	0	.5	2	13
39	12	0	1.0	2	13
38	13	0	1.0	2	13
38	11	0	.5	2	13
38	9	0	0	2	13
37	8	0	0	2	13
37	10	0	0	2	13
37	12	0	.5	2	13
36	13	0	1.0	2	13
36	11	0	.5	2	13
36	9	0	0	2	13

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
35	8	0	0	2	13
35	10	0	0	2	13
35	12	0	.5	2	13
46	9	--	2.5	2	13
46	11	0	3.0	2	13
46	13	0	3.0	2	13
46	15	0	2.5	2	13
46	17	.5	2.0	2	13
46	19	1.5	1.5	2	13
46	21	1.5	1.5	2	13
46	23	2.0	1.5	2	13
46	25	2.5	1.0	2	13
46	27	2.5	1.0	2	13
46	29	2.5	1.0	2	13
46	31	2.5	.5	2	13
46	33	2.0	.5	2	13
46	35	1.5	.5	2	13
46	37	1.5	.5	2	13
46	39	1.0	1.0	2	13
46	41	.5	1.0	2	13
46	43	1.0	1.5	2	14
46	45	.5	1.0	2	14

III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
46	47	.5	1.5	2	14
46	49	0	1.5	2	14
46	51	0	1.5	2	14
46	53	.5	1.5	2	14
46	55	.5	1.5	2	14
46	57	.5	1.5	2	14
46	59	.5	2.0	2	14
46	61	1.0	2.0	2	14
46	63	1.0	2.0	2	14
46	65	1.0	1.5	2	14
46	67	1.0	1.5	2	14
46	69	1.0	1.0	2	14
46	71	1.5	1.0	2	14
46	73	1.5	1.0	2	14
46	75	1.0	1.0	2	14
46	77	1.0	1.0	2	14
46	79	1.0	1.0	2	14
46	81	1.0	.5	2	14
46	83	1.0	.5	2	14
46	85	.5	0	2	14
46	87	0	0	2	14
46	89	0	0	2	14

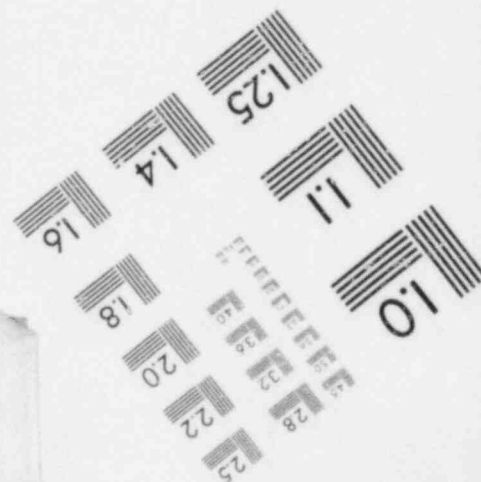
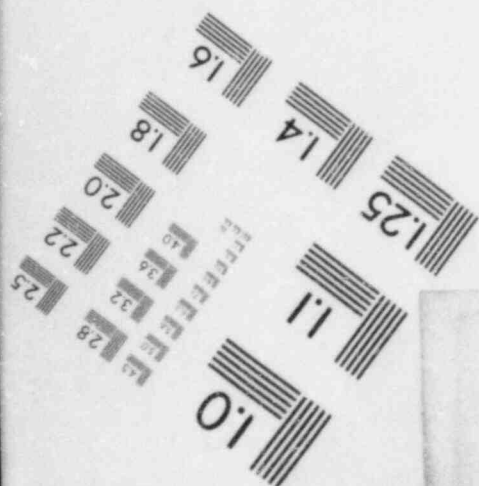
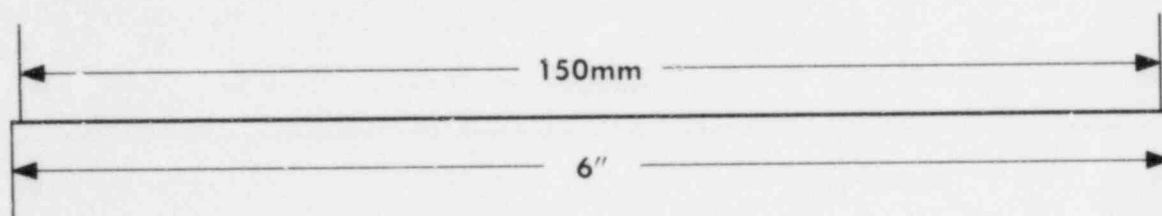
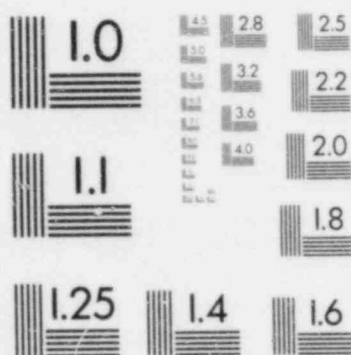
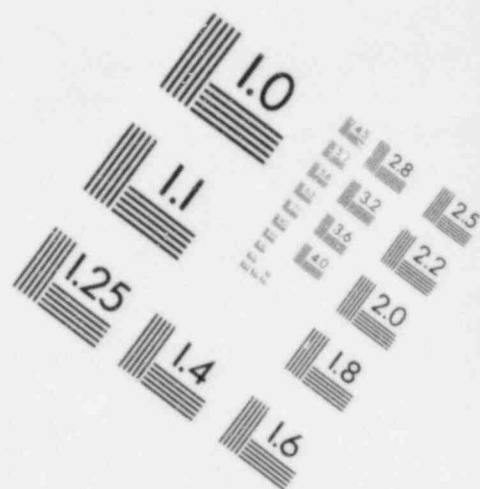
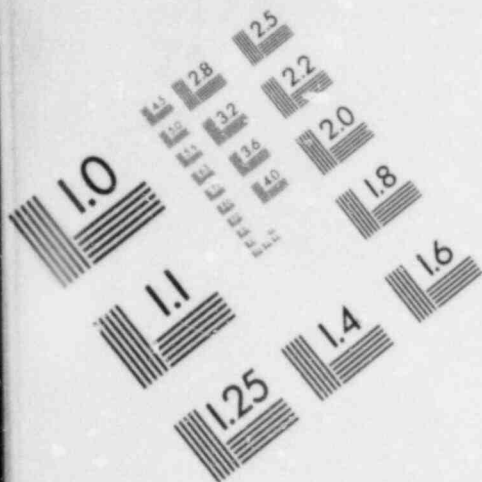
III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
60	9	2.0	2.0	2	14
60	11	1.5	2.0	2	14
60	13	1.5	1.5	2	14
60	15	1.5	1.0	2	14
60	17	2.0	1.0	2	14
60	19	1.5	1.0	2	14
60	21	1.5	1.0	2	14
60	23	1.5	1.0	2	14
60	25	1.5	1.0	2	14
60	27	1.0	1.0	2	14
60	29	.5	.5	2	14
60	31	.5	.5	2	14
60	33	1.0	1.0	2	15
60	35	.5	1.0	2	15
60	37	0	.5	2	15
60	39	0	0	2	15
60	41	0	0	2	15
60	43	0	.5	2	15
60	45	0	0	2	15
60	47	0	0	2	15
60	49	0	0	2	15
60	51	0	0	2	15

IMAGE EVALUATION
TEST TARGET (MT-3)



III. SLUDGE TEST RESULTS

Steam Generator 12

October 1983

<u>LINE</u>	<u>ROW</u>	<u>INLET</u>	<u>OUTLET</u>	<u>QUAD</u>	<u>REEL</u>
60	53	0	0	2	15
60	55	0	0	2	15

APPENDIX III

TUBES TESTED IN STEAM GENERATOR NO. 11

BY REEL NUMBER

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
28	91	2	1
29	92	2	1
30	91	2	1
31	92	2	1
32	91	2	1
33	92	2	1
35	92	2	1
35	94	2	1
35	96	2	1
35	98	2	1
35	100	2	1
36	99	2	1
36	95	2	1
36	93	2	1
36	91	2	1
37	90	2	1
37	94	2	1
37	96	2	1
37	98	2	1
37	100	2	1
38	99	2	1
38	97	2	1
38	95	2	1

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
38	93	2	1
38	91	2	1
39	92	2	1
39	94	2	1
39	96	2	1
39	98	2	1
39	100	2	1
40	99	2	1
40	97	2	1
40	95	2	1
40	93	2	1
40	91	2	1
41	92	2	1
42	91	2	1
44	91	2	1
45	92	2	1
46	91	2	1
47	92	2	1
48	91	2	1
49	92	2	1
50	91	2	1
51	92	2	1
52	91	2	1

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
53	92	2	1		59	94	2	2
54	91	2	1		59	92	2	2
55	92	2	1		58	91	2	2 RT 18
56	91	2	1		58	93	2	2
64	91	2	1		58	95	2	2
63	92	2	1		58	97	2	2
62	91	2	1		58	99	2	2
62	93	2	1		58	101	2	2
62	95	2	1		57	104 PT	2	2
61	96	2	1 RT 18		57	104 RT	2	2
61	94	2	1		57	102	2	2
61	92	2	1		57	100	2	2
60	91	2	1		57	98	2	2
60	93	2	1		57	96	2	2
60	95	2	1		57	94	2	2
60	97	2	1		57	92	2	2
60	99	2	1		56	101	2	2
59	100	2	1		56	103	2	2
59	98	2	2		56	105	2	2
59	96	2	2		55	106	2	2

PT - Partial Test
RT - Retest

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
7	108	3	8		9	120	3	8
7	106	3	8		9	122	3	8
7	104	3	8		9	124	3	8
7	102	3	8		9	126	3	8
7	100	3	8		9	128	3	8
7	98	3	8		9	130	3	8
7	96	3	8		9	132	3	8
7	94	3	8		9	134	3	8
7	92	3	8		9	136	3	8
9	92	3	8		9	138	3	8
9	94	3	8		9	140	3	8
9	96	3	8		10	139	3	8
9	98	3	8		10	139	3	9
9	100	3	8		12	139	3	9
9	102	3	8		11	126	3	9
9	104	3	8		11	124	3	9
9	106	3	8		11	122	3	9
9	108	3	8		11	120	3	9
9	110	3	8		11	116	3	9
9	112	3	8		11	114	3	9
9	114	3	8		11	112	3	9
9	116	3	8		11	110	3	9
9	118	3	8		11	108	3	9

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
55	104	2	2		47	114	2	2
55	102	2	2		47	112	2	2
54	101	2	2		47	110	2	2
54	103	2	2		46	111	2	2
54	107	2	2		46	113	2	2
53	108	2	2		46	115	2	2
53	106	2	2		46	117	2	2
53	102	2	2		45	118	2	2
52	101	2	2		45	116	2	2
52	103	2	2		45	114	2	2
52	105	2	2		45	112	2	3
52	107	2	2		45	110	2	3
52	109	2	2		44	111	2	3
51	110	2	2		44	113	2	3
51	112	2	2		44	115	2	3
50	111	2	2		44	117	2	3
50	113	2	2		44	119	2	3
49	114	2	2		43	120	2	3
49	112	2	2		43	118	2	3
49	110	2	2		43	116	2	3
48	111	2	2		43	114	2	3
48	115	2	2		43	112	2	3
47	116	2	2		43	110	2	3

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
42	121	2	3
42	119	2	3
41	120	2	3
41	122	2	3
40	123	2	3
40	121	2	3
40	119	2	3
40	117	2	3
39	118	2	3
39	120	2	3
39	122	2	3
39	124	2	3
38	125	2	3
38	123	2	3
38	121	2	3
38	119	2	3
38	117	2	3
37	118	2	3
37	122	2	3
37	126	2	3
36	127	2	3
36	125	2	3
36	123	2	3

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
36	121	2	3
36	119	2	3
35	128	2	3 RT 18
35	126	2	3
34	127	2	3
34	129	2	3
33	130	2	3
33	128	2	3
32	129	2	3
31	130	2	3
30	131	2	3
29	132	2	3
28	133	2	3
27	134	2	3
26	133	2	3
26	131	2	3
26	129	2	3
25	130	2	3
25	132	2	4
25	134	2	4 RT 18
24	135	2	4
24	133	2	4
24	131	2	4

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
24	129	2	4		22	99	2	4
23	130	2	4		22	97	2	4
23	132	2	4		22	95	2	4
23	134	2	4		22	93	2	4
23	136	2	4 RT 18		22	91	2	4
22	135	2	4		21	92	2	4
22	133	2	4		21	94	2	4
22	131	2	4		21	96	2	4
22	129	2	4		21	98	2	4
22	127	2	4		21	100	2	4
22	125	2	4		21	102	2	4
22	123	2	4		21	104	2	4
22	121	2	4		20	103	2	4
22	119	2	4		19	102	2	4
22	117	2	4		18	103	2	4
22	115	2	4		18	105	2	4 RT 18
22	113	2	4		19	106	2	4
22	111	2	4		20	105	2	4 RT 12 RT 18
22	109	2	4		21	106	2	4
22	107	2	4		21	108	2	4
22	105	2	4		21	110	2	4
22	103	2	4		21	112	2	4
22	101	2	4		21	114	2	4

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
21	116	2	4		16	135	2	5
21	118	2	4		15	136	2	5
21	120	2	4		15	138	2	5
21	122	2	4		14	137	2	5
21	124	2	4		13	138	2	5
21	126	2	4		13	136	2	5
21	128	2	4		12	137	2	5
21	130	2	4		12	135	2	5
21	132	2	5		12	133	2	5
21	134	2	5		12	131	2	5
21	136	2	5		12	129	2	5
20	137	2	5		12	127	2	5
20	135	2	5		12	125	2	5
20	131	2	5		12	123	2	5
19	132	2	5		11	122	2	5
19	136	2	5		11	124	2	5
18	137	2	5		10	123	2	5
18	135	2	5		10	125	2	5
18	133	2	5		11	126	2	5
17	134	2	5		11	128	2	5
17	136	2	5		11	130	2	5
17	138	2	5		11	132	2	5
16	137	2	5		11	134	2	5

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
11	136	2	5		3	132	2	6
11	138	2	5		3	134	2	6
10	139	2	5		3	136	2	6
10	137	2	5		2	135	2	6
10	135	2	5		2	133	2	6
10	133	2	5		2	131	2	6
9	134	2	5		2	129	2	6
9	136	2	5		2	127	2	6
9	138	2	5		2	125	2	6
8	139	2	5 RT 18		2	123	2	6
8	137	2	5		2	121	2	6
8	135	2	5		3	122	2	6
7	136	2	5		3	120	2	6
7	138	2	5		4	121	2	6
6	139	2	5		4	119	2	6
6	137	2	6		3	118	2	6
6	135	2	6		2	119	2	6
5	134	2	6		2	117	2	6
5	136	2	6		2	115	2	6
5	138	2	6		2	113	2	6
4	137	2	6		2	111	2	6
4	135	2	6		2	109	2	6
4	133	2	6		2	105	2	6

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>	<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
2	103	2	6	1	126	CTR	7
2	101	2	6	1	128	CTR	7
2	99	2	6	1	130	CTR	7
2	97	2	6	1	132	CTR	7
2	95	2	6	1	134	CTR	7
2	93	2	6	3	132	3	7
2	91	2	6	3	130	3	7
1	90	2	6	3	128	3	7
1	94	2	6	3	126	3	7
1	96	2	6	3	124	3	7
1	98	2	6 RT 18	3	122	3	7
1	100	2	6	4	121	3	7
1	102	2	6	3	120	3	7
1	104	2	6	4	119	3	7
1	106	2	6	3	118	3	7
1	108	2	6	3	116	3	7
1	110	2	6	3	114	3	7
1	112	2	6	3	112	3	7
1	114	2	6 RT 18	3	110	3	7
1	116	2	6	3	108	3	7
1	118	CTR	7	3	106	3	7
1	122	CTR	7	3	104	3	7
1	124	CTR	7	3	102	3	7

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
3	100	3	7		5	130	3	7
3		3	7		5	132	3	7
3	96	3	7		5	134	3	7
3	94	3	7		5	136	3	8
3	92	3	7		5	138	3	8
5	92	3	7		5	140	3	8
5	94	3	7		4	139	3	8
5	96	3	7		6	139	3	8
5	98	3	7		7	140	3	8
5	100	3	7		8	139	3	8
5	102	3	7		7	138	3	8
5	104	3	7		7	136	3	8
5	106	3	7		7	134	3	8
5	108	3	7		7	132	3	8
5	110	3	7		7	130	3	8
5	112	3	7		7	128	3	8
5	114	3	7		7	126	3	8
5	116	3	7		7	124	3	8
5	118	3	7		7	122	3	8
5	120	3	7		7	120	3	8
5	122	3	7		7	118	3	8
5	124	3	7		7	116	3	8
5	126	3	7		7	114	3	8
5	128	3	7		7	110	3	8

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
11	106	3	9		13	122	3	9
11	104	3	9		13	124	3	9
11	102	3	9		13	126	3	9
11	100	3	9		13	128	3	9
11	98	3	9		13	130	3	9
11	96	3	9		13	132	3	9
11	94	3	9		13	134	3	9
11	92	3	9		13	136	3	9
13	92	3	9		13	138	3	9
13	94	3	9		14	137	3	9
13	96	3	9		15	138	3	9
13	98	3	9		16	137	3	9
13	100	3	9		15	136	3	10
13	102	3	9		15	134	3	10
13	104	3	9		15	132	3	10
13	106	3	9		15	130	3	10
13	108	3	9		15	128	3	10
13	110	3	9		15	126	3	10
13	112	3	9		15	124	3	10
13	114	3	9		15	122	3	10
13	116	3	9		15	120	3	10
13	118	3	9		15	116	3	10
13	120	3	9		15	118	PT	10

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
15	114	3	10		17	112	3	10
15	112	3	10		17	114	3	10
15	110	3	10		17	116	3	10
15	108	3	10		17	118	3	10
15	106	3	10		17	120	3	10
15	104	3	10		17	122	3	10
15	102	3	10		17	124	3	10
15	100	3	10		17	126	3	10
15	98	3	10		17	128	3	10
15	96	3	10		17	130	3	10
15	94	3	10		17	132	3	10
15	92	3	10		16	133	3	10
17	92	3	10		17	134	3	10
17	94	3	10		16	135	3	10
17	96	3	10		17	136	3	10
17	98	3	10		17	138	3	10
17	100	3	10		18	137	3	10
17	102	3	10		18	135	3	10
16	103	3	10		18	133	3	10
17	104	3	10		19	132	3	10
16	105	3	10		19	136	3	11
17	106	3	10		20	135	3	11
17	108	3	10		20	133	3	11

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
21	132	3	11		19	106	3	11
21	134	3	11		20	105	3	11
22	133	3	11		20	103	3	11
22	131	3	11		18	105	3	11
23	132	3	11		18	103	3	11
23	134	3	11		19	102	3	11
24	133	3	11		19	100	3	11
24	131	3	11		19	98	3	11
25	132	3	11		19	96	3	11
25	134	3	11		19	94	3	11
26	133	3	11		19	92	3	11
26	131	3	11		34	121	3	11
19	130	3	11		34	119	3	11
19	128	3	11		35	118	3	11
19	126	3	11		35	120	3	11
19	124	3	11		35	122	3	11
19	122	3	11		36	121	3	11
19	120	3	11		36	119	3	11
19	118	3	11		37	118	3	11
19	116	3	11		38	121	3	11
19	112	3	11		38	119	3	11
19	110	3	11		50	103	3	11
19	108	3	11		50	105	3	11

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
51	106	3	11		19	64	3	12
51	104	3	11		19	66	3	12
51	102	3	11		19	68	3	12
52	103	3	11		19	70	3	12
52	105	3	11		19	72	3	12
53	106	3	11		19	74	3	12
53	102	3	11		19	76	3	12
54	103	3	11		19	78	3	12
54	105	3	12		19	80	3	12
61	96	3	12		19	84	3	12
61	94	3	12		19	86	3	12
61	92	3	12		19	88	3	12
62	91	3	12		19	90	3	12
62	93	3	12		20	105	2	12 RT 18
63	92	3	12		17	90	3	12
63	90	3	12		15	90	3	12
63	88	3	12		13	90	3	12
64	87	3	12		11	90	3	12
64	89	3	12		9	90	3	12
64	91	3	12		7	90	3	12
65	88	3	12		5	90	3	12
66	87	3	12		3	90	3	12
19	60	3	12		1	88	CTR	12
19	62	3	12		1	86	CTR	12

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>	<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
1	84	CTR	12	11	68	2	13
1	82	CTR	12	11	70	2	13
1	80	CTR	12	11	72	2	13
1	78	CTR	12	11	74	2	13
1	76	CTR	12	11	76		13
1	74	CTR	12	11	78	2	13
1	72	CTR	12	13	78	2	13
1	70	CTR	12	15	78	2	13
1	68	CTR	12	17	78	2	13
1	66	CTR	12	19	78	2	13
1	64	CTR	12	21	78	2	13
1	62	CTR	12	22	77	2	13
1	60	CTR	12	22	75	2	13
1	58	CTR	12	22	73	2	13
3	58	2	12	22	71	2	13
5	58	2	12	22	69	2	13
7	58	2	13	22	67	2	13
9	58	2	13	22	65	2	13
11	56	2	13	22	63	2	13
11	60	2	13	22	61	2	13
11	62	2	13	22	59	2	13
11	64	2	13	22	57	2	13
11	66	2	13	22	55	2	13

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
22	53	2	13		31	44	2	13
22	51	2	13		31	46	2	13
22	49	2	13		31	48	2	13
22	47	2	13		31	50	2	13
22	45	2	13		31	52	2	13
22	43	2	13		31	54	2	13
22	41	2	13		31	56	2	13
22	39	2	13		31	58	2	13
23	38	2	13		31	60	2	13
24	37	2	13		31	62	2	13
25	36	2	13		31	64	2	13
26	35	2	13		33	64	2	13
27	34	2	13		35	64	2	13
28	33	2	13		37	64	2	13
29	32	2	13		39	64	2	13
30	31	2	13		40	63	2	13
31	30	2	13		40	61	2	13
31	32	2	13		40	59	2	14
31	34	2	13		40	57	2	14
31	36	2	13		40	55	2	14
31	48	2	13		40	53	2	14
31	40	2	13		40	51	2	14
31	42	2	13		40	49	2	14

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
40	47	2	14		38	13	2	14
40	45	2	14		38	11	2	14
40	43	2	14		38	9	2	14
40	41	2	14		37	8	2	14
40	39	2	14		37	10	2	14
40	37	2	14		37	12	2	14
40	35	2	14		36	13	2	14
40	33	2	14		36	11	2	14
40	31	2	14		36	9	2	14
40	29	2	14		35	8	2	14
40	27	2	14		35	10	2	14
40	25	2	14		35	12	2	14
40	23	2	14		34	13	2	14
40	21	2	14		34	11	2	14
40	19	2	14		33	10	2	14
40	17	2	14		33	12	2	14
40	15	2	14		32	13	2	14
40	13	2	14		34	9	2	14
40	11	2	14		32	11	2	14
40	9	2	14		32	9	2	14
39	8	2	14		41	20	2	14
39	10	2	14		41	18	2	14
39	12	2	14		41	16	2	14

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
41	14	2	14
41	12	2	14
41	10	2	14
41	8	2	14
42	9	2	14
42	11	2	14
42	13	2	14
42	15	2	14
42	17	2	14
42	19	2	14
43	12	2	14
43	10	2	14
43	8	2	14
44	9	2	14
44	11	2	14
44	13	2	14
45	12	2	15
45	10	2	15
45	8	2	15
46	9	2	15
46	11	2	15
46	13	2	15
46	15	2	15

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
46	17	2	15
46	19	2	15
46	21	2	15
46	23	2	15
46	25	2	15
46	27	2	15
46	29	2	15
46	31	2	15
46	33	2	15
46	35	2	15
46	37	2	15
46	39	2	15
46	41	2	15
46	43	2	15
46	45	2	15
46	47	2	15
46	49	2	15
46	51	2	15
46	53	2	15
46	55	2	15
46	57	2	15
46	59	2	15
46	61	2	15

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>	<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
46	63	2	15	48	15	2	15
46	65	2	15	48	17	2	15
46	67	2	15	48	19	2	15
46	69	2	15	49	14	2	15
46	71	2	15	49	12	2	15
46	73	2	15	49	10	2	15
46	75	2	15	49	8	2	15
46	77	2	15	50	9	2	15
46	79	2	15	50	11	2	15
46	81	2	15	50	13	2	15
46	85	2	15	51	14	2	15
46	87	2	15	51	12	2	15
46	89	2	15	51	10	2	15
47	20	2	15	51	8	2	15
47	18	2	15	52	9	2	15
47	16	2	15	52	11	2	15
47	14	2	15	52	13	2	15
47	12	2	15	53	14	2	15
47	10	2	15	53	12	2	15
47	8	2	15	53	10	2	15
48	9	2	15	53	8	2	15
48	11	2	15	54	9	2	15
48	13	2	15	54	9	2	16

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
54	11	2	16
54	13	2	16
55	14	2	16
55	12	2	16
55	10	2	16
55	8	2	16
56	9	2	16
56	11	2	16
56	13	2	16
57	14	2	16
57	12	2	16
57	10	2	16
57	8	2	16
58	9	2	16
58	11	2	16
58	13	2	16
59	14	2	16
59	12	2	16
59	10	2	16
59	8	2	16
60	7	2	16
60	5	2	16
60	3	2	16

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
60	9	2	16
60	11	2	16
60	13	2	16
60	15	2	16
60	17	2	16
60	19	2	16
60	21	2	16
60	23	2	16
60	27	2	16
60	29	2	16
60	31	2	16
60	33	2	16
60	35	2	16
60	37	2	16
60	39	2	16
60	41	2	16
60	43	2	16
60	45	2	16
60	47	2	16
60	49	2	16
60	51	2	16
60	53	2	16
60	55	2	16

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
61	12	2	16
61	10	2	16
61	8	2	16
62	9	2	16
62	11	2	16
62	13	2	16
63	10	2	16
63	8	2	16
64	9	2	16
64	11	2	16
64	13	2	16
65	12	2	16
65	10	2	16
65	8	2	16
66	9	2	16
66	11	2	16
66	13	2	16
67	12	2	16
67	10	2	16
67	8	2	16
68	9	2	16
68	11	2	16
68	13	2	16

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
69	12	2	16
69	10	2	16
69	8	2	16
70	9	2	16
70	11	2	16
70	13	2	16
71	12	2	16
71	10	2	16
71	8	2	16
72	9	2	16
72	11	2	16
72	13	2	16
73	12	2	16
73	10	2	16
73	8	2	16
74	9	2	16
74	11	2	16
74	13	2	16
75	12	2	16
75	12	2	17
75	10	2	17
75	8	2	17
76	9	2	17

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
76	11	2	17		80	41	2	17
76	13	2	17		80	43	2	17
84	3	2	17		79	46	2	17
84	5	2	17		79	48	2	17
84	7	2	17		78	49	2	17
84	9	2	17		78	51	2	17
84	11	2	17		78	53	2	17
84	13	2	17		77	54	2	17
84	15	2	17		77	56	2	17
83	16	2	17		76	57	2	17
83	18	2	17		76	59	2	17
83	20	2	17		75	60	2	17
83	22	2	17		75	62	2	17
83	24	2	17		74	63	2	17
82	25	2	17		74	65	2	17
82	27	2	17		74	67	2	17
82	29	2	17		73	68	2	17
82	31	2	17		72	69	2	17
81	32	2	17		72	71	2	17
81	34	2	17		72	73	2	17
81	36	2	17		70	75	2	17
81	38	2	17		70	77	2	17
80	39	2	17		69	78	2	17

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
69	80	2	17		11	134	3	17
68	81	2	17		11	132	3	18
68	83	2	17		11	130	3	18
67	84	2	17		11	128	3	18
66	87	2	17		11	118	3	18
65	88	2	17		15	118	3	18
64	89	2	17		1	140	3	18
61	2	2	17		1	138	3	18
63	2	2	17		1	136	3	18
65	2	2	17		2	139	2	18
67	2	2	17		3	140	2	18
60	1	2	17		3	138	2	18
62	1	2	17		4	139	2	18
64	1	2	17		5	140	2	18
66	1	2	17		7	140	2	18
68	1	2	17		9	140	2	18
2	139	3	17		12	139	2	18
3	140	3	17		1	114	CTR	18
3	138	3	17		1	98	CTR	18
3	136	3	17		8	139	2	18
3	134	3	17		18	105	2	18
11	138	3	17		20	105	2	18
11	136	3	17		23	136	2	18

TUBES TESTED IN STEAM GENERATOR NO. 11
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
25	134	2	18
35	128	2	18
58	91	2	18
61	96	2	18

CHANGE TO MAGNETIC SUPPRESSED PROBE

61	96	2	18 HOT LEG ONLY
23	136	2	18 HOT LEG ONLY

APPENDIX IV
TUBES TESTED IN STEAM GENERATOR NO. 12
BY REEL NUMBER

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
28	91	2	1		38	93	2	1
29	92	2	1		38	91	2	1
30	91	2	1		39	92	2	1
31	92	2	1		39	94	2	1
32	91	2	1		39	96	2	1
33	92	2	1		39	98	2	1
35	92	2	1		39	100	2	1
35	94	2	1		40	99	2	1
35	96	2	1		40	97	2	1
35	98	2	1		40	95	2	1
35	100	2	1		40	93	2	1
36	99	2	1		40	91	2	1
36	95	2	1		41	92	2	1
36	93	2	1		42	91	2	1
36	91	2	1		44	91	2	1
37	90	2	1		45	92	2	1
37	94	2	1		46	91	2	1
37	96	2	1		47	92	2	1
37	98	2	1		48	91	2	1
37	100	2	1		49	92	2	1
38	99	2	1		50	91	2	1
38	97	2	1		51	92	2	1
38	95	2	1		52	91	2	1

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
53	92	2	1		58	93	2	2
54	91	2	1		58	95	2	2
55	92	2	1		58	97	2	2
56	91	2	1		58	99	2	2
64	91	2	1		58	101	2	2
63	92	2	1		57	104	2	2
62	91	2	1		57	102	2	2
62	93	2	1		57	100	2	2
62	95	2	1		57	98	2	2
61	96	2	1		57	96	2	2
61	94	2	1		57	94	2	2
61	92	2	1		57	92	2	2
60	91	2	1		56	101	2	2
60	93	2	2		56	103	2	2
60	95	2	2		56	105	2	2
60	97	2	2		55	106	2	2
60	99	2	2		55	102	2	2
59	100	2	2		54	101	2	2
59	98	2	2		54	103	2	2
59	96	2	2		54	107	2	2
59	94	2	2		53	108	2	2
59	92	2	2		53	106	2	2
58	91	2	2		53	104	2	2

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
53	102	2	2		45	118	2	2
52	101	2	2		45	116	2	2
52	103	2	2		45	114	2	2
52	105	2	2		45	112	2	2
52	107	2	2		45	110	2	2
52	109	2	2		44	111	2	2
51	110	2	2		44	113	2	2
51	112	2	2		44	115	2	3
50	111	2	2		44	117	2	3
50	113	2	2		44	119	2	3
49	114	2	2		43	120	2	3
49	112	2	2		43	118	2	3
49	110	2	2		43	116	2	3
48	111	2	2		43	114	2	3
48	115	2	2		43	112	2	3
47	116	2	2		43	110	2	3
47	114	2	2		42	121	2	3
47	112	2	2		42	119	2	3
47	110	2	2		41	120	2	3
46	111	2	2		41	122	2	3
46	113	2	2		40	123	2	3
46	115	2	2		40	121	2	3
46	117	2	2 RT 16 RT17		40	119	2	3

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
40	117	2	3
39	118	2	3
39	122	2	3
39	124	2	3
38	125	2	3
38	123	2	3
38	121	2	3
38	119	2	3
38	117	2	3
37	118	2	3
37	120	2	3
37	122	2	3
37	126	2	3
36	127	2	3
36	125	2	3
36	123	2	3
36	121	2	3
36	119	2	3
35	128	2	3
35	126	2	3
34	127	2	3
34	129	2	3
33	130	2	3

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
33	128	2	3
32	129	2	3
31	130	2	3
30	131	2	3
29	132	2	3
28	133	2	3
27	134	2	3
26	133	2	3
26	131	2	3
26	129	2	3
25	130	2	3
25	132	2	3
25	134	2	3
24	135	2	3
24	133	2	3
24	131	2	3
24	129	2	3
23	130	2	3
23	132	2	3
23	134	2	4
23	136	2	4
22	135	2	4
22	133	2	4

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
22	131	2	4		21	96	2	4
22	129	2	4		21	98	2	4
22	127	2	4		21	100	2	4
22	125	2	4		21	102	2	4
22	123	2	4		20	103	2	4
22	121	2	4		19	102	2	4
22	119	2	4		18	103	2	4
22	117	2	4		18	105	2	4
22	115	2	4		19	106	2	4
22	113	2	4		19	104	2	4
22	111	2	4		20	105	2	4
22	109	2	4		21	106	2	4
22	107	2	4		21	108	2	4
22	105	2	4		21	110	2	4
22	103	2	4		21	112	2	4
22	101	2	4		21	114	2	4
22	99	2	4		21	116	2	4
22	97	2	4		21	118	2	4
22	95	2	4		21	120	2	4
22	93	2	4		21	122	2	4
22	91	2	4		21	124	2	4
21	92	2	4		21	126	2	4
21	94	2	4		21	128	2	4

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1933 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
21	130	2	4
21	132	2	4
21	136	2	4
20	137	2	4
20	135	2	4
20	131	2	4
19	132	2	4
19	134	2	4
19	136	2	4
18	137	2	4
18	135	2	4
18	133	2	5
17	134	2	5
17	136	2	5
17	138	2	5
16	137	2	5
16	135	2	5
15	136	2	5
15	138	2	5
14	137	2	5
13	138	2	5
13	136	2	5
12	139	2	5

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
12	137	2	5
12	135	2	5
12	133	2	5
12	131	2	5
12	129	2	5
12	127	2	5
12	125	2	5
12	123	2	5
11	122	2	5
10	123	2	5
10	125	2	5
11	126	2	5
11	128	2	5
11	130	2	5
11	132	2	5
11	134	2	5
11	136	2	5
11	138	2	5
10	139	2	5
10	137	2	5
10	135	2	5
10	133	2	5
9	134	2	5

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
9	136	2	5		3	138	2	6
9	138	2	5		3	140	2	6
9	140	2	5		2	139	2	6
8	139	2	5		2	135	2	6
8	137	2	5		2	133	2	6
8	135	2	5		2	131	2	6
7	136	2	5		2	129	2	6
7	138	2	5		2	127	2	6
7	140	2	5		2	125	2	6
6	139	2	5		2	123	2	6
6	137	2	5		2	121	2	6
6	135	2	5		3	122	2	6
5	134	2	5		4	121	2	6
5	136	2	5		4	119	2	6
5	138	2	5		3	118	2	6
5	140	2	5		2	119	2	6
4	139	2	5		2	117	2	6
4	137	2	5		2	115	2	6
4	135	2	5		2	113	2	6
4	133	2	5		2	111	2	6
3	132	2	6		2	109	2	6
3	134	2	6		2	105	2	6
3	136	2	6		2	103	2	6

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
2	101	2	6
2	99	2	6
2	97	2	6
2	95	2	6
2	93	2	6
2	91	2	6
1	90	CTR	6
1	94	CTR	6
1	96	CTR	6
1	98	CTR	6
1	100	CTR	6
1	102	CTR	6
1	104	CTR	6
1	106	CTR	6
1	108	CTR	6
1	110	CTR	6
1	112	CTR	6
1	114	CTR	6
1	116	CTR	6
1	118	CTR	6
1	120	CTR	6
1	122	CTR	6
1	124	CTR	6

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
1	126	CTR	6
1	128	CTR	6
1	130	CTR	6
1	132	CTR	6
1	134	CTR	6
1	136	CTR	6
1	138	CTR	6
1	140	CTR	6
2	139	3	6
3	140	3	6
3	138	3	6
3	136	3	6
3	134	3	7
3	132	3	7
3	130	3	7
3	128	3	7
3	126	3	7
3	124	3	7
3	122	3	7
4	121	3	7
4	119	3	7
3	118	3	7
3	116	3	7

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>	<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
3	114	3	7	5	114	3	7
3	112	3	7	5	116	3	7
3	110	3	7	5	118	3	7
3	108	3	7	5	120	3	7
3	106	3	7	5	122	3	7
3	104	3	7	5	124	3	7
3	102	3	7	5	126	3	7
3	100	3	7	5	128	3	7
3	98	3	7	5	130	3	7
3	96	3	7	5	132	3	7
3	94	3	7	5	134	3	7
3	92	3	7	5	136	3	7
5	92	3	7	5	138	3	7
5	94	3	7	5	140	3	7
5	95	3	7	4	139	3	7
5	98	3	7	6	139	3	7
5	100	3	7	7	140	3	7
5	102	3	7	8	139	3	7
5	104	3	7	7	138	3	7
5	106	3	7	7	136	3	7
5	108	3	7	7	134	3	7
5	110	3	7	7	132	3	7
5	112	3	7	7	130	3	7

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
7	128	3	7		9	102	3	8
7	126	3	7		9	104	3	8
7	124	3	7 RT 16 RT 17		9	106	3	8
7	122	3	7		9	108	3	8
7	120	3	7		9	110	3	8
7	118	3	7		9	112	3	8
7	116	3	8		9	114	3	8
7	114	3	8		9	116	3	8
7	110	3	8		9	118	3	8
7	108	3	8		9	120	3	8
7	106	3	8		9	122	3	8
7	104	3	8		9	124	3	8
7	102	3	8		9	126	3	8
7	100	3	8		9	128	3	8
7	98	3	8		9	130	3	8
7	96	3	8		9	132	3	8
7	94	3	8		9	134	3	8
7	92	3	8		9	136	3	8
9	92	3	8		9	138	3	8
9	94	3	8		9	140	3	8
9	96	3	8		10	139	3	8
9	98	3	8		11	138	3	8
9	100	3	8		12	139	3	8

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
11	136	3	8		13	92	3	9
11	134	3	8		13	94	3	9
11	132	3	8		13	96	3	9 RT 16 RT 17
11	130	3	8		13	98	3	9
11	128	3	8		13	100	3	9
11	126	3	8		13	102	3	9
11	124	3	8		13	104	3	9
11	122	3	8		13	106	3	9
11	120	3	8		13	108	3	9
11	118	3	8		13	110	3	9
11	116	3	8		13	112	3	9
11	114	3	8		13	114	3	9
11	112	3	8		13	116	3	9
11	110	3	8		13	118	3	9
11	108	3	8		13	120	3	9
11	106	3	8		13	122	3	9
11	104	3	8		13	124	3	9
11	102	3	8		13	126	3	9
11	100	3	8		13	128	3	9
11	98	3	8		13	130	3	9
11	96	3	8		13	132	3	9
11	94	3	9		13	134	3	9
11	92	3	9		13	136	3	9

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
13	138	3	9
14	137	3	9
15	138	3	9
16	137	3	9
15	136	3	9
15	134	3	9
15	132	3	9
15	130	3	9
15	128	3	9
15	126	3	9
15	124	3	9
15	122	3	9
15	120	3	9
15	118	3	9
15	116	3	9
15	114	3	9
15	112	3	9
15	110	3	9
15	108	3	9
15	106	3	9
15	104	3	9
15	102	3	9
15	100	3	9

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
15	98	3	9
15	96	3	9
15	94	3	9
15	92	3	9
17	92	3	9
17	94	3	9
17	96	3	9
17	98	3	9
17	100	3	9
17	102	3	9
16	103	3	9
16	105	3	9
17	106	3	9 RT 17
17	108	3	9
17	112	3	9
17	114	3	9
17	116	3	10
17	118	3	10
17	120	3	10
17	122	3	10
17	124	3	10
17	126	3	10
17	128	3	10

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
17	130	3	10
17	132	3	10
16	133	3	10
16	135	3	10
17	136	3	10
17	138	3	10
18	137	3	10
18	135	3	10
18	133	3	10
19	132	3	10
19	134	3	10
19	136	3	10
20	137	3	10
20	135	3	10
21	132	3	10
21	134	3	10
21	136	3	10
22	135	3	10
22	133	3	10
22	131	3	10
23	132	3	10
23	134	3	10
23	136	3	10

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
24	135	3	10
24	133	3	10
24	131	3	10
25	132	3	10
25	134	3	10
26	133	3	10
26	131	3	10
19	130	3	10
19	128	3	10
19	126	3	10
19	124	3	10
19	122	3	10
19	120	3	10
19	118	3	10
19	116	3	10
19	114	3	10
19	110	3	10
19	108	3	10
19	106	3	10
20	105	3	10
20	103	3	10
19	104	3	10
18	105	3	10

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
18	103	3	10		52	105	3	11
19	102	3	10		78	33	3	11
19	100	3	10		78	31	3	11
19	98	3	10		78	29	3	11
19	96	3	10		77	34	3	11
19	94	3	10		77	32	3	11
19	92	3	11		77	30	3	11
34	121	3	11		76	33	3	11
34	119	3	11		19	76	3	11
35	118	3	11		53	106	3	11
35	122	3	11		53	104	3	11
36	121	3	11		53	102	3	11
36	119	3	11		54	103	3	11
37	118	3	11		54	105	3	11
37	120	3	11		61	96	3	11
37	122	3	11		61	94	3	11
38	121	3	11		61	92	3	11
38	119	3	11		62	91	3	11
50	103	3	11		62	93	3	11
50	105	3	11	RT	19	76	3	11
51	106	3	11		19	78	3	11
51	102	3	11		19	80	3	11
52	103	3	11		19	82	3	11

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
19	84	3	11
19	86	3	11
19	88	3	11
19	90	3	11
17	90	3	11
15	90	3	11
13	90	3	11
11	90	3	11
9	90	3	11
7	90	3	11
5	90	3	11
3	90	3	11
1	88	CTR	11
1	86	CTR	11
1	84	CTR	11
1	82	CTR	11
1	80	CTR	11
1	78	CTR	12
1	76	CTR	12
1	74	CTR	12
1	70	CTR	12
1	68	CTR	12
1	66	CTR	12

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
1	62	CTR	12
1	60	CTR	12
1	58	CTR	12
3	58	2	12
11	70	2	12
11	72	2	12
11	74	2	12
11	76	2	12
11	78	2	12
13	78	2	12
15	78	2	12
17	78	2	12
19	78	2	12
21	78	2	12 RT 17
22	77	2	12
22	75	2	12
22	73	2	12
22	71	2	12
22	69	2	12
22	67	2	12
22	65	2	12
22	63	2	12
22	61	2	12

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
22	59	2	12
22	57	2	12
22	55	2	12
22	53	2	12
22	51	2	12
22	49	2	12
22	47	2	12
22	45	2	12
22	43	2	12
22	41	2	12
22	39	2	12
23	38	2	12
24	37	2	12
25	36	2	12
26	35	2	12
27	34	2	12
28	33	2	12
29	32	2	12
30	31	2	12
31	30	2	12
31	32	2	12
31	34	2	12
31	36	2	12

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
31	38	2	12
31	40	2	12
31	42	2	12 RT 17
31	44	2	12
31	46	2	12
31	48	2	12
31	50	2	12
31	52	2	12
31	54	2	12
31	56	2	12
31	58	2	12
31	60	2	12
31	62	2	12
31	64	2	12
33	64	2	12
35	64	2	12
37	64	2	12
39	64	2	12
40	63	2	12
40	61	2	12
40	59	2	12
40	57	2	12
40	55	2	12

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
40	53	2	12		39	8	2	13
40	51	2	12		39	10	2	13
40	49	2	13		39	12	2	13
40	47	2	13		38	13	2	13
40	45	2	13		38	11	2	13
40	43	2	13		38	9	2	13
40	41	2	13		37	8	2	13
40	39	2	13		37	10	2	13
40	37	2	13		37	12	2	13
40	35	2	13		36	13	2	13
40	33	2	13		36	11	2	13
40	31	2	13		36	9	2	13
40	29	2	13		35	8	2	13
40	27	2	13		35	10	2	13
40	25	2	13		35	12	2	13
40	23	2	13		34	13	2	13
40	21	2	13		34	11	2	13
40	19	2	13		34	9	2	13
40	17	2	13		33	10	2	13
40	15	2	13		33	12	2	13
40	13	2	13		32	13	2	13
40	11	2	13		32	11	2	13
40	9	2	13		32	9	2	13

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>	<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
41	20	2	13	46	11	2	13
41	13	2	13	46	13	2	13
41	16	2	13	46	15	2	13
41	14	2	13	46	17	2	13
41	12	2	13	46	19	2	13
41	10	2	13	46	21	2	13
41	8	2	13	46	23	2	13
42	9	2	13	46	25	2	13
42	11	2	13	46	27	2	13
42	13	2	13	46	29	2	13
42	15	2	13	46	31	2	13
42	17	2	13	46	33	2	13
42	19	2	13	46	35	2	13
43	12	2	13	46	37	2	13
43	10	2	13	46	39	2	13
43	8	2	13	46	41	2	13
44	9	2	13	46	43	2	14
44	11	2	13	46	45	2	14
44	13	2	13	46	47	2	14
45	12	2	13	46	49	2	14
45	10	2	13	46	51	2	14
45	8	2	13	46	53	2	14
46	9	2	13	46	55	2	14

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
46	57	2	14
46	59	2	14
46	61	2	14
46	63	2	14
46	65	2	14
46	67	2	14
46	69	2	14
46	71	2	14
46	73	2	14
46	75	2	14
46	77	2	14
46	79	2	14
46	81	2	14
46	83	2	14
46	85	2	14
46	87	2	14
46	89	2	14
47	20	2	14
47	18	2	14
47	16	2	14
47	14	2	14
47	12	2	14
47	10	2	14

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
47	8	2	14
48	9	2	14
48	11	2	14
48	13	2	14
48	15	2	14
48	17	2	14
48	19	2	14
49	14	2	14
49	12	2	14
49	10	2	14
49	8	2	14
50	9	2	14
50	11	2	14
50	13	2	14
51	14	2	14
51	12	2	14
51	10	2	14
51	8	2	14
52	9	2	14
52	11	2	14
52	13	2	14 RT 17
53	14	2	14
53	12	2	14

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>PEEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
53	10	2	14		60	7	2	14
53	8	2	14		60	5	2	14
54	9	2	14		60	3	2	14
54	11	2	14		60	9	2	14
54	13	2	14		60	11	2	14
55	14	2	14		60	13	2	14
55	12	2	14		60	15	2	14
55	10	2	14		60	17	2	14
55	8	2	14		60	19	2	14
56	9	2	14		60	21	2	14
56	11	2	14		60	23	2	14
56	13	2	14		60	25	2	14
57	14	2	14		60	27	2	14
57	12	2	14		60	29	2	14
57	10	2	14		60	31	2	14
57	8	2	14		60	33	2	15
58	9	2	14		60	35	2	15
58	11	2	14		60	37	2	15
58	13	2	14		60	39	2	15
59	14	2	14		60	41	2	15
59	12	2	14		60	43	2	15
59	10	2	14		60	45	2	15
59	8	2	14		60	47	2	15

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
60	49	2	15
60	51	2	15
60	53	2	15
60	55	2	15
61	12	2	15
61	10	2	15
61	8	2	15
62	9	2	15
62	11	2	15
62	13	2	15
63	10	2	15
63	8	2	15
64	9	2	15
64	11	2	15
64	13	2	15
65	12	2	15
65	10	2	15
65	8	2	15
66	9	2	15
66	11	2	15
66	13	2	15
67	12	2	15
67	10	2	15

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
67	8	2	15
68	9	2	15
68	11	2	15
68	13	2	15
69	12	2	15
69	10	2	15
69	8	2	15
70	9	2	15
70	11	2	15
70	13	2	15
71	12	2	15
71	10	2	15
71	8	2	15
72	9	2	15
72	11	2	15
72	13	2	15
73	12	2	15 RT 17
73	10	2	15
73	8	2	15
74	9	2	15
74	11	2	15
74	13	2	15
75	12	2	15

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>		<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
75	10	2	15		81	38	2	15
75	8	2	15		80	39	2	15
76	9	2	15		80	41	2	15
76	11	2	15		80	43	2	15
76	13	2	15		79	46	2	15
84	3	2	15		79	48	2	15
84	5	2	15		78	49	2	15
84	7	2	15		78	51	2	15
84	9	2	15		78	53	2	15
84	11	2	15		77	54	2	15
84	13	2	15		77	56	2	15
84	15	2	15		76	57	2	15
83	16	2	15		76	59	2	15
83	18	2	15		75	60	2	15
83	20	2	15		76	59	2	16
83	22	2	15		75	60	2	16
83	24	2	15		75	62	2	16
82	27	2	15		74	63	2	16
82	29	2	15		74	65	2	16
82	31	2	15		74	67	2	16
81	32	2	15		73	68	2	16
81	34	2	15		72	69	2	16
81	36	2	15		72	71	2	16

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
72	73	2	16
70	75	2	16
70	77	2	16
69	78	2	16
69	80	2	16
68	81	2	16
68	83	2	16
67	84	2	16
66	87	2	16
65	88	2	16
64	89	2	16
5	58	2	16
5	60	2	16
5	62	2	16
7	58	2	16
9	58	2	16
11	58	2	16
11	60	2	16
11	62	2	16
11	64	2	16
11	66	2	16
11	68	2	16
1	72	2	16

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
46	117	2	16 RT 17
82	25	2	16
68	1	2	16
67	2	2	16
66	1	2	16
65	2	2	16
64	1	2	16
63	2	2	16
62	1	2	16
61	2	2	16
60	1	2	16
7	124	3	16 RT 17
13	96	3	16 RT 17
66	87	3	16
65	88	3	16
64	89	3	16
64	37	3	16
63	88	3	16
63	90	3	16
63	92	3	16
62	95	3	16
17	106	3	17
7	124	3	17

TUBES TESTED IN STEAM GENERATOR NO. 12
DURING OCTOBER 1983 INSPECTION BY REEL NUMBER

<u>LINE</u>	<u>ROW</u>	<u>QUAD</u>	<u>REEL</u>
13	96	3	17
21	78	2	17
46	117	2	17
31	42	2	17
52	13	2	17
73	12	2	17

CHANGE TO MAGNETIC SATURATION PROBE

31	42	2	17 HOT LEG ONLY
46	117	2	17 HOT LEG ONLY
7	124	3	17 HOT LEG ONLY
17	106	3	17 HOT LEG ONLY
13	96	3	17 HOT LEG ONLY
21	78	2	17 HOT LEG ONLY

APPENDIX V
CALIBRATION LOG

100 80 60 40 20
39 89 109 134 147
40 87 106 124 128
40 55 57 71

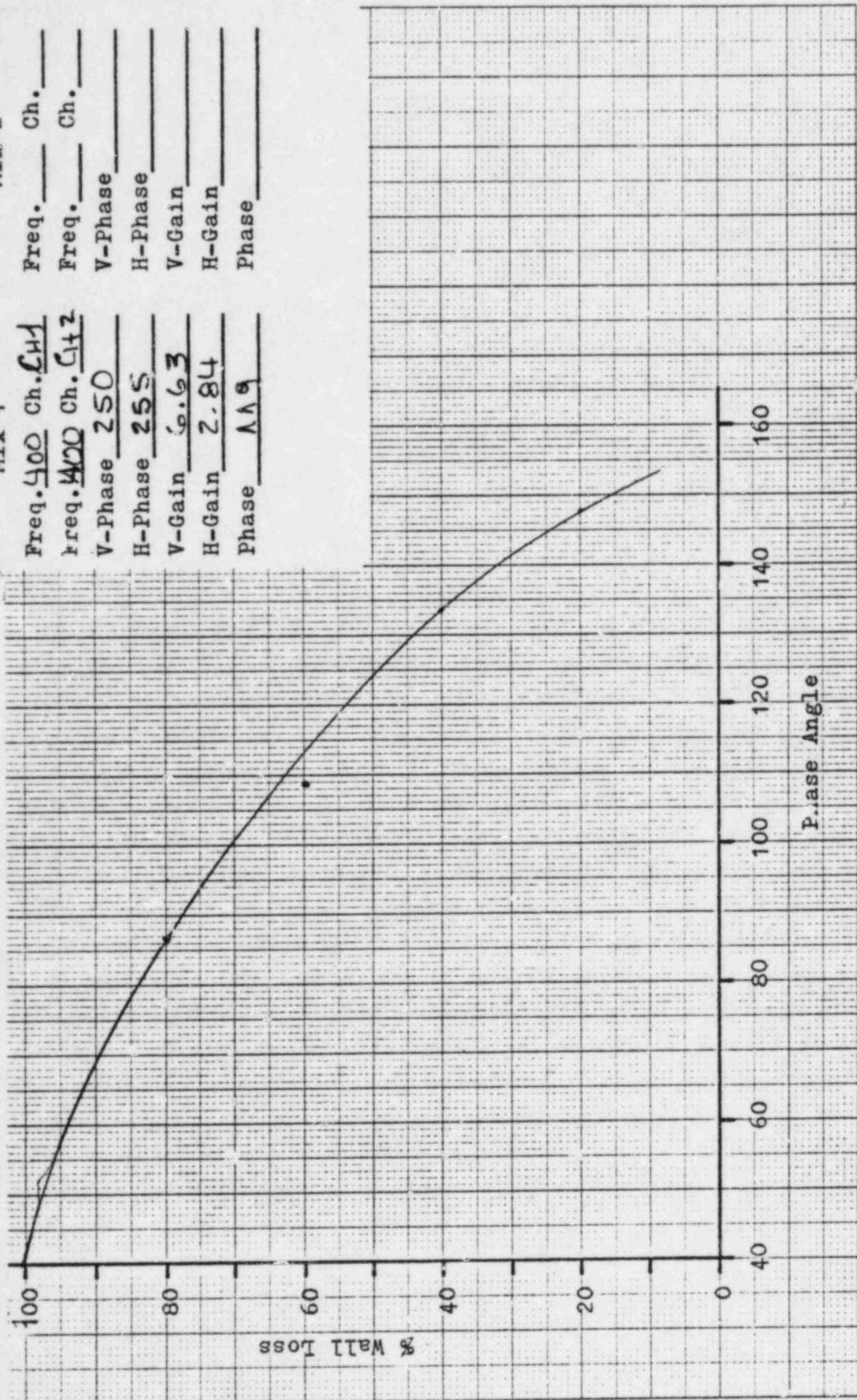
Standard
Upper Mix
Lower Mix

Plant C.C. #1 S/G 11 Inlet/Outlet
Date 15 OCT 83 Reel 1

Mix 1

Mix 2

Freq. 400 Ch. C11 Freq. Ch.
Freq. 400 Ch. C12 Freq. Ch.
V-Phase 250 V-Phase
H-Phase 255 H-Phase
V-Gain 6.63 V-Gain
H-Gain 2.84 H-Gain
Phase 119 Phase



	100	80	60	40	20
Standard	<u>38</u>	<u>87</u>	<u>109</u>	<u>135</u>	<u>144</u>
Upper Mix	<u>40</u>	<u>86</u>	<u>107</u>	<u>125</u>	<u>128</u>
Lower Mix	<u>41</u>	<u>52</u>	<u>56</u>	<u>68</u>	<u>72</u>

Plant C.C. #1 S/G 11 Inlet/Outlet
Date 16 OCT 83 Reel 2

Mix 1

Mix 2

Freq. 400 Ch. 1

Freq. Ch.

Freq. 100 Ch. 2

Freq. Ch.

V-Phase 250

V-Phase

H-Phase 255

H-Phase

V-Gain 6.64

V-Gain

H-Gain 2.84

H-Gain

Phase 119

Phase

% Wall Loss

Phase Angle

	100	80	60	40	20
400KH ² Standard	<u>42</u>	<u>89</u>	<u>108</u>	<u>135</u>	<u>144</u>
Upper Mix 100KH ²	<u>40</u>	<u>83</u>	<u>103</u>	<u>124</u>	<u>127</u>
Lower Mix	<u>41</u>	<u>53</u>	<u>58</u>	<u>69</u>	<u>72</u>

Plant C.C. #1 S/G 11 Inlet/Outlet
Date 16 OCT 83 Reel 3

Mix 1

Mix 2

Freq. 400 Ch. 1

Freq. Ch.

Freq. 100 Ch. 2

Freq. Ch.

V-Phase 250

V-Phase

H-Phase 255

H-Phase

V-Gain 6.63

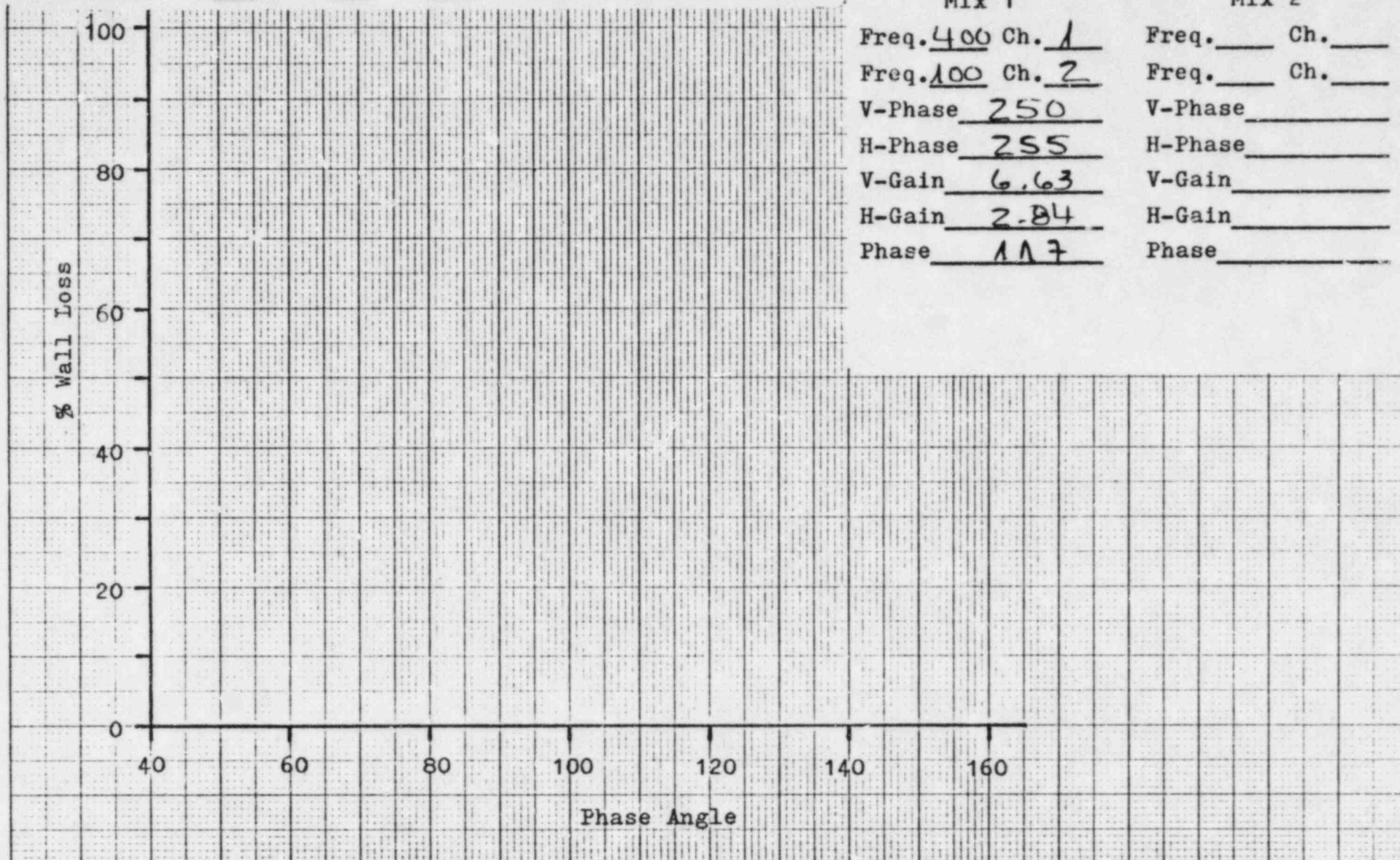
V-Gain

H-Gain 2.84

H-Gain

Phase 117

Phase



	100	80	60	40	20
400KHz Standard	<u>36</u>	<u>80</u>	<u>103</u>	<u>123</u>	<u>149</u>
Upper Mix 100KHz	<u>40</u>	<u>79</u>	<u>98</u>	<u>110</u>	<u>142</u>
Lower Mix	<u>40</u>	<u>53</u>	<u>58</u>	<u>67</u>	<u>75</u>

Plant CCNPP #1 S/G 12 Inlet/Outlet
Date 22 OCT 83 Reel 12

Mix 1

Mix 2

Freq. _____ Ch. _____

Freq. _____ Ch. _____

Freq. _____ Ch. _____

Freq. _____ Ch. _____

V-Phase _____

V-Phase _____

H-Phase _____

H-Phase _____

V-Gain _____

V-Gain _____

H-Gain _____

H-Gain _____

Phase _____

Phase _____

% Wall Loss

Phase Angle

100 80 60 40 20

400 KHz
Standard
Upper Mix
100 KHz
Lower Mix

40 40 40
82 78 51
108 100 57
124 112 66
155 147 76

Plant CC 41 S/GA2 Inlet/Outlet
Date 22 OCT 83 Reel 15

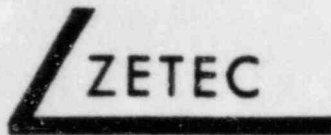
Mix 1

Freq. Ch. Freq. Ch.
Freq. Ch. Freq. Ch.
V-Phase V-Phase
H-Phase H-Phase
V-Gain V-Gain
H-Gain H-Gain
Phase Phase

% Wall Loss

Phase Angle

APPENDIX VI
PERSONNEL CERTIFICATIONS



POST OFFICE BOX 140 · ISSAQUAH, WASHINGTON 98027 · TELEPHONE 206-392-5316

CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: PAMELA ANN ANDERSON

DATE OF BIRTH: August 26, 1960

SOCIAL SECURITY NUMBER: 539-70-9608

TEST METHOD: Eddy Current

HIGHEST LEVEL: Level I

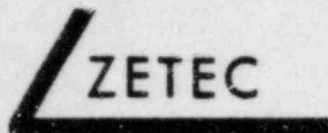
CERTIFICATION DATE: 7/15/83 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

11/12/77 to Present Zetec, Inc.; Issaquah, WA - Technician

EDUCATIONAL BACKGROUND:

9/75-6/78	Issaquah High School; Issaquah, WA
9/28/78-3/16/83	University of Washington; Seattle, WA
July 1983	40 hours formal training for Eddy Current Level I at Zetec, Inc.



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PAGE TWO

NAME: PAMELA ANN ANDERSON

PHYSICAL EXAMINATION:

DATE: 7/26/83

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Good

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).


VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/20	20/20
CORRECTED	--	--
JAEGER		
UNCORRECTED	J/1	J/1
CORRECTED	--	--
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.


TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	7/15/83	100%	88%	100%	96%

CERTIFIED BY:


A. C. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or


CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: PAMELA ANDERSONSEX: F AGE: 22 HT: 5'4 1/2 WT: 120DOCTOR: R.W. EnckTECH: BL DATE: 7/26/83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	4.4 L/Sec	%	3.7 L/Sec	%	4.3 L/Sec	%
FVC	3.40 L	70 %	3.50 L	72 %	3.49 L	72 %
FEV 1.0	2.82 L	70 %	2.83 L	70 %	2.89 L	72 %
% FEV 1.0	83 %	99 %	81 %	96 %	83 %	99 %
FEF 25-75%	3.27 L/Sec	71 %	3.13 L/Sec	68 %	3.29 L/Sec	72 %

MVV

Actual	% Pred.
L/Min	%
L/Min	%

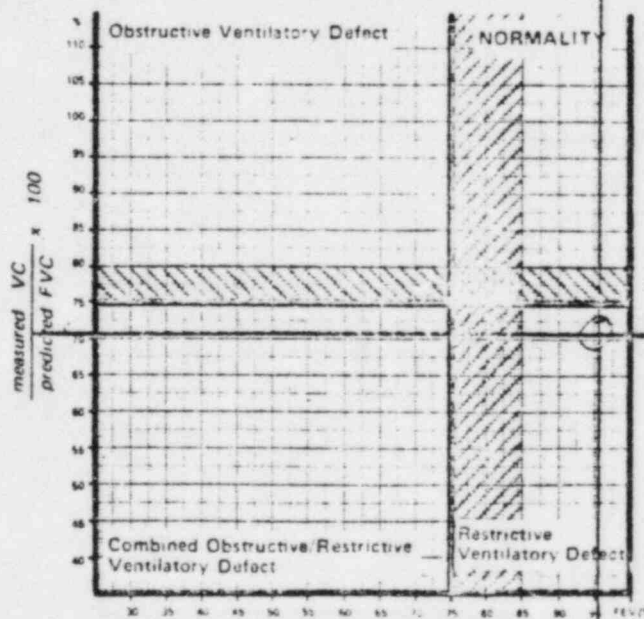
TIDAL VOLUME

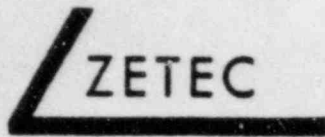
PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

Patient Co-operation: excellent X good _____ fair _____ poor _____Patient Understanding: excellent X good _____ fair _____ poor _____Wheezing: Yes _____ No X Position: Standing X Sitting _____ Nose Clip _____

Remarks, Comments

The above-named individual is physically
 unable to perform and wear respiratory
 equipment for periods.

Signed R. W. Enck, M.D.



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CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: KENNETH SCOTT ALSPAUGH

DATE OF BIRTH: December 2, 1961

SOCIAL SECURITY NUMBER: 533-82-9574

TEST METHOD: Eddy Current

HIGHEST LEVEL: I

CERTIFICATION DATE: 1/7/85 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

5/82-Present	Zetec, Inc.; Issaquah, WA - Technician
2/81-2/82	Thrust IV Homes, Inc.: Redmond, WA - Asst. Superintendent
9/80-1/81	Emco Logging: Ashland, OR - Foreman

EDUCATIONAL BACKGROUND:

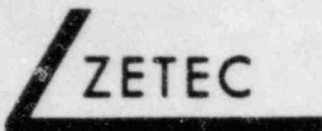
1978-1980	Issaquah High School; Issaquah, WA
January 1983	40 hours formal training for Eddy Current Level I at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI
psychological test

DOCTOR: Hugh M. Castell, M.D.; Kirkland, Washington 98033

DATE: January 20, 1985



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PAGE TWO

NAME: KENNETH SCOTT ALSPAUGH

PHYSICAL EXAMINATION:

DATE: January 13, 1983

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Excellent

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

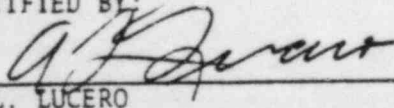
VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/20	20/20
CORRECTED	--	--
JAEGER		
UNCORRECTED	J1	J1
CORRECTED	--	--
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.


TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	1/7/83	82	76	100	89.2

CERTIFIED BY:


A. L. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or


CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: SCOTT ALSVAUGHSEX: M AGE: 21 HT: 67 WT: 150DOCTOR: R. W. EnckTECH: BZ DATE: 1/13/83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	8.0 L/Sec	%	13.4 L/Sec	%	L/Sec	%
FVC	5.08 L	99%	5.12 L	99%	L	%
FEV 1.0	3.99 L	94%	4.31 L	102%	L	%
% FEV 1.0	79%	94%	84%	101%	%	%
FEF 25-75%	4.71 L/Sec	100%	4.83 L/Sec	102%	L/Sec	%

MVV

Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME

PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

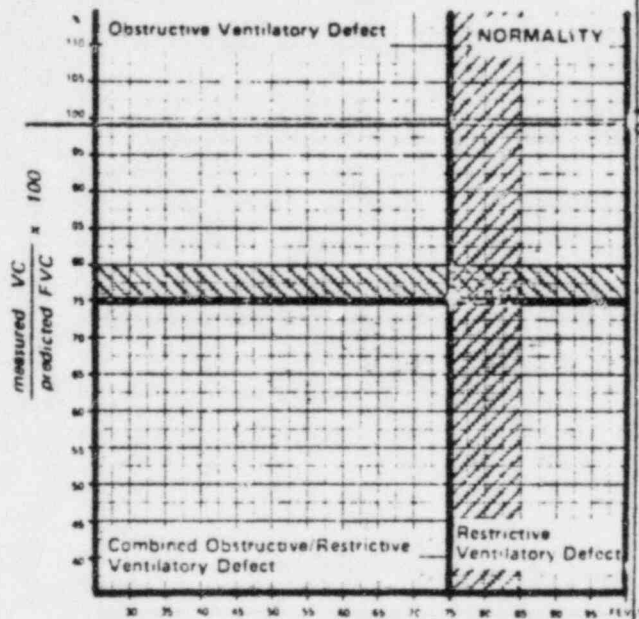
Patient Co-operation: excellent ☒ good _____ fair _____ poor _____Patient Understanding: excellent ☒ good _____ fair _____ poor _____Wheezing: Yes ☒ No _____ Position: Standing ☒ Sitting _____ Nose Clip _____

Remarks, Comments

The above-named individual is physically able to perform work and wear respiratory protective equipment.

Signed R. W. Enck, M.D.

R. W. ENCK, M.D.
10224 N. E. 10th
Bellevue, Wash. 98004





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CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: SCOTT LEWIS HOWER

DATE OF BIRTH: February 13, 1964

SOCIAL SECURITY NUMBER: 234-72-2949

TEST METHOD: Eddy Current

HIGHEST LEVEL: I

CERTIFICATION DATE: 7/15/83 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

12/82-Present	Zetec, Inc.; Issaquah, WA - Technician
12/81-12/82	Arriba Restaurant; Kirkland, WA - Cook
1/81-11/81	Rich's Street Rods; Bellevue, WA - Shop Maintenance

EDUCATIONAL BACKGROUND:

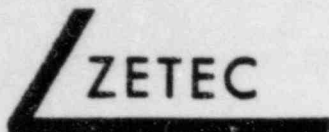
9/79-6/82	Sammamish High School; Bellevue, WA
1980-1981	Bellevue High Vocational Auto Mechanics; Bellevue, WA
July 1983	40 hour formal training for Eddy Current Level I at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI
psychological test

DOCTOR: Hugh M. Castell, M.D.; Kirkland, Washington

DATE: August 2, 1983



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PAGE TWO

NAME: SCOTT LEWIS HOWER

PHYSICAL EXAMINATION:

DATE: July 29, 1983

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Excellent

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

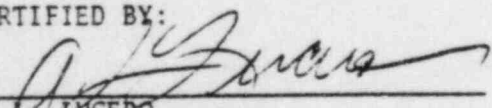
VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/40	20/30
CORRECTED	20/-	20/-
JAEGER		
UNCORRECTED	J1	J1
CORRECTED	--	--
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.

TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	7/15/83	91%	83%	100%	93%

CERTIFIED BY:


A. E. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or

CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: SCOTT HOWERSEX: M AGE: 19 HT: 69 WT: 155DOCTOR: RW. EnckTECH: BL DATE: 7/29/83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	107 L/Sec	%	102 L/Sec	%	L/Sec	%
FVC	5.59 L	102%	6.06 L	110%	L	%
FEV 1.0	4.19 L	94%	4.08 L	91%	L	%
% FEV 1.0	75%	90%	67%	81%	%	%
FEF 25-75%	3.59 L/Sec	73%	3.37 L/Sec	69%	L/Sec	%

MVV

Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME

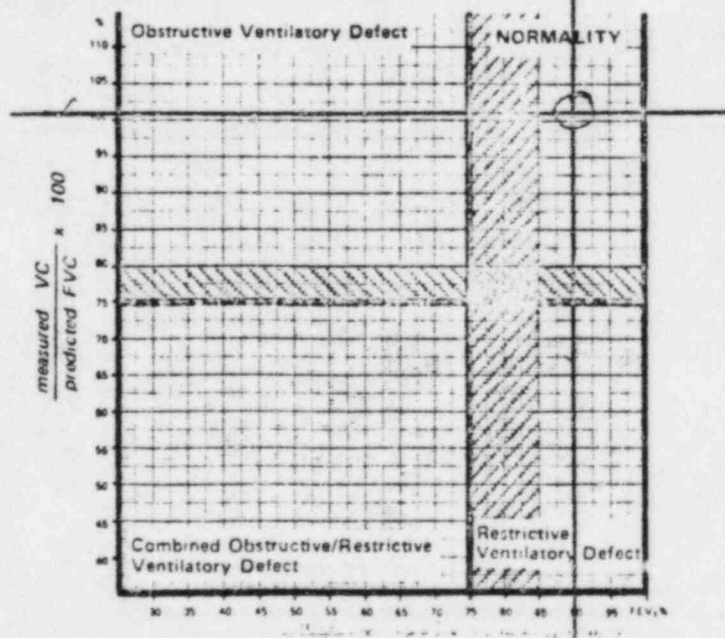
PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

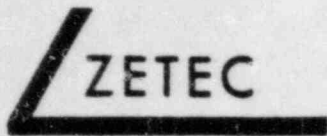
Patient Co-operation: excellent K good _____ fair _____ poor _____Patient Understanding: excellent K good _____ fair _____ poor _____Wheezing: Yes _____ No X Position: Standing X Sitting _____ Nose Clip _____

Remarks, Comments

The above-named individual is physically
and is patient work and wear respiratory
equipment.

Adapted from _____





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CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: KEVIN JOSEPH NEWELL

DATE OF BIRTH: September 16, 1959

SOCIAL SECURITY NUMBER: 473-~~72~~-5330

TEST METHOD: Eddy Current

HIGHEST LEVEL: Level II

CERTIFICATION DATE: 9/29/83 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

9/83-Present	Zetec, Inc.; Issaquah, WA - Technician
6/83-9/83	Crow River Cable Co.; Hutchinson, MN - Installer
12/81-6/83	Linder Bus Company; Hutchinson, MN - Driver
10/80-10/81	Will's Cable TV Contractor; Dallas, TX - Installer
3/80-10/80	Willow Distributors; Dallas, TX - Salesman
12/79-2/80	Kline Volvo, Inc.; Roseville, MN - Assistant
9/79-11/79	Metropolitan Transit Commission - St. Paul, MN - Assistant
1/79-9/79	Don's Mobil; St. Paul, MN - Mechanic
6/78-1/79	Vogen Landscaping; St. Paul, MN - Laborer
5/77-6/78	Sales and Marketing; St. Paul, MN - Courier
5/74-5/77	Knowlan's Super Markets; St. Paul, MN - Display Arranger

EDUCATIONAL BACKGROUND:

9/72-6/77	Cretin High School (JROTC); St. Paul, MN
1979-2/80	916 Area Vocational Institute; White Bear Lake, MN
11/81-9/83	Hutchinson Area Vocational Technical Institute; Hutchinson, MN
September 1983	32 hours formal training for Eddy Current Level II at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI psychological test

DOCTOR: Hugh M. Castell, M.D.; Kirkland, Washington 98033

DATE: September 22, 1983

ZETEC

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PAGE TWO

NAME: Kevin Joseph Newell

PHYSICAL EXAMINATION:

DATE: 9/20/83

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Excellent

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

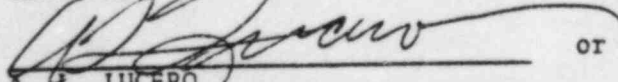
VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/50	20/40
CORRECTED	
JAEGER		
UNCORRECTED	J1	J1
CORRECTED	
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.

TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
II	9/29/83	94%	88%	100%	93%

CERTIFIED BY:


A. C. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

OR

CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: KEVIN NEWELLSEX: MAGE: 24HT: 23WT: 184DOCTOR: R. W. EnckTECH: B. L.DATE: 9-20-83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	130 L/Sec	128%	132 L/Sec			
FVC	2.62 L	110%	2.68 L	129%		
FEV 1.0	5.16 L	85%	5.37 L	115%		
% FEV 1.0	68%	78%	70%	87%		
FEF 25-75%	3.77 L/Sec		4.00 L/Sec	82%		

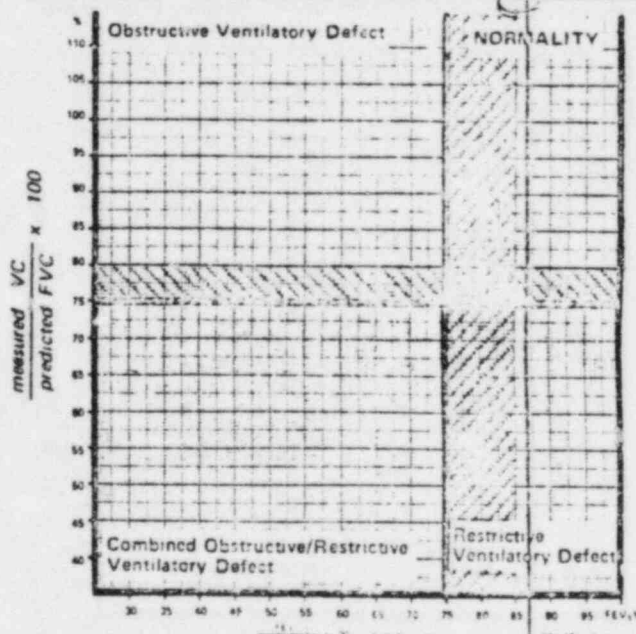
MVV	
Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME			
PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

Patient Co-operation: excellent ☒ good _____ fair _____ poor _____Patient Understanding: excellent ☒ good _____ fair _____ poor _____Wheezing: Yes _____ No ☒ Position: Standing ☒ Sitting _____ Nose Clip _____

Remarks, Comments

The above-named individual is physically
able to perform work and wear respiratory
protective equipment.

Signed R. W. Enck, M.D.



PO Box 140 • Issaquah, WA 98027 • (206) 592-5316 • Tlx 15 2592

October 7, 1983

Baltimore Gas & Electric Company
P.O. Box 1472
Baltimore, MD 21203
ATTN: Security Officer

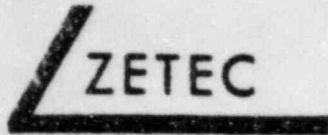
The employees listed below do not have three years or more of continuous service at Zetec, Inc. Their trustworthiness has been determined by a review of employment records for the period of time they have been in our service by conducting a background investigation extending in an amount of time into the past prior to their employment with our firm, such that total screening period equals three years.

To the extent of our knowledge, these persons do not possess adverse character traits or have not exhibited any unusual behavior. Hence, we recommend that these employees be granted unescorted access to the Calvert Cliffs Nuclear facilities.

<u>Name</u>	<u>Soc. Sec. No.</u>	<u>Service Date</u>
ALSPAUGH, Kenneth Scott	533-82-9574	5/12/82
HOVER, Lynn Dale	536-66-1274	4/82
HOWER, Scott Lewis	234-72-2949	3/14/83
NEWELL, Kevin Joseph	473-72-5330	9/15/83
NISSLEY, Raymond Allen	537-64-2574	3/1/81

Sincerely,

A handwritten signature in cursive script that reads "Charlotte A. Jennings".
Charlotte A. Jennings
Assistant Security Officer



POST OFFICE BOX 140 · ISSAQUAH, WASHINGTON 98027 · TELEPHONE 206-392-5316

CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: LYNN D. HOVER

DATE OF BIRTH: 4/3/56

SOCIAL SECURITY NUMBER: 536-66-1274

TEST METHOD: Eddy Current

HIGHEST LEVEL: II

CERTIFICATION DATE: 3/9/83 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

4/19/82-Present	Zetec, Inc.; Issaquah, WA - NDT Technician
1981-1982	Bebbee Brothers, Inc.; Seattle, WA - Numerical Control Machine Operator
1978-1981	Emil's Concrete Construction Co.; Redmond, WA - Laborer

EDUCATIONAL BACKGROUND:

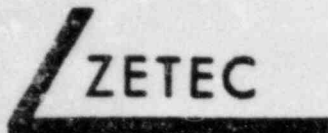
1972-1974	Issaquah High School; Issaquah, WA
1974-1976	Walla Walla Community College; Walla Walla, WA
1976-1978	University of Wyoming; Laramie, WY
1980	South Seattle Community College; Seattle, WA
1982	Shoreline Community College; Seattle, WA
June 1982	40 hours formal training for Eddy Current Level I at Zetec, Inc.
February 1983	40 hours formal training for Eddy Current Level II at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI
psychological test

DOCTOR: Hugh M. Castell, M.D.; Bellevue, Washington

DATE: May 13, 1982



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PAGE TWO

NAME: LYNN D. HOVER

PHYSICAL EXAMINATION:

DATE: 4/7/83

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Excellent

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/30	20/30
CORRECTED	--	--
JAEGER		
UNCORRECTED	J1	J1
CORRECTED	--	--
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.

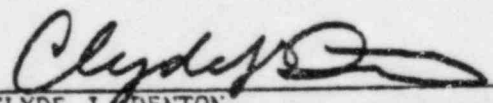
TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	6/5/82	70%	74%	90%	81%
II	3/9/83	85%	98%	100%	95%

CERTIFIED BY:

A. L. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or



CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: LYNN HOWEIRSEX: M AGE: 27 HT: 74 1/2 WT: 243DOCTOR: R.W. FURKTECH: BS DATE: 4/7/83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	104 L/Sec	%	L/Sec	16.0 %	L/Sec	%
FVC	703 L	113 %	L	744 %	120 L	%
FEV 1.0	563 L	118 %	L	557 %	117 L	%
% FEV 1.0	80 %	103 %	%	75 %	96 %	%
FEF 25-75%	547 L/Sec	113 %	L/Sec	471 %	98 L/Sec	%

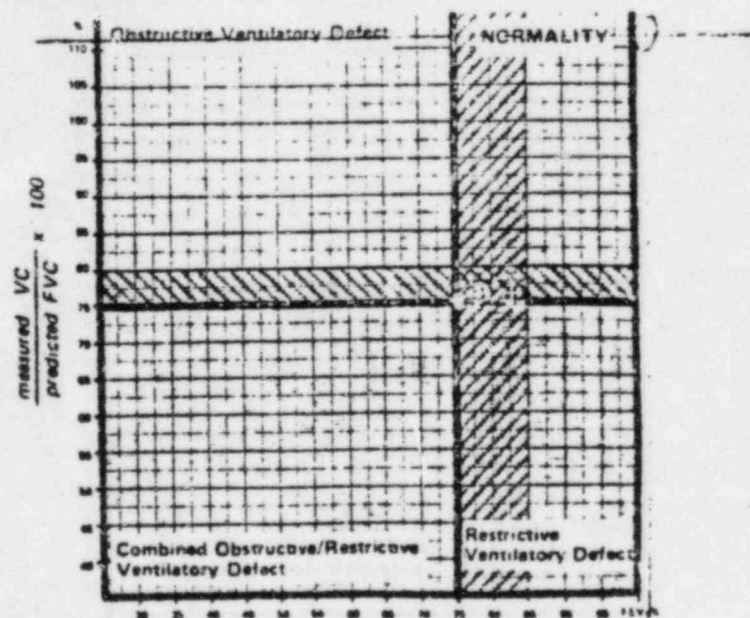
MVV	
Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME			
PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

Patient Co-operation: excellent ✓ good _____ fair _____ poor _____Patient Understanding: excellent ✓ good _____ fair _____ poor _____Wheezing: Yes _____ No ✓ Position: Standing ✓ Sitting _____ Nose Clip _____

Remarks, Comments

The above named individual is physically
able to perform work and wear respiratory
protective equipment.

Signed Robert M. Fink M.D.



PO Box 140 • Issaquah, WA 98027 • (206) 392-5316 • Tlx 15 2502

October 7, 1983

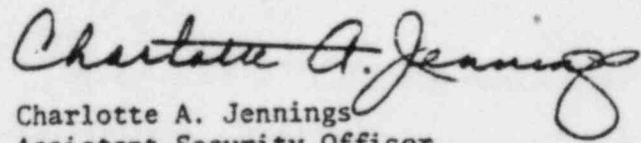
Baltimore Gas & Electric Company
P.O. Box 1472
Baltimore, MD 21203
ATTN: Security Officer

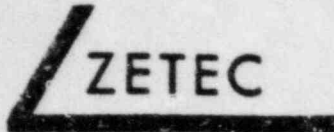
The employees listed below do not have three years or more of continuous service at Zetec, Inc. Their trustworthiness has been determined by a review of employment records for the period of time they have been in our service by conducting a background investigation extending in an amount of time into the past prior to their employment with our firm, such that total screening period equals three years.

To the extent of our knowledge, these persons do not possess adverse character traits or have not exhibited any unusual behavior. Hence, we recommend that these employees be granted unescorted access to the Calvert Cliffs Nuclear facilities.

<u>Name</u>	<u>Soc. Sec. No.</u>	<u>Service Date</u>
ALSPAUGH, Kenneth Scott	533-82-9574	5/12/82
HOVER, Lynn Dale	536-66-1274	4/82
HOWER, Scott Lewis	234-72-2949	3/14/83
NEWELL, Kevin Joseph	473-72-5330	9/15/83
NISSLEY, Raymond Allen	537-64-2574	3/1/81

Sincerely,


Charlotte A. Jennings
Assistant Security Officer



POST OFFICE BOX 140 · ISSAQUAH, WASHINGTON 98027 · TELEPHONE 206-392-5316

CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: ~~RAYMOND~~ A. NISSLEY

DATE OF BIRTH: 6/25/54

SOCIAL SECURITY NUMBER: 537-64-2574

TEST METHOD: Eddy Current

HIGHEST LEVEL: II

CERTIFICATION DATE: 8/22/81 LATEST RE-CERTIFICATION DATE:

EXPERIENCE BACKGROUND:

10/80-Present	Zetec, Inc.; Issaquah, WA - NDT Technician
1978-1980	Stephen D. Freegard, Inc.; Issaquah, WA - Machinist, construction
1976-1978	T.R.M. Wood Products; Maple Valley, WA - Forklift operator, shipping and receiving
1972-1976	Morris Wood Corp./Car-Mor Hardwoods/Chelsia Hardwoods, Inc. Sawyer, forklift operator, shipping and receiving, quality control

EDUCATIONAL BACKGROUND:

1972	Issaquah High School; Issaquah, Washington
November 1980	40 hours formal training for Eddy Current Level I at Zetec, Inc.
July 1981	40 hours formal training for Eddy Current Level II at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI psychological test

DOCTOR: Hugh M. Castell, M.D.; Kirkland, Washington

DATE: December 12, 1980



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PAGE TWO

NAME: RAYMOND A. NISSLEY

PHYSICAL EXAMINATION:

DATE: 1/12/83

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Good

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/40	20/70
CORRECTED	20/20	20/25
JAEGER		
UNCORRECTED	J1	J1
CORRECTED	--	--
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.

TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	11/21/80	91%	100%	100%	98%
II	8/22/81	97%	96%	100%	98%

CERTIFIED BY:

A. L. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or


CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: RAY NISSLEYSEX: 171AGE: 28HT: 72WT: 154DOCTOR: R W EnckTECH: R JDATE: 1/12/83

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	13.8		15.3			
	L/Sec	%	L/Sec	%	L/Sec	%
FVC	5.44	96%	5.53	97%		
	L		L		L	%
FEV 1.0	4.85	109%	4.90	110%		
	L		L		L	%
% FEV 1.0	89%	102%	89%	112%		
FEF 25-75%	6.52	140%	6.43	137%		
	L/Sec	%	L/Sec	%	L/Sec	%

MVV	
Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME			
PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

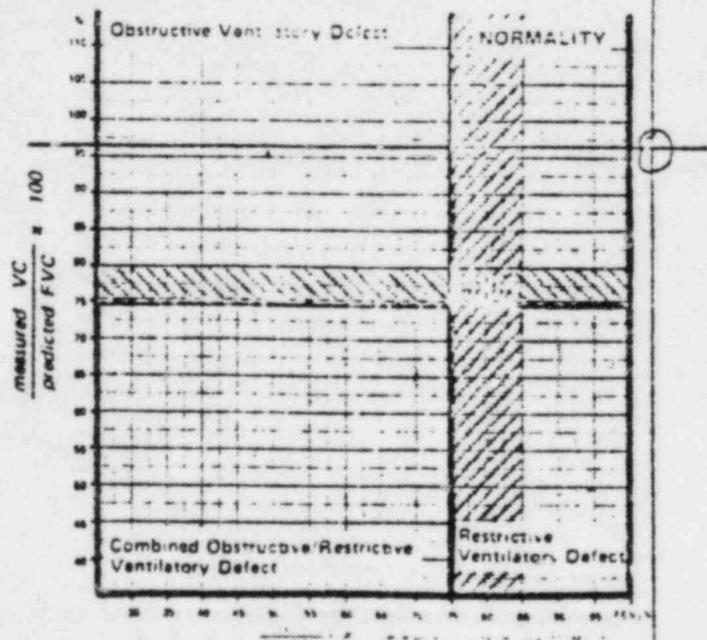
Patient Co-operation: excellent ☒ good _____ fair _____ poor _____Patient Understanding: excellent ☒ good _____ fair _____ poor _____Wheezing: Yes ☒ No _____, Position: Standing ☒ Sitting _____, Nose Clip _____

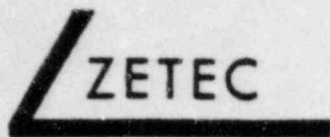
Remarks, Comments

The above-named individual is physically able to perform work and wear respiratory protective equipment.

Signed R W Enck, M.D.

R W ENCK, M.D.
10224 N. E. 10th
Bellevue, Wash 98004





POST OFFICE BOX 140 · ISSAQUAH, WASHINGTON 98027 · TELEPHONE 206-392-5316

CERTIFICATE OF PERSONNEL QUALIFICATION

(Refer to Quality Assurance Plan and Program Z-QA
Procedure No. Z-QA 101)

NAME: R. STEWART EMERY

DATE OF BIRTH: 8/27/39

SOCIAL SECURITY NUMBER: 519-42-0864

TEST METHOD: Eddy Current

HIGHEST LEVEL: IIA

CERTIFICATION DATE: 12/17/76 LATEST RE-CERTIFICATION DATE: 11/30/82

EXPERIENCE BACKGROUND:

7/74-Present	Zetec, Inc.; Issaquah, WA - NDT Technician
3/65-1/71	Conam Inspection; Seattle, WA - NDT Technician
1/71-12/71	Industrial Testing Lab; Idaho Falls, ID - NDT Technician/ Manager

EDUCATIONAL BACKGROUND:

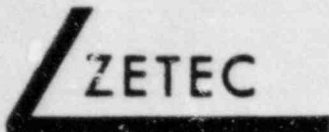
1957	Boise High School; Boise, Idaho
August 1974	40 hours formal training for Eddy Current Level I at Zetec, Inc.
July 1975	24 hours formal training for Eddy Current Level II at Zetec, Inc.
October 1976	40 hours formal training for Eddy Current Level IIA at Zetec, Inc.

PSYCHOLOGICAL EXAMINATION:

METHOD: Standard psychiatric examination interview and the MMPI
psychological test

DOCTOR: Hugh M. Castell, M.D., Bellevue, Washington

DATE: September 22, 1975



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PAGE TWO

NAME: R. STEWART EMERY

PHYSICAL EXAMINATION:

DATE: 12/3/82

DOCTOR: R. W. Enck, M.D., Bellevue, Washington

GENERAL HEALTH: Good

Based on: complete history and physical including a complete blood count, urinalysis, EKG, chest x-ray and GHS 100 (automated blood profile).

VISION:	RIGHT EYE	LEFT EYE
SNELLEN		
UNCORRECTED.....	20/20	20/20
CORRECTED	--	--
JAEGER		
UNCORRECTED	--	--
CORRECTED	J1	J1
ISHIHARA COLOR PLATES	Normal	Normal

RESPIRATORY: Individual meets the acceptable requirements of USNRC Regulatory Guide 8.15 C4.h and NUREG-0041 Section 7.4.

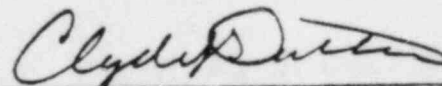
TECHNICAL EXAMINATION:

LEVEL	DATE	GENERAL	SPECIFIC	PRACTICAL	COMPOSITE
I	8/19/74	80%	91%	100%	93.3%
II	11/30/82	91%	96%	100%	96%
IIA	11/30/82			99%	99%

CERTIFIED BY:

A. L. LUCERO
MANAGER OF QUALITY ASSURANCE
LEVEL III EXAMINER

or



CLYDE J. DENTON
GENERAL MANAGER
LEVEL III EXAMINER

NAME: STEWART EMMERYSEX: M AGE: 43 HT: 71 WT: 185DOCTOR: R. W. EnckTECH: B-L DATE: 12 3 82

MEDICATION: _____

DOSAGE: _____

PULMONARY FUNCTION TESTS

Single Breath Test:

	Test 1		Test 2		Test 3	
	Actual	% Pred.	Actual	% Pred.	Actual	% Pred.
PEF	14.8 L/Sec	%	13.1 L/Sec	%	L/Sec	%
FVC	5.10 L	98 %	4.13 L	80 %	L	%
FEV 1.0	3.98 L	102 %	3.29 L	84 %	L	%
% FEV 1.0	78 %	104 %	80 %	106 %	%	%
FEF 25-75%	4.05 L/Sec	103 %	3.13 L/Sec	80 %	L/Sec	%

MVV

Actual	% Pred.
L/Min	%
L/Min	%

TIDAL VOLUME

PEF	VOL	PEF	VOL
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L
L/Sec	L	L/Sec	L

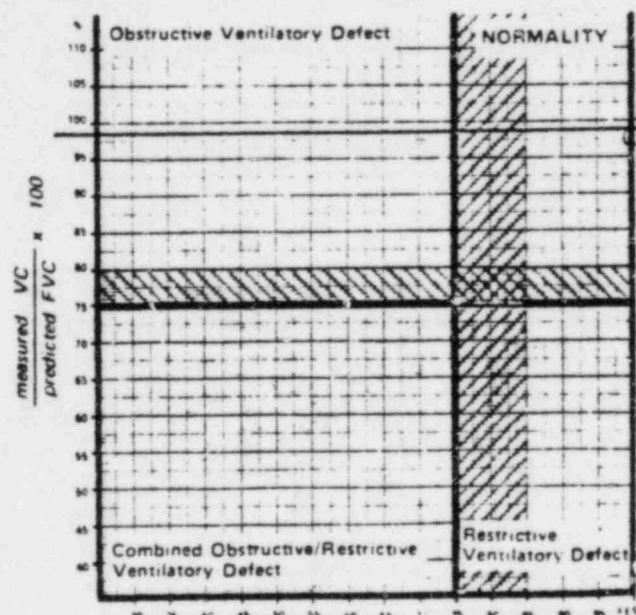
Patient Co-operation: excellent ☒ good _____ fair _____ poor _____Patient Understanding: excellent ☒ good _____ fair _____ poor _____Wheezing: Yes _____ No ☒ Position: Standing ☒ Sitting _____ Nose Clip _____

Remarks, Comments

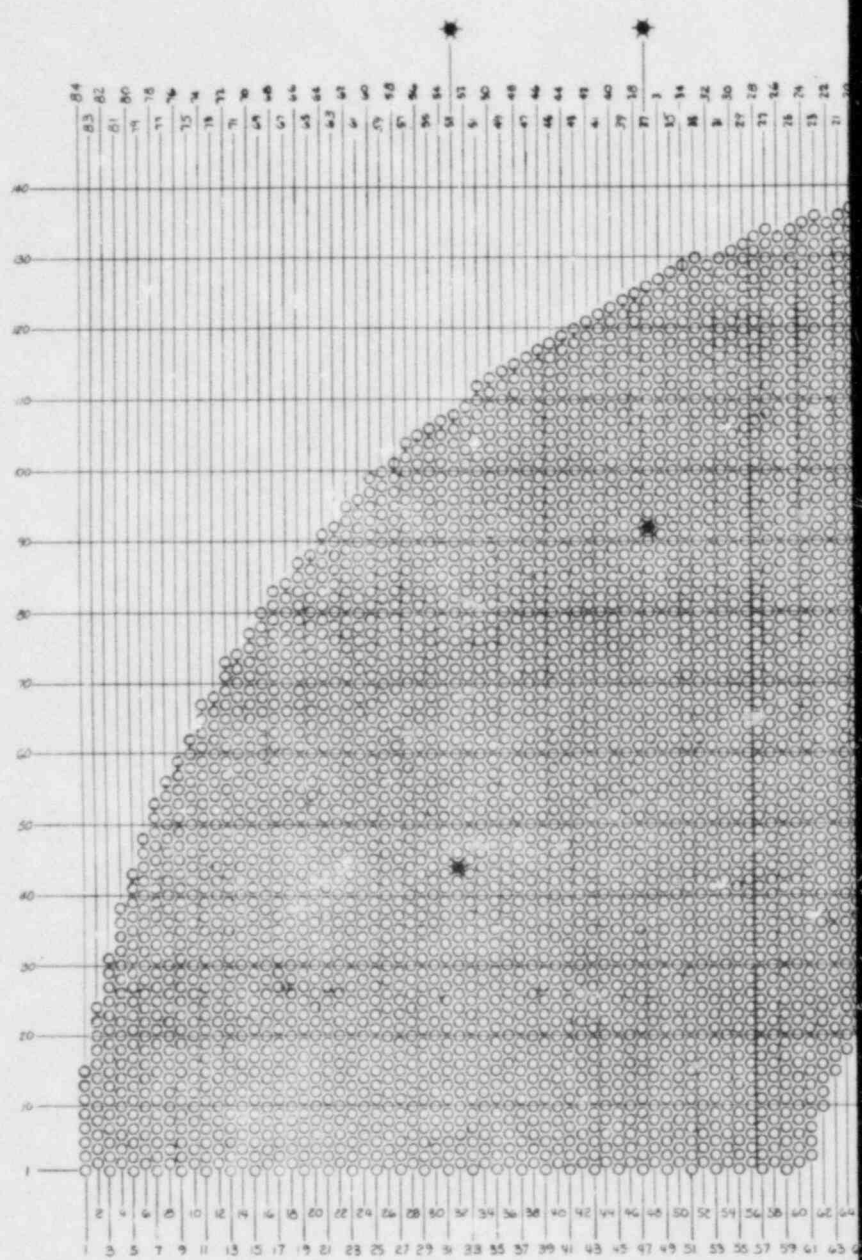
The above-named individual is physically able to perform work and wear respiratory protective equipment.

Signed R. W. Enck, M.D.

R. W. ENCK, M.D.
10224 N. E. 10th
Bellevue, Wash. 98004



QUAD #



PLANT -
INSPT SUPERVISOR -
NUMBERING SYSTEM -
COMMENTS -
DATE

ENCLOSURE (3)

#11 Steam Generator Tubes Plugged During the Unit 1 1983 Outage

<u>LINE</u>	<u>ROW</u>	<u>HOT LEG QUAD</u>	<u>REASON FOR PLUGGING</u>
23	136	2	ECT indication of 48% wall loss originating on the OD of the tube 24" above the #6 egg crate support on the hot leg.
60	99	2	Portion of tube removed to perform detailed metallurgical examination of ECT indication of 20% wall loss originating on the OD of the tube at the #3 "batwing" support.
61	96	2	Portion of tube removed to perform detailed metallurgical examination of ECT indications ranging up to 22% wall loss originating on the OD between the #2 and #4 "batwing" supports.

#12 Steam Generator Tubes Plugged During the Unit 1 1983 Outage

<u>LINE</u>	<u>ROW</u>	<u>HOT LEG QUAD</u>	<u>REASON FOR PLUGGING</u>
13	96	3	ECT indication of 46% wall loss originating on the OD of the tube 30" above the #1 "egg crate" support on the cold leg.
7	124	3	ECT indication of 45% wall loss originating on the OD of the 12" above the #8 "egg crate" support on the hot leg.