

Docket # 50-244
Accession # 9005310 498
Date 5/18/90 of Ltr
Regulatory Docket File

ROCHESTER GAS AND ELECTRIC CORPORATION
89 EAST AVENUE, ROCHESTER, NY 14649

MATERIALS ENGINEERING AND INSPECTION SERVICES

SUMMARY EXAMINATION REPORT

FOR THE

1990 STEAM GENERATOR EDDY CURRENT INSPECTION

AT

R. E. GINNA NUCLEAR POWER STATION

REVISION 0
APRIL 25, 1990

REVISION 1
MAY 8, 1990

PREPARED BY:

Kevin J. Wachter
Kevin J. Wachter
Materials Engineering and
Inspection Services
Level III Eddy Current Examiner

DATE:

5/8/90

REVIEWED/
APPROVED BY:

John F. Smith
John F. Smith, Manager,
Materials Engineering and
Inspection Services

DATE:

5/8/90

9005310500 900518
PDR ADOCK 05000244
Q PDC

TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	DATA ACQUISITION PROGRAM	6
3.0	DATA ANALYSIS RESULTS SUMMARY	10
4.0	OBSERVATIONS	40
5.0	CORRECTIVE ACTIONS	45



1.0 INTRODUCTION

The following is a summary report of the results of the multifrequency eddy current examination performed during the April 1990 Annual Refueling and Maintenance Outage at the R. E. Ginna Nuclear Power Station in Ontario, New York. The examination was performed in both the "A" and "B" recirculating steam generators which are Westinghouse Series-44 design. Each generator contains 3260 Inconel 600 Mil Annealed U-Bend tubes having an outside diameter of 0.875" and a nominal wall thickness of 0.050".

The purpose of the eddy current examination was to assess any corrosion or mechanical damage that may have occurred during the cycle since March 1989. Particular attention was given to the detection of:

- 1) Intergrannular attack (IGA) and intergrannular stress corrosion cracking (IGSCC) within the inlet tubesheet crevice region.
- 2) Intergrannular attack (IGA) and intergrannular stress corrosion cracking (IGSCC) within the outlet tubesheet crevice region (none detected).
- 3) Primary water stress corrosion cracking (PWSCC) at the inlet tubesheet roll transition.
- 4) Primary water stress corrosion cracking (PWSCC) at the outlet tubesheet roll transition (none detected).



- 5) Pitting and wastage between the tubesheet and first support plate.
- 6) Wear at the antivibration bar to tube intersections in the U-bend region.
- 7) Denting at all tube support intersections.
- 8) Primary water stress corrosion cracking (PWSCC) in the Row 1 and Row 2 U-bend area (none detected).
- 9) Intergranular attack (IGA) and intergranular stress corrosion cracking (IGSCC) at the #1 tube support plate region on the inlet side (none detected).

The examination was performed by personnel from Rochester Gas and Electric (RG&E) and Allen Nuclear Associates, Inc. (ANA). All personnel were trained and qualified in the eddy current examination method and have been certified to a minimum of Level I for data acquisition and Level II for data analysis. In addition, all acquisition personnel were trained and qualified to site specific procedures and all analysis personnel were trained and qualified to the site specific "Steam Generator Data Analysis Guidelines - RG&E Ginna Station". These analysis guidelines were prepared in accordance with Revision 2 of the Electric Power Research Institutes (EPRI) "PWR Steam Generator Inspection Guidelines".



The data analysis was performed by two independent teams. One team utilized the ZETEC Computer Data Screening (CDS) System with a manual review of the CDS calls. The other team performed their analysis manually utilizing the Zetec DDA-4 Digital Data Analysis System. The results of these two analyses were compared for discrepancies using the TUBAN computerized data management system. The typical data flow chart is shown on Figure 1 (Page 5). The following list describes some typical discrepancies between analysis teams requiring resolution by the Level III resolution team.

- o Any indication that is reported as $\geq 20\%$ by either team and is not reported by the other team or is sized at $>10\%$ difference.
- o Any indication spanning the repair limit, (39% vs. 41%).
- o Any difference of >1 inch in the axial location of a flaw.
- o Any tube which was analyzed by one team but not the other.
- o Any difference in the reported test extent.
- o All indications identified as IGA and/or SCC regardless of whether one or both parties have reported it.
- o Any tube reported as obstructed by one team but not the other.
- o Any tube for which a retest was requested by one team but not the other.



- o All Roll Transition Indications (DRT/DRI) reported by one team but not the other.

In addition to the above, all tubes requiring repair whether reported by one or both teams were reviewed by the resolution team (usually consisting of two Level III individuals). In all cases, the removal of a repairable indication from the data base required the concurrence of two Level III individuals.



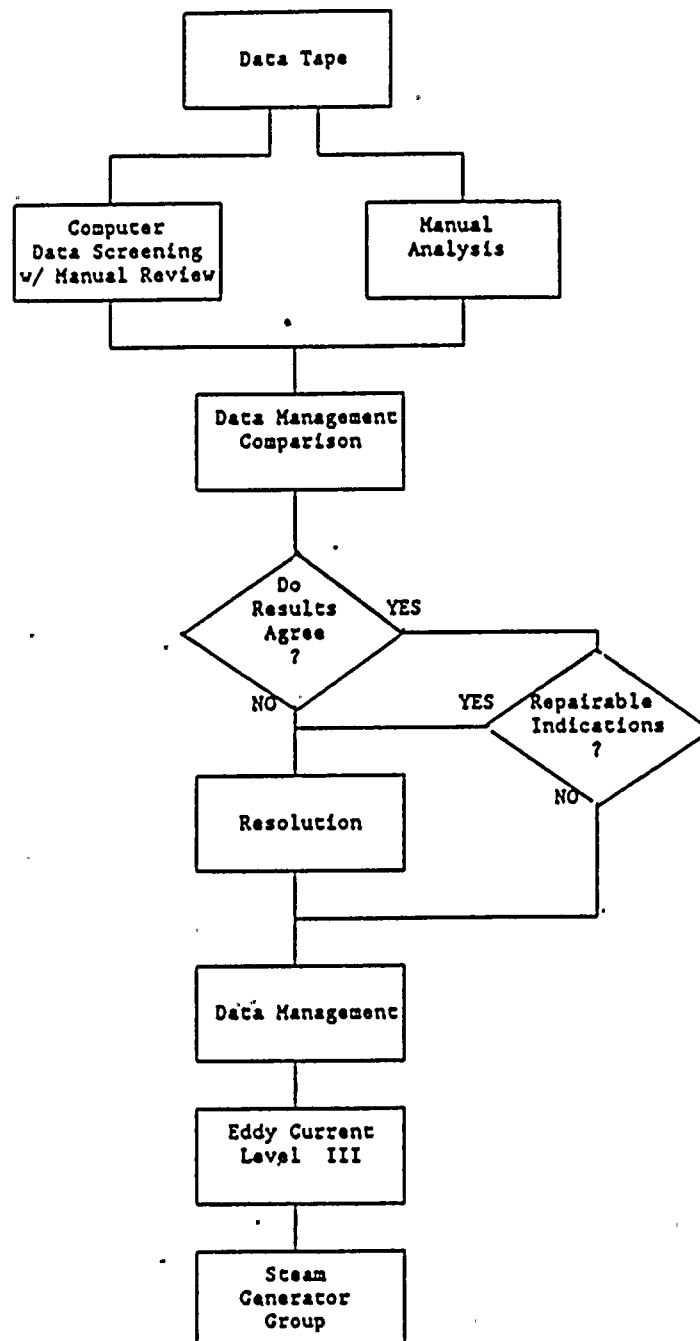


Figure 1



2.0 DATA ACQUISITION PROGRAM

The eddy current examination of the "A" and "B" steam generators was performed utilizing the Zetec Miz-18 Digital Data Acquisition System. The frequencies selected were 400, 200, 100 and 25 kHz. The selected frequencies were all operated in the differential and absolute modes. The examination was performed primarily with a standard 0.740" or 0.720" O.D. bobbin coil probe with smaller diameter probes used to traverse the smaller radius U-bends and dented regions.

Prior to examination of the steam generators, an inspection program was established for the inlet and outlet sides of both the "A" and "B" steam generators. The inlet or hot leg examination program plan was generated to provide the examination of 100% of each open unsleeved steam generator tube from the tube end to the first tube support, along with 20% of these tubes being selected and examined for their full length (20% random sample as recommended in the Electric Power Research Institute (EPRI) guidelines). In addition, 20% of each type of sleeve was examined and the remaining tube examined full length. All previous tubes with indications greater than 20% through wall (TW) depth were examined as a minimum to the location of their degradation. All Row 1 and



Row 2 U-bend regions selected as part of the 20% random sample were examined with the Motorized Rotating Pancake Coil (MRPC) between the #6 TSP H and the #6 TSP C from the cold leg side. Table 1 is a breakdown, by steam generator, of all tubes examined and to the extent inspected.



STEAM GENERATOR "A"
1990 EDDY CURRENT INSPECTION EXTENTS
PRIOR TO CORRECTIVE ACTION

Total Tubes	3260
Out of Service	173
Sleeved Tubes	<u>172</u>
Open Unsleeved Tubes	2915

	<u>REQ'D MIN¹</u>	<u>NUMBER PROGM'D</u>	<u>NUMBER INSPT'D</u>	<u>% COMPLETE²</u>
Hot Leg to #1 TSP	2915	2915	2915	100.0%
Full Length (20% Random)	583	586	585	100.3%
Previous Ind. \geq 20%	9	9	9	100.0%
Sleeves	35	36	35	100.0%

Table 1

¹ Per Appendix B requirement.

² % Complete = Tubes Inspected/Required Minimum.



STEAM GENERATOR "B"
1990 EDDY CURRENT INSPECTION EXTENTS
PRIOR TO CORRECTIVE ACTION

Total Tubes	3260
Out of Service	340
Sleeved Tubes	<u>642</u>
Open Unsleeved Tubes	2278

	<u>REQ'D MIN¹</u>	<u>NUMBER PROGM'D</u>	<u>NUMBER INSPT'D</u>	<u>% COMPLETE²</u>
Hot Leg to #1 TSP	2278	2278	2278	100.0%
Full Length (20% Random)	456	461	460 ³	100.9%
Previous Ind. \geq 20%	19	19	19	100.0%
Sleeves	129	131	131	101.6%
Depugged Tubes (F/L)	28	28	28	100.0%

NOTE: 15 additional tubes were examined from CTE to H6.

Table 1 (Cont'd)

¹ Per Appendix B requirement.

² % Complete = Tubes Inspected/Required Minimum.

³ One plugged tube listed on examination plan was not examined.



3.0 DATA ANALYSIS RESULTS SUMMARY

The data analysis was performed using the Zetec DDA-4 Digital Data Analysis System and Edition 18.6 Revision 5 software with the CDS (Revision 27) and MRPC (Revision 13) supplements.

All data was reviewed by displaying the 400 kHz data on the CRT along with the vertical component of the differential and absolute mix outputs in strip chart form (where applicable). Other frequencies and their components were selected as necessary for the evaluation of indications. All recordable indications were logged into the computer and stored on floppy disk. The final report form summarizing all indications $\geq 20\%$ TW (including IGA and PWSCC which is assumed to be $>20\%$) for each generator can be found in Table 2. An explanation of the abbreviations and nomenclature used on these lists has been compiled for ease of interpretation.

Table 3 has been compiled to show a list of the total number of dents at each axial elevation. The dent indications on this table are only those with signal amplitudes that exceed the 5.0 volt (approximately 0.0025" diametric dent) recording criteria.

LIST OF >20% INDICATION AND CREVICE INDICATION NOMENCLATURE

Top of List Information

- ROW - ROW number from the tube identification.
- COL - Column number from the tube identification.
- OUTAGE - Year examination was performed.
- INDICATION - Type of damage mechanism.
- VALUE - Percent through wall depth or code for non-measurable indications.
- VOLTS - Amplitude of the measured indication signal response.
- LOCATION - Reference point from which the indication was measured.
- INCHES - Axial distance from reference point.

Information Under Value

- XX% TW - The measured percent TW depth of the indication.
- ADI - Absolute Drift Indication Signal which is indicative of IGA.
- ADS - Absolute Drift Signal which may be indicative of IGA.
- DRT - Distorted Roll Transition may be indicative of PWSCC.
- DRI - Distorted Roll Indication indicative of PWSCC.
- RTI - Roll Transition Indication - MRPC verified DRT

LIST OF >20% INDICATION AND CREVICE INDICATION NOMENCLATURE (CON'T)

Information Under LOCATION

- HTS PF - Primary face of inlet tubesheet.
- HTS SF - Secondary face of inlet tubesheet.
- TSP - Tube Support Plate
- CTS PF Primary face of outlet tubesheet.
- CTS SF - Secondary face of outlet tubesheet.
- AVB - Antivibration Bars
- XX.X - Axial distance below the secondary face of the tubesheet or support plates where the indication is located.
- +XX.X - Axial distance above the secondary face of the tubesheet or support plates where the indication is located.
- H - Hot Leg (inlet side)
- C - Cold Leg (outlet side)

Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
6	4	ROLL TRANS		0.50	HTS PF	+ 2.04
21	7	OD (general)	24 % TW	2.79	AVB2	0.00
9	12	ROLL TRANS		0.67	HTS PF	+ 2.80
10	12	ROLL TRANS		1.07	HTS PF	+ 2.80
3	13	DISTORT ROLL		5.34	HTS SF	-19.30
1	14	ROLL TRANS		0.67	HTS PF	+ 2.73
12	16	OD SCC	26 % TW	0.39	HTS SF	-12.50
24	16	ROLL TRANS		1.17	HTS SF	+ 2.55
4	17	ROLL TRANS		1.14	HTS PF	+ 2.53
9	17	OD WASTAGE	20 % TW	0.63	HTS SF	+ 1.60
6	18	DISTORT ROLL		3.79	HTS SF	-19.50
7	18	OD WASTAGE	22 % TW	0.93	HTS SF	+ 1.80
30	18	ROLL TRANS		1.40	HTS PF	+ 2.46
6	19	DISTORT ROLL		3.82	HTS SF	-19.60
9	19	DISTORT ROLL		3.49	HTS SF	-19.50
5	20	ROLL TRANS		1.02	HTS PF	+ 2.59
7	20	OD WASTAGE	20 % TW	3.48	HTS SF	+ 1.80
7	20	OD WASTAGE	27 % TW	2.41	HTS SF	+ 2.40
8	20	OD WASTAGE	20 % TW	1.94	HTS SF	+ 2.10
14	20	OD (general)	24 % TW	0.54	HTS SF	+ 2.10
24	20	OD IGA	ADI	1.28	HTS PF	+ 5.40
8	21	OD WASTAGE	24 % TW	1.45	HTS SF	+ 1.70
9	21	OD WASTAGE	25 % TW	1.50	HTS SF	+ 1.50
9	21	OD WASTAGE	25 % TW	4.47	HTS SF	+ 2.10
9	21	OD WASTAGE	22 % TW	4.01	HTS SF	+ 2.70
9	21	OD WASTAGE	24 % TW	1.35	HTS SF	+ 3.30
10	21	OD WASTAGE	26 % TW	1.42	HTS SF	+ 2.00
10	21	OD WASTAGE	22 % TW	0.72	HTS SF	+ 2.50
11	21	OD WASTAGE	25 % TW	6.47	HTS SF	+ 2.00
13	21	OD WASTAGE	26 % TW	1.86	HTS SF	+ 1.90
13	21	OD WASTAGE	21 % TW	4.21	HTS SF	+ 2.30
14	21	OD WASTAGE	23 % TW	1.67	HTS SF	+ 1.40
15	21	OD WASTAGE	25 % TW	6.04	HTS SF	+ 1.30
15	21	OD WASTAGE	34 % TW	1.00	HTS SF	+ 2.10
17	21	OD WASTAGE	29 % TW	3.62	HTS SF	+ 1.00
20	21	OD IGA	ADI	1.53	HTS PF	+ 5.24
20	21	OD SCC	73 % TW	0.61	HTS SF	-14.30
38	21	OD (general)	29 % TW	1.07	AVB3	0.00
8	22	OD WASTAGE	26 % TW	0.92	HTS SF	+ 1.60
10	22	OD WASTAGE	24 % TW	2.25	HTS SF	+ 3.10
11	22	OD WASTAGE	22 % TW	2.91	HTS SF	+ 2.50
12	22	OD WASTAGE	22 % TW	4.33	HTS SF	+ 2.40
16	22	OD WASTAGE	20 % TW	2.01	HTS SF	+ 1.50
18	22	OD WASTAGE	22 % TW	4.42	HTS SF	+ 1.00
27	22	OD IGA	ADI	1.31	HTS SF	-17.40
27	22	OD SCC	73 % TW	0.36	HTS SF	-7.70
27	22	OD SCC	89 % TW	0.55	HTS SF	-12.40
10	23	OD WASTAGE	30 % TW	1.08	HTS SF	+ 1.30
10	23	OD WASTAGE	34 % TW	1.96	HTS SF	+ 2.10
13	23	OD WASTAGE	29 % TW	14.24	HTS SF	+ 3.00
14	23	OD WASTAGE	34 % TW	1.96	HTS SF	+ 1.60
14	23	OD WASTAGE	22 % TW	6.66	HTS SF	+ 2.90
23	23	OD WASTAGE	25 % TW	1.11	HTS SF	+ 1.30
10	24	OD WASTAGE	25 % TW	2.64	HTS SF	+ 1.80
11	24	OD WASTAGE	21 % TW	1.16	HTS SF	+ 1.40
11	24	OD WASTAGE	21 % TW	4.42	HTS SF	+ 2.00
11	24	OD WASTAGE	34 % TW	1.51	HTS SF	+ 2.40
12	24	OD WASTAGE	20 % TW	1.35	HTS SF	+ 2.10
12	24	OD WASTAGE	22 % TW	7.03	HTS SF	+ 2.90
13	24	OD WASTAGE	26 % TW	4.63	HTS SF	+ 2.40
13	24	OD WASTAGE	23 % TW	7.43	HTS SF	+ 3.00
22	24	OD WASTAGE	21 % TW	2.60	HTS SF	+ 1.70
22	24	OD WASTAGE	22 % TW	2.09	HTS SF	+ 2.10
12	25	OD WASTAGE	24 % TW	5.47	HTS SF	+ 2.24
13	25	OD WASTAGE	28 % TW	7.82	HTS SF	+ 2.64
17	25	OD WASTAGE	20 % TW	4.12	HTS SF	+ 1.78

Table 2

Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater).

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
17	25	OD WASTAGE	24 % TW	9.49	HTS SF	+ 2.31
24	25	OD WASTAGE	22 % TW	0.80	HTS SF	+ 0.87
26	25	OD IGA	ADI	6.74	HTS SF	-18.25
26	25	OD SCC	44 % TW	0.32	HTS SF	-16.05
28	25	OD IGA	ADI	6.03	HTS SF	-18.24
32	25	DS		0.35	H1	0.00
3	26	OD IGA	ADI	4.88	HTS SF	-14.82
9	26	OD WASTAGE	24 % TW	4.46	HTS SF	+ 0.80
24	26	OD WASTAGE	24 % TW	2.13	HTS SF	+ 1.40
17	27	OD WASTAGE	28 % TW	3.93	HTS SF	+ 2.48
17	27	OD WASTAGE	29 % TW	6.75	HTS SF	+ 3.06
22	27	OD WASTAGE	22 % TW	2.50	HTS SF	+ 1.37
22	27	OD WASTAGE	25 % TW	7.74	HTS SF	+ 2.16
22	27	OD WASTAGE	26 % TW	9.81	HTS SF	+ 2.67
23	27	OD WASTAGE	23 % TW	1.17	HTS SF	+ 1.83
23	27	OD WASTAGE	35 % TW	0.78	HTS SF	+ 2.44
24	27	OD WASTAGE	25 % TW	3.35	HTS SF	+ 1.64
25	27	OD WASTAGE	22 % TW	2.37	HTS SF	+ 1.10
27	27	OD IGA	ADI	4.35	HTS SF	-16.53
27	27	OD IGA	ADI	3.42	HTS SF	-14.16
30	27	DISTORT ROLL		2.91	HTS SF	-19.48
30	27	ROLL TRANS		1.44	HTS PF	+ 2.27
34	27	ROLL TRANS		2.05	HTS PF	+ 2.42
40	27	OD IGA	ADI	1.16	HTS PF	+ 3.87
40	27	OD SCC	55 % TW	0.56	HTS SF	-17.52
40	27	OD SCC	73 % TW	0.58	HTS SF	-17.97
14	28	OD WASTAGE	20 % TW	1.97	HTS SF	+ 2.33
23	28	OD WASTAGE	29 % TW	3.29	HTS SF	+ 2.12
23	28	OD WASTAGE	26 % TW	1.79	HTS SF	+ 2.48
24	28	OD WASTAGE	20 % TW	7.54	HTS SF	+ 1.48
25	28	OD WASTAGE	31 % TW	1.21	H1	+ 1.31
39	28	ROLL TRANS		2.90	HTS PF	+ 2.27
15	29	OD WASTAGE	20 % TW	4.29	HTS SF	+ 3.08
15	29	OD WASTAGE	38 % TW	1.66	HTS SF	+ 3.41
34	29	ROLL TRANS		3.88	HTS PF	+ 2.46
11	30	OD IGA	ADI	3.00	HTS SF	-18.40
23	30	OD WASTAGE	22 % TW	5.72	HTS SF	+ 1.36
23	30	OD WASTAGE	36 % TW	0.82	HTS SF	+ 1.69
24	30	OD WASTAGE	34 % TW	3.72	HTS SF	+ 1.63
25	30	OD WASTAGE	22 % TW	9.47	HTS SF	+ 1.47
23	31	OD WASTAGE	29 % TW	7.89	HTS SF	+ 1.82
23	31	OD WASTAGE	26 % TW	8.39	HTS SF	+ 2.43
26	31	OD WASTAGE	23 % TW	3.60	CTS SF	+ 1.40
26	31	OD WASTAGE	23 % TW	3.60	CTS SF	+ 1.40
20	32	OD WASTAGE	36 % TW	0.90	HTS SF	+ 2.59
20	32	OD WASTAGE	31 % TW	5.96	HTS SF	+ 2.84
22	32	OD WASTAGE	27 % TW	3.51	HTS SF	+ 1.47
22	32	OD WASTAGE	29 % TW	12.72	HTS SF	+ 2.08
23	32	OD WASTAGE	22 % TW	2.84	HTS SF	+ 1.94
23	32	OD WASTAGE	31 % TW	9.12	HTS SF	+ 2.49
24	32	OD WASTAGE	24 % TW	10.15	HTS SF	+ 1.66
26	32	OD WASTAGE	24 % TW	6.41	HTS SF	+ 0.70
28	32	OD WASTAGE	28 % TW	1.94	CTS SF	+ 0.70
28	32	OD WASTAGE	28 % TW	1.94	CTS SF	+ 0.70
21	33	OD WASTAGE	28 % TW	5.04	HTS SF	+ 2.09
22	33	OD WASTAGE	27 % TW	2.58	HTS SF	+ 1.31
22	33	OD WASTAGE	28 % TW	11.39	HTS SF	+ 2.22
23	33	OD WASTAGE	23 % TW	4.73	HTS SF	+ 2.22
23	33	OD WASTAGE	28 % TW	6.59	HTS SF	+ 2.67
24	33	OD WASTAGE	26 % TW	8.18	HTS SF	+ 1.76
26	33	OD WASTAGE	32 % TW	1.34	HTS SF	+ 1.59
27	33	OD IGA	ADI	4.58	HTS SF	-15.40
19	34	OD WASTAGE	34 % TW	2.69	HTS SF	+ 2.14
19	34	OD WASTAGE	20 % TW	2.15	HTS SF	+ 2.58
19	34	OD WASTAGE	39 % TW	0.72	HTS SF	+ 3.19
23	34	OD SCC	83 % TW	1.00	HTS SF	-18.03

Table 2 (Cont'd)

Plant: R. E. Ginna Station
 Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
23	34	OD WASTAGE	21 % TW	1.40	CTSS SF	+ 2.80
23	34	OD WASTAGE	24 % TW	2.12	HTSS SF	+ 1.99
23	34	OD WASTAGE	29 % TW	2.76	HTSS SF	+ 2.41
25	34	OD WASTAGE	27 % TW	9.74	HTSS SF	+ 1.68
26	34	OD WASTAGE	21 % TW	6.52	HTSS SF	+ 1.37
27	34	OD WASTAGE	37 % TW	0.75	HTSS SF	+ 1.37
30	34	ROLL TRANS		1.25	HTSS PF	+ 2.26
18	35	OD IGA	ADI	4.18	HTSS SF	- 3.91
19	35	OD WASTAGE	29 % TW	4.58	HTSS SF	+ 2.45
20	35	OD WASTAGE	24 % TW	1.83	HTSS SF	+ 2.26
21	35	OD WASTAGE	23 % TW	1.94	HTSS SF	+ 1.09
21	35	OD WASTAGE	23 % TW	6.49	HTSS SF	+ 2.23
22	35	OD WASTAGE	20 % TW	5.37	HTSS SF	+ 1.44
23	35	OD WASTAGE	22 % TW	2.03	HTSS SF	+ 1.26
23	35	OD WASTAGE	23 % TW	6.40	HTSS SF	+ 2.38
25	35	OD WASTAGE	22 % TW	6.27	HTSS SF	+ 1.62
25	35	OD WASTAGE	30 % TW	3.52	HTSS SF	+ 2.02
26	35	OD WASTAGE	26 % TW	5.76	HTSS SF	+ 1.53
26	35	OD WASTAGE	35 % TW	0.79	HTSS SF	+ 2.68
27	35	OD WASTAGE	23 % TW	3.97	HTSS SF	+ 1.29
39	35	OD (general)	39 % TW	6.78	AVB3	0.00
39	35	OD (general)	28 % TW	3.54	AVB4	0.00
15	36	DISTORT ROLL		2.05	HTSS SF	- 19.80
21	36	OD WASTAGE	22 % TW	5.34	HTSS SF	+ 1.94
23	36	OD WASTAGE	22 % TW	2.19	HTSS SF	+ 0.92
26	36	OD WASTAGE	31 % TW	7.15	HTSS SF	+ 1.43
10	37	OD IGA	ADI	1.75	HTSS SF	- 15.90
18	37	OD WASTAGE	22 % TW	3.46	HTSS SF	- 2.93
21	37	DISTORT ROLL		6.59	HTSS SF	- 19.32
21	37	OD WASTAGE	25 % TW	4.75	CTSS SF	+ 2.30
21	37	OD WASTAGE	26 % TW	8.80	HTSS SF	+ 2.05
22	37	OD WASTAGE	26 % TW	5.65	HTSS SF	+ 1.67
23	37	OD WASTAGE	23 % TW	1.44	HTSS SF	+ 0.95
24	37	OD WASTAGE	20 % TW	7.43	HTSS SF	+ 2.15
25	37	OD WASTAGE	24 % TW	8.92	HTSS SF	+ 1.28
25	37	OD WASTAGE	24 % TW	6.12	HTSS SF	+ 2.20
26	37	OD WASTAGE	28 % TW	4.77	HTSS SF	+ 1.50
26	37	OD WASTAGE	21 % TW	3.93	HTSS SF	+ 2.12
4	38	OD WASTAGE	24 % TW	0.92	HTSS SF	+ 0.42
16	38	OD IGA	ADI	1.58	HTSS SF	- 11.30
23	38	OD WASTAGE	23 % TW	1.96	HTSS SF	+ 1.80
23	38	OD WASTAGE	24 % TW	1.71	HTSS SF	+ 1.80
23	38	OD WASTAGE	20 % TW	0.99	HTSS SF	+ 2.20
24	38	OD WASTAGE	29 % TW	6.74	HTSS SF	+ 1.44
25	38	OD WASTAGE	20 % TW	5.83	HTSS SF	+ 1.30
25	38	OD WASTAGE	26 % TW	9.83	HTSS SF	+ 2.33
26	38	OD WASTAGE	21 % TW	5.87	HTSS SF	+ 1.62
18	39	OD WASTAGE	22 % TW	0.61	HTSS SF	+ 2.14
18	39	OD WASTAGE	24 % TW	1.90	HTSS SF	+ 2.64
20	39	OD WASTAGE	23 % TW	5.52	CTSS SF	+ 2.20
21	39	OD WASTAGE	21 % TW	6.04	CTSS SF	+ 2.10
22	39	OD WASTAGE	22 % TW	3.01	HTSS SF	+ 1.43
25	39	OD WASTAGE	24 % TW	2.87	HTSS SF	+ 1.03
25	39	OD WASTAGE	21 % TW	6.15	HTSS SF	+ 2.15
26	39	OD WASTAGE	23 % TW	11.29	HTSS SF	+ 2.57
28	39	OD WASTAGE	20 % TW	7.36	HTSS SF	+ 1.93
7	40	DISTORT ROLL		2.14	HTSS SF	- 19.30
17	40	ROLL TRANS		2.77	HTSS PF	+ 2.23
18	40	OD WASTAGE	21 % TW	1.37	HTSS SF	+ 2.20
18	40	OD WASTAGE	25 % TW	1.60	HTSS SF	+ 2.59
22	40	OD WASTAGE	20 % TW	1.30	HTSS SF	+ 1.68
24	40	OD WASTAGE	25 % TW	1.30	HTSS SF	+ 1.27
24	40	OD WASTAGE	24 % TW	1.58	HTSS SF	+ 1.91
26	40	OD WASTAGE	21 % TW	6.63	HTSS SF	+ 2.19
27	40	OD WASTAGE	21 % TW	0.75	CTSS SF	+ 0.60
27	40	OD WASTAGE	24 % TW	6.13	HTSS SF	+ 2.23

Table 2 (Cont'd)

Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
27	40	OD WASTAGE	26 % TW	6.50	HTS SF	+ 2.62
28	40	OD WASTAGE	22 % TW	6.38	HTS SF	+ 2.14
32	40	OD IGA	ADI	2.03	HTS SF	- 6.94
32	40	OD IGA	ADI	2.32	HTS SF	- 13.69
18	41	OD WASTAGE	36 % TW	0.96	HTS SF	+ 2.12
24	41	OD WASTAGE	24 % TW	1.27	HTS SF	+ 1.83
25	41	OD WASTAGE	28 % TW	4.27	HTS SF	+ 1.20
25	41	OD WASTAGE	22 % TW	8.20	HTS SF	+ 1.93
26	41	OD WASTAGE	30 % TW	2.26	HTS SF	+ 1.82
26	41	OD WASTAGE	24 % TW	4.31	HTS SF	+ 2.13
28	41	OD WASTAGE	27 % TW	4.62	HTS SF	+ 2.24
28	41	OD WASTAGE	28 % TW	4.71	HTS SF	+ 2.75
29	41	OD WASTAGE	24 % TW	2.58	HTS SF	+ 1.77
29	41	OD WASTAGE	29 % TW	3.05	HTS SF	+ 2.65
30	41	OD WASTAGE	22 % TW	2.19	HTS SF	+ 2.19
24	42	OD WASTAGE	20 % TW	3.81	HTS SF	+ 1.20
26	42	OD WASTAGE	24 % TW	6.87	HTS SF	+ 1.82
27	42	OD WASTAGE	24 % TW	2.01	HTS SF	+ 1.73
29	42	OD WASTAGE	25 % TW	5.75	HTS SF	+ 2.01
37	42	OD (general)	22 % TW	0.63	AVB1	0.00
37	42	OD (general)	35 % TW	5.41	AVB2	0.00
37	42	OD (general)	29 % TW	3.82	AVB3	0.00
37	42	OD (general)	27 % TW	3.37	AVB4	0.00
20	43	OD WASTAGE	23 % TW	1.23	HTS SF	+ 1.20
20	43	OD WASTAGE	25 % TW	0.71	HTS SF	+ 2.20
24	43	OD WASTAGE	21 % TW	2.26	HTS SF	+ 1.50
24	43	OD WASTAGE	34 % TW	0.60	HTS SF	+ 2.53
27	43	OD WASTAGE	28 % TW	4.10	HTS SF	+ 2.03
27	43	OD WASTAGE	24 % TW	1.09	HTS SF	+ 2.50
28	43	OD WASTAGE	24 % TW	4.19	HTS SF	+ 1.17
28	43	OD WASTAGE	26 % TW	8.88	HTS SF	+ 2.28
6	44	DISTORT ROLL		1.52	HTS SF	- 19.90
9	44	OD WASTAGE	24 % TW	1.10	HTS SF	+ 0.80
15	44	OD SCC	96 % TW	0.57	HTS SF	- 2.70
15	44	OD WASTAGE	24 % TW	0.76	HTS SF	+ 3.37
17	44	OD WASTAGE	20 % TW	0.79	HTS SF	+ 2.26
18	44	OD WASTAGE	36 % TW	0.48	HTS SF	+ 2.10
18	44	OD WASTAGE	29 % TW	1.45	HTS SF	+ 2.80
22	44	OD WASTAGE	27 % TW	1.63	CTS SF	+ 2.00
22	44	OD WASTAGE	22 % TW	0.88	HTS SF	+ 2.18
24	44	DISTORT ROLL		6.34	HTS SF	- 19.29
27	44	OD WASTAGE	32 % TW	0.85	HTS SF	+ 1.40
28	44	OD WASTAGE	24 % TW	10.41	HTS SF	+ 2.03
29	44	OD WASTAGE	34 % TW	8.46	HTS SF	+ 1.20
29	44	OD WASTAGE	26 % TW	5.69	HTS SF	+ 1.65
12	45	OD WASTAGE	28 % TW	4.38	HTS SF	+ 2.11
13	45	OD WASTAGE	20 % TW	1.49	HTS SF	+ 1.87
14	45	OD SCC	64 % TW	0.50	HTS SF	- 4.40
15	45	OD SCC	81 % TW	3.86	HTS SF	- 11.40
19	45	OD WASTAGE	26 % TW	0.79	HTS SF	+ 3.60
21	45	OD WASTAGE	20 % TW	2.96	HTS SF	+ 1.36
27	45	OD WASTAGE	25 % TW	7.62	HTS SF	+ 0.87
28	45	OD WASTAGE	22 % TW	3.38	HTS SF	+ 0.95
28	45	OD WASTAGE	22 % TW	1.69	HTS SF	+ 1.32
28	45	OD WASTAGE	23 % TW	6.90	HTS SF	+ 1.88
29	45	OD WASTAGE	23 % TW	3.94	HTS SF	+ 0.67
29	45	OD WASTAGE	24 % TW	2.54	HTS SF	+ 1.68
30	45	OD WASTAGE	31 % TW	1.66	HTS SF	+ 1.04
14	46	ROLL TRANS		10.70	HTS PF	+ 2.48
19	46	OD WASTAGE	23 % TW	0.56	HTS SF	+ 0.85
25	46	OD WASTAGE	27 % TW	8.73	HTS SF	+ 1.23
26	46	OD WASTAGE	28 % TW	7.39	HTS SF	+ 1.28
31	46	OD WASTAGE	28 % TW	2.30	HTS SF	+ 1.09
9	47	ROLL TRANS		2.99	HTS PF	+ 2.43
13	47	ROLL TRANS		7.05	HTS PF	+ 2.40
18	47	OD WASTAGE	27 % TW	0.75	HTS SF	+ 2.78

Table 2 (Cont'd)

Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
21	47	ROLL TRANS		5.60	HTS PF	+ 2.49
22	47	OD WASTAGE	22 % TW	0.99	CTS SF	+ 1.00
30	47	OD WASTAGE	22 % TW	9.02	HTS SF	+ 0.95
34	47	ROLL TRANS		1.44	HTS PF	+ 2.27
1	48	OD SCC	78 % TW	0.53	HTS SF	-19.50
12	49	OD WASTAGE	32 % TW	0.69	HTS SF	+ 0.50
14	49	OD IGA	ADI	5.04	HTS SF	+ 5.00
14	49	OD WASTAGE	31 % TW	0.59	HTS SF	+ 3.60
19	49	OD IGA	ADI	2.54	HTS SF	-11.52
26	49	OD WASTAGE	34 % TW	0.83	HTS SF	+ 1.10
26	49	OD WASTAGE	21 % TW	5.87	HTS SF	+ 1.40
28	49	OD WASTAGE	24 % TW	9.35	HTS SF	+ 0.40
28	49	OD WASTAGE	25 % TW	8.48	HTS SF	+ 1.40
6	50	ROLL TRANS		24.36	HTS PF	+ 2.46
16	50	OD WASTAGE	35 % TW	1.27	CTS SF	+ 1.90
20	50	OD WASTAGE	20 % TW	1.16	HTS SF	+ 2.20
24	50	OD WASTAGE	27 % TW	1.00	HTS SF	+ 1.90
27	50	OD WASTAGE	20 % TW	2.11	HTS SF	+ 1.40
27	50	OD WASTAGE	20 % TW	2.53	HTS SF	+ 2.00
29	50	OD WASTAGE	20 % TW	2.80	HTS SF	+ 0.60
37	50	OD (general)	32 % TW	4.99	AVR3	0.00
19	51	OD WASTAGE	27 % TW	8.13	HTS SF	+ 1.70
24	51	ROLL TRANS		3.81	HTS PF	+ 2.43
27	51	OD WASTAGE	30 % TW	1.05	HTS SF	+ 1.50
27	51	OD WASTAGE	22 % TW	1.84	HTS SF	+ 1.80
1	52	OD SCC	62 % TW	0.39	HTS SF	-16.10
1	52	OD SCC	45 % TW	0.55	HTS SF	-17.30
1	52	OD SCC	58 % TW	0.45	HTS SF	-17.90
6	52	ROLL TRANS		7.48	HTS PF	+ 2.40
13	52	OD WASTAGE	21 % TW	4.25	HTS SF	+ 1.80
18	52	OD WASTAGE	20 % TW	1.32	HTS SF	+ 2.80
21	52	OD SCC	80 % TW	0.44	HTS SF	-16.70
16	53	OD WASTAGE	26 % TW	2.17	HTS SF	+ 5.50
17	53	OD WASTAGE	34 % TW	1.22	HTS SF	+ 3.90
19	53	OD WASTAGE	28 % TW	2.06	HTS SF	+ 2.20
32	53	OD SCC	77 % TW	0.46	HTS SF	-15.70
13	54	OD WASTAGE	32 % TW	2.02	HTS SF	+ 2.00
18	54	OD WASTAGE	21 % TW	3.25	HTS SF	+ 2.60
27	54	ROLL TRANS		9.29	HTS PF	+ 2.58
29	54	OD WASTAGE	39 % TW	0.69	HTS SF	+ 1.50
32	54	OD SCC	93 % TW	0.64	HTS SF	-17.10
8	55	OD SCC	32 % TW	0.28	HTS SF	-17.60
8	55	OD SCC	32 % TW	0.30	HTS SF	-18.40
13	55	OD WASTAGE	21 % TW	1.84	HTS SF	+ 1.50
15	55	OD WASTAGE	21 % TW	0.79	HTS SF	+ 4.50
16	55	OD WASTAGE	20 % TW	6.58	HTS SF	+ 4.10
17	55	OD WASTAGE	32 % TW	1.08	HTS SF	+ 4.30
23	55	OD SCC	31 % TW	0.31	HTS SF	-16.20
16	56	OD WASTAGE	32 % TW	1.14	HTS SF	+ 4.20
17	56	OD WASTAGE	23 % TW	1.61	HTS SF	+ 3.54
19	56	OD WASTAGE	25 % TW	0.85	HTS SF	+ 1.25
28	56	OD WASTAGE	23 % TW	1.74	HTS SF	+ 1.22
30	56	OD WASTAGE	25 % TW	4.61	HTS SF	+ 0.61
34	56	OD SCC	95 % TW	0.43	HTS SF	-18.50
18	57	OD IGA	ADI	4.67	HTS SF	-17.87
22	57	OD WASTAGE	23 % TW	10.85	HTS SF	+ 1.45
24	57	DISTORT ROLL		8.20	HTS SF	-19.44
24	57	OD WASTAGE	31 % TW	0.78	HTS SF	+ 1.48
24	57	ROLL TRANS		5.82	HTS PF	+ 2.38
28	57	OD WASTAGE	22 % TW	1.34	HTS SF	+ 0.75
34	57	OD SCC	96 % TW	0.65	HTS SF	-17.35
17	58	OD WASTAGE	28 % TW	0.71	HTS SF	+ 3.98
19	58	OD WASTAGE	24 % TW	8.51	HTS SF	+ 1.83
20	58	OD WASTAGE	35 % TW	1.84	HTS SF	+ 1.91
20	58	OD WASTAGE	22 % TW	1.03	HTS SF	+ 2.24
24	58	OD WASTAGE	27 % TW	2.42	HTS SF	+ 1.37

Table 2 (Cont'd)

Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
25	58	OD WASTAGE	32 % TW	1.25	HTS SF	+ 1.34
9	59	OD WASTAGE	28 % TW	1.61	HTS SF	+ 0.47
17	59	OD WASTAGE	21 % TW	3.72	HTS SF	+ 2.30
24	59	OD WASTAGE	21 % TW	2.31	HTS SF	+ 1.09
9	60	OD WASTAGE	20 % TW	1.27	HTS SF	+ 0.33
20	60	OD WASTAGE	25 % TW	2.28	HTS SF	+ 1.17
20	60	OD WASTAGE	23 % TW	0.75	HTS SF	+ 1.42
20	60	OD WASTAGE	20 % TW	0.94	HTS SF	+ 1.89
23	60	OD WASTAGE	22 % TW	3.46	HTS SF	+ 1.51
31	60	ROLL TRANS		1.94	HTS PF	+ 2.34
13	61	OD WASTAGE	34 % TW	2.51	HTS SF	+ 1.55
13	61	OD WASTAGE	33 % TW	1.31	HTS SF	+ 1.94
14	61	OD WASTAGE	28 % TW	7.10	HTS SF	+ 2.19
15	61	OD WASTAGE	28 % TW	7.10	HTS SF	+ 2.25
17	61	OD WASTAGE	22 % TW	4.23	HTS SF	+ 1.72
19	61	OD WASTAGE	25 % TW	5.31	HTS SF	+ 1.58
20	61	OD WASTAGE	28 % TW	4.38	HTS SF	+ 1.67
21	61	OD WASTAGE	22 % TW	2.98	HTS SF	+ 1.69
25	61	OD WASTAGE	24 % TW	1.08	HTS SF	+ 0.89
12	62	OD WASTAGE	20 % TW	4.61	HTS SF	+ 1.02
18	62	OD WASTAGE	21 % TW	3.91	HTS SF	+ 1.44
19	62	OD WASTAGE	20 % TW	7.28	HTS SF	+ 1.71
8	63	OD WASTAGE	23 % TW	1.02	HTS SF	+ 0.47
13	63	OD WASTAGE	21 % TW	2.92	HTS SF	+ 2.47
17	63	OD WASTAGE	21 % TW	10.53	HTS SF	+ 1.47
20	63	OD WASTAGE	23 % TW	3.10	HTS SF	+ 1.39
21	63	ROLL TRANS		2.57	HTS PF	+ 2.34
25	63	OD IGA	ADI	0.41	HTS PF	+ 3.81
25	63	ROLL TRANS		1.73	HTS PF	+ 2.34
13	64	OD WASTAGE	22 % TW	6.20	HTS SF	+ 1.40
13	64	OD WASTAGE	24 % TW	1.91	HTS SF	+ 2.10
14	64	OD WASTAGE	23 % TW	7.69	HTS SF	+ 1.70
14	64	OD WASTAGE	26 % TW	1.04	HTS SF	+ 2.00
16	64	OD WASTAGE	29 % TW	5.34	HTS SF	+ 1.20
17	64	OD WASTAGE	23 % TW	7.84	HTS SF	+ 1.40
18	64	OD WASTAGE	24 % TW	6.18	HTS SF	+ 1.50
19	64	OD WASTAGE	24 % TW	9.25	HTS SF	+ 1.10
19	64	OD WASTAGE	26 % TW	4.68	HTS SF	+ 1.20
20	64	OD WASTAGE	28 % TW	0.66	HTS SF	+ 1.20
9	65	OD WASTAGE	22 % TW	6.98	HTS SF	+ 0.50
10	65	OD WASTAGE	24 % TW	7.27	HTS SF	+ 0.60
11	65	OD WASTAGE	21 % TW	2.91	HTS SF	+ 0.80
11	65	OD WASTAGE	28 % TW	4.72	HTS SF	+ 1.00
15	65	OD WASTAGE	30 % TW	6.64	HTS SF	+ 1.70
18	65	OD WASTAGE	26 % TW	5.49	HTS SF	+ 1.50
10	66	OD WASTAGE	26 % TW	4.50	HTS SF	+ 0.90
12	66	OD WASTAGE	25 % TW	4.64	HTS SF	+ 1.40
13	66	OD WASTAGE	20 % TW	8.61	HTS SF	+ 1.40
14	66	OD WASTAGE	26 % TW	6.20	HTS SF	+ 1.80
15	66	OD WASTAGE	27 % TW	8.34	HTS SF	+ 1.70
18	66	OD WASTAGE	26 % TW	5.95	HTS SF	+ 1.50
19	66	OD WASTAGE	20 % TW	10.86	HTS SF	+ 1.70
20	66	OD WASTAGE	29 % TW	3.30	HTS SF	+ 1.30
21	66	OD WASTAGE	26 % TW	7.66	HTS SF	+ 1.40
31	66	DISTORT ROLL		1.69	HTS SF	+ 19.50
4	67	OD WASTAGE	20 % TW	1.07	HTS SF	+ 0.40
7	67	OD IGA	ADI	5.22	HTS SF	+ 16.70
9	67	OD WASTAGE	24 % TW	7.95	HTS SF	+ 0.80
11	67	OD WASTAGE	23 % TW	5.85	HTS SF	+ 1.20
11	67	OD WASTAGE	24 % TW	5.86	HTS SF	+ 1.60
13	67	OD WASTAGE	29 % TW	6.10	HTS SF	+ 1.70
19	67	OD WASTAGE	26 % TW	5.51	HTS SF	+ 1.90
21	67	OD WASTAGE	21 % TW	2.39	HTS SF	+ 0.60
38	67	OD (general)	25 % TW	2.99	AVB3	0.00
38	67	OD (general)	30 % TW	4.03	AVB4	0.00
13	68	OD WASTAGE	20 % TW	5.03	HTS SF	+ 2.00

Table 2 (Cont'd)

Plant: R. E. Ginna Station
 Outage: 1990 Resolution

Steam Generator: A

All Reportable Indications (20%tw and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
19	68	OD WASTAGE	26 % TW	4.93	HTS SF	+ 1.70
20	68	OD WASTAGE	20 % TW	2.24	HTS SF	+ 1.40
22	68	OD SCC	67 % TW	1.69	HTS SF	-13.20
24	68	OD SCC	70 % TW	0.90	HTS SF	-19.90
12	69	OD WASTAGE	26 % TW	8.44	HTS SF	+ 1.50
14	69	OD WASTAGE	35 % TW	1.67	HTS SF	+ 2.00
16	69	OD WASTAGE	20 % TW	4.02	HTS SF	+ 1.80
5	70	OD SCC	93 % TW	0.91	HTS SF	-19.30
10	70	OD WASTAGE	27 % TW	1.94	HTS SF	+ 1.30
11	70	OD WASTAGE	20 % TW	4.66	HTS SF	+ 1.10
14	70	OD WASTAGE	23 % TW	4.67	HTS SF	+ 2.10
15	70	OD WASTAGE	23 % TW	1.15	HTS SF	+ 1.50
6	71	OD WASTAGE	25 % TW	7.29	HTS SF	+ 1.10
6	71	OD WASTAGE	26 % TW	0.71	HTS SF	+ 1.40
12	71	OD WASTAGE	20 % TW	4.18	HTS SF	+ 1.60
13	71	OD WASTAGE	23 % TW	1.92	HTS SF	+ 1.60
5	72	OD WASTAGE	20 % TW	2.65	HTS SF	+ 0.50
6	72	OD WASTAGE	21 % TW	5.92	HTS SF	+ 0.80
13	72	OD WASTAGE	20 % TW	3.05	HTS SF	+ 1.40
6	73	OD WASTAGE	20 % TW	4.42	HTS SF	+ 0.70
8	73	OD WASTAGE	25 % TW	1.18	HTS SF	+ 1.00
8	73	OD WASTAGE	25 % TW	6.21	HTS SF	+ 1.50
12	73	OD WASTAGE	23 % TW	10.13	HTS SF	+ 1.30
12	74	OD WASTAGE	26 % TW	5.38	HTS SF	+ 0.70
12	74	OD WASTAGE	21 % TW	6.27	HTS SF	+ 1.30
13	74	OD WASTAGE	26 % TW	2.11	HTS SF	+ 0.90
16	74	OD SCC	20 % TW	0.92	HTS SF	-10.90
17	74	OD IGA	ADI	3.60	HTS SF	-18.50
18	74	OD IGA	ADI	4.47	HTS SF	-18.10
5	76	OD WASTAGE	28 % TW	1.11	HTS SF	+ 0.70
16	87	OD WASTAGE	36 % TW	1.14	HTS SF	+12.13
11	91	OD WASTAGE	21 % TW	2.23	HTS SF	+ 1.00

TOTAL TUBES FOUND 325

TOTAL INDICATIONS FOUND 428

Plant: R. E. Ginna Station
Outage: 1970 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
18	5	OD (general)	22 % TW	1.88	C1	0.00
18	6	OD (general)	35 % TW	2.39	C2	0.00
18	6	OD (general)	36 % TW	1.97	C1	0.00
17	7	ROLL TRANS		0.80	HTS PF	+ 2.40
24	8	OD (general)	26 % TW	2.81	C1	0.00
25	11	ROLL TRANS		1.54	HTS PF	+ 2.85
11	13	OD SCC	93 % TW	0.60	HTS SF	-18.50
17	13	DISTORT ROLL		3.96	HTS SF	-19.43
2	15	OD IGA	ADI	5.42	HTS SF	-15.55
19	15	OD IGA	ADI	5.13	HTS SF	-17.80
2	16	OD IGA	ADI	6.47	HTS SF	-15.49
7	16	OD IGA	ADI	2.89	HTS SF	-8.20
17	17	ROLL TRANS		0.82	HTS PF	+ 2.96
11	18	OD IGA	ADI	1.67	HTS SF	-16.80
11	19	OD IGA	ADI	0.47	HTS PF	+ 5.94
17	19	DISTORT ROLL		1.29	HTS SF	-19.50
22	20	ROLL TRANS		0.49	HTS PF	+ 3.03
33	20	OD IGA	ADI	2.58	HTS SF	-14.70
11	21	OD WASTAGE	23 % TW	9.70	HTS SF	+ 1.40
16	21	OD IGA	ADI	1.60	HTS SF	-15.80
24	21	OD IGA	ADI	1.32	HTS SF	-18.80
11	22	OD WASTAGE	20 % TW	8.26	HTS SF	+ 1.30
17	22	OD IGA	ADI	0.37	HTS PF	+ 4.57
17	22	ROLL TRANS		1.06	HTS PF	+ 2.90
17	22	DISTORT ROLL		2.74	HTS SF	-19.60
21	22	OD IGA	ADI	1.75	HTS SF	-16.50
26	22	OD WASTAGE	20 % TW	1.85	HTS SF	+ 0.90
29	22	DISTORT ROLL		2.31	HTS SF	-20.00
11	23	OD WASTAGE	20 % TW	10.52	HTS SF	+ 1.40
15	23	OD WASTAGE	25 % TW	1.74	HTS SF	+ 1.20
22	23	OD WASTAGE	20 % TW	1.23	HTS SF	+ 1.30
30	23	OD IGA	ADI	3.10	HTS SF	-18.00
16	24	OD IGA	ADI	1.47	HTS SF	-12.20
2	25	OD SCC	59 % TW	0.77	HTS SF	-18.80
2	25	OD IGA	ADI	13.96	HTS SF	-16.62
20	25	OD WASTAGE	25 % TW	2.56	HTS SF	+ 1.10
24	25	OD WASTAGE	28 % TW	11.60	HTS SF	+ 1.10
1	26	OD IGA	ADI	2.83	HTS SF	-17.40
2	26	OD IGA	ADI	2.43	HTS SF	-17.00
15	26	OD IGA	ADI	2.45	HTS SF	-17.20
16	26	OD WASTAGE	20 % TW	8.24	HTS SF	+ 1.40
17	26	OD WASTAGE	29 % TW	10.81	HTS SF	+ 1.30
18	26	OD WASTAGE	29 % TW	16.99	HTS SF	+ 1.40
19	26	OD WASTAGE	30 % TW	11.82	HTS SF	+ 1.30
20	26	OD WASTAGE	21 % TW	6.01	HTS SF	+ 1.20
22	26	OD WASTAGE	23 % TW	10.03	HTS SF	+ 1.50
24	26	OD WASTAGE	27 % TW	10.78	HTS SF	+ 1.50
27	26	OD IGA	ADI	1.78	HTS SF	-18.40
2	27	OD SCC	93 % TW	0.88	HTS SF	-18.90
2	27	OD IGA	ADI	7.66	HTS SF	-15.35
13	27	OD WASTAGE	23 % TW	5.69	HTS SF	+ 1.20
21	27	OD WASTAGE	24 % TW	6.20	HTS SF	+ 1.50
23	27	OD WASTAGE	20 % TW	1.30	HTS SF	+ 1.60
24	27	OD WASTAGE	20 % TW	11.94	HTS SF	+ 1.40
24	27	OD IGA	ADI	0.51	HTS PF	+ 4.88
24	27	OD IGA	ADI	2.06	HTS SF	-17.00
11	29	OD IGA	ADI	5.09	HTS SF	-13.60
19	29	OD WASTAGE	21 % TW	13.80	HTS SF	+ 1.40
25	29	OD IGA	ADI	0.52	HTS PF	+ 5.56
39	29	OD WASTAGE	20 % TW	0.61	HTS SF	+ 1.40
41	29	DISTORT ROLL		1.43	HTS SF	-19.60
2	30	OD IGA	ADI	8.80	HTS SF	-15.94
15	30	OD IGA	ADI	2.42	HTS SF	-5.20
17	30	OD WASTAGE	20 % TW	0.78	HTS SF	+ 1.00
17	30	OD WASTAGE	27 % TW	0.62	HTS SF	+ 0.50
17	30	OD WASTAGE	27 % TW	1.62	HTS SF	+ 2.00

Table 2 (Cont'd)



Plant: R. E. Ginna Station
 Outage: 1990 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
24	30	OD IGA	ADI	5.90	HTS SF	-15.10
28	30	OD SCC	69 % TW	2.04	HTS SF	-10.70
28	30	OD SCC	69 % TW	2.55	HTS SF	-16.90
17	31	OD WASTAGE	28 % TW	0.66	HTS SF	+ 1.30
42	31	OD (general)	25 % TW	4.38	CTS SF	+15.20
17	32	OD IGA	ADI	4.94	HTS SF	-10.20
19	32	OD IGA	ADI	0.31	HTS PF	+ 2.96
12	33	OD IGA	ADI	7.58	HTS SF	-15.50
10	34	OD WASTAGE	24 % TW	2.23	HTS SF	+ 0.40
14	34	DISTORT ROLL		2.15	HTS SF	-19.80
21	34	OD SCC	81 % TW	3.99	HTS SF	-16.90
21	34	OD IGA	ADI	1.69	HTS PF	+ 4.13
21	34	ROLL TRANS		0.75	HTS PF	+ 3.13
21	34	DISTORT ROLL		3.05	HTS SF	-19.70
8	35	OD IGA	ADI	3.03	HTS SF	-15.20
31	35	OD SCC	55 % TW	1.58	HTS SF	-17.18
31	35	OD SCC	69 % TW	3.96	HTS SF	-18.20
34	35	OD IGA	ADI	4.49	HTS SF	-17.90
2	36	OD SCC	17 % TW	0.84	HTS SF	-17.40
3	36	OD IGA	ADI	5.82	HTS SF	-15.00
24	37	OD WASTAGE	22 % TW	4.79	HTS SF	+ 1.40
24	37	OD IGA	ADI	2.10	HTS SF	-17.40
23	38	OD SCC	82 % TW	1.08	HTS SF	- 8.40
41	38	OD (general)	20 % TW	4.84	HTS PF	+ 7.21
41	38	OD (general)	30 % TW	2.82	HTS PF	+ 6.09
24	39	OD WASTAGE	21 % TW	1.96	HTS SF	+ 1.10
24	39	OD WASTAGE	23 % TW	4.70	HTS SF	+ 1.40
35	39	OD IGA	ADI	3.01	HTS SF	-17.80
45	39	OD (general)	23 % TW	1.14	HTS SF	+41.60
11	40	OD WASTAGE	34 % TW	1.35	HTS SF	+ 0.30
23	40	OD WASTAGE	23 % TW	7.86	HTS SF	+ 1.70
24	40	OD WASTAGE	26 % TW	5.33	HTS SF	+ 1.30
24	40	OD WASTAGE	28 % TW	0.99	HTS SF	+ 0.90
25	40	OD WASTAGE	20 % TW	0.83	HTS SF	+ 2.40
34	40	OD IGA	ADI	4.26	HTS SF	-18.60
36	40	OD SCC	96 % TW	1.72	HTS SF	-18.70
7	41	OD IGA	ADI	5.30	HTS SF	-15.50
9	41	OD IGA	ADI	4.61	HTS SF	-15.30
9	41	DISTORT ROLL		3.38	HTS SF	-19.90
23	41	OD WASTAGE	21 % TW	3.24	HTS SF	+ 1.70
24	41	OD WASTAGE	30 % TW	3.54	HTS SF	+ 1.20
28	41	OD IGA	ADI	1.26	HTS PF	+18.55
44	41	OD SCC	93 % TW	2.64	HTS SF	-18.70
6	42	OD WASTAGE	23 % TW	5.16	HTS SF	+ 0.50
6	42	OD WASTAGE	26 % TW	4.89	HTS SF	+ 0.60
7	42	OD IGA	ADI	5.22	HTS SF	-15.00
7	42	OD IGA	ADI	7.35	HTS SF	-16.00
8	42	OD IGA	ADI	4.71	HTS SF	-15.50
14	42	OD IGA	ADI	3.90	HTS SF	- 5.80
31	42	OD IGA	ADI	5.05	HTS SF	-18.30
41	42	OD IGA	ADI	4.27	HTS SF	-18.20
7	43	OD IGA	ADI	6.01	HTS SF	-16.00
8	43	OD IGA	ADI	4.83	HTS SF	-14.30
10	43	DISTORT ROLL		3.26	HTS SF	-19.40
14	43	OD WASTAGE	20 % TW	6.50	CTS SF	+ 1.40
35	43	OD IGA	ADI	0.73	HTS PF	+ 4.26
35	43	OD IGA	ADI	3.43	HTS SF	-17.40
41	43	OD SCC	77 % TW	1.93	HTS SF	-18.20
42	43	OD SCC	94 % TW	1.01	HTS SF	-18.00
27	44	OD WASTAGE	20 % TW	1.35	HTS SF	+ 2.50
35	44	OD IGA	ADI	0.37	HTS PF	+ 3.62
38	44	ROLL TRANS		1.05	HTS PF	+ 1.74
40	44	OD IGA	ADI	2.60	HTS SF	-17.30
1	45	OD SCC	22 % TW	0.63	HTS SF	-17.90
4	45	OD (general)	20 % TW	1.28	HTS SF	+ 0.30
9	45	OD WASTAGE	20 % TW	0.61	HTS SF	+ 1.30

Table 2 (Cont'd)

Plant: R. E. Ginna Station
 Outage: 1990 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
23	45	OD IGA	ADI	2.90	HTS SF	-16.00
26	45	OD WASTAGE	30 % TW	0.99	HTS SF	+ 1.00
26	45	OD SCC	50 % TW	0.52	HTS SF	-17.80
31	45	OD WASTAGE	29 % TW	2.61	HTS SF	+ 0.30
41	45	ROLL TRANS		2.10	HTS PF	+ 2.35
3	46	OD WASTAGE	30 % TW	0.73	HTS SF	+ 0.60
9	46	OD WASTAGE	28 % TW	1.03	HTS SF	+ 0.70
9	46	OD IGA	ADI	0.34	HTS PF	+ 6.57
20	46	OD (general)	39 % TW	1.11	HTS SF	+ 3.40
22	46	ROLL TRANS		1.38	HTS PF	+ 2.36
27	46	OD WASTAGE	20 % TW	6.64	HTS SF	+ 1.70
27	46	OD WASTAGE	20 % TW	1.16	HTS SF	+ 2.30
32	46	OD IGA	ADI	3.37	HTS SF	-17.40
40	46	OD IGA	ADI	3.82	HTS SF	-16.00
3	47	OD WASTAGE	41 % TW	0.77	HTS SF	+ 0.60
8	47	OD IGA	ADI	8.14	HTS SF	-15.20
18	47	OD WASTAGE	22 % TW	3.80	CTS SF	+ 1.30
26	47	OD WASTAGE	20 % TW	0.58	HTS SF	+ 2.20
32	47	OD SCC	75 % TW	0.83	HTS SF	-18.26
38	47	OD IGA	ADI	7.34	HTS SF	-17.53
38	47	ROLL TRANS		0.96	HTS PF	+ 2.55
2	48	OD IGA	ADI	6.74	HTS SF	- 6.06
8	48	OD IGA	ADI	4.16	HTS SF	-17.25
25	48	OD WASTAGE	24 % TW	1.77	HTS SF	+ 3.90
35	48	OD SCC	84 % TW	0.82	HTS SF	-18.67
2	49	OD IGA	ADI	6.45	HTS SF	- 8.83
34	49	OD IGA	ADI	2.23	HTS SF	-17.10
35	49	OD SCC	54 % TW	0.31	HTS SF	-17.13
37	49	OD SCC	41 % TW	0.48	HTS SF	-18.47
40	49	OD IGA	ADI	9.95	HTS SF	-17.19
1	50	OD IGA	ADI	4.67	HTS SF	-17.00
2	50	OD SCC	69 % TW	0.62	HTS SF	-11.01
2	50	OD SCC	72 % TW	0.80	HTS SF	-17.14
4	50	OD IGA	ADI	4.85	HTS SF	-15.00
6	50	OD IGA	ADI	2.42	HTS SF	-16.00
8	50	OD SCC	63 % TW	1.16	HTS SF	-18.40
17	50	OD IGA	ADI	1.76	HTS SF	- 9.60
23	50	OD SCC	82 % TW	0.30	HTS SF	-18.60
25	50	OD WASTAGE	24 % TW	1.93	HTS SF	+ 3.45
30	50	OD SCC	93 % TW	0.54	HTS SF	-18.14
2	51	OD SCC	72 % TW	0.50	HTS SF	-15.07
2	51	OD IGA	ADI	8.77	HTS SF	-13.96
18	51	OD WASTAGE	28 % TW	1.21	HTS SF	+ 2.60
26	51	OD WASTAGE	31 % TW	2.24	HTS SF	+ 3.19
31	51	OD SCC	89 % TW	0.56	HTS SF	-18.67
35	51	OD SCC	87 % TW	0.70	HTS SF	-18.57
11	52	OD IGA	ADI	3.04	HTS SF	-16.00
13	52	OD IGA	ADI	2.88	HTS SF	-17.00
24	52	OD IGA	ADI	4.72	HTS SF	- 5.23
25	52	OD WASTAGE	21 % TW	0.76	HTS SF	+ 3.50
27	52	OD WASTAGE	33 % TW	0.81	HTS SF	+ 2.90
29	52	OD WASTAGE	26 % TW	1.28	HTS SF	+ 2.69
29	52	OD SCC	82 % TW	0.75	HTS SF	-18.27
38	52	ROLL TRANS		0.75	HTS PF	+ 2.80
25	53	OD WASTAGE	20 % TW	1.22	HTS SF	+ 4.07
28	53	OD IGA	ADI	0.56	HTS PF	+ 5.15
2	54	OD SCC	44 % TW	0.72	HTS SF	-12.09
2	54	OD SCC	45 % TW	0.53	HTS SF	-16.52
3	54	OD IGA	ADI	3.00	HTS SF	-17.00
19	54	OD WASTAGE	20 % TW	9.76	HTS SF	+ 2.25
25	54	OD WASTAGE	24 % TW	0.80	HTS SF	+ 4.70
1	55	OD IGA	ADI	9.51	HTS SF	-17.00
2	55	OD SCC	48 % TW	0.31	HTS SF	-14.60
5	55	OD IGA	ADI	2.10	HTS SF	-12.00
16	55	OD IGA	ADI	2.96	HTS SF	-16.00
19	55	OD IGA	ADI	3.76	HTS SF	-10.60

Table 2 (Cont'd)



Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
29	55	OD WASTAGE	20 % TW	1.04	HTS SF	+ 0.96
1	56	OD SCC	74 % TW	0.95	HTS SF	-17.80
2	56	OD SCC	77 % TW	2.11	HTS SF	-18.95
17	56	ROLL TRANS		0.55	HTS PFF	+ 2.27
18	56	OD IGA	ADI	0.44	HTS PFF	+ 5.21
27	56	OD WASTAGE	20 % TW	0.98	HTS SF	+ 3.80
33	56	OD (general)	26 % TW	1.05	HTS SF	+ 0.40
2	57	OD IGA	ADI	3.24	HTS SF	-15.00
13	57	OD IGA	ADI	4.88	HTS SF	-17.00
15	57	ROLL TRANS		2.24	HTS PFF	+ 2.79
20	57	OD WASTAGE	24 % TW	0.47	HTS SF	+ 2.32
22	57	ROLL TRANS		1.59	HTS PFF	+ 2.91
25	57	OD WASTAGE	21 % TW	1.58	HTS SF	+ 1.60
25	57	OD SCC	71 % TW	0.44	HTS SF	-17.00
25	57	OD SCC	79 % TW	0.59	HTS SF	-18.40
31	57	OD SCC	69 % TW	0.36	HTS SF	-17.60
31	57	OD SCC	79 % TW	0.69	HTS SF	-14.82
32	57	OD SCC	84 % TW	0.62	HTS SF	-14.59
36	57	OD SCC	79 % TW	0.31	HTS SF	-17.40
39	57	OD SCC	49 % TW	0.95	HTS SF	-18.43
39	57	OD IGA	ADI	1.33	HTS PFF	+ 3.38
40	57	OD SCC	34 % TW	0.60	HTS SF	-18.10
5	58	OD IGA	ADI	2.49	HTS SF	-14.10
13	58	OD IGA	ADI	3.07	HTS SF	-16.25
20	58	OD WASTAGE	23 % TW	3.15	HTS SF	+ 2.35
29	58	OD SCC	69 % TW	0.41	HTS SF	-15.43
32	58	OD SCC	86 % TW	0.57	HTS SF	-17.04
32	58	OD SCC	92 % TW	1.02	HTS SF	-18.13
3	59	OD IGA	ADI	5.67	HTS SF	-14.00
4	59	OD SCC	82 % TW	0.67	HTS SF	-18.20
9	59	OD SCC	42 % TW	0.42	HTS SF	-13.20
21	59	OD IGA	ADI	7.74	HTS SF	-5.00
2	60	OD SCC	86 % TW	0.42	HTS SF	-17.50
5	60	OD SCC	26 % TW	0.37	HTS SF	-16.50
8	60	OD IGA	ADI	1.93	HTS SF	-16.70
11	60	OD IGA	ADI	2.25	HTS SF	-17.00
12	60	OD IGA	ADI	4.44	HTS SF	-16.00
14	60	OD WASTAGE	20 % TW	3.51	HTS SF	+ 0.81
17	60	OD SCC	37 % TW	0.72	HTS SF	-17.93
17	60	OD IGA	ADI	0.61	HTS PFF	+ 4.20
17	60	ROLL TRANS		2.03	HTS PFF	+ 2.57
27	60	OD WASTAGE	20 % TW	0.93	HTS SF	+ 1.60
2	61	OD SCC	64 % TW	1.55	HTS SF	-18.86
2	61	OD SCC	69 % TW	1.52	HTS SF	-13.96
3	62	OD IGA	ADI	3.52	HTS SF	-14.60
15	62	OD IGA	ADI	4.85	HTS SF	-16.00
18	62	OD IGA	ADI	5.34	HTS SF	-12.30
19	62	OD SCC	80 % TW	0.52	HTS SF	-11.90
19	62	OD SCC	91 % TW	0.64	HTS SF	-13.17
21	62	OD WASTAGE	25 % TW	3.69	HTS SF	+ 1.70
27	62	OD IGA	ADI	6.30	HTS SF	- 4.40
27	62	OD IGA	ADI	3.95	HTS SF	- 4.40
1	63	OD IGA	ADI	4.00	HTS SF	-16.50
2	63	OD SCC	59 % TW	1.03	HTS SF	-18.45
2	63	OD SCC	75 % TW	0.75	HTS SF	-16.62
16	63	OD IGA	ADI	6.68	HTS SF	-15.30
19	63	OD SCC	43 % TW	0.27	HTS SF	-18.55
20	63	OD IGA	ADI	1.88	HTS SF	-14.10
22	63	OD WASTAGE	28 % TW	1.36	HTS SF	+ 1.90
27	63	OD WASTAGE	21 % TW	1.76	HTS SF	+ 1.70
28	63	OD WASTAGE	28 % TW	4.37	HTS SF	+ 1.70
4	64	OD IGA	ADI	1.65	HTS SF	-12.20
5	64	OD IGA	ADI	2.25	HTS SF	-15.10
8	64	OD IGA	ADI	2.10	HTS SF	-18.70
19	64	OD IGA	ADI	1.57	HTS SF	-11.34
24	64	OD WASTAGE	22 % TW	8.88	HTS SF	+ 1.90

Table 2 (Cont'd)

Plant: R. E. Ginna Station
 Outage: 1990 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
24	64	OD IGA	ADI	4.83	HTS SF	-18.40
25	64	OD IGA	ADI	1.70	HTS SF	-17.76
26	64	OD WASTAGE	23 % TW	6.41	HTS SF	+ 2.10
22	65	OD SCC	74 % TW	0.91	HTS SF	-18.32
22	65	OD SCC	76 % TW	0.88	HTS SF	-15.26
1	66	OD SCC	68 % TW	2.02	HTS SF	-18.10
22	66	OD SCC	56 % TW	1.18	HTS SF	-15.73
2	66	OD SCC	65 % TW	0.93	HTS SF	-16.79
7	66	OD IGA	ADI	1.94	HTS SF	-16.10
20	66	OD IGA	ADI	3.77	HTS SF	-16.80
22	67	OD SCC	68 % TW	0.78	HTS SF	-16.57
22	67	OD SCC	68 % TW	0.82	HTS SF	-17.41
25	67	OD WASTAGE	21 % TW	2.30	HTS SF	+ 0.80
25	67	OD SCC	73 % TW	1.63	HTS SF	-16.20
25	67	OD SCC	93 % TW	0.52	HTS SF	-17.80
26	67	OD SCC	83 % TW	0.47	HTS SF	- 6.50
39	67	OD (general)	27 % TW	2.38	C1	0.00
39	67	OD (general)	27 % TW	0.87	C3	0.00
39	67	OD (general)	28 % TW	1.51	C3	0.00
39	67	OD (general)	28 % TW	1.36	C3	- 0.03
39	67	DS		1.42	C2	0.00
22	68	OD SCC	65 % TW	0.64	HTS SF	-16.51
22	68	OD SCC	72 % TW	1.16	HTS SF	-18.74
20	68	OD IGA	ADI	6.47	HTS SF	-17.40
22	70	OD SCC	85 % TW	2.35	HTS SF	-17.80
13	70	OD WASTAGE	21 % TW	2.96	HTS SF	+ 1.00
32	70	OD SCC	78 % TW	1.75	HTS SF	-18.60
22	71	OD SCC	76 % TW	2.93	HTS SF	-16.10
2	71	OD IGA	ADI	2.76	HTS SF	-16.40
22	72	OD SCC	86 % TW	2.41	HTS SF	-16.78
22	73	OD SCC	94 % TW	2.18	HTS SF	-17.73
16	73	OD IGA	ADI	2.55	HTS SF	-17.00
1	74	OD IGA	ADI	4.58	HTS SF	-17.30
22	74	OD SCC	72 % TW	3.53	HTS SF	-18.59
20	74	OD IGA	ADI	6.04	HTS SF	-18.30
22	75	OD SCC	87 % TW	5.41	HTS SF	-17.01
7	75	OD IGA	ADI	5.27	HTS SF	-17.70
10	75	OD WASTAGE	20 % TW	1.76	HTS SF	+ 0.82
22	75	DISTORT ROLL		2.32	HTS SF	-19.34
28	75	OD IGA	ADI	4.77	HTS SF	-17.00
33	75	OD SCC	90 % TW	2.10	HTS SF	-19.10
22	76	OD SCC	93 % TW	4.00	HTS SF	-18.00
3	76	OD IGA	ADI	4.58	HTS SF	-16.55
8	76	OD IGA	ADI	4.17	HTS SF	-15.79
10	76	OD IGA	ADI	3.19	HTS SF	-15.87
17	76	OD IGA	ADI	3.72	HTS SF	-17.00
2	77	OD SCC	86 % TW	1.81	HTS SF	-17.45
3	77	OD IGA	ADI	5.25	HTS SF	-16.13
5	77	OD IGA	ADI	5.58	HTS SF	-16.38
16	77	OD SCC	79 % TW	0.32	HTS SF	-17.33
18	77	OD SCC	97 % TW	1.17	HTS SF	-18.88
22	77	OD SCC	93 % TW	1.00	HTS SF	-18.78
6	78	OD IGA	ADI	5.60	HTS SF	-15.62
7	78	OD IGA	ADI	6.43	HTS SF	-18.57
20	78	OD IGA	ADI	5.08	HTS SF	-17.30
2	79	OD SCC	94 % TW	1.94	HTS SF	-17.90
1	80	OD IGA	ADI	5.27	HTS SF	-16.76
22	80	OD SCC	88 % TW	4.26	HTS SF	-18.27
15	80	OD SCC	96 % TW	2.30	HTS SF	-17.20
5	80	OD IGA	ADI	7.02	HTS SF	-17.02
7	81	OD IGA	ADI	3.75	HTS SF	-16.74
4	82	OD IGA	ADI	5.57	HTS SF	-16.03
24	83	OD SCC	81 % TW	0.36	HTS SF	-18.70
10	84	OD SCC	91 % TW	2.24	HTS SF	-18.55
8	85	OD IGA	ADI	0.39	HTS SF	-17.58
				8.04	HTS SF	-10.96

Table 2 (Cont'd)



Plant: R. E. Ginna Station
Outage: 1990 Resolution

Steam Generator: B

All Reportable Indications (20% and greater)

ROW	COL	INDICATION	VALUE	VOLTS	LOCATION	INCHES
11	85	OD IGA	ADI	4.46	HTS SF	-16.87
14	86	OD SCC	89 % TW	0.37	HTS SF	-15.98
15	86	OD SCC	72 % TW	2.17	HTS SF	-17.69
15	86	OD SCC	77 % TW	0.96	HTS SF	-18.29
1	92	OD WASTAGE	27 % TW	1.43	HTS SF	+11.19
1	92	OD WASTAGE	38 % TW	1.84	CTS SF	+11.24

TOTAL TUBES FOUND: 282

TOTAL INDICATIONS FOUND: 336



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

DENT - VOLTS

LOCATION	<6.00	6.00-11	12.00-1	18.00-2	30.00-5	>54.99	TOTAL
1. HTS PF	0	0	0	0	0	0	0
2. HTS MID	42	180	94	82	20	0	418
3. HTS SF	22	15	2	4	0	0	43
4. HTS-H1	2	14	4	5	2	2	29
5. H1	1	19	13	22	25	14	99
6. H1-H2	12	52	38	42	32	3	179
7. H2	0	0	0	0	0	0	0
8. H2-H3	1	4	3	3	1	0	12
9. H3	0	1	0	0	3	0	4
10. H3-H4	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0
13. H5	3	4	0	7	0	1	15
14. H5-H6	0	6	0	2	6	5	19
15. H6	7	11	3	12	10	19	62
16. >H6	1	1	6	2	1	0	11
17. AVB1	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0
25. >C6	2	15	10	2	0	0	29
26. C6	2	12	3	5	7	2	31
27. C6-C5	0	0	0	0	0	1	1
28. C5	4	4	0	1	1	0	10
29. C5-C4	0	1	1	0	0	0	2
30. C4	0	1	1	2	0	0	4
31. C4-C3	0	1	3	0	0	0	4
32. C3	0	0	1	1	0	0	2
33. C3-C2	0	0	0	1	0	0	1
34. C2	0	0	1	2	2	0	5
35. C2-C1	0	3	0	2	0	0	5
36. C1	2	5	1	2	0	0	10
37. C1-CTS	1	4	1	2	0	0	8
38. CTS SF	15	10	0	0	0	0	25
39. CTS MID	31	18	1	0	0	0	50
40. CTS PF	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0
TOTALS :	148	381	186	199	110	52	1076
PERCENT:	13.8	35.4	17.3	18.5	10.2	4.8	

Table 3



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

OBSTRUCTED - MILS

LOCATION	<610	610-679	680-699	700-719	720-739	>739	TOTAL
1. HTS PF	0	0	0	0	0	1	1
2. HTS MID	0	0	0	0	0	0	0
3. HTS SF	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0	0
5. H1	0	0	0	0	0	10	10
6. H1-H2	0	0	0	0	0	1	1
7. H2	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	1	1
14. H5-H6	0	0	0	0	0	1	1
15. H6	0	0	0	0	1	6	7
16. >H6	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0
25. >C6	0	0	0	0	4	2	6
26. C6	0	0	0	0	2	0	2
27. C6-C5	0	0	0	0	0	2	2
28. C5	0	0	0	0	0	1	1
29. C5-C4	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	1	1
31. C4-C3	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0
TOTALS :	0	0	0	0	7	27	34
PERCENT:	0.0	0.0	0.0	0.0	20.6	79.4	

Table 3 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

BULGES - VOLTS

LOCATION	<10.00	10.00-1	20.00-2	30.00-3	>39.99	TOTAL
1. HTS PF	0	0	0	0	0	0
2. HTS MID	0	0	0	0	0	0
3. HTS SF	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0
5. H1	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0
7. H2	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0
9. H3	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0
11. H4	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0
13. H5	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0
15. H6	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0
26. C6	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0
28. C5	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0
30. C4	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0
32. C3	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0
34. C2	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0
36. C1	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0
39. CTS MID	3	4	1	0	0	8
40. CTS PF	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0
TOTALS :	3	4	1	0	0	8
PERCENT:	37.5	50.0	12.5	0.0	0.0	

Table 3 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: A

OD SCC - % TW									
LOCATION	SQR	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	0	0	5	4	3	6	4	5	27
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0	0	0	0
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	0	0	5	4	3	6	4	5	27
PERCENT:	0.0	0.0	18.5	14.8	11.1	22.2	14.8	18.5	

Table 3 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: A

OD IGA - % TW									
LOCATION	ADI	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	23	0	0	0	0	0	0	0	23
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0	0	0	0
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	23	0	0	0	0	0	0	0	23
PERCENT:	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Table 3 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

OD WASTAGE - % TW									
LOCATION	UDS	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	0	0	0	0	0	0	0	0	0
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	2	877	313	0	0	0	0	0	1192
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	4	1	0	0	0	0	0	5
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	1	161	12	0	0	0	0	0	174
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	3	1042	326	0	0	0	0	0	1371
PERCENT:	0.2	76.0	23.8	0.0	0.0	0.0	0.0	0.0	

Table 3 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

OD (general) - % TW

LOCATION	ADS	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	21	0	0	0	0	0	0	0	21
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	1	1	1	0	0	0	0	0	3
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	1	1	0	0	0	0	0	2
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	2	0	0	0	0	0	2
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	1	5	0	0	0	0	0	6
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	3	0	0	0	0	0	3
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	1	0	0	0	0	0	0	1
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	2	0	0	0	0	0	0	0	2
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	24	4	12	0	0	0	0	0	40
PERCENT:	60.0	10.0	30.0	0.0	0.0	0.0	0.0	0.0	

Table 3 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

DENT - VOLTS

LOCATION	<6.00	6.00-11	12.00-1	18.00-2	30.00-5	>59.99	TOTAL
1. HTS PF	0	0	0	0	0	0	0
2. HTS MID	70	206	95	78	25	0	474
3. HTS SF	30	17	6	4	2	0	59
4. HTS-H1	0	1	1	0	0	0	2
5. H1	2	1	0	0	0	4	9
6. H1-H2	1	4	0	5	11	9	30
7. H2	13	2	0	0	1	0	19
8. H2-H3	0	0	0	0	0	0	0
9. H3	0	0	0	0	4	0	4
10. H3-H4	0	0	0	0	0	0	0
11. H4	10	8	1	2	0	0	21
12. H4-H5	2	0	0	0	0	0	2
13. H5	0	0	1	0	0	0	5
14. H5-H6	11	15	2	3	0	0	31
15. H6	6	17	5	9	6	1	44
16. >H6	15	19	0	4	0	0	38
17. AVB1	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0
25. >C6	7	36	16	2	9	3	73
26. C6	0	2	2	2	7	7	20
27. C6-C5	1	3	0	1	1	1	7
28. C5	7	2	0	0	0	0	9
29. C5-C4	0	0	0	0	0	0	0
30. C4	4	1	0	0	0	0	5
31. C4-C3	0	1	0	0	0	0	1
32. C3	1	0	0	0	1	0	2
33. C3-C2	0	0	0	0	1	0	1
34. C2	1	1	1	1	0	0	4
35. C2-C1	1	1	0	2	1	0	5
36. C1	2	8	1	3	0	0	14
37. C1-CTS	4	0	0	0	0	0	4
38. CTS SF	42	50	5	0	0	0	97
39. CTS MID	85	106	20	1	0	0	212
40. CTS PF	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0
TOTALS :	315	505	156	120	71	25	1192
PERCENT:	26.4	42.4	13.1	10.1	6.0	2.1	

Table 4

Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

OBSTRUCTED - MILS

LOCATION	<610	610-679	680-699	700-719	720-739	>739	TOTAL
1. HTS PF	0	0	0	0	0	0	0
2. HTS MID	0	0	0	0	0	0	0
3. HTS SF	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	4	4
5. H1	0	0	0	0	0	1	1
6. H1-H2	0	0	0	0	0	1	1
7. H2	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0
16. VH6	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0
18. VAVB1	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0
20. VAVB2	0	0	0	0	0	0	0
21. VAVB3	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	1	0	1
23. VAVB4	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0
25. VC6	0	0	2	2	2	2	8
26. C6	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0
TOTALS :	0	0	2	2	3	8	15
PERCENT:	0.0	0.0	13.3	13.3	20.0	53.3	

Table 4 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: B

BULGES - VOLTS

LOCATION	<10.00	10.00-1	20.00-2	30.00-3	>34.99	TOTAL
1. HTS PF	0	0	0	0	0	0
2. HTS MID	0	2	0	0	0	2
3. HTS SF	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	1	1
5. H1	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0
7. H2	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0
9. H3	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0
11. H4	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0
13. H5	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0
15. H6	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0
26. C6	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0
28. C5	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0
30. C4	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0
32. C3	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0
34. C2	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0
36. C1	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0
TOTALS :	0	2	0	0	1	3
PERCENT:	0.0	66.7	0.0	0.0	33.3	

Table 4 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: B

OD SCC - % TW									
LOCATION	SQR	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	0	1	4	13	15	21	20	17	91
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0	0	0	0
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	0	1	4	13	15	21	20	17	91
PERCENT:	0.0	1.1	4.4	14.3	16.5	23.1	22.0	18.7	

Table 4 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: B

OD IGA - % TW									
LOCATION	ADI	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	126	0	0	0	0	0	0	0	126
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	0	0	0	0	0	0	0	0
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	0	0	0	0	0	0	0	0
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	126	0	0	0	0	0	0	0	126
PERCENT:	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Table 4 (Cont'd)



Plant: GINNA
 Outage: 1990 Res.

Steam Generator: B

OD WASTAGE - % TW									
LOCATION	UDS	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	0	0	0	0	0	0	0	0	0
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	652	74	1	0	0	0	0	727
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	0	0	0	0	0	0	0	0
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	0	0	0	0	0	0	0	0
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	0	0	0	0	0	0	0
33. C3-C2	0	0	0	0	0	0	0	0	0
34. C2	0	0	0	0	0	0	0	0	0
35. C2-C1	0	1	0	0	0	0	0	0	1
36. C1	0	0	0	0	0	0	0	0	0
37. C1-CTS	0	107	3	0	0	0	0	0	110
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	0	0	0	0	0	0	0	0	0
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	0	760	77	1	0	0	0	0	838
PERCENT:	0.0	90.7	9.2	0.1	0.0	0.0	0.0	0.0	

Table 4 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

OD (general) - % TW

LOCATION	ADS	<20	20-39	40-59	60-69	70-79	80-89	>89	TOTAL
1. HTS PF	0	0	0	0	0	0	0	0	0
2. HTS MID	38	0	2	0	0	0	0	0	40
3. HTS SF	0	0	0	0	0	0	0	0	0
4. HTS-H1	0	4	4	0	0	0	0	0	8
5. H1	0	0	0	0	0	0	0	0	0
6. H1-H2	0	0	0	0	0	0	0	0	0
7. H2	0	0	0	0	0	0	0	0	0
8. H2-H3	0	0	0	0	0	0	0	0	0
9. H3	0	0	0	0	0	0	0	0	0
10. H3-H4	0	0	0	0	0	0	0	0	0
11. H4	0	0	0	0	0	0	0	0	0
12. H4-H5	0	0	0	0	0	0	0	0	0
13. H5	0	0	0	0	0	0	0	0	0
14. H5-H6	0	0	0	0	0	0	0	0	0
15. H6	0	0	0	0	0	0	0	0	0
16. >H6	0	0	0	0	0	0	0	0	0
17. AVB1	0	0	0	0	0	0	0	0	0
18. >AVB1	0	0	0	0	0	0	0	0	0
19. AVB2	0	1	0	0	0	0	0	0	1
20. >AVB2	0	0	0	0	0	0	0	0	0
21. >AVB3	0	0	0	0	0	0	0	0	0
22. AVB3	0	1	0	0	0	0	0	0	1
23. >AVB4	0	0	0	0	0	0	0	0	0
24. AVB4	0	0	0	0	0	0	0	0	0
25. >C6	0	0	0	0	0	0	0	0	0
26. C6	0	0	0	0	0	0	0	0	0
27. C6-C5	0	0	0	0	0	0	0	0	0
28. C5	0	0	0	0	0	0	0	0	0
29. C5-C4	0	0	0	0	0	0	0	0	0
30. C4	0	0	0	0	0	0	0	0	0
31. C4-C3	0	0	0	0	0	0	0	0	0
32. C3	0	0	2	0	0	0	0	0	2
33. C3-C2	0	0	1	0	0	0	0	0	1
34. C2	0	0	1	0	0	0	0	0	1
35. C2-C1	0	0	0	0	0	0	0	0	0
36. C1	0	0	4	0	0	0	0	0	4
37. C1-CTS	0	1	1	0	0	0	0	0	2
38. CTS SF	0	0	0	0	0	0	0	0	0
39. CTS MID	1	0	0	0	0	0	0	0	1
40. CTS PF	0	0	0	0	0	0	0	0	0
41. OTHER	0	0	0	0	0	0	0	0	0
TOTALS :	39	7	15	0	0	0	0	0	61
PERCENT:	63.9	11.5	24.6	0.0	0.0	0.0	0.0	0.0	

Table 4 (Cont'd)

4.0 OBSERVATIONS

The results of the examination indicate that IGA and IGSCC continue to be active within the tubesheet crevice region on the inlet side of each steam generator. As in the past, IGA/SCC is much more prevalent in the "B" steam generator with 108 new (plus 5 deplugged) IGA indications and 49 new (plus 23 deplugged) IGSCC indications reported. In the "A" steam generator, 16 new IGA indications and 22 new IGSCC indications were reported.

The majority of the inlet tubesheet crevice corrosion indications are IGA/SCC of the mil-annealed Inconel 600 tube material. This form of corrosion is believed to be the result of the tubesheet crevices forming an alkaline environment. This environment has developed over the years as deposits and active species like sodium and phosphate, have reacted, changing a neutral or inhibited crevice into the aggressive environment that presently exists. Table 5 shows the steam generator IGA/SCC history.



GINNA'S STEAM GENERATORS

CREVICE CORROSION INDICATION HISTORY

B-Steam Generator (A- Steam Generator)

	Not Sizeable	0-25%	26-50%	51-75%	76-100%	A-S/G Total	B-S/G Total
March 1979	0	0	0	2	0	(0)	2
December 1979	0	0	6	5	0	(0)	11
April 1980	19	1	2	7	2	(0)	31
November 1980	2	0	0	1	0	(0)	3
April 1981	0	5	4	5	0	(0)	14
February 1982	1	0	1	6	5	(0)	13
October 1982	27	4	5	7(1)	16	(1)	59
April 1983	11(3)	3(1)	15	7	15	(4)	51
May 1984	5	0	0(1)	1	2	(1)	8
March 1985	23	4	6	9(1)	27(1)	(2)	69
February 1986	3(2)	9(2)	1	14(1)	25	(5)	52
February 1987	82(17)	1	8(1)	16(3)	46(13)	(34)	153
February 1988	22(3)	0	1	7(2)	11(2)	(7)	41
March 1988	1	0	0	1	4	(0)	6
March 1989	150(14)	0	4	35(2)	79(8)	(24)	268
April 1990	108(16)	1(2)	8(3)	8(6)	32(11)	(38)	157
TOTALS	454(55)	28(5)	61(5)	131(16)	264(35)	(116)	938

TABLE 5



4.0 OBSERVATIONS (CONT)

Along with IGA/SCC in the crevice, PWSCC at the roll transition appears to have a slight increase in growth during the last operating cycle. This mechanism was first addressed in 1989 and this year there were 23 PWSCC indications in "B" steam generator and 37 PWSCC indications in "A" steam generator. These numbers include tubes that may have PWSCC in combination with IGA or SCC in the crevice.

A large volume, typically <20% TW, wastage type condition exists just above the tubesheet secondary face of both generators. A small percentage of the tubes, generally toward the center of the bundle, have this condition. Several of the tubes did have penetrations >20% TW. One tube in the "B" steam generator was listed for corrective action from this condition. These tubes were essentially unchanged from prior inspections. It is believed that these wastage indications were caused by the original water chemistry when phosphate was used as a buffering medium.

Small indications of probable copper deposits were also found in the tubesheet crevice region randomly located throughout each steam generator.



4.0 OBSERVATIONS (CONT)

Minor denting has been detected at the tubesheet secondary face for many years in both steam generators, primarily on the inlet side. Denting was also detected at the 1st, 2nd and 6th tube support plates randomly throughout the generator, and in most cases was of greater magnitude on size than that at the tubesheet secondary side face. In general, minor distortions of most of the tube support signals were seen.

The denting phenomenon and minor distortions at the tubesheet and support plates can be attributed to secondary side corrosion product buildup in the annular region between the tube outside surface and the carbon steel support member. Comparisons with previous data indicates that a small increase in the extent or magnitude of denting has occurred from what has been detected by previous inspections.

Indications were detected at the support plates in the cold leg of the "B" steam generator in tube R39-C67. A review of the data base and previous data revealed these indications to be present and were recorded. Examination of these intersections with MRPC indicated shallow indications within the support plates believed to be less than 40% TW. Due to a distortion of the signal on the bobbin coil examination, this tube was preventatively plugged.



4.0 OBSERVATIONS (CONT)

Additional MRPC at tube intersections in the Hot Leg of both steam generators showed no indications within the support plates. This sample included tubes with and without denting at the support intersection.

In summary, the "A" Steam Generator had 75 tubes that were found to have "new" tubesheet crevice indications. The "B" Steam Generator had 180 "new" tubesheet crevice indications.

There were six (6) tubes in the "A" Steam Generator and two (2) tubes in the "B" Steam Generator recorded with indications at the anti-vibration bar intersections. These indications are greater than 20% but less than the repair limit and have not changed significantly since previous examinations. These tubes will be reexamined at the next inspection to reconfirm no active fretting wear damage mechanism exists. In light of the fact that only a small number of tubes exhibit these indications, AVB fretting wear is not considered to be a major concern at this time but will be monitored for any growth during future outages.



5.0 CORRECTIVE ACTION

Table 6 has been generated to identify tubes with crevice indications or with indications which exceed the repair criteria. This table also shows the location and the axial extent of the indication and what corrective action was taken on these tubes. Tubes requiring repair due to hot leg tubesheet crevice indications were identified by the appropriate codes: an absolute drift indication signal (ADI) of the Mix-2 Channel along with the IGA designation and/or quantifiable IGSCC indications on the 400 kHz data.

There were 28 tubes deplugged in the "B" generator in an effort to return them to service. These de-plugged tubes consisted of tubes with tubesheet crevice indications recorded in earlier outages. These tubes were inspected full length to insure no indications existed that would prevent them from being returned to service.

The "A" steam generator had a total of 75 new repairable indications. The "B" steam generator had a total of 183 new repairable indications (not counting the de-plugged tubes).

A Ginna Steam Generator Tube Inspection and Corrective Action History has been tabulated on Table 7.

1990 Outage Repairable Tubes

PLANT: GINNA

GENERATOR: A

TOTAL TUBES: 3260

OUT OF SERVICE (#): 173

● - PKSCC (37)

■ - SCC (22)

▲ - IGA (16)

TOTAL TUBES ASSIGNED: 75

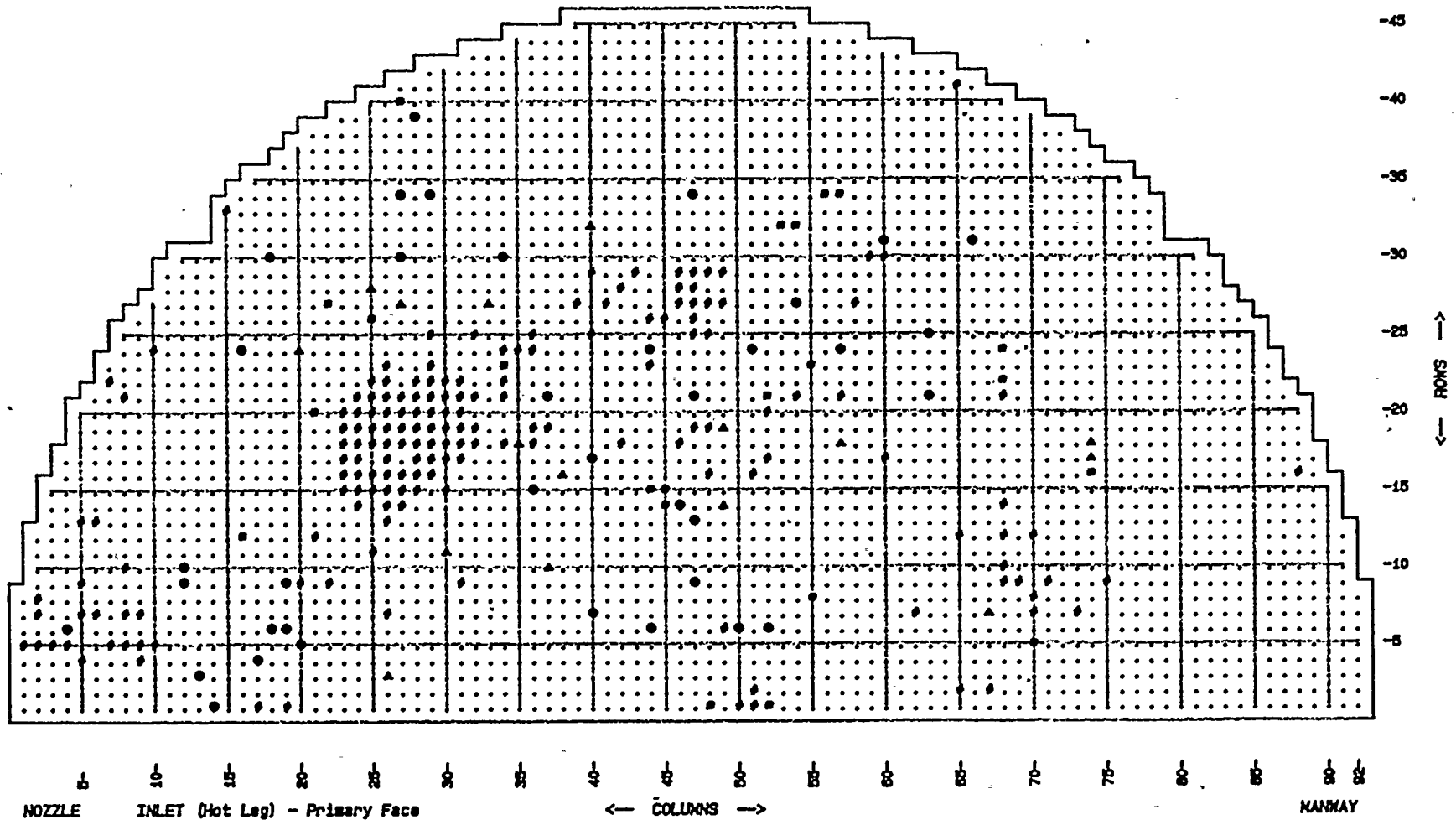


Figure 2



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
6	4	1990 Res.	TYPE 1		11.68	HTS SF	-19.90
		1990 Res.	ROLL TRANS		0.50	HTS PF	+ 2.04
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
9	12	1990 Res.	TYPE 1		1.46	HTS SF	-19.20
		1990 Res.	ROLL TRANS		0.67	HTS PF	+ 2.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
10	12	1990 Res.	TYPE 1		2.96	HTS SF	-19.00
		1990 Res.	ROLL TRANS		1.07	HTS PF	+ 2.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	13	1990 Res.	DISTORT ROLL		5.34	HTS SF	-19.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	14	1990 Res.	TYPE 1		1.42	HTS SF	-19.00
		1990 Res.	ROLL TRANS		0.67	HTS PF	+ 2.73
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
12	16	1990 Res.	OD WASTAGE	11 % TW	1.03	HTS SF	+ 0.40
		1990 Res.	OD SCC	26 % TW	0.39	HTS SF	-12.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	16	1990 Res.	TYPE 1		3.57	HTS SF	-19.20
		1990 Res.	ROLL TRANS		1.17	HTS PF	+ 2.55
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
4	17	1990 Res.	OD WASTAGE	11 % TW	1.24	HTS SF	+ 0.40
		1990 Res.	TYPE 1		3.58	HTS SF	-19.00
		1990 Res.	ROLL TRANS		1.14	HTS PF	+ 2.53
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
6	18	1990 Res.	DISTORT ROLL		3.79	HTS SF	-19.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
30	18	1990 Res.	TYPE 1		3.62	HTS SF	-19.50
		1990 Res.	ROLL TRANS		1.40	HTS PF	+ 2.46
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
6	19	1990 Res.	DISTORT ROLL		3.82	HTS SF	-19.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
9	19	1990 Res.	OD WASTAGE	12 % TW	3.71	HTS SF	+ 2.20
		1990 Res.	DISTORT ROLL		3.49	HTS SF	-19.50
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
5	20	1990 Res.	TYPE 1		2.54	HTS SF	-19.50
		1990 Res.	ROLL TRANS		1.02	HTS PF	+ 2.59
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	20	1990 Res.	OD (general)	ADS	2.62	HTS SF	-16.60
		1990 Res.	OD IGA	ADI	1.28	HTS PF	+ 5.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
20	21	1990 Res.	OD SCC	73 % TW	0.61	HTS SF	-14.30
		1990 Res.	OD IGA	ADI	1.53	HTS PF	+ 5.24
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
27	22	1990 Res.	OD SCC	73 % TW	0.36	HTS SF	- 7.70
		1990 Res.	OD SCC	89 % TW	0.55	HTS SF	-12.40
		1990 Res.	OD IGA	ADI	1.31	HTS SF	-17.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
26	25	1990 Res.	OD SCC	44 % TW	0.32	HTS SF	-16.05
		1990 Res.	OD IGA	ADI	6.74	HTS SF	-18.25
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
28	25	1990 Res.	OD IGA	ADI	6.03	HTS SF	-18.24
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	26	1990 Res.	OD IGA	ADI	4.88	HTS SF	-14.82
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
27	27	1990 Res.	OD IGA	ADI	4.35	HTS SF	- 6.53
		1990 Res.	OD IGA	ADI	3.42	HTS SF	-14.16
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
30	27	1990 Res.	DISTORT ROLL		2.91	HTS SF	-19.48
		1990 Res.	ROLL TRANS		1.44	HTS PF	+ 2.27
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
34	27	1990 Res.	TYPE 1		3.49	HTS SF	-19.48
		1990 Res.	ROLL TRANS		2.05	HTS PF	+ 2.42

Table 6



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
40	27	1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
		1990 Res.	OD (general)	ADS	2.27	HTS SF	-7.73
		1990 Res.	OD (general)	ADS	3.93	HTS SF	-15.21
		1990 Res.	OD SCC	55 % TW	0.56	HTS SF	-17.52
		1990 Res.	OD SCC	73 % TW	0.58	HTS SF	-17.97
		1990 Res.	OD IGA	ADI	1.16	HTS PF	+3.87
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
39	28	1990 Res.	TYPE 1		3.54	HTS SF	-19.37
		1990 Res.	ROLL TRANS		2.90	HTS PF	+2.27
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
34	29	1990 Res.	TYPE 1		5.68	HTS SF	-19.52
		1990 Res.	ROLL TRANS		3.88	HTS PF	+2.46
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
11	30	1990 Res.	OD IGA	ADI	3.00	HTS SF	-18.40
		1990 Res.	OD WASTAGE	14 % TW	2.77	CTS SF	+2.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
27	33	1990 Res.	OD WASTAGE	14 % TW	6.10	HTS SF	+0.56
		1990 Res.	OD IGA	ADI	4.58	HTS SF	-15.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
23	34	1990 Res.	OD WASTAGE	19 % TW	1.63	HTS SF	+2.69
		1990 Res.	OD WASTAGE	29 % TW	2.76	HTS SF	+2.41
		1990 Res.	OD WASTAGE	24 % TW	2.12	HTS SF	+1.99
		1990 Res.	OD SCC	83 % TW	1.00	HTS SF	-18.03
		1990 Res.	OD WASTAGE	21 % TW	1.40	CTS SF	+2.80
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
30	34	1990 Res.	TYPE 1		5.60	HTS SF	-19.54
		1990 Res.	ROLL TRANS		1.25	HTS PF	+2.26
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	35	1990 Res.	OD WASTAGE	14 % TW	1.41	HTS SF	+3.05
		1990 Res.	OD WASTAGE	8 % TW	4.28	HTS SF	+3.21
		1990 Res.	OD IGA	ADI	4.18	HTS SF	-3.91
		1990 Res.	OD WASTAGE	17 % TW	1.58	HTS SF	+2.78
		1990 Res.	OD WASTAGE	19 % TW	0.74	HTS SF	+3.30
		1990 Res.	OD WASTAGE	14 % TW	0.79	HTS SF	+2.40
		1990 Res.	OD WASTAGE	15 % TW	1.08	CTS SF	+3.00
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
15	36	1990 Res.	DISTORT ROLL		2.05	HTS SF	-19.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
10	37	1990 Res.	OD IGA	ADI	1.75	HTS SF	-15.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	37	1990 Res.	OD WASTAGE	26 % TW	8.80	HTS SF	+2.05
		1990 Res.	DISTORT ROLL		6.59	HTS SF	-19.32
		1990 Res.	OD WASTAGE	25 % TW	4.75	CTS SF	+2.30
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
16	38	1990 Res.	OD WASTAGE	16 % TW	1.34	HTS SF	+1.10
		1990 Res.	OD IGA	ADI	1.58	HTS SF	-11.30
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
7	40	1990 Res.	DISTORT ROLL		2.14	HTS SF	-19.30
		1990 Res.	SLEEVED	LEAK LIM		HTS PF	+27.00
17	40	1990 Res.	OD WASTAGE	19 % TW	1.36	HTS SF	+3.69
		1990 Res.	OD WASTAGE	15 % TW	1.23	HTS SF	+3.20
		1990 Res.	OD WASTAGE	7 % TW	0.63	HTS SF	+0.98
		1990 Res.	TYPE 1		4.61	HTS SF	-19.38
		1990 Res.	ROLL TRANS		2.77	HTS PF	+2.23
		1990 Res.	OD WASTAGE	7 % TW	3.05	CTS SF	+2.00
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
32	40	1990 Res.	OD IGA	ADI	2.03	HTS SF	-6.94
		1990 Res.	OD IGA	ADI	2.32	HTS SF	-13.64
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
6	44	1990 Res.	DISTORT ROLL		1.52	HTS SF	-19.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00

Table 6 (Cont'd)

Plant: GINNA
 Outage: 1990 Res.

Steam Generator: A

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
15	44	1990 Res.	OD WASTAGE	24 % TW	0.76	HTS SF	+ 3.37
		1990 Res.	OD SCC	96 % TW	0.57	HTS SF	- 2.70
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
24	44	1990 Res.	OD WASTAGE	15 % TW	1.51	HTS SF	+ 1.61
		1990 Res.	OD WASTAGE	7 % TW	3.68	HTS SF	+ 1.11
		1990 Res.	DISTORT ROLL		6.34	HTS SF	-19.29
		1990 Res.	SLEEVED	LEAK LIM		HTS PF	+27.00
14	45	1990 Res.	OD WASTAGE	3 % TW	0.67	HTS SF	+ 3.44
		1990 Res.	OD SCC	64 % TW	0.50	HTS SF	- 4.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
15	45	1990 Res.	OD SCC	81 % TW	3.86	HTS SF	-11.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
14	46	1990 Res.	OD WASTAGE	2 % TW	1.16	HTS SF	+ 3.40
		1990 Res.	OD WASTAGE	10 % TW	1.10	HTS SF	+ 1.53
		1990 Res.	TYPE 1		4.53	HTS SF	-19.70
		1990 Res.	ROLL TRANS		10.70	HTS PF	+ 2.48
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
9	47	1990 Res.	OD WASTAGE	14 % TW	2.26	HTS SF	+ 1.59
		1990 Res.	OD WASTAGE	11 % TW	2.15	HTS SF	+ 0.98
		1990 Res.	TYPE 1		3.01	HTS SF	-20.00
		1990 Res.	ROLL TRANS		2.99	HTS PF	+ 2.43
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
13	47	1990 Res.	OD WASTAGE	15 % TW	1.68	HTS SF	+ 3.11
		1990 Res.	OD WASTAGE	8 % TW	1.25	HTS SF	+ 1.06
		1990 Res.	TYPE 1		4.14	HTS SF	-19.02
		1990 Res.	ROLL TRANS		7.05	HTS PF	+ 2.40
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
21	47	1990 Res.	OD WASTAGE	17 % TW	2.58	HTS SF	+ 1.14
		1990 Res.	TYPE 1		2.57	HTS SF	-19.08
		1990 Res.	ROLL TRANS		5.60	HTS PF	+ 2.49
		1990 Res.	OD WASTAGE	19 % TW	0.72	CTS SF	+ 1.70
		1990 Res.	OD WASTAGE	12 % TW	1.70	CTS SF	+ 0.70
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
34	47	1990 Res.	TYPE 1		5.82	HTS SF	-19.49
		1990 Res.	ROLL TRANS		1.44	HTS PF	+ 2.27
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	48	1990 Res.	OD SCC	78 % TW	0.53	HTS SF	-19.50
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
14	49	1990 Res.	OD WASTAGE	31 % TW	0.54	HTS SF	+ 3.60
		1990 Res.	OD IGA	ADI	5.04	HTS SF	- 5.00
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
19	49	1990 Res.	OD WASTAGE	19 % TW	6.10	HTS SF	+ 1.66
		1990 Res.	OD IGA	ADI	2.54	HTS SF	-11.52
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
6	50	1990 Res.	ROLL TRANS		24.36	HTS PF	+ 2.46
		1990 Res.	TYPE 1		4.18	HTS SF	-20.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	51	1990 Res.	ROLL TRANS		3.81	HTS PF	+ 2.43
		1990 Res.	OD WASTAGE	18 % TW	0.88	HTS SF	+ 1.90
		1990 Res.	TYPE 1		3.93	HTS SF	-19.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	52	1990 Res.	OD SCC	62 % TW	0.39	HTS SF	-16.10
		1990 Res.	OD SCC	45 % TW	0.55	HTS SF	-17.30
		1990 Res.	OD SCC	58 % TW	0.45	HTS SF	-17.90
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
6	52	1990 Res.	ROLL TRANS		7.48	HTS PF	+ 2.40

Table 6 (Cont'd)

Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
		1990 Res.	TYPE 1		2.53	HTS SF	-20.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	52	1990 Res.	OD WASTAGE	3 % TW	1.03	HTS SF	+ 0.50
		1990 Res.	OD SCC	80 % TW	0.44	HTS SF	-16.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
32	53	1990 Res.	OD SCC	77 % TW	0.46	HTS SF	-15.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
27	54	1990 Res.	ROLL TRANS		9.29	HTS PF	+ 2.58
		1990 Res.	OD WASTAGE	13 % TW	1.55	HTS SF	+ 1.20
		1990 Res.	TYPE 1		4.34	HTS SF	-19.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
32	54	1990 Res.	OBSTRUCTED	740 MILS		HTS SF	+34.40
		1990 Res.	OD SCC	93 % TW	0.64	HTS SF	-17.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	55	1990 Res.	OD SCC	32 % TW	0.28	HTS SF	-17.60
		1990 Res.	OD SCC	32 % TW	0.30	HTS SF	-18.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
23	55	1990 Res.	OD WASTAGE	4 % TW	0.89	HTS SF	+ 1.50
		1990 Res.	OD SCC	31 % TW	0.31	HTS SF	-16.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
34	56	1990 Res.	OD SCC	95 % TW	0.43	HTS SF	-18.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	57	1990 Res.	OD WASTAGE	16 % TW	5.30	HTS SF	+ 2.81
		1990 Res.	OD WASTAGE	15 % TW	2.06	HTS SF	+ 2.46
		1990 Res.	OD IGA	ADI	4.67	HTS SF	-17.87
		1990 Res.	OD WASTAGE	5 % TW	1.50	CTS SF	+ 1.71
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
24	57	1990 Res.	OD WASTAGE	9 % TW	1.37	HTS SF	+ 1.92
		1990 Res.	OD WASTAGE	31 % TW	0.78	HTS SF	+ 1.48
		1990 Res.	OD WASTAGE	5 % TW	4.81	HTS SF	+ 1.00
		1990 Res.	DISTORT ROLL		8.20	HTS SF	-19.44
		1990 Res.	ROLL TRANS		5.62	HTS PF	+22.38
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
34	57	1990 Res.	OD SCC	96 % TW	0.65	HTS SF	-17.35
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
31	60	1990 Res.	TYPE 1		2.54	HTS SF	-19.83
		1990 Res.	ROLL TRANS		1.94	HTS PF	+ 2.34
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	63	1990 Res.	OD WASTAGE	9 % TW	7.17	HTS SF	+ 1.52
		1990 Res.	TYPE 1		2.56	HTS SF	-19.81
		1990 Res.	ROLL TRANS		2.57	HTS PF	+ 2.34
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
25	63	1990 Res.	TYPE 1		4.76	HTS SF	-19.32
		1990 Res.	OD IGA	ADI	0.41	HTS PF	+ 3.81
		1990 Res.	ROLL TRANS		1.73	HTS PF	+ 2.34
		1990 Res.	PLUGGED	BAREHOLE		HTS PF	
		1990 Res.	PLUGGED	CE WLD S		CTS PF	
31	66	1990 Res.	DISTORT ROLL		1.69	HTS SF	-19.50
		1990 Res.	PLUGGED	BAREHOLE		HTS PF	
		1990 Res.	PLUGGED	CE WLD S		CTS PF	
7	67	1990 Res.	OD WASTAGE	13 % TW	2.61	HTS SF	+ 0.50
		1990 Res.	OD IGA	ADI	5.22	HTS SF	-16.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	68	1990 Res.	OD SCC	67 % TW	1.69	HTS SF	-13.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	68	1990 Res.	OD (general)	ADS	5.42	HTS SF	-18.20
		1990 Res.	OD SCC	70 % TW	0.90	HTS SF	-19.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	70	1990 Res.	OD SCC	93 % TW	0.91	HTS SF	-19.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
16	74	1990 Res.	OD SCC	20 % TW	0.92	HTS SF	-10.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: A

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
17	74	1990 Res.	OD IGA	ADI	3.60	HTS SF	-18.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	74	1990 Res.	OD IGA	ADI	4.47	HTS SF	-18.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
TOTAL TUBES FOUND				=	75		
TOTAL INDICATIONS FOUND				=	272		
TOTAL TUBES IN INPUT FILE				=	75		
TOTAL TUBES INSPECTED				=	75		

Table 6 (Cont'd)

Page 51 of 69



17
18
19
20

1990 Outage Repairable Tubes

PLANT: GINNA

GENERATOR: B

TOTAL TUBES: 3260

OUT OF SERVICE (#): 312

● - PWSCC (23)
X - Mastage (1)

■ - SCC (72)
M - Cold Leg Indication (1)

▲ - IGA (113)
* - B&W Sleeve (1)

TOTAL TUBES ASSIGNED: 211

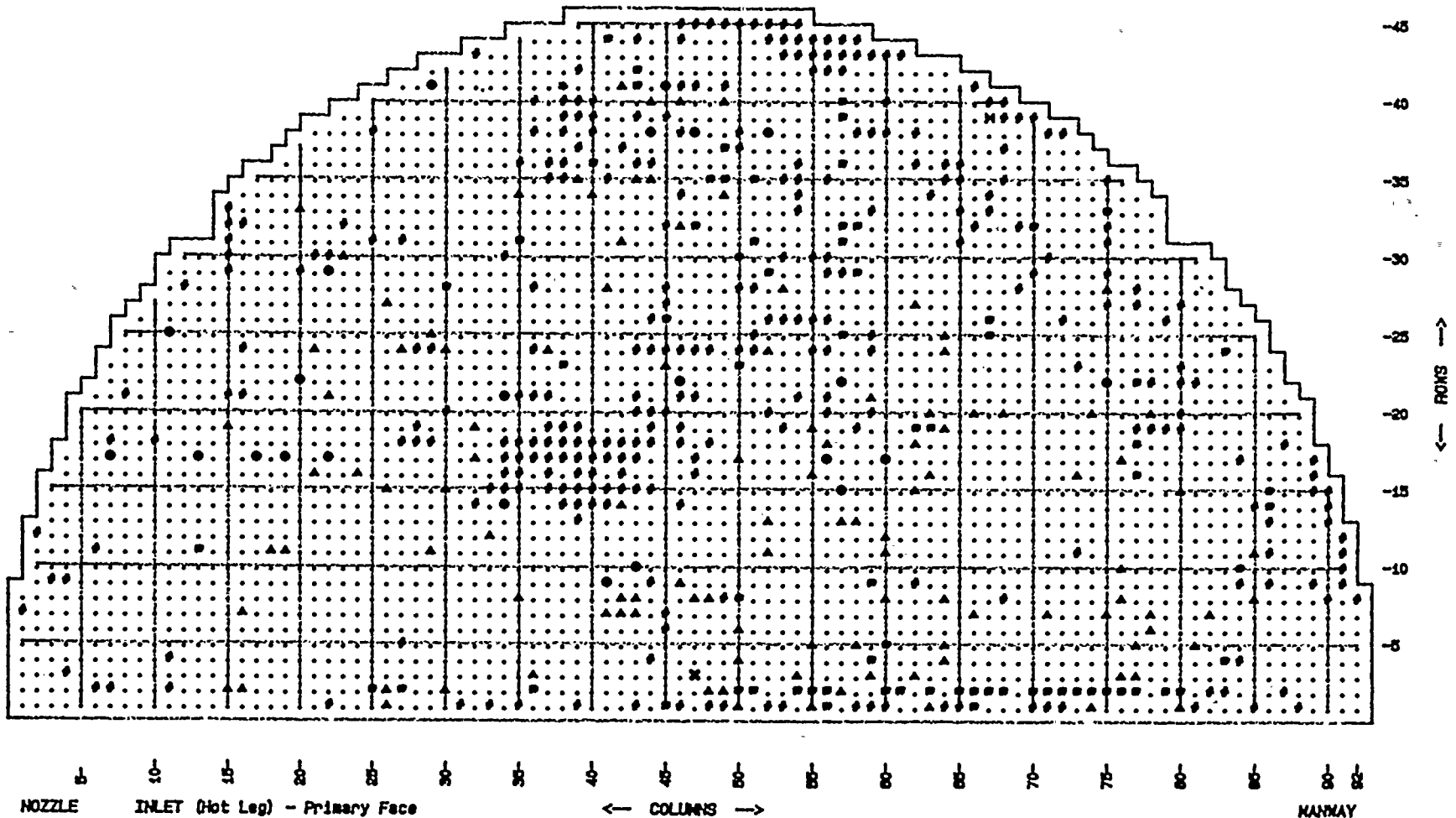


Figure 3



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Indications on Tubes De-plugged in 1990

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
2	15	1990 Res.	OD IGA	ADI	5.42	HTS SF	-15.55
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	16	1990 Res.	OD IGA	ADI	6.47	HTS SF	-15.49
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	25	1990 Res.	OD IGA	ADI	13.96	HTS SF	-16.62
		1990 Res.	OD SCC	59 % TW	0.77	HTS SF	-18.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	27	1990 Res.	OD IGA	ADI	7.66	HTS SF	-15.35
		1990 Res.	OD SCC	93 % TW	0.88	HTS SF	-18.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	30	1990 Res.	OD IGA	ADI	8.80	HTS SF	-15.94
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
28	30	1990 Res.	OD SCC	69 % TW	2.04	HTS SF	-10.70
		1990 Res.	OD SCC	69 % TW	2.55	HTS SF	-16.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
31	35	1990 Res.	OD SCC	69 % TW	3.96	HTS SF	-18.20
		1990 Res.	OD SCC	55 % TW	1.58	HTS SF	-17.18
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	36	1990 Res.	OD SCC	17 % TW	0.84	HTS SF	-17.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	48	1990 Res.	OD IGA	ADI	6.74	HTS SF	-6.06
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	49	1990 Res.	OD IGA	ADI	6.45	HTS SF	-8.83
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	50	1990 Res.	OD SCC	72 % TW	0.80	HTS SF	-17.14
		1990 Res.	OD SCC	69 % TW	0.62	HTS SF	-11.01
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	51	1990 Res.	OD SCC	72 % TW	0.50	HTS SF	-15.07
		1990 Res.	OD IGA	ADI	8.77	HTS SF	-13.96
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	54	1990 Res.	OD SCC	45 % TW	0.53	HTS SF	-16.52
		1990 Res.	OD SCC	44 % TW	0.72	HTS SF	-12.09
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	56	1990 Res.	OD SCC	77 % TW	2.11	HTS SF	-18.95
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	61	1990 Res.	OD SCC	69 % TW	1.52	HTS SF	-13.96
		1990 Res.	OD SCC	64 % TW	1.55	HTS SF	-18.86
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	63	1990 Res.	OD SCC	75 % TW	0.75	HTS SF	-16.62
		1990 Res.	OD SCC	59 % TW	1.03	HTS SF	-18.45
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	65	1990 Res.	OD SCC	74 % TW	0.91	HTS SF	-18.32
		1990 Res.	OD SCC	76 % TW	0.88	HTS SF	-15.26
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	66	1990 Res.	OD SCC	65 % TW	0.93	HTS SF	-16.79
		1990 Res.	OD SCC	56 % TW	1.18	HTS SF	-15.73
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	67	1990 Res.	OD SCC	68 % TW	0.78	HTS SF	-16.57
		1990 Res.	OD SCC	68 % TW	0.82	HTS SF	-17.41
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	68	1990 Res.	OD SCC	65 % TW	0.64	HTS SF	-16.51
		1990 Res.	OD SCC	72 % TW	1.16	HTS SF	-18.74
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	72	1990 Res.	OD SCC	86 % TW	2.41	HTS SF	-16.78
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	73	1990 Res.	OD SCC	94 % TW	2.18	HTS SF	-17.73
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	74	1990 Res.	OD SCC	72 % TW	3.53	HTS SF	-18.59
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	75	1990 Res.	OD SCC	87 % TW	5.41	HTS SF	-17.01
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	76	1990 Res.	OD SCC	93 % TW	4.00	HTS SF	-18.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	77	1990 Res.	OD SCC	86 % TW	1.81	HTS SF	-17.45
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	79	1990 Res.	OD SCC	94 % TW	1.94	HTS SF	-17.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Indications on Tubes De-plugged in 1990

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
2	80	1990 Res.	OD SCC	96 % TW	2.30	HTS SF	-17.20
		1990 Res.	OD SCC	88 % TW	4.26	HTS SF	-18.27
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
TOTAL TUBES FOUND				=	28		
TOTAL INDICATIONS FOUND				=	70		
TOTAL TUBES IN INPUT FILE				=	28		
TOTAL TUBES INSPECTED				=	28		

Table 6 (Cont'd)

Page 54 of 69



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
17	7	1990 Res.	TYPE 1		1.73	HTS SF	-19.20
		1990 Res.	ROLL TRANS		0.80	HTS PF	+ 2.40
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
25	11	1990 Res.	TYPE 1		2.84	HTS SF	-19.38
		1990 Res.	ROLL TRANS		1.54	HTS PF	+ 2.85
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
11	13	1990 Res.	OD SCC	93 % TW	0.60	HTS SF	-18.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	13	1990 Res.	DISTORT ROLL		3.96	HTS SF	-14.43
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
19	15	1990 Res.	OD IGA	ADI	5.13	HTS SF	-17.80
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
7	16	1990 Res.	OD WASTAGE	13 % TW	2.67	HTS SF	+ 1.10
		1990 Res.	OD IGA	ADI	2.89	HTS SF	- 8.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	17	1990 Res.	TYPE 1		1.23	HTS SF	-20.00
		1990 Res.	ROLL TRANS		0.82	HTS PF	+ 2.96
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
11	18	1990 Res.	OD WASTAGE	11 % TW	5.76	HTS SF	+ 1.20
		1990 Res.	OD IGA	ADI	1.67	HTS SF	-16.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
11	19	1990 Res.	OD (general)	ADS	2.52	HTS SF	-15.80
		1990 Res.	OD WASTAGE	10 % TW	12.74	HTS SF	+ 1.30
		1990 Res.	OD IGA	ADI	0.47	HTS PF	+ 5.94
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	19	1990 Res.	DISTORT ROLL		1.29	HTS SF	-19.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	20	1990 Res.	ROLL TRANS		0.49	HTS PF	+ 3.03
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
33	20	1990 Res.	OD IGA	ADI	2.58	HTS SF	-14.70
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
16	21	1990 Res.	OD IGA	ADI	1.60	HTS SF	-15.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	21	1990 Res.	OD IGA	ADI	1.32	HTS SF	-18.80
		1990 Res.	OD WASTAGE	12 % TW	1.10	HTS SF	+ 0.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	22	1990 Res.	DISTORT ROLL		2.74	HTS SF	-19.60
		1990 Res.	ROLL TRANS		1.06	HTS PF	+ 2.90
		1990 Res.	OD IGA	ADI	0.37	HTS PF	+ 4.57
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	22	1990 Res.	OD IGA	ADI	1.75	HTS SF	-16.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
29	22	1990 Res.	DISTORT ROLL		2.31	HTS SF	-20.00
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
30	23	1990 Res.	OD IGA	ADI	3.10	HTS SF	-18.00
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
16	24	1990 Res.	OD IGA	ADI	1.47	HTS SF	-12.20
		1990 Res.	OD WASTAGE	14 % TW	6.88	HTS SF	+ 1.50
		1990 Res.	OD (general)	ADS	1.88	HTS SF	-11.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	26	1990 Res.	OD IGA	ADI	2.63	HTS SF	-17.40
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
2	26	1990 Res.	OD IGA	ADI	2.43	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
15	26	1990 Res.	OD IGA	ADI	2.45	HTS SF	-17.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
27	26	1990 Res.	OD IGA	ADI	1.78	HTS SF	-18.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	27	1990 Res.	OD WASTAGE	20 % TW	11.94	HTS SF	+ 1.40
		1990 Res.	OD IGA	ADI	2.06	HTS SF	-17.00
		1990 Res.	OD (general)	ADS	1.46	HTS SF	-17.40
		1990 Res.	OD IGA	ADI	0.51	HTS PF	+ 4.88
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
11	29	1990 Res.	OD IGA	ADI	5.09	HTS SF	-13.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
25	29	1990 Res.	OD WASTAGE	12 % TW	7.76	HTS SF	+ 1.50

Table 6 (Cont'd)

Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
		1990 Res.	OD (general)	ADS	1.32	HTS SF	-16.60
		1990 Res.	OD IGA	ADI	0.52	HTS PF	+ 5.56
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
41	29	1990 Res.	DISTORT ROLL		1.43	HTS SF	-19.60
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
15	30	1990 Res.	OD WASTAGE	2 % TW	2.45	HTS SF	+ 1.70
		1990 Res.	OD WASTAGE	13 % TW	0.87	HTS SF	+ 0.80
		1990 Res.	OD IGA	ADI	2.42	HTS SF	- 5.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	30	1990 Res.	OD WASTAGE	17 % TW	1.35	HTS SF	+ 0.80
		1990 Res.	OD WASTAGE	19 % TW	5.19	HTS SF	+ 1.10
		1990 Res.	OD IGA	ADI	5.90	HTS SF	-15.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	32	1990 Res.	OD WASTAGE	4 % TW	2.02	HTS SF	+ 2.60
		1990 Res.	OD WASTAGE	4 % TW	0.58	HTS SF	+ 1.10
		1990 Res.	OD WASTAGE	18 % TW	1.15	HTS SF	+ 0.80
		1990 Res.	OD IGA	ADI	4.94	HTS SF	-10.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
19	32	1990 Res.	OD WASTAGE	11 % TW	0.84	HTS SF	+ 2.50
		1990 Res.	OD WASTAGE	2 % TW	2.99	HTS SF	+ 1.90
		1990 Res.	OD WASTAGE	6 % TW	0.53	HTS SF	+ 0.80
		1990 Res.	OD (general)	ADS	5.07	HTS SF	-17.60
		1990 Res.	OD IGA	ADI	0.31	HTS PF	+ 2.46
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
12	33	1990 Res.	OD WASTAGE	11 % TW	1.82	HTS SF	+ 0.50
		1990 Res.	OD IGA	ADI	7.58	HTS SF	-15.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
14	34	1990 Res.	OD WASTAGE	6 % TW	1.50	HTS SF	+ 1.20
		1990 Res.	DISTORT ROLL		2.15	HTS SF	-19.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	34	1990 Res.	OD WASTAGE	14 % TW	3.33	HTS SF	+ 1.80
		1990 Res.	OD SCC	81 % TW	3.99	HTS SF	-16.90
		1990 Res.	DISTORT ROLL		3.85	HTS SF	-19.70
		1990 Res.	OD IGA	ADI	1.69	HTS PF	+ 4.13
		1990 Res.	ROLL TRANS		0.75	HTS PF	+ 3.13
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	35	1990 Res.	OD (general)	ADS	3.08	HTS SF	-14.70
		1990 Res.	OD IGA	ADI	3.03	HTS SF	-15.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
34	35	1990 Res.	OD IGA	ADI	4.49	HTS SF	-17.90
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
3	36	1990 Res.	OD IGA	ADI	5.82	HTS SF	-15.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	37	1990 Res.	OD WASTAGE	22 % TW	4.79	HTS SF	+ 1.40
		1990 Res.	OD IGA	ADI	2.10	HTS SF	-17.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
23	38	1990 Res.	OD WASTAGE	14 % TW	2.34	HTS SF	+ 1.50
		1990 Res.	OD SCC	82 % TW	1.08	HTS SF	- 8.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
41	38	1990 Res.	OD (general)	20 % TW	4.84	HTS PF	+ 7.21
		1990 Res.	OD (general)	30 % TW	2.82	HTS PF	+ 6.09
		1990 Res.	PLUGGED	CE WLD S		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
35	39	1990 Res.	OD IGA	ADI	3.01	HTS SF	-17.80
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
34	40	1990 Res.	OD IGA	ADI	4.26	HTS SF	-18.60
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
36	40	1990 Res.	OD SCC	96 % TW	1.72	HTS SF	-18.70
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
7	41	1990 Res.	OD WASTAGE	18 % TW	0.91	HTS SF	+ 0.30
		1990 Res.	OD IGA	ADI	5.30	HTS SF	-15.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
9	41	1990 Res.	OD IGA	ADI	4.61	HTS SF	-15.30
		1990 Res.	DISTORT ROLL		3.38	HTS SF	-19.90
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
28	41	1990 Res.	OD WASTAGE	19 % TW	7.75	HTS SF	+ 1.40
		1990 Res.	OD (general)	ADS	3.24	HTS SF	- 3.90
		1990 Res.	OD IGA	ADI	1.26	HTS PF	+18.55
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
44	41	1990 Res.	OD SCC	93 % TW	2.64	HTS SF	-18.70
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
7	42	1990 Res.	OD WASTAGE	12 % TW	3.74	HTS SF	+ 0.40
		1990 Res.	OD IGA	ADI	7.35	HTS SF	-16.00
		1990 Res.	OD IGA	ADI	5.22	HTS SF	-15.00
		1990 Res.	OD WASTAGE	1 % TW	2.86	CTS SF	+ 1.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	42	1990 Res.	OD IGA	ADI	4.71	HTS SF	-15.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
14	42	1990 Res.	OD IGA	ADI	3.90	HTS SF	- 5.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
31	42	1990 Res.	OD IGA	ADI	5.05	HTS SF	-18.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
41	42	1990 Res.	OD IGA	ADI	4.27	HTS SF	-18.20
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
7	43	1990 Res.	OD WASTAGE	19 % TW	2.43	HTS SF	+ 0.80
		1990 Res.	OD IGA	ADI	6.01	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	43	1990 Res.	OD IGA	ADI	4.83	HTS SF	-14.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
10	43	1990 Res.	OD WASTAGE	7 % TW	2.94	HTS SF	+ 0.70
		1990 Res.	DISTORT ROLL		3.26	HTS SF	-19.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
35	43	1990 Res.	OD IGA	ADI	3.43	HTS SF	-17.40
		1990 Res.	OD IGA	ADI	0.73	HTS PF	+ 4.26
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
41	43	1990 Res.	OD SCC	77 % TW	1.93	HTS SF	-18.20
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
42	43	1990 Res.	OD SCC	94 % TW	1.01	HTS SF	-18.00
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
35	44	1990 Res.	OD (general)	ADS	3.58	HTS SF	-17.50
		1990 Res.	OD IGA	ADI	0.37	HTS PF	+ 3.62
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
38	44	1990 Res.	TYPE 1		4.49	HTS SF	-19.20
		1990 Res.	ROLL TRANS		1.05	HTS PF	+ 1.74
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
40	44	1990 Res.	OD IGA	ADI	2.60	HTS SF	-17.30
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
1	45	1990 Res.	OD SCC	22 % TW	0.63	HTS SF	-17.40
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
23	45	1990 Res.	OD WASTAGE	7 % TW	2.93	HTS SF	+ 1.50
		1990 Res.	OD WASTAGE	17 % TW	0.91	HTS SF	+ 0.50
		1990 Res.	OD IGA	ADI	2.90	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
26	45	1990 Res.	OD WASTAGE	3 % TW	2.81	HTS SF	+ 2.80
		1990 Res.	OD WASTAGE	9 % TW	1.14	HTS SF	+ 2.30
		1990 Res.	OD WASTAGE	15 % TW	2.61	HTS SF	+ 1.70
		1990 Res.	OD WASTAGE	13 % TW	1.82	HTS SF	+ 1.40
		1990 Res.	OD WASTAGE	30 % TW	0.49	HTS SF	+ 1.00
		1990 Res.	OD SCC	50 % TW	0.52	HTS SF	-17.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
41	45	1990 Res.	TYPE 1		3.32	HTS SF	-19.10
		1990 Res.	ROLL TRANS		2.10	HTS PF	+ 2.35
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
9	46	1990 Res.	OD WASTAGE	28 % TW	1.03	HTS SF	+ 0.70
		1990 Res.	OD (general)	ADS	1.99	HTS SF	-15.10
		1990 Res.	OD IGA	ADI	0.34	HTS PF	+ 6.57
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	46	1990 Res.	OD WASTAGE	7 % TW	1.59	HTS SF	+ 1.70
		1990 Res.	TYPE 1		4.10	HTS SF	-19.30
		1990 Res.	ROLL TRANS		1.38	HTS PF	+ 2.36

Table 6 (Cont'd)

Plant: GINNA
 Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
32	46	1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
		1990 Res.	OD IGA	ADI	3.37	HTS SF	-17.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
40	46	1990 Res.	OD IGA	ADI	3.82	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
3	47	1990 Res.	OD WASTAGE	41 % TW	0.77	HTS SF	+ 0.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	47	1990 Res.	OD IGA	ADI	8.14	HTS SF	-15.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
32	47	1990 Res.	OD WASTAGE	15 % TW	3.82	HTS SF	+ 0.65
		1990 Res.	OD SCC	75 % TW	0.83	HTS SF	-18.26
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
38	47	1990 Res.	TYPE 1		3.66	HTS SF	-19.32
		1990 Res.	OD IGA	ADI	7.34	HTS SF	-17.53
		1990 Res.	ROLL TRANS		0.96	HTS PF	+ 2.55
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
8	48	1990 Res.	OD IGA	ADI	4.16	HTS SF	-17.25
		1990 Res.	OD WASTAGE	1 % TW	3.84	CTS SF	+ 1.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
35	48	1990 Res.	OD SCC	84 % TW	0.82	HTS SF	-18.67
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
34	49	1990 Res.	OD IGA	ADI	2.23	HTS SF	-17.10
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
35	49	1990 Res.	OD SCC	54 % TW	0.31	HTS SF	-17.13
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
37	49	1990 Res.	OD SCC	41 % TW	0.48	HTS SF	-18.47
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
40	49	1990 Res.	OD IGA	ADI	9.95	HTS SF	-17.19
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
1	50	1990 Res.	OD IGA	ADI	4.67	HTS SF	-17.00
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
4	50	1990 Res.	OD IGA	ADI	4.65	HTS SF	-15.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
6	50	1990 Res.	OD IGA	ADI	2.42	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	50	1990 Res.	OD SCC	63 % TW	1.16	HTS SF	-18.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	50	1990 Res.	OD IGA	ADI	1.76	HTS SF	- 4.60
		1990 Res.	OD WASTAGE	2 % TW	2.53	CTS SF	+ 1.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
23	50	1990 Res.	OD WASTAGE	13 % TW	0.89	HTS SF	+ 1.71
		1990 Res.	OD SCC	82 % TW	0.30	HTS SF	-18.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
30	50	1990 Res.	OD WASTAGE	17 % TW	2.46	HTS SF	+ 0.88
		1990 Res.	OD SCC	93 % TW	0.54	HTS SF	-18.14
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
31	51	1990 Res.	OD WASTAGE	11 % TW	4.50	HTS SF	+ 0.57
		1990 Res.	OD SCC	89 % TW	0.56	HTS SF	-18.67
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
35	51	1990 Res.	OD SCC	87 % TW	0.70	HTS SF	-18.57
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
11	52	1990 Res.	OD IGA	ADI	3.04	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
13	52	1990 Res.	OD IGA	ADI	2.88	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	52	1990 Res.	OD WASTAGE	18 % TW	1.06	HTS SF	+ 4.67
		1990 Res.	OD IGA	ADI	4.72	HTS SF	- 5.23
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
29	52	1990 Res.	OD WASTAGE	26 % TW	1.28	HTS SF	+ 2.64
		1990 Res.	OD SCC	82 % TW	0.75	HTS SF	-18.27
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
38	52	1990 Res.	TYPE 1		3.31	HTS SF	-14.20
		1990 Res.	ROLL TRANS		0.75	HTS PF	+ 2.80
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
28	53	1990 Res.	OD WASTAGE	4 % TW	2.39	HTS SF	+ 2.48
		1990 Res.	OD (general)	ADS	5.27	HTS SF	-15.75
		1990 Res.	OD IGA	ADI	0.56	HTS PF	+ 5.15
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	54	1990 Res.	OD IGA	ADI	3.00	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	55	1990 Res.	OD IGA	ADI	9.51	HTS SF	-17.00
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
2	55	1990 Res.	OD SCC	48 % TW	0.31	HTS SF	-14.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	55	1990 Res.	OD IGA	ADI	2.10	HTS SF	-12.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
16	55	1990 Res.	OD WASTAGE	13 % TW	2.66	HTS SF	+ 1.57
		1990 Res.	OD IGA	ADI	2.96	HTS SF	-16.00
		1990 Res.	OD WASTAGE	6 % TW	3.71	CTS SF	+ 1.60
		1990 Res.	SLEFVED	CE-WELD		HTS PF	+27.00
19	55	1990 Res.	OD IGA	ADI	3.76	HTS SF	-10.60
		1990 Res.	OD WASTAGE	12 % TW	5.29	HTS SF	+ 2.42
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
1	56	1990 Res.	OD SCC	74 % TW	0.95	HTS SF	-17.80
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
17	56	1990 Res.	OD WASTAGE	5 % TW	1.76	HTS SF	+ 2.19
		1990 Res.	TYPE 1		1.93	HTS SF	-18.80
		1990 Res.	ROLL TRANS		0.55	HTS PF	+ 2.27
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	56	1990 Res.	OD WASTAGE	15 % TW	3.20	HTS SF	+ 2.29
		1990 Res.	OD (general)	ADS	7.53	HTS SF	- 4.34
		1990 Res.	OD IGA	ADI	0.44	HTS PF	+ 5.21
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	57	1990 Res.	OD IGA	ADI	3.24	HTS SF	-15.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
13	57	1990 Res.	OD IGA	ADI	4.88	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
15	57	1990 Res.	OD WASTAGE	4 % TW	2.80	HTS SF	+ 0.79
		1990 Res.	TYPE 1		4.28	HTS SF	-18.83
		1990 Res.	ROLL TRANS		2.24	HTS PF	+ 2.79
		1990 Res.	OD WASTAGE	11 % TW	2.81	CTS SF	+ 1.63
		1990 Res.	OD WASTAGE	3 % TW	3.13	CTS SF	+ 1.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	57	1990 Res.	OD WASTAGE	5 % TW	1.79	HTS SF	+ 2.41
		1990 Res.	TYPE 1		4.75	HTS SF	-19.10
		1990 Res.	ROLL TRANS		1.59	HTS PF	+ 2.91
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
25	57	1990 Res.	OD WASTAGE	4 % TW	1.79	HTS SF	+ 1.65
		1990 Res.	OD WASTAGE	21 % TW	1.58	HTS SF	+ 1.60
		1990 Res.	OD SCC	71 % TW	0.44	HTS SF	-17.00
		1990 Res.	OD SCC	79 % TW	0.59	HTS SF	-18.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
31	57	1990 Res.	OD WASTAGE	15 % TW	2.01	HTS SF	+ 1.50
		1990 Res.	OD WASTAGE	16 % TW	2.22	HTS SF	+ 0.46
		1990 Res.	OD SCC	79 % TW	0.69	HTS SF	-14.82
		1990 Res.	OD SCC	69 % TW	0.36	HTS SF	-17.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
32	57	1990 Res.	OD WASTAGE	7 % TW	2.96	HTS SF	+ 0.77
		1990 Res.	OD SCC	84 % TW	0.62	HTS SF	-14.59
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
36	57	1990 Res.	OD SCC	79 % TW	0.31	HTS SF	-17.40
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
39	57	1990 Res.	OD SCC	49 % TW	0.95	HTS SF	-18.43
		1990 Res.	TYPE 1		5.52	HTS SF	-19.34
		1990 Res.	OD IGA	ADI	1.33	HTS PF	+ 3.38
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
40	57	1990 Res.	OD SCC	34 % TW	0.60	HTS SF	-18.10

Table 6 (Cont'd)

Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
		1990 Res.	SLEEVED	CE-URV		HTS PF	+27.00
5	58	1990 Res.	OD IGA	ADI	2.49	HTS SF	-14.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
13	58	1990 Res.	OD IGA	ADI	3.07	HTS SF	-16.25
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
29	58	1990 Res.	OD SCC	69 % TW	0.41	HTS SF	-15.43
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
32	58	1990 Res.	OD WASTAGE	7 % TW	0.76	HTS SF	+ 1.69
		1990 Res.	OD WASTAGE	9 % TW	2.05	HTS SF	+ 0.59
		1990 Res.	OD SCC	86 % TW	0.57	HTS SF	-17.04
		1990 Res.	OD SCC	92 % TW	1.02	HTS SF	-18.13
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	59	1990 Res.	OD IGA	ADI	5.67	HTS SF	-14.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
4	59	1990 Res.	OD SCC	82 % TW	0.67	HTS SF	-18.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
9	59	1990 Res.	OD SCC	42 % TW	0.42	HTS SF	-13.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
21	59	1990 Res.	OD WASTAGE	11 % TW	4.47	HTS SF	+ 2.17
		1990 Res.	OD IGA	ADI	7.74	HTS SF	- 5.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	60	1990 Res.	OD SCC	86 % TW	0.42	HTS SF	-17.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	60	1990 Res.	OD SCC	26 % TW	0.37	HTS SF	-16.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	60	1990 Res.	OD IGA	ADI	1.93	HTS SF	-16.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
11	60	1990 Res.	OD IGA	ADI	2.25	HTS SF	-17.00
		1990 Res.	OD WASTAGE	9 % TW	2.96	CTS SF	+ 1.71
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
12	60	1990 Res.	OD IGA	ADI	4.44	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	60	1990 Res.	OD WASTAGE	13 % TW	1.30	HTS SF	+ 1.44
		1990 Res.	OD SCC	37 % TW	0.72	HTS SF	-17.93
		1990 Res.	TYPE 1		3.82	HTS SF	-14.11
		1990 Res.	OD IGA	ADI	0.61	HTS PF	+ 4.20
		1990 Res.	ROLL TRANS		2.03	HTS PF	+ 2.57
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	62	1990 Res.	OD IGA	ADI	3.52	HTS SF	-14.60
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
15	62	1990 Res.	OD WASTAGE	7 % TW	1.67	HTS SF	+ 1.40
		1990 Res.	OD IGA	ADI	4.85	HTS SF	-16.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	62	1990 Res.	OD IGA	ADI	5.34	HTS SF	-12.30
		1990 Res.	OD WASTAGE	4 % TW	5.21	HTS SF	+ 1.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
19	62	1990 Res.	OD WASTAGE	6 % TW	5.24	HTS SF	+ 1.50
		1990 Res.	OD SCC	80 % TW	0.52	HTS SF	-11.90
		1990 Res.	OD WASTAGE	8 % TW	4.66	HTS SF	+ 1.40
		1990 Res.	OD SCC	91 % TW	0.64	HTS SF	-13.17
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
27	62	1990 Res.	OD IGA	ADI	3.95	HTS SF	- 4.40
		1990 Res.	OD WASTAGE	16 % TW	1.66	HTS SF	+ 1.60
		1990 Res.	OD IGA	ADI	6.30	HTS SF	- 4.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	63	1990 Res.	OD IGA	ADI	4.00	HTS SF	-16.50
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
16	63	1990 Res.	OD WASTAGE	2 % TW	2.63	HTS SF	+ 1.40
		1990 Res.	OD IGA	ADI	6.68	HTS SF	-15.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
19	63	1990 Res.	OD WASTAGE	11 % TW	4.83	HTS SF	+ 1.30
		1990 Res.	OD SCC	43 % TW	0.27	HTS SF	-18.55
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
20	63	1990 Res.	OD IGA	ADI	1.88	HTS SF	-14.10
		1990 Res.	OD WASTAGE	19 % TW	6.63	HTS SF	+ 1.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
4	64	1990 Res.	OD IGA	ADI	1.65	HTS SF	-12.20
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	64	1990 Res.	OD IGA	ADI	2.25	HTS SF	-15.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	64	1990 Res.	OD WASTAGE	6 % TW	1.72	HTS SF	+ 0.40
		1990 Res.	OD IGA	ADI	2.10	HTS SF	-18.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
19	64	1990 Res.	OD WASTAGE	19 % TW	8.98	HTS SF	+ 1.50
		1990 Res.	OD IGA	ADI	1.57	HTS SF	-11.34
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
24	64	1990 Res.	OD WASTAGE	22 % TW	8.88	HTS SF	+ 1.40
		1990 Res.	OD IGA	ADI	4.83	HTS SF	-18.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
25	64	1990 Res.	OD WASTAGE	16 % TW	6.33	HTS SF	+ 1.80
		1990 Res.	OD IGA	ADI	1.70	HTS SF	-17.76
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	66	1990 Res.	OD SCC	68 % TW	2.02	HTS SF	-18.10
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
7	66	1990 Res.	OD WASTAGE	7 % TW	1.19	HTS SF	+ 0.40
		1990 Res.	OD IGA	ADI	1.94	HTS SF	-16.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
20	66	1990 Res.	OD WASTAGE	3 % TW	2.56	HTS SF	+ 1.20
		1990 Res.	OD IGA	ADI	3.77	HTS SF	-16.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
25	67	1990 Res.	OD WASTAGE	21 % TW	2.30	HTS SF	+ 0.80
		1990 Res.	OD SCC	73 % TW	1.63	HTS SF	-16.20
		1990 Res.	OD SCC	93 % TW	0.52	HTS SF	-17.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
26	67	1990 Res.	OD WASTAGE	11 % TW	1.46	HTS SF	+ 0.70
		1990 Res.	OD SCC	83 % TW	0.47	HTS SF	- 6.50
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
39	67	1990 Res.	OD (general)	28 % TW	1.51	C3	
		1990 Res.	DS		1.42	C2	
		1990 Res.	OD (general)	27 % TW	2.38	C1	
		1990 Res.	OTHER		2.99	C2	
		1990 Res.	OD (general)	27 % TW	0.87	C3	
		1990 Res.	OD (general)	28 % TW	1.36	C3	
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
20	68	1990 Res.	OD IGA	ADI	6.47	HTS SF	-17.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
2	70	1990 Res.	OD SCC	85 % TW	2.35	HTS SF	-17.80
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
32	70	1990 Res.	OD SCC	78 % TW	1.75	HTS SF	-18.60
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
2	71	1990 Res.	OD SCC	76 % TW	2.93	HTS SF	-16.10
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
7	71	1990 Res.	OD IGA	ADI	2.76	HTS SF	-16.40
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
16	73	1990 Res.	OD IGA	ADI	2.55	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
1	74	1990 Res.	OD IGA	ADI	4.58	HTS SF	-17.30
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
20	74	1990 Res.	OD IGA	ADI	6.04	HTS SF	-18.30
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
7	75	1990 Res.	OD IGA	ADI	5.27	HTS SF	-17.70
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	75	1990 Res.	DISTORT ROLL		2.32	HTS SF	-19.34
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
28	75	1990 Res.	OD IGA	ADI	4.77	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
33	75	1990 Res.	OD SCC	90 % TW	2.10	HTS SF	-19.10
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
3	76	1990 Res.	OD IGA	ADI	4.58	HTS SF	-16.55

Table 6 (Cont'd)



Plant: GINNA
Outage: 1990 Res.

Steam Generator: B

QUERY: Repairable Indications

ROW	COL	OUTAGE	INDICATION	VALUE	VOLTS	LOCATION	INCHES
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
8	76	1990 Res.	OD IGA	ADI	4.17	HTS SF	-15.74
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
10	76	1990 Res.	OD WASTAGE	18 % TW	1.32	HTS SF	+ 0.54
		1990 Res.	OD IGA	ADI	3.19	HTS SF	-15.87
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
17	76	1990 Res.	OD IGA	ADI	3.72	HTS SF	-17.00
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
3	77	1990 Res.	OD IGA	ADI	5.25	HTS SF	-16.13
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	77	1990 Res.	OD WASTAGE	6 % TW	2.60	HTS SF	+ 0.57
		1990 Res.	OD IGA	ADI	5.58	HTS SF	-16.38
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
16	77	1990 Res.	OD SCC	79 % TW	0.32	HTS SF	-17.33
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
18	77	1990 Res.	OD SCC	97 % TW	1.17	HTS SF	-18.88
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
22	77	1990 Res.	OD SCC	93 % TW	1.00	HTS SF	-18.78
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
6	78	1990 Res.	OD WASTAGE	5 % TW	2.05	HTS SF	+ 0.68
		1990 Res.	OD IGA	ADI	5.60	HTS SF	-15.62
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
7	78	1990 Res.	OD IGA	ADI	6.43	HTS SF	-18.57
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
20	78	1990 Res.	OD IGA	ADI	5.08	HTS SF	-17.30
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
1	80	1990 Res.	OD IGA	ADI	5.27	HTS SF	-16.76
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
15	80	1990 Res.	OD IGA	ADI	7.02	HTS SF	-17.02
		1990 Res.	SLEEVED	CE-WELD		HTS PF	+27.00
5	81	1990 Res.	OD IGA	ADI	3.75	HTS SF	-16.74
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
7	82	1990 Res.	OD WASTAGE	5 % TW	1.12	HTS SF	+ 0.88
		1990 Res.	OD IGA	ADI	5.57	HTS SF	-16.03
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
4	83	1990 Res.	OD SCC	81 % TW	0.36	HTS SF	-18.70
		1990 Res.	PLUGGED	CE-MECH		HTS PF	
		1990 Res.	PLUGGED	CE-MECH		CTS PF	
24	83	1990 Res.	OD SCC	91 % TW	2.24	HTS SF	-18.55
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
10	84	1990 Res.	OD SCC	66 % TW	0.39	HTS SF	-17.58
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
8	85	1990 Res.	OD IGA	ADI	8.04	HTS SF	-10.96
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
11	85	1990 Res.	OD IGA	ADI	4.46	HTS SF	-16.87
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
14	86	1990 Res.	OD SCC	89 % TW	0.37	HTS SF	-15.98
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00
15	86	1990 Res.	OD SCC	72 % TW	2.17	HTS SF	-17.69
		1990 Res.	OD SCC	77 % TW	0.96	HTS SF	-18.29
		1990 Res.	SLEEVED	CE-CRV		HTS PF	+27.00

TOTAL TUBES FOUND = 183
TOTAL INDICATIONS FOUND = 521

TOTAL TUBES IN INPUT FILE = 183
TOTAL TUBES INSPECTED = 183

Table 6 (Cont'd)

GINNA
STEAM GENERATOR TUBE INSPECTION
AND CORRECTIVE ACTION HISTORY

DATE	NO. TUBES INSPECTED				PRIMARY TO SECONDARY LEAKAGE, GPM	TOTAL TUBES REQUIRING CORRECTIVE ACTION		TYPE OF DEGRADATION	>49% REQUIRED REPAIRS		NO. TUBES PLUGGED		NO. TUBES SLEEVED		NO. PLUGGED RETURNED TO SERVICE WITH SLEEVE		NO. PLUGGED RETURNED TO SERVICE WITHOUT SLEEVE		NO. SLEEVES PLUGGED		NO. PULLED TUBES		TOTAL PLUGGED		TOTAL SLEEVED		COMMENT		
	A		B			A			A		B		A		B		A		B		A		B		A			B	
	HOT	COLD	HOT	COLD		A	B		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B		A	B
IN FACTORY						1	0		1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0			
APRIL 1972	1050					0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MARCH 1974	3259	516	1098	516		19	0	VASTAGE	19	0	19	0	0	0	0	0	0	0	0	0	0	2	0	19	0	0	0		
NOV. 1974	1701	430	672	39		2	0	VASTAGE	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0			
MARCH 1975	2174	442	1931	442	0.005 A S/G	46	11	CRACKING/VASTAGE	46	11	46	11	0	0	0	0	0	0	0	0	0	2	0	46	11	0	0		
JAN. 1978	0	0	53	0	0.091 B S/G	0	2	VASTAGE	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0		
FEB. 1978	3192	3192	3247	3247		39	2	VASTAGE	39	2	39	2	0	0	0	0	0	0	0	0	0	0	39	2	0	0			
APRIL 1978	100	0	1025	75	0.099 B S/G	0	15	CRACKING	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0		
APRIL 1977	2003	268	1525	268		13	2	VASTAGE	13	1	13	1	0	0	0	0	0	0	0	0	0	0	13	1	0	0			
JULY 1977			300		0.012 B S/G	0	6	ID CRACKING	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0		
JAN. 1978					0.06 B S/G	0	8	CRACKING/VASTAGE	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0		
APRIL 1978	2049	325	1714	375		1	15	ID CRACKING	1	15	1	15	0	0	0	0	0	0	0	0	0	1	15	1	15	0	0		
FEB. 1979	2049	325	1714	375		0	6	CRACKING/VASTAGE/IGA	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0		
DEC. 1979					0.007 B S/G	0	13	IGA/VASTAGE	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0		
APRIL 1980	3139	325	3182	375		1	31	A"PITTING/"B"IGA	1	13	1	34	0	0	0	0	0	0	0	0	0	3	1	34	0	0	1		
NOV. 1980	3138	325	3151	375		0	0	IGA	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	2		
MAY 1981	3138	325	3141	400		0	4	IGA/VASTAGE	0	6	0	4	0	16	0	0	0	0	0	0	0	3	0	4	0	16	3		
FEB. 1982	3137	526	3140	526	700 B S/G	0	18	IGA/MECH. DAM	0	16	0	18	0	0	0	0	0	0	0	0	1	0	18	0	0	4			
SEP. 1982	3138	382	3129	893		1	33	IGA	1	28	1	33	0	0	0	0	0	0	0	0	0	0	1	33	0	0			
APRIL 1983	3137	633	3096	832		4	4	IGA/SCC	0	23	0	3	4	74	0	0	0	0	0	1	0	1	0	4	4	73	5		
MARCH 1984	3137	717	3093	963		1	1	IGA/SCC	0	5	1	1	0	9	0	0	0	0	0	1	0	0	1	2	0	8			
MARCH 1985	3135	3135	3087	3087		3	4	IGA/SCC/VASTAGE	3	70	2	4	2	67	0	0	0	0	0	0	0	0	2	4	2	67	6		
FEB. 1986	3134	623	3083	770		6	27	IGA/SCC/VASTAGE	2	49	0	27	6	30	0	3	0	0	0	0	0	0	0	24	6	33	7		
FEB. 1987	3128	0	2884	0		34	73	IGA/SCC	17	78	10	72	24	80	0	0	0	0	0	3	0	0	10	75	24	77	8		
FEB. 1988	3122	1517	2723	1301		7	41	IGA/SCC	4	18	14	58	0	0	0	0	0	0	0	1	1	0	0	15	59	-1	-1	9	
MAR. 1988	0	0	208	0	0.13 B S/G	0	9	IGA/SCC	0	6	0	8	0	0	0	0	0	0	0	1	0	0	0	9	0	-1	10		
MAR. 1989	3128	1668	2805	1486		177	445	IGA/SCC/PVSCC/VAS	21	142	36	73	132	306	9	64	8	18	4	5	0	0	22	-4	137	365	11		
MAR. 1990	2949	663	2437	653		75	211	IGA/SCC/PVSCC/VAS	18	70	22	20	56	163	0	28	0	0	5	1	2	0	24	-8	51	190	12		
						430	981				208	433	224	750	9	95	8	18	10	13	6	9	197	332	223	832			



STEAM GENERATOR TUBE INSPECTION AND
CORRECTIVE ACTION HISTORY COMMENTS
(FROM TABLE 7)

- (1) Pulled R15 C55 and R17 C41 from the hot leg and R17 C40 from the cold leg to determine IGA conditions in the "B" steam generator. R17 C41 and ECT indications at all frequencies, R15 C44 had only 100 kHz Absolute ECT indication and R17 C40 had no ECT indication. Both hot leg tubes had approximately 50% IGA, R17 C41 had a 60% SCC indication associated with the IGA.
- (2) Manually sleeved 5 tubes with nickel plated Inconel 600 thermally treated sleeves. Three tubes had IGA indications, two others were preventatively sleeved.
- (3) Sleeved 16 tubes with co-extruded sleeves, 13 with defects and 3 preventatively. Pulled Hot Leg tubes R21 C46 with a 100 kHz ECT indication, R7 C45 and R28 C 45 which were clean tubes.
- (4) Recovery from the January 25, 1982 Tube Rupture Event including removing 26 tube sections by EDM and ID cutters along with the one tube pulled from the secondary side.
- (5) The four tubes identified with IGA in the "A" steam generator were sleeved with 22" tubesheet sleeves. The 78 tubes identified in the



"B" steam generator with IGA and/or SCC in the crevice were repaired as follows:

- 41 tubes were sleeved with 36" brazed sleeves
- 9 tubes were sleeved with 28" brazed sleeves
- 24 tubes were sleeved with 22" tubesheet sleeves
- 1 tube and 2 sleeves were plugged
- 1 tube R34 C54 was pulled for metallurgical analysis

(6) The two tubes identified with IGA in the crevice in the "A" steam generator inlet were sleeved with 20" tubesheet sleeves. One indication >40% TWD in the U-bend was permanently plugged. The 70 tubes identified in the "B" steam generator were repaired as follows:

- 56 tubes were sleeved with 20" tubesheet sleeves
- 10 tubes were sleeved with 36" brazed sleeves
- 3 tubes were mechanically plugged (CE removable)
- 1 tube was explosively plugged
- 1 tube was sleeved with a 36" brazed sleeve due to the domino effect.

(7) The five tubes identified with crevice indications in the "A" steam generator inlet were sleeved with 27" Combustion Engineering (CE) Sleeves. One tube identified with an O.D. general indication above the secondary side tubesheet was also sleeved with a 27" CE sleeve.



The 57 tubes identified in the "B" steam generator were repaired as follows:

- 27 tubes were sleeved with 27" CE sleeves
- 27 tubes were mechanically plugged (CE removable)
- 3 CE Mechanical Plugs installed in 1985 were removed and sleeved with 27" sleeves

The present sleeve installation status is 83 brazed sleeves, 88 tube sheet sleeves, 30 welded CE sleeves in the "B" steam generator with 6 tubesheet sleeves and 6 welded CE sleeves in the "A" steam generator.

(8) The 34 tubes identified with crevice indications in the "A" steam generator inlet were repaired as follows:

- 10 tubes were mechanically plugged (CE removable)
- 24 tubes were sleeved with 27" CE welded sleeves

The 153 tubes identified with crevice indications in the "B" steam generator inlet were repaired as follows:

- 72 tubes were mechanically plugged (CE removable)
- 80 tubes were sleeved with 27" CE welded sleeves
- 1 CE welded sleeve (installed in 1987) was plugged with a CE welded sleeve plug due to rejection of upper weld.

Other repairs required in the "B" steam generator are as follows:

- 2 B&W test brazed sleeves (installed in 1980) were plugged due to the loss of the primary to secondary pressure boundary as detected by the Hydro Test.

- 5 Westinghouse explosive plugs installed prior to 1987 were removed due to leakage and replaced with CE welded plugs.
- 1 CE Mechanical Plug on the cold leg was removed and replaced with a CE Mechanical Plug.
- 4 CE welded sleeves (installed in 1987), are considered as "leak limiting" due to the marginal acceptance of the upper welds.

(9) In the "A" steam generator, 15 tubes were plugged for the following reasons:

- 7 tubes had tubesheet crevice indications
- 7 tubes for no confirmed AVB support
- 1 CE sleeve for unverified upper expansion

In "B" steam generator, 61 tubes were plugged for the following reasons:

- 39 tubes had tubesheet crevice indications
- 2 tubes were missplugged in the hot leg during 1987 outage
- 8 tubes to box existing plugs were AVB support could not be verified.
- 10 tubes for no confirmed AVB support
- 1 tube for flow peaking consideration due to AVB placement
- 8 Westinghouse Explosive Plugs were removed and replaced with welded "Top Hat" Plugs

9) The "B" steam generator had 9 tubes plugged for the following reasons:

- 6 tubes had tubesheet crevice indications identified by a review of the February data. These were removed from service with CE mechanical plugs.
- 2 tubes had signal changes from February to March. The tubes were removed from service with CE mechanical plugs.
- 1 B&W tubesheet sleeve identified by the hydrostatic pressure test was removed from service with a B&W explosive plug in the hot leg and a CE mechanical in the cold leg.

(11) A total of 177 tubes in "A" steam generator were repaired in 1989 as follows:

- 137 CE 27" welded sleeves (straight and periphery)
- 40 Tube and/or sleeve plugs
- 2 Previously plugged tubes stabilized (not counted as repaired)

A total of 445 tubes were repaired in "B" steam generator were repaired as follows:

- 367 CE 27" welded sleeves (straight and periphery)
- 78 Tubes and/or sleeve plugs
- 1 Previously plugged tube stabilized (not counted as repaired)

) A total of 75 tubes in "A" steam generator were repaired in 1990 as follows:

- 51 CE 27" welded sleeves (straight and periphery)
- 24 Tube and/or sleeve plugs (includes pulled tubes R25-C63 and R31-C66)

A total of 211 tubes were repaired in "B" steam generator were repaired as follows:

- 191 CE 27" welded sleeves (straight and periphery) including 28 unplugged tubes
- 20 Tubes and/or sleeve plugs (includes B&W tubesheet sleeve noted during hydro)

