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1717 Wakonade Drive
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U S Nuclear Regulatory Commission
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant Unit 1
Docket No. 50-282
Renewed Facility Operating License No. DPR-42

2018 Unit 1 180-Day Steam Generator Tube Inspection Report

Reference: 1) Letter from Northern States Power Company, a Minnesota corporation NSPM), d/b/a Xcel Energy to Document Control Desk, "2012 Unit 1 180-Day Steam Generator Tube Inspection Report", dated June 21, 2013 (ADAMS Accession Number ML13172A344).

In accordance with Prairie Island Nuclear Generating Plant, Unit 1 Technical Specification 5.6.7 "Steam Generator Tube Inspection Report", NSPM submits the enclosed report of steam generator tube inspections performed during the 2018 refueling and maintenance outage on Unit 1.

During development and validation of Enclosure 1, it was discovered that an error was contained in Reference 1, Enclosure 1, page 2 of 27. Specifically, NSPM conservatively over reported the inspection cycle effective full power years (EFPY) as 4.18 (should have been 4.17) and cumulative SG EFPY as 7.16 (should have been 7.15).

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

Scott Sharp
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC

ENCLOSURE 1

Prairie Island Nuclear Generating Plant – Unit 1
2018 Steam Generator Tube Inspection Report

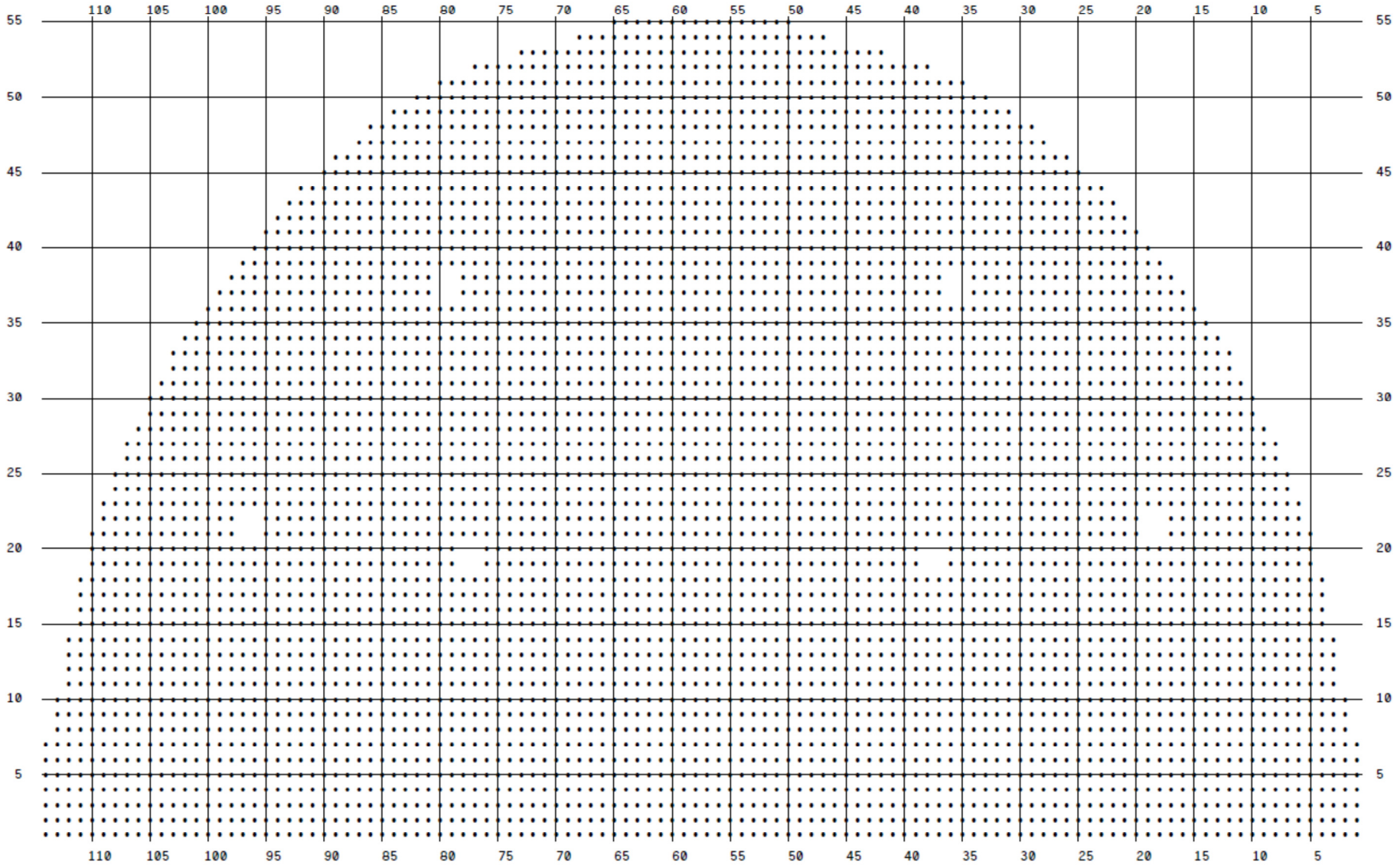
In accordance with Prairie Island Nuclear Generating Plant (PINGP), Unit 1 Technical Specification 5.6.7, Xcel Energy Nuclear Department submits this report of steam generator tube inspections performed during the 2018 refueling and maintenance outage for Unit 1 (1R31).

PINGP Unit 1 has two Framatome Model 56/19 Replacement Steam Generators (RSGs) with approximately 5,600 square meters of heat transfer area utilizing tubes with 19 millimeter outside diameter. Each RSG has 4,868 thermally-treated Alloy 690 u-tubes manufactured by Sandvik which have an outside diameter of 0.750 inch and a nominal wall thickness of 0.043 inch. The tubes are configured in a square pitch of 1.0425 inches with 55 rows and 114 columns (see Figure 1). The tube u-bends vary in radius from 2.7000 inches for a row 1 tube to 58.9950 inches for a row 55 tube. The tubes vary in length from 738.16 inches for row 1 tubes to 923.04 inches for row 55 tubes. Row 1 through row 9 tubes were subject to stress relieving following the bending process using the thermal treatment process for an additional 2 hour minimum soak time. The tubes were hydraulically expanded at each end for the full depth of the tubesheet with the expansion transition being between 0.079 inches and 0.236 inches below the secondary tubesheet face.

The tubesheet is low alloy steel 21.46 inches thick with alloys 82 and 182 cladding 0.375" thick for an overall thickness of 21.835 inches. The tubes are supported by eight tube support plates (TSPs) and five anti-vibration bars (AVBs) intersecting tubes between 1, 3, 5, 7 and 9 times (see Figure 2). There is one straight bar that intersects all rows at the center of each bend, two 57 degree bars that intersect rows 13 through 55 and two 14 degree bars that intersect rows 25 through 55. In addition there are 24 peripheral tubes with nine staples (one at each AVB location) that carry the entire load of the complete AVB assembly. All TSPs are constructed from Type 410 stainless steel. The TSPs have a minimum thickness of 1.18 inch and have quatrefoil-shaped holes through which the tubes pass. The AVBs are constructed from Type 405 stainless steel and are rectangular in cross section (nominally 0.5 inch by 0.3 inch).

Each RSG is equipped with a Loose Parts Trapping Systems (LPTS), which is composed of screens at the top of the downcomer and at the top of the primary separators (cyclones). These screens (0.14" square mesh formed from 0.031" diameter wire), prevent foreign material from entering the steam generator tube area from the main feedwater and auxiliary feedwater systems (see Figure 2).

Figure 1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55 50 45 40 35 30 25 20 15 10 5

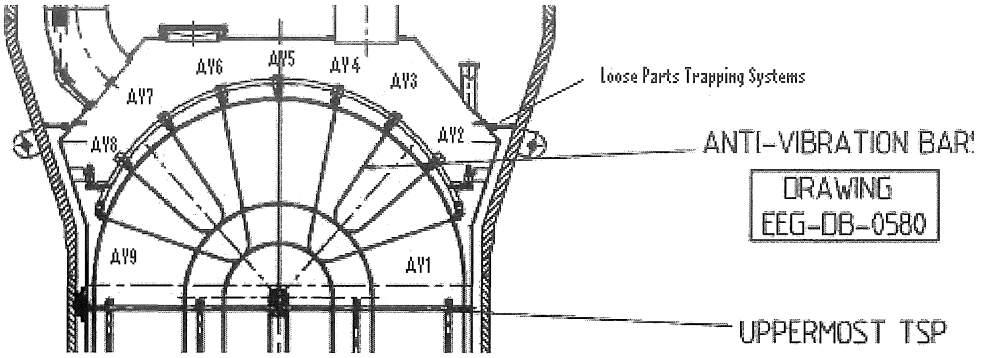

Figure 2

The original Westinghouse Model 51 Steam Generators (SGs) were replaced during the 2004 refueling outage after 25.73 EFPY of operation. During the 2006 refueling outage the first inservice inspection (100% full length bobbin) was conducted on the RSGs after accumulating the initial 1.36 EFPY of RSG operation. Based on the lack of a definitive root cause for TSP wear and only a single cycle growth rate trend for both AVB and TSP wear identified during 1R24, NSPM conservatively elected to inspect the RSGs during 1R25 (2009 refueling outage) after an additional 1.62 EFPY of RSG operation (2.98 RSG cumulative EFPY). Based on the inspection results of both 1R24 and 1R25, NSPM elected to skip two inspections (1R26 and 1R27; 2009 and 2011 refueling outages, respectively) and perform an inspection of the RSGs during 1R28 (2012 refueling outage) after an additional 4.17 EFPY of RSG operation (7.15 RSG cumulative EFPY). Based on the inspection results of 1R28, NSPM elected to skip two additional inspections (1R29 and 1R30; 2014 and 2016 refueling outages, respectively) and perform an inspection of the RSGs during 1R31 (2018 refueling outage) after an additional 5.17 EFPY of RSG operation (12.32 RSG cumulative EFPY).

NOTE:	*Italicized* text represents technical specification excerpts. Each excerpt is followed by the appropriate information intended to address each specific requirement and also includes additional details based on benchmarking previous submittals and NRC Staff requests for additional information of peer Licensees. A legend of codes and field names is included at the end of the report.

5.6 Reporting Requirements

5.6.7 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after initial entry into MODE 4 following completion of an inspection performed in accordance with the Specification 5.5.8, Steam Generator (SG) Program.

Initial entry into MODE 4 occurred on October 20, 2018, dictating submittal of this report on or before April 18, 2019.

The report shall include:

a. The scope of inspections performed on each SG,

Table 1 and the notes that follow, provides the scope of inspections performed during 1R31.

TABLE 1

SCOPE	LEG	EXTENT	TECHNIQUE	SG 11	SG 12
Row 7 through 55①	H/C	F/L	X-Probe™	100%(4178)	100%(4177)
Row 3 through 6	H	AV5TEH	X-Probe™	100%(456)	100%(456)
Row 1 and 2	H	08HTEH	X-Probe™	100%(228)	100%(228)
Row 1 and 2	H/C	Various②	Bobbin	100%(228)	100%(228)
Row 1 and 2	C	08CTEC	X-Probe™	100%(228)	100%(228)
Row 3 through 6	C	AV5TEC	X-Probe™	100%(456)	100%(456)
Post Plugging③	H/C	N/A	Visual	100%(4)	100%(10)
Upper Internals④	N/A	N/A	Visual	100%	100%
Top of Tubesheet⑤	H/C	N/A	Visual	100%	100%
In-bundle⑥	H/C	N/A	Visual	~17%	~17%
PLP⑦ FOSAR	H/C	N/A	Visual	100%(2)	N/A

Notes:

- The X-Probe™ deployed contained both a standard bobbin coil and a 16 coil array of transmit/receive coils.
- The scope of inspections is provided as a percentage of the open tubes (or plugs) followed by the total number of tests parenthetically (where practical).
- No tubes were plugged during the RSG manufacturing or prior to service.
- Six tubes were plugged in SG 11 and seven tubes were plugged in SG 12 during previous inspections (1R24, 1R25 and 1R28).

① The Row 7 through 55 inspections were completed from both legs (either hot or cold) over the full length (F/L) of each tube (TEHTEC or TECTEH).

② Row 1 and 2 bobbin inspections were performed using various extents (08CTEH, 08HTEC, 07HTEC or AV5TEH and AV5TEC).

③ Post tube plugging visual inspections were conducted by Engineering to validate the tube plug location and proper insertion.

④ Inspections of the upper internals included the visual inspections of all bolted closures (manways and camera ports), Feedwater Ring (including J-tubes and antistratification (helix) device), Primary Separators (cyclones) Loose Parts Trapping System (LPTS) screens, Downcomer LPTS screens and wrapper position per NRC Generic Letter 97-06 and Prairie Island Unit 1 56/19 Replacement Steam Generator Operation and Maintenance Manual.

⑤ Tube lane and periphery of the tube bundle inspected using a camera transport system.

⑥ Random fiber-optic inspection of one out of every six columns.

⑦ Foreign Object Search and Retrieval of possible loose part (PLP) indications for evaluation and possible removal based on eddy current results (SG 11 only – no PLP's detected in SG 12).

b. *Degradation mechanisms found,*

Primary Side Inspections:

AVB wear and TSP wear were the only degradation mechanisms found in both SGs during 1R31. The findings of the 1R31 steam generator examination are bounded by the through wall depth behavior projected in the 1R28 operational assessment. In addition to none of AVB or TSP wear indications approaching the condition monitoring (CM) limit, the Upper 95th growth rates from 1R31 have decreased slightly for AVB wear and increased slightly for TSP wear as compared to 1R28 and the actual number of indications reported in 1R31 is less than the projected number of indications in the 1R28 operational assessment.

Secondary Side Inspections:

Upper Bundle – Minor downcomer LPTS screen grid degradation, on two screen segments, was discovered during 1R30 and dispositioned in the CAP program for one cycle operation without repair. During 1R31 one additional grid with degradation was discovered. All three degraded grids were subsequently replaced during 1R31.

Top-of-Tubesheet – During post sludge lancing and post eddy current FOSAR inspections, no tube degradation was observed that was associated with foreign objects visually observed or eddy current PLP indications recorded.

c. *Nondestructive examination techniques utilized for each degradation mechanism,*

Table 2 and the notes that follow, provide the Electric Power Research Institute (EPRI) Examination Technique Specification Sheet (ETSS) (techniques) utilized during 1R31 for existing and potential degradation.

TABLE 2

CLASSIFICATION①	MECHANISM	LOCATION	PROBE	TECHNIQUE②
Existing	Wear	TSP	Bobbin	96004.1 Rev. 13
			X-Probe™	11956.1 Rev. 3
Existing	Wear	AVB and Staple	Bobbin	M96041.1 Rev. 5③
			X-Probe™	M17909.2 Rev. 1
Potential	Wear	PLP	Bobbin	27091.2 Rev. 2
			X-Probe™	1790X.Y Rev. 0④
			+Point™	2790Z.1 Rev. #⑤
Potential	Wear	Tube-to-Tube	Bobbin	13091.1 Rev. 0
			X-Probe™	13902.1 Rev. 0
			+Point™	13901.1 Rev. 1

Notes:

① Existing or Potential degradation as defined in the EPRI SGMP: Steam Generator Integrity Assessment Guidelines, Revision 4.

② Each listed technique was site validated for both detection and sizing except for PLP wear with the Bobbin probe which utilized the above listed technique for detection while sizing would have been based on the X-Probe™ and/or +Point™ had PLP wear been detected. In addition, bobbin ETSS's 96010.1 Rev. 7, 24013.1 Rev. 2 and 96007.1 Rev. 12 were site validated for use on non-degradation (MBMs, DNGs, PDSs and cold laps).

③ M indicates the cited ETSS is an Appendix I qualified technique with system performance quantified using Model Assisted Probability of Detection (MAPOD).

④ X represents 1 through 6 where the user selects the best EPRI ETSS based on the as found wear scar shape, Y represents .1 or .3 based on the applicable coil detection set and the user applies the published performance indices for that ETSS.

⑤ Z represents 1 through 7 where the user selects the best EPRI ETSS based on the as found wear scar shape, # represents the current revision and the user applies the published performance indices for that ETSS.

d. *Location, orientation (if linear), and measured sizes (if available) of service induced indications,*

Tables 3 and 4 provide the location, orientation and measured size of each reported AVB wear indication in each steam generator respectively for the degradation found during 1R31. All the tubes in these two tables were returned to service.

Tables 5 and 6 provide the location, orientation and measured size of each reported TSP wear indication in each steam generator respectively for the degradation found during 1R31. All the tubes in these two tables were returned to service.

Tables 7 and 8 provide the location, orientation and measured sizes of AVB and TSP wear indications in each steam generator respectively for tubes preventively plugged during 1R31. The preventive tube plugging criteria implemented during 1R31 was any wear indication greater than or equal to 21% through wall as measured by either the bobbin or array coil.

Within Tables 4 through 6, sixteen tubes with a UTIL2 NCA code were detected by the bobbin coil and not confirmed by the array coil. Within Tables 3 through 8, twelve tubes (with 21 indication locations) were reported with multiple VOL calls at the same ROW/COL/LOC/PROBE which would confirm indications of double sided AVB wear or multiple wear location sites on multiple land contact points of a single Quatrefoil TSP. Conversely, all VOL calls at the same ROW/COL/LOC/PROBE confirm only single sided wear sites at all the remaining AVB and TSP locations.

A legend of fields and codes with brief explanations is provided at the end of this enclosure for clarification purposes.

TABLE 3

Steam Generator 11 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	51	41	0.65	VOL	12	AV3	-0.14	0.26	0.40	Array	WAR	TPR	
1	1	51	41	0.17	AVB	6	AV3	0.12			Bobbin		CBA	
1	2	51	41	0.29	VOL	9	AV4	-0.20	0.20	0.40	Array	WAR	FLT	NBC
1	3	51	41	0.44	VOL	10	AV5	-0.23	0.20	0.43	Array	WAR	TPR	
1	3	51	41	0.16	AVB	6	AV5	0.12			Bobbin		CBA	
2	4	52	41	0.4	VOL	10	AV5	-0.09	0.46	0.55	Array	WAR	TPR	
2	4	52	41	0.13	AVB	5	AV5	0.29			Bobbin		CBA	
3	5	50	42	0.24	VOL	8	AV3	-0.26	0.09	0.35	Array	WAR	TPR	NBC
4	6	42	45	1.18	VOL	16	AV2	-0.37	0.25	0.62	Array	WAR	FLT	
4	6	42	45	0.48	AVB	13	AV2	-0.06			Bobbin		CBA	
4	7	42	45	0.41	VOL	10	AV7	-0.31	-0.06	0.25	Array	WAR	FLT	
4	7	42	45	0.15	AVB	5	AV7	-0.11			Bobbin		CBA	
5	8	49	49	0.2	VOL	8	AV6	-0.14	0.23	0.37	Array	WAR	TPR	NBC
5	9	49	49	0.51	VOL	11	AV7	-0.52	0.26	0.78	Array	WAR	TPR	
5	9	49	49	0.13	AVB	5	AV7	-0.09			Bobbin		CBA	
6	10	45	50	0.25	VOL	8	AV5	-0.42	0.28	0.70	Array	WAR	FLT	NBC
7	11	49	53	0.39	VOL	9	AV3	-0.34	0.25	0.59	Array	WAR	FLT	NBC
7	12	49	53	0.51	VOL	11	AV5	-0.23	0.31	0.54	Array	WAR	FLT	
7	12	49	53	0.19	AVB	6	AV5	0.00			Bobbin		CBA	
7	13	49	53	1.46	VOL	18	AV6	-0.34	0.48	0.82	Array	WAR	FLT	
7	13	49	53	0.47	AVB	13	AV6	-0.03			Bobbin		CBA	
7	14	49	53	0.66	VOL	12	AV7	-0.25	0.25	0.50	Array	WAR	FLT	
7	14	49	53	0.14	AVB	4	AV7	-0.03			Bobbin		CBA	
8	15	41	54	0.34	VOL	9	AV8	-0.23	0.31	0.54	Array	WAR	TPR	NBC
9	16	40	56	0.44	VOL	10	AV4	-0.23	0.20	0.43	Array	WAR	TPR	
9	16	40	56	0.1	AVB	3	AV4	0.11			Bobbin		CBA	
10	17	33	57	0.77	VOL	13	AV3	-0.28	0.34	0.62	Array	WAR	TPR	
10	17	33	57	0.17	AVB	5	AV3	0.14			Bobbin		CBA	
10	18	33	57	0.22	AVB	7	AV4	0.11			Bobbin		CBA	
10	18	33	57	0.79	VOL	13	AV4	0.25	0.87	0.62	Array	WAR	TPR	
10	19	33	57	0.42	VOL	10	AV5	-0.31	0.23	0.54	Array	WAR	TPR	
10	19	33	57	0.53	VOL	11	AV5	-0.25	0.34	0.59	Array	WAR	TPR	
10	19	33	57	0.28	AVB	9	AV5	0.08			Bobbin		CBA	
10	20	33	57	0.66	VOL	12	AV6	-0.37	0.37	0.74	Array	WAR	TPR	
10	20	33	57	0.25	AVB	8	AV6	0.03			Bobbin		CBA	
10	21	33	57	0.28	VOL	8	AV7	-0.39	0.31	0.70	Array	WAR	TPR	NBC
10	22	33	57	0.62	VOL	12	AV8	-0.34	0.31	0.65	Array	WAR	TPR	
10	22	33	57	0.21	AVB	7	AV8	0.06			Bobbin		CBA	
10	23	33	57	1.06	VOL	15	AV9	-0.23	0.31	0.54	Array	WAR	TPR	
10	23	33	57	0.4	AVB	12	AV9	0.08			Bobbin		CBA	

TABLE 3

Steam Generator 11 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
11	24	42	59	0.42	VOL	9	AV6	-0.14	0.28	0.42	Array	WAR	FLT	
11	24	42	59	0.11	AVB	4	AV6	0.23			Bobbin		CBA	
12	25	46	61	0.13	VOL	7	AV3	-0.11	0.08	0.19	Array	WAR	TPR	
12	25	46	61	0.08	AVB	3	AV3	-0.06			Bobbin		CBA	
12	26	46	61	0.4	VOL	10	AV4	-0.17	0.25	0.42	Array	WAR	FLT	
12	26	46	61	0.15	AVB	5	AV4	-0.06			Bobbin		CBA	
12	27	46	61	0.28	VOL	9	AV6	-0.23	0.25	0.48	Array	WAR	TPR	
12	27	46	61	0.09	AVB	3	AV6	0.03			Bobbin		CBA	
13	28	40	62	0.28	VOL	8	AV7	-0.08	0.23	0.31	Array	WAR	FLT	
13	28	40	62	0.13	AVB	4	AV7	0.14			Bobbin		CBA	
14	29	48	62	1.1	VOL	16	AV3	-0.14	0.31	0.45	Array	WAR	TPR	
14	29	48	62	0.31	AVB	10	AV3	0.14			Bobbin		CBA	
14	30	48	62	0.49	VOL	10	AV5	-0.25	0.28	0.53	Array	WAR	FLT	
14	30	48	62	0.32	VOL	9	AV5	-0.23	0.25	0.48	Array	WAR	TPR	
14	30	48	62	0.24	AVB	8	AV5	-0.03			Bobbin		CBA	
14	31	48	62	0.36	VOL	9	AV6	-0.20	0.23	0.43	Array	WAR	FLT	
14	31	48	62	0.08	AVB	3	AV6	0.03			Bobbin		CBA	
14	32	48	62	0.37	VOL	9	AV9	-0.14	0.17	0.31	Array	WAR	TPR	NBC
15	33	50	65	0.27	VOL	8	AV6	-0.11	0.08	0.19	Array	WAR	TPR	
15	33	50	65	0.24	AVB	7	AV6	-0.08			Bobbin		CBA	
15	33	50	65	0.42	VOL	10	AV6	-0.06	0.42	0.48	Array	WAR	TPR	
15	34	50	65	0.59	VOL	11	AV7	-0.14	0.40	0.54	Array	WAR	FLT	
15	34	50	65	0.24	AVB	7	AV7	0.00			Bobbin		CBA	
16	35	46	67	0.38	VOL	9	AV2	-0.17	0.20	0.37	Array	WAR	TPR	NBC
16	36	46	67	0.31	VOL	9	AV5	-0.20	0.17	0.37	Array	WAR	NBC	TPR
17	37	48	67	0.62	VOL	12	AV5	-0.17	0.26	0.43	Array	WAR	TPR	
17	37	48	67	0.18	AVB	6	AV5	-0.06			Bobbin		CBA	
18	38	53	68	0.57	VOL	11	AV5	-0.12	0.20	0.32	Array	WAR	TPR	
18	38	53	68	0.1	AVB	3	AV5	0.06			Bobbin		CBA	
19	39	53	69	0.47	VOL	10	AV6	-0.20	0.29	0.49	Array	WAR	FLT	
19	39	53	69	0.14	AVB	5	AV6	0.20			Bobbin		CBA	
20	40	47	72	0.25	VOL	8	AV3	-0.09	0.12	0.21	Array	WAR	TPR	
20	40	47	72	0.09	AVB	3	AV3	-0.06			Bobbin		CBA	

TABLE 4

Steam Generator 12 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	12	35	0.39	VOL	10	AV5	-0.20	0.23	0.43	Array	WAR	TPR	
1	1	12	35	0.17	AVB	6	AV5	0.00			Bobbin		CBA	
2	2	50	40	0.46	VOL	10	AV8	-0.23	0.25	0.48	Array	WAR	FLT	
2	2	50	40	0.16	AVB	5	AV8	0.06			Bobbin		CBA	
3	3	51	42	0.74	VOL	13	AV4	-0.31	0.17	0.48	Array	WAR	FLT	
3	3	51	42	0.15	AVB	5	AV4	-0.03			Bobbin		CBA	
4	4	45	43	0.39	VOL	10	AV4	-0.23	0.11	0.34	Array	WAR	TPR	
4	4	45	43	0.17	AVB	6	AV4	-0.03			Bobbin		CBA	
5	5	50	45	0.6	VOL	11	AV6	-0.42	0.23	0.65	Array	WAR	TPR	
5	5	50	45	0.13	AVB	5	AV6	-0.03			Bobbin		CBA	
5	6	50	45	0.84	VOL	13	AV7	-0.17	0.37	0.54	Array	WAR	TPR	
5	6	50	45	0.24	AVB	9	AV7	0.14			Bobbin		CBA	
6	7	49	46	0.36	VOL	9	AV3	-0.23	0.31	0.54	Array	WAR	TPR	NBC
7	8	50	49	0.98	VOL	15	AV3	-0.25	0.25	0.50	Array	WAR	FLT	
7	8	50	49	0.3	AVB	10	AV3	0.14			Bobbin		CBA	
7	9	50	49	0.31	VOL	9	AV4	-0.23	0.20	0.43	Array	WAR	FLT	
7	9	50	49	0.16	AVB	5	AV4	-0.03			Bobbin		CBA	
7	10	50	49	0.77	VOL	13	AV5	-0.25	0.31	0.56	Array	WAR	FLT	
7	10	50	49	0.21	AVB	7	AV5	0.06			Bobbin		CBA	
8	11	42	50	0.38	VOL	9	AV4	-0.17	0.25	0.42	Array	WAR	TPR	NBC
8	12	42	50	0.51	VOL	11	AV5	-0.23	0.25	0.48	Array	WAR	FLT	
8	12	42	50	0.24	AVB	8	AV5	0.03			Bobbin		CBA	
9	13	48	50	0.97	VOL	14	AV3	-0.25	0.25	0.50	Array	WAR	TPR	
9	13	48	50	0.29	AVB	9	AV3	0.14			Bobbin		CBA	
9	14	48	50	0.47	VOL	10	AV4	-0.28	0.14	0.42	Array	WAR	FLT	
9	14	48	50	0.26	AVB	9	AV4	0.11			Bobbin		CBA	
9	15	48	50	1.19	VOL	16	AV5	-0.25	0.28	0.53	Array	WAR	FLT	
9	15	48	50	0.36	AVB	11	AV5	0.00			Bobbin		CBA	
9	16	48	50	1.11	VOL	16	AV6	-0.25	0.28	0.53	Array	WAR	FLT	
9	16	48	50	0.4	AVB	12	AV6	-0.03			Bobbin		CBA	
10	17	48	52	0.49	VOL	9	AV3	-0.27	0.27	0.54	Array	WAR	TPR	
10	17	48	52	0.09	AVB	3	AV3	-0.09			Bobbin		CBA	
10	18	48	52	0.28	VOL	8	AV5	-0.15	0.30	0.45	Array	TPR	NBC	
11	19	35	53	0.63	VOL	12	AV1	-0.18	0.28	0.46	Array	WAR	FLT	
11	19	35	53	0.25	AVB	8	AV1	-0.03			Bobbin		CBA	
11	20	35	53	0.68	VOL	12	AV2	-0.17	0.31	0.48	Array	WAR	FLT	
11	20	35	53	0.25	AVB	8	AV2	0.14			Bobbin		CBA	
11	21	35	53	1.25	VOL	17	AV3	-0.14	0.37	0.51	Array	WAR	TPR	
11	21	35	53	0.41	AVB	13	AV3	0.17			Bobbin		CBA	
11	22	35	53	0.56	VOL	11	AV4	-0.20	0.31	0.51	Array	WAR	FLT	

TABLE 4

Steam Generator 12 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
11	22	35	53	0.21	AVB	7	AV4	0.00			Bobbin		CBA	
11	23	35	53	1.55	VOL	19	AV5	-0.23	0.37	0.60	Array	WAR	FLT	
11	23	35	53	0.45	AVB	14	AV5	-0.03			Bobbin		CBA	
11	24	35	53	0.46	VOL	10	AV6	-0.17	0.31	0.48	Array	WAR	FLT	
11	24	35	53	0.23	AVB	8	AV6	0.14			Bobbin		CBA	
11	25	35	53	0.72	VOL	12	AV7	-0.20	0.31	0.51	Array	WAR	FLT	
11	25	35	53	0.25	AVB	8	AV7	0.11			Bobbin		CBA	
11	26	35	53	0.87	VOL	14	AV8	-0.20	0.34	0.54	Array	WAR	FLT	
11	26	35	53	0.32	AVB	10	AV8	-0.03			Bobbin		CBA	
11	27	35	53	1.11	VOL	16	AV9	-0.17	0.37	0.54	Array	WAR	FLT	
11	27	35	53	0.44	AVB	14	AV9	-0.06			Bobbin		CBA	
12	28	47	53	0.61	VOL	11	AV5	-0.14	0.42	0.56	Array	WAR	FLT	
12	28	47	53	0.28	AVB	10	AV5	0.17			Bobbin		CBA	
12	29	47	53	1.65	VOL	20	AV6	-0.23	0.37	0.60	Array	WAR	FLT	
12	29	47	53	0.57	AVB	18	AV6	-0.03			Bobbin		CBA	
12	30	47	53	1.13	VOL	16	AV7	-0.20	0.37	0.57	Array	WAR	FLT	
12	30	47	53	0.34	AVB	12	AV7	-0.06			Bobbin		CBA	
13	31	54	54	0.41	VOL	10	AV4	-0.34	0.25	0.59	Array	WAR	TPR	
13	31	54	54	0.15	AVB	6	AV4	-0.08			Bobbin		CBA	
13	32	54	54	0.38	VOL	9	AV5	-0.17	0.20	0.37	Array	WAR	TPR	
13	32	54	54	0.14	AVB	6	AV5	-0.11			Bobbin		CBA	
13	33	54	54	1.45	VOL	18	AV6	-0.20	0.37	0.57	Array	WAR	TPR	
13	33	54	54	0.49	VOL	10	AV6	-0.20	0.17	0.37	Array	WAR	TPR	
13	33	54	54	0.52	AVB	17	AV6	-0.08			Bobbin		CBA	
13	34	54	54	1.09	VOL	15	AV7	-0.17	0.40	0.57	Array	WAR	TPR	
13	34	54	54	0.32	AVB	11	AV7	-0.03			Bobbin		CBA	
13	35	54	54	1.17	VOL	16	AV8	-0.17	0.40	0.57	Array	WAR	TPR	
13	35	54	54	0.73	VOL	13	AV8	-0.14	0.45	0.59	Array	WAR	TPR	
13	35	54	54	0.57	AVB	18	AV8	0.00			Bobbin		CBA	
14	36	51	55	0.32	VOL	9	AV3	-0.14	0.20	0.34	Array	WAR	FLT	
14	36	51	55	0.09	AVB	3	AV3	0.06			Bobbin		CBA	
15	37	52	55	0.23	VOL	8	AV7	-0.17	0.20	0.37	Array	WAR	FLT	NBC
16	38	42	58	0.27	VOL	8	AV6	0.00	0.26	0.26	Array	WAR	TPR	NBC
16	39	42	58	0.93	VOL	14	AV7	-0.12	0.43	0.55	Array	WAR	FLT	
16	39	42	58	0.31	AVB	10	AV7	0.12			Bobbin		CBA	
16	40	42	58	0.35	VOL	9	AV8	-0.06	0.26	0.32	Array	WAR	TPR	NBC
17	41	47	58	0.45	VOL	10	AV3	-0.37	-0.03	0.34	Array	WAR	FLT	
17	41	47	58	0.17	AVB	6	AV3	-0.14			Bobbin		CBA	
17	42	47	58	0.86	VOL	14	AV4	-0.42	0.03	0.45	Array	WAR	FLT	
17	42	47	58	0.26	AVB	9	AV4	-0.17			Bobbin		CBA	

TABLE 4

Steam Generator 12 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
17	43	47	58	0.45	VOL	10	AV5	-0.31	0.11	0.42	Array	WAR	FLT	NBC
17	44	47	58	0.31	VOL	9	AV6	-0.25	0.11	0.36	Array	WAR	FLT	NBC
18	45	33	60	0.17	VOL	7	AV4	-0.26	0.00	0.26	Array	WAR	TPR	NBC
18	46	33	60	0.67	VOL	12	AV7	-0.23	0.17	0.40	Array	WAR	TPR	
18	46	33	60	0.18	AVB	7	AV7	0.06			Bobbin		CBA	
19	47	39	61	0.24	VOL	8	AV2	-0.20	0.12	0.32	Array	WAR	TPR	NBC
19	48	39	61	0.65	VOL	12	AV3	-0.35	0.17	0.52	Array	WAR	TPR	
19	48	39	61	0.22	AVB	8	AV3	-0.06			Bobbin		CBA	
19	49	39	61	0.37	VOL	9	AV4	-0.29	0.14	0.43	Array	WAR	TPR	
19	49	39	61	0.11	AVB	4	AV4	-0.06			Bobbin		CBA	
20	50	54	61	0.39	VOL	9	AV3	-0.28	0.28	0.56	Array	WAR	FLT	
20	50	54	61	0.16	AVB	6	AV3	-0.03			Bobbin		CBA	
20	51	54	61	0.32	VOL	8	AV4	-0.34	0.25	0.59	Array	WAR	FLT	NBC
21	52	55	61	0.66	VOL	12	AV9	-0.14	0.46	0.60	Array	WAR	FLT	
21	52	55	61	0.17	AVB	6	AV9	0.11			Bobbin		CBA	
22	53	41	64	0.27	VOL	8	AV2	-0.23	0.14	0.37	Array	WAR	FLT	
22	53	41	64	0.16	AVB	6	AV2	-0.06			Bobbin		CBA	
22	54	41	64	1.02	VOL	15	AV3	-0.26	0.29	0.55	Array	WAR	FLT	
22	54	41	64	0.42	AVB	14	AV3	0.06			Bobbin		CBA	
22	55	41	64	0.4	VOL	10	AV4	-0.32	0.20	0.52	Array	WAR	FLT	
22	55	41	64	0.18	AVB	7	AV4	0.03			Bobbin		CBA	
22	56	41	64	0.28	VOL	8	AV5	-0.23	0.17	0.40	Array	WAR	FLT	
22	56	41	64	0.25	AVB	9	AV5	-0.03			Bobbin		CBA	
22	57	41	64	0.86	VOL	14	AV6	-0.29	0.23	0.52	Array	WAR	FLT	
22	57	41	64	0.29	AVB	10	AV6	-0.09			Bobbin		CBA	
23	58	35	65	0.36	VOL	9	AV4	-0.32	0.09	0.41	Array	WAR	TPR	
23	58	35	65	0.09	AVB	3	AV4	0.00			Bobbin		CBA	
24	59	47	65	0.13	AVB	5	AV2	0.00			Bobbin		NCA	
24	60	47	65	0.79	VOL	13	AV3	-0.23	0.26	0.49	Array	WAR	TPR	
24	60	47	65	0.2	AVB	7	AV3	0.11			Bobbin		CBA	
24	61	47	65	0.33	VOL	9	AV4	-0.55	0.06	0.61	Array	WAR	TPR	
24	61	47	65	0.13	AVB	5	AV4	-0.17			Bobbin		CBA	
24	62	47	65	0.6	VOL	11	AV5	-0.37	0.23	0.60	Array	WAR	FLT	
24	62	47	65	0.45	VOL	10	AV5	-0.26	0.17	0.43	Array	WAR	FLT	
24	62	47	65	0.35	AVB	12	AV5	-0.03			Bobbin		CBA	
25	63	31	66	0.28	VOL	9	AV7	-0.29	-0.03	0.26	Array	WAR	TPR	
25	63	31	66	0.09	AVB	3	AV7	-0.23			Bobbin		CBA	
26	64	39	66	0.46	VOL	10	AV3	-0.32	0.14	0.46	Array	WAR	TPR	
26	64	39	66	0.1	AVB	4	AV3	-0.12			Bobbin		CBA	
26	65	39	66	1.08	VOL	15	AV4	-0.38	0.17	0.55	Array	WAR	FLT	

TABLE 4

Steam Generator 12 AVB Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
26	65	39	66	0.45	AVB	14	AV4	0.03			Bobbin		CBA	
26	66	39	66	0.42	VOL	10	AV5	-0.29	0.26	0.55	Array	WAR	TPR	
26	66	39	66	0.17	AVB	6	AV5	0.09			Bobbin		CBA	
26	67	39	66	0.97	VOL	14	AV6	-0.35	0.23	0.58	Array	WAR	TPR	
26	67	39	66	0.32	AVB	11	AV6	-0.12			Bobbin		CBA	
26	68	39	66	1.65	VOL	20	AV7	-0.38	0.20	0.58	Array	WAR	TPR	
26	68	39	66	0.48	AVB	15	AV7	-0.12			Bobbin		CBA	
26	69	39	66	0.71	VOL	12	AV8	-0.32	0.17	0.49	Array	WAR	TPR	
26	69	39	66	0.23	AVB	8	AV8	-0.09			Bobbin		CBA	
27	70	51	66	0.31	VOL	9	AV4	-0.32	0.12	0.44	Array	WAR	TPR	NBC
27	71	51	66	0.49	VOL	10	AV6	-0.38	0.09	0.47	Array	WAR	TPR	NBC
27	72	51	66	0.42	VOL	10	AV7	-0.35	0.06	0.41	Array	WAR	TPR	NBC
28	73	41	67	0.26	VOL	8	AV7	0.06	0.32	0.26	Array	WAR	TPR	NBC
29	74	37	69	0.24	VOL	8	AV3	-0.26	0.06	0.32	Array	WAR	TPR	NBC
29	75	37	69	0.17	VOL	7	AV4	-0.17	0.09	0.26	Array	WAR	TPR	NBC
29	76	37	69	0.08	AVB	3	AV6	-0.29			Bobbin		CBA	
29	76	37	69	0.23	VOL	8	AV6	-0.26	0.00	0.26	Array	WAR	TPR	
30	77	42	71	0.23	VOL	8	AV3	-0.12	0.14	0.26	Array	WAR	TPR	NBC
30	78	42	71	0.41	VOL	10	AV6	-0.03	0.32	0.35	Array	WAR	TPR	
30	78	42	71	0.09	AVB	3	AV6	0.00			Bobbin		CBA	
31	79	47	73	0.58	VOL	11	AV4	-0.34	0.34	0.68	Array	WAR	TPR	
31	79	47	73	0.15	AVB	5	AV4	-0.03			Bobbin		CBA	
31	80	47	73	0.59	VOL	11	AV5	-0.34	0.28	0.62	Array	WAR	TPR	
31	80	47	73	0.1	AVB	4	AV5	-0.03			Bobbin		CBA	
32	81	51	74	0.48	VOL	10	AV4	-0.25	0.22	0.47	Array	WAR	TPR	
32	81	51	74	0.12	AVB	4	AV4	-0.08			Bobbin		CBA	
33	82	39	79	0.2	VOL	8	AV4	-0.20	0.06	0.26	Array	WAR	TPR	
33	82	39	79	0.11	AVB	4	AV4	0.00			Bobbin		CBA	
33	83	39	79	0.77	VOL	13	AV5	-0.32	0.23	0.55	Array	WAR	TPR	
33	83	39	79	0.18	AVB	6	AV5	0.00			Bobbin		CBA	
33	84	39	79	0.81	VOL	13	AV6	-0.26	0.29	0.55	Array	WAR	TPR	
33	84	39	79	0.21	AVB	7	AV6	0.03			Bobbin		CBA	
33	85	39	79	0.21	VOL	8	AV8	-0.20	0.00	0.20	Array	WAR	TPR	
33	85	39	79	0.09	AVB	3	AV8	-0.12			Bobbin		CBA	
33	86	39	79	0.18	VOL	8	AV9	-0.20	0.12	0.32	Array	WAR	TPR	NBC

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	3	1	0.39	VOL	15	05H	-1.04	-0.55	0.49	Array	WAR	TPR	
1	1	3	1	0.08	WAR	7	05H	-0.81			Bobbin		CBA	
1	2	3	1	0.78	VOL	20	04C	0.23	0.70	0.47	Array	WAR	TPR	
1	2	3	1	0.15	WAR	13	04C	0.37			Bobbin		CBA	
2	3	5	1	0.43	VOL	16	05C	-0.90	-0.53	0.37	Array	WAR	TPR	
2	3	5	1	0.1	WAR	9	05C	-0.76			Bobbin		CBA	
3	4	6	6	0.41	VOL	15	04C	-0.90	-0.42	0.48	Array	WAR	TPR	
3	4	6	6	0.13	WAR	11	04C	-0.73			Bobbin		CBA	
4	5	25	8	0.37	VOL	15	05C	-0.93	-0.61	0.32	Array	WAR	TPR	
4	5	25	8	0.15	WAR	13	05C	-0.70			Bobbin		CBA	
5	6	27	9	0.36	VOL	14	06C	-0.96	-0.64	0.32	Array	WAR	TPR	NBC
6	7	30	10	0.26	VOL	13	05C	-0.84	-0.64	0.20	Array	WAR	TPR	NBC
7	8	32	12	0.75	VOL	19	06C	-0.96	-0.58	0.38	Array	WAR	TPR	
7	8	32	12	0.17	WAR	14	06C	-0.72			Bobbin		CBA	
8	9	33	14	0.5	VOL	16	06C	-0.93	-0.55	0.38	Array	WAR	TPR	
8	9	33	14	0.14	WAR	12	06C	-0.76			Bobbin		CBA	
9	10	34	14	0.82	VOL	20	06C	-0.95	-0.46	0.49	Array	WAR	TPR	
9	10	34	14	0.16	WAR	13	06C	-0.72			Bobbin		CBA	
10	11	36	16	0.42	VOL	15	05C	-0.87	-0.55	0.32	Array	WAR	TPR	NBC
11	12	23	17	0.29	VOL	13	04H	-0.95	-0.66	0.29	Array	WAR	TPR	
11	12	23	17	0.12	WAR	10	04H	-0.75			Bobbin		CBA	
12	13	37	18	0.47	VOL	16	04H	-0.98	-0.66	0.32	Array	WAR	TPR	
12	13	37	18	0.12	WAR	10	04H	-0.78			Bobbin		CBA	
13	14	39	18	0.39	VOL	15	05C	-0.84	-0.52	0.32	Array	WAR	TPR	NBC
14	15	38	19	0.39	VOL	15	06C	-0.96	-0.58	0.38	Array	WAR	TPR	
14	15	38	19	0.12	WAR	10	06C	-0.73			Bobbin		CBA	
15	16	37	20	0.4	VOL	15	06C	-0.90	-0.55	0.35	Array	WAR	TPR	
15	16	37	20	0.11	WAR	10	06C	-0.70			Bobbin		CBA	
16	17	41	20	0.34	VOL	14	06C	-0.87	-0.58	0.29	Array	WAR	TPR	NBC
16	18	41	20	0.41	VOL	15	05C	-0.90	-0.58	0.32	Array	WAR	TPR	
16	18	41	20	0.13	WAR	11	05C	-0.70			Bobbin		CBA	
17	19	7	23	0.35	VOL	14	04C	-0.92	-0.58	0.34	Array	WAR	TPR	
17	19	7	23	0.12	WAR	10	04C	-0.63			Bobbin		CBA	
18	20	42	23	0.49	VOL	16	06C	-0.84	-0.55	0.29	Array	WAR	TPR	
18	20	42	23	0.09	WAR	8	06C	-0.73			Bobbin		CBA	
19	21	38	27	0.6	VOL	18	06C	-0.99	-0.55	0.44	Array	WAR	TPR	
19	21	38	27	0.16	WAR	13	06C	-0.73			Bobbin		CBA	
20	22	48	29	0.53	VOL	17	06H	-1.01	-0.63	0.38	Array	WAR	TPR	NBC
20	23	48	29	0.28	VOL	13	08H	-1.12	-0.46	0.66	Array	WAR	TPR	
20	23	48	29	0.09	WAR	8	08H	-0.84			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
21	24	41	30	0.4	VOL	15	05H	-0.90	-0.61	0.29	Array	WAR	TPR	NBC
22	25	50	37	0.08	WAR	7	02H	0.40			Bobbin		NCA	
22	26	50	37	0.44	VOL	16	04H	-0.86	-0.37	0.49	Array	WAR	TPR	
22	26	50	37	0.1	WAR	9	04H	-0.66			Bobbin		CBA	
23	27	50	38	0.39	VOL	15	04H	-1.07	-0.61	0.46	Array	WAR	TPR	
23	27	50	38	0.09	WAR	8	04H	-0.72			Bobbin		CBA	
24	28	49	39	0.32	VOL	14	08C	-1.08	-0.61	0.47	Array	WAR	TPR	NBC
25	29	51	39	0.38	VOL	15	04H	-0.86	-0.32	0.54	Array	WAR	TPR	
25	29	51	39	0.11	WAR	10	04H	-0.72			Bobbin		CBA	
25	30	51	39	0.45	VOL	16	06H	-0.92	-0.49	0.43	Array	WAR	TPR	
25	30	51	39	0.12	WAR	10	06H	-0.78			Bobbin		CBA	
26	31	43	40	0.28	VOL	13	05C	-0.90	-0.55	0.35	Array	WAR	TPR	NBC
27	32	51	40	0.52	VOL	17	02H	0.32	0.69	0.37	Array	WAR	TPR	
27	32	51	40	0.18	WAR	15	02H	0.40			Bobbin		CBA	
27	33	51	40	0.58	VOL	17	08C	-1.11	-0.50	0.61	Array	WAR	TPR	
27	33	51	40	0.14	WAR	12	08C	-0.82			Bobbin		CBA	
28	34	52	40	0.3	VOL	13	04H	0.26	0.52	0.26	Array	WAR	TPR	
28	34	52	40	0.19	WAR	15	04H	0.43			Bobbin		CBA	
29	35	51	41	0.32	VOL	14	07H	-0.93	-0.58	0.35	Array	WAR	TPR	NBC
30	36	3	42	0.35	VOL	14	03C	-0.90	-0.53	0.37	Array	WAR	TPR	
30	36	3	42	0.1	WAR	9	03C	-0.45			Bobbin		CBA	
31	37	22	42	0.6	VOL	18	04H	-1.01	-0.64	0.37	Array	WAR	TPR	
31	37	22	42	0.07	WAR	6	04H	-0.81			Bobbin		CBA	
32	38	46	42	0.55	VOL	17	05C	-0.87	-0.51	0.36	Array	WAR	TPR	
32	38	46	42	0.06	WAR	6	05C	-0.76			Bobbin		CBA	
33	39	49	42	0.27	VOL	13	05H	-0.95	-0.66	0.29	Array	WAR	TPR	NBC
34	40	51	42	0.53	VOL	17	08C	-1.04	-0.61	0.43	Array	WAR	TPR	NBC
35	41	52	42	0.34	VOL	14	06C	-0.95	-0.69	0.26	Array	WAR	TPR	NBC
36	42	53	42	0.24	VOL	12	05C	-0.99	-0.73	0.26	Array	WAR	TPR	NBC
37	43	17	43	0.35	VOL	14	05H	-1.04	-0.72	0.32	Array	WAR	TPR	
37	43	17	43	0.07	WAR	6	05H	-0.87			Bobbin		CBA	
37	44	17	43	0.64	VOL	18	06H	-1.07	-0.72	0.35	Array	WAR	TPR	
37	44	17	43	0.14	WAR	12	06H	-0.87			Bobbin		CBA	
38	45	18	43	0.35	VOL	14	04H	-0.98	-0.72	0.26	Array	WAR	TPR	NBC
39	46	19	43	0.36	VOL	14	05H	-1.04	-0.75	0.29	Array	WAR	TPR	NBC
40	47	20	43	0.41	VOL	15	04H	-1.01	-0.67	0.34	Array	WAR	TPR	NBC
41	48	21	43	0.52	VOL	17	05H	-1.04	-0.72	0.32	Array	WAR	TPR	
41	48	21	43	0.06	WAR	6	05H	-0.84			Bobbin		CBA	
42	49	42	43	0.34	VOL	14	05H	-0.93	-0.62	0.31	Array	WAR	TPR	
42	49	42	43	0.09	WAR	8	05H	-0.65			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
43	50	51	43	0.25	VOL	12	04H	-0.84	-0.61	0.23	Array	WAR	TPR	
43	50	51	43	0.12	WAR	10	04H	-0.78			Bobbin		CBA	
44	51	53	43	0.47	VOL	16	05H	-0.83	-0.52	0.31	Array	WAR	TPR	NBC
44	52	53	43	0.46	VOL	16	08H	-0.93	-0.58	0.35	Array	WAR	TPR	NBC
44	53	53	43	0.36	VOL	14	05H	-0.80	-0.55	0.25	Array	WAR	TPR	NBC
44	54	53	43	0.46	VOL	16	08H	-1.01	-0.66	0.35	Array	WAR	TPR	NBC
45	55	16	44	0.27	VOL	13	05H	-0.91	-0.60	0.31	Array	WAR	TPR	
45	55	16	44	0.12	WAR	10	05H	-0.86			Bobbin		CBA	
46	56	19	44	0.25	VOL	12	05H	-0.91	-0.63	0.28	Array	WAR	TPR	
46	56	19	44	0.13	WAR	11	05H	-0.83			Bobbin		CBA	
47	57	20	44	0.44	VOL	16	05H	-0.91	-0.63	0.28	Array	WAR	TPR	
47	57	20	44	0.16	WAR	13	05H	-0.89			Bobbin		CBA	
48	58	22	44	0.36	VOL	14	03H	-0.87	-0.61	0.26	Array	WAR	TPR	
48	58	22	44	0.13	WAR	11	03H	-0.78			Bobbin		CBA	
49	59	23	44	0.29	VOL	13	02H	-0.81	-0.58	0.23	Array	WAR	TPR	
49	59	23	44	0.12	WAR	10	02H	-0.69			Bobbin		CBA	
50	60	37	44	0.61	VOL	18	08C	-1.01	-0.56	0.45	Array	WAR	TPR	
50	60	37	44	0.1	WAR	9	08C	-0.84			Bobbin		CBA	
51	61	51	44	0.29	VOL	13	05H	-1.10	-0.69	0.41	Array	WAR	TPR	
51	61	51	44	0.1	WAR	9	05H	-0.75			Bobbin		CBA	
52	62	53	44	0.59	VOL	18	07H	-1.01	-0.63	0.38	Array	WAR	TPR	
52	62	53	44	0.18	WAR	15	07H	-0.78			Bobbin		CBA	
53	63	15	45	0.48	VOL	16	05H	-1.04	-0.72	0.32	Array	WAR	TPR	
53	63	15	45	0.11	WAR	10	05H	-0.87			Bobbin		CBA	
54	64	18	45	0.42	VOL	15	04H	-0.98	-0.67	0.31	Array	WAR	TPR	
54	64	18	45	0.08	WAR	7	04H	-0.69			Bobbin		CBA	
55	65	20	45	0.57	VOL	17	04H	-1.01	-0.70	0.31	Array	WAR	TPR	
55	65	20	45	0.12	WAR	10	04H	-0.78			Bobbin		CBA	
56	66	21	45	0.51	VOL	17	04H	-1.07	-0.72	0.35	Array	WAR	TPR	NBC
57	67	22	45	0.32	VOL	14	02H	-0.90	-0.70	0.20	Array	WAR	TPR	
57	67	22	45	0.07	WAR	6	02H	-0.72			Bobbin		CBA	
58	68	23	45	0.53	VOL	17	03H	-1.04	-0.72	0.32	Array	WAR	TPR	
58	68	23	45	0.1	WAR	9	03H	-0.81			Bobbin		CBA	
59	69	36	45	0.44	VOL	16	08C	-0.96	-0.48	0.48	Array	WAR	TPR	
59	69	36	45	0.06	WAR	6	08C	-0.87			Bobbin		CBA	
60	70	18	46	0.35	VOL	14	05H	-0.95	-0.63	0.32	Array	WAR	TPR	
60	70	18	46	0.14	WAR	12	05H	-0.86			Bobbin		CBA	
61	71	22	46	0.46	VOL	16	04H	-0.93	-0.64	0.29	Array	WAR	TPR	
61	71	22	46	0.16	WAR	13	04H	-0.81			Bobbin		CBA	
62	72	23	46	0.31	VOL	14	03H	-0.84	-0.58	0.26	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
62	72	23	46	0.15	WAR	13	03H	-0.78			Bobbin		CBA	
63	73	52	46	0.39	VOL	15	05H	-0.87	-0.52	0.35	Array	WAR	TPR	NBC
64	74	18	47	0.29	VOL	13	05H	-1.10	-0.78	0.32	Array	WAR	TPR	NBC
65	75	19	47	0.39	VOL	15	04H	-1.01	-0.75	0.26	Array	WAR	TPR	
65	75	19	47	0.07	WAR	6	04H	-0.81			Bobbin		CBA	
66	76	20	47	0.28	VOL	13	03H	-0.98	-0.72	0.26	Array	WAR	TPR	NBC
67	77	21	47	0.48	VOL	16	03H	-0.98	-0.72	0.26	Array	WAR	TPR	
67	77	21	47	0.13	WAR	11	03H	-0.78			Bobbin		CBA	
68	78	22	47	0.43	VOL	15	05H	-1.01	-0.72	0.29	Array	WAR	TPR	NBC
69	79	23	47	0.39	VOL	15	03H	-0.98	-0.72	0.26	Array	WAR	TPR	
69	79	23	47	0.1	WAR	9	03H	-0.81			Bobbin		CBA	
70	80	24	47	0.27	VOL	13	02H	-0.93	-0.70	0.23	Array	WAR	TPR	
70	80	24	47	0.14	WAR	12	02H	-0.75			Bobbin		CBA	
70	81	24	47	0.39	VOL	15	03H	-1.01	-0.72	0.29	Array	WAR	TPR	NBC
71	82	53	47	0.34	VOL	14	04H	-0.96	-0.72	0.24	Array	WAR	TPR	
71	82	53	47	0.07	WAR	6	04H	-0.64			Bobbin		CBA	
72	83	54	47	0.33	VOL	14	04H	-0.93	-0.67	0.26	Array	WAR	TPR	
72	83	54	47	0.09	WAR	8	04H	-0.72			Bobbin		CBA	
73	84	17	48	0.13	WAR	11	05H	-0.86			Bobbin		NCA	
74	85	54	48	0.46	VOL	16	04H	-0.93	-0.67	0.26	Array	WAR	TPR	
74	85	54	48	0.11	WAR	10	04H	-0.75			Bobbin		CBA	
75	86	17	49	0.37	VOL	15	05H	-1.01	-0.72	0.29	Array	WAR	TPR	
75	86	17	49	0.08	WAR	7	05H	-0.90			Bobbin		CBA	
76	87	19	49	0.56	VOL	17	05H	-1.01	-0.69	0.32	Array	WAR	TPR	
76	87	19	49	0.13	WAR	11	05H	-0.81			Bobbin		CBA	
77	88	21	49	0.48	VOL	16	04H	-1.01	-0.72	0.29	Array	WAR	TPR	
77	88	21	49	0.14	WAR	12	04H	-0.84			Bobbin		CBA	
78	89	23	49	0.32	VOL	14	03H	-0.99	-0.70	0.29	Array	WAR	TPR	
78	89	23	49	0.11	WAR	10	03H	-0.78			Bobbin		CBA	
79	90	52	49	0.55	VOL	17	07H	-0.98	-0.72	0.26	Array	WAR	TPR	
79	90	52	49	0.09	WAR	8	07H	-0.78			Bobbin		CBA	
80	91	53	49	0.35	VOL	14	02H	0.20	0.49	0.29	Array	WAR	TPR	
80	91	53	49	0.15	WAR	13	02H	0.40			Bobbin		CBA	
81	92	19	50	0.27	VOL	13	04H	-0.90	-0.64	0.26	Array	WAR	TPR	
81	92	19	50	0.11	WAR	10	04H	-0.84			Bobbin		CBA	
82	93	53	50	0.55	VOL	17	04H	-0.78	-0.29	0.49	Array	WAR	TPR	
82	93	53	50	0.17	WAR	14	04H	-0.64			Bobbin		CBA	
83	94	54	50	0.64	VOL	18	05H	-0.98	-0.32	0.66	Array	WAR	TPR	
83	94	54	50	0.65	VOL	12	05H	-0.98	-0.32	0.66	Array	WAR	TPR	
83	94	54	50	0.14	WAR	12	05H	-0.72			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
84	95	22	51	0.25	VOL	12	03H	-0.96	-0.72	0.24	Array	WAR	TPR	NBC
85	96	48	51	0.41	VOL	15	04H	-0.95	-0.64	0.31	Array	WAR	TPR	
85	96	48	51	0.09	WAR	8	04H	-0.78			Bobbin		CBA	
86	97	53	51	0.25	VOL	12	03H	-0.90	-0.46	0.44	Array	WAR	NBC	TPR
86	98	53	51	0.49	VOL	16	04H	-0.84	-0.46	0.38	Array	WAR	TPR	
86	98	53	51	0.14	WAR	12	04H	-0.72			Bobbin		CBA	
87	99	54	51	0.17	WAR	14	02H	0.30			Bobbin		CBA	
87	99	54	51	0.39	VOL	15	02H	0.33	0.58	0.25	Array	WAR	TPR	
87	100	54	51	0.61	VOL	18	04H	-0.89	-0.42	0.47	Array	WAR	TPR	
87	100	54	51	0.1	WAR	9	04H	-0.61			Bobbin		CBA	
87	101	54	51	0.84	VOL	20	07H	-0.98	-0.42	0.56	Array	WAR	TPR	
87	101	54	51	0.13	WAR	11	07H	-0.64			Bobbin		CBA	
88	102	18	52	0.21	VOL	12	04H	-1.01	-0.75	0.26	Array	WAR	TPR	
88	102	18	52	0.1	WAR	9	04H	-0.81			Bobbin		CBA	
89	103	53	52	0.67	VOL	18	04H	-0.84	-0.51	0.33	Array	WAR	TPR	
89	103	53	52	0.14	WAR	12	04H	-0.62			Bobbin		CBA	
89	104	53	52	0.42	VOL	15	06H	-0.88	-0.57	0.31	Array	WAR	TPR	
89	104	53	52	0.08	WAR	7	06H	-0.62			Bobbin		CBA	
90	105	54	52	0.55	VOL	17	04H	0.00	0.54	0.54	Array	WAR	TPR	
90	105	54	52	0.17	WAR	14	04H	0.51			Bobbin		CBA	
91	106	55	52	0.31	VOL	14	03H	-0.82	-0.42	0.40	Array	WAR	TPR	
91	106	55	52	0.09	WAR	8	03H	-0.56			Bobbin		CBA	
91	107	55	52	0.74	VOL	19	07H	-0.91	-0.43	0.48	Array	WAR	TPR	
91	107	55	52	0.14	WAR	12	07H	-0.68			Bobbin		CBA	
92	108	52	53	0.55	VOL	17	04H	-0.89	-0.25	0.64	Array	WAR	TPR	
92	108	52	53	0.11	WAR	10	04H	-0.64			Bobbin		CBA	
93	109	54	53	0.5	VOL	16	04H	-0.86	-0.55	0.31	Array	WAR	TPR	
93	109	54	53	0.12	WAR	10	04H	-0.61			Bobbin		CBA	
93	110	54	53	0.33	VOL	14	06C	-0.98	-0.70	0.28	Array	WAR	TPR	
93	110	54	53	0.08	WAR	7	06C	-0.84			Bobbin		CBA	
94	111	55	53	0.66	VOL	18	04H	-0.91	-0.55	0.36	Array	WAR	TPR	
94	111	55	53	0.14	WAR	12	04H	-0.61			Bobbin		CBA	
94	112	55	53	0.38	VOL	15	07H	-0.95	-0.42	0.53	Array	WAR	TPR	
94	112	55	53	0.1	WAR	9	07H	-0.67			Bobbin		CBA	
95	113	48	54	0.63	VOL	18	03H	-0.96	-0.42	0.54	Array	WAR	TPR	
95	113	48	54	0.21	WAR	16	03H	-0.62			Bobbin		CBA	
96	114	54	54	0.61	VOL	18	04H	-0.93	-0.51	0.42	Array	WAR	TPR	
96	114	54	54	0.14	WAR	12	04H	-0.65			Bobbin		CBA	
96	115	54	54	0.31	VOL	14	06H	-0.93	-0.62	0.31	Array	WAR	TPR	
96	115	54	54	0.07	WAR	6	06H	-0.65			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
97	116	55	54	0.27	VOL	13	02H	0.31	0.56	0.25	Array	WAR	TPR	
97	116	55	54	0.15	WAR	13	02H	0.48			Bobbin		CBA	
97	117	55	54	0.46	VOL	16	04H	-0.85	-0.34	0.51	Array	WAR	TPR	
97	117	55	54	0.07	WAR	6	04H	-0.59			Bobbin		CBA	
97	118	55	54	0.39	VOL	15	08H	-0.95	-0.63	0.32	Array	WAR	TPR	NBC
98	119	52	55	0.42	VOL	15	07H	-1.04	-0.45	0.59	Array	WAR	TPR	
98	119	52	55	0.1	WAR	9	07H	-0.59			Bobbin		CBA	
99	120	53	55	0.54	VOL	17	04H	-0.88	-0.41	0.47	Array	WAR	TPR	
99	120	53	55	0.12	WAR	10	04H	-0.52			Bobbin		CBA	
100	121	54	55	0.65	VOL	18	04H	-0.99	-0.36	0.63	Array	WAR	TPR	
100	121	54	55	0.09	WAR	8	04H	-0.64			Bobbin		CBA	
101	122	55	55	0.32	VOL	14	05C	0.20	0.39	0.19	Array	WAR	TPR	
101	122	55	55	0.15	WAR	13	05C	0.34			Bobbin		CBA	
102	123	33	56	0.27	VOL	13	05C	-0.90	-0.59	0.31	Array	WAR	TPR	
102	123	33	56	0.06	WAR	6	05C	-0.68			Bobbin		CBA	
103	124	42	56	0.13	WAR	11	05H	0.45			Bobbin		NCA	
104	125	53	56	0.51	VOL	17	04H	-0.87	-0.56	0.31	Array	WAR	TPR	
104	125	53	56	0.09	WAR	8	04H	-0.62			Bobbin		CBA	
105	126	54	56	0.07	WAR	6	02H	0.48			Bobbin		NCA	
105	127	54	56	0.72	VOL	19	04H	-0.85	-0.48	0.37	Array	WAR	TPR	
105	127	54	56	0.13	WAR	11	04H	-0.62			Bobbin		CBA	
105	128	54	56	0.79	VOL	20	07H	-0.99	-0.65	0.34	Array	WAR	TPR	
105	128	54	56	0.19	WAR	15	07H	-0.71			Bobbin		CBA	
106	129	53	57	0.43	VOL	15	04H	-0.80	-0.50	0.30	Array	WAR	TPR	NBC
107	130	55	57	0.41	VOL	15	04H	-0.91	-0.44	0.47	Array	WAR	TPR	
107	130	55	57	0.1	WAR	9	04H	-0.64			Bobbin		CBA	
107	131	55	57	0.5	VOL	16	05C	-0.95	-0.64	0.31	Array	WAR	TPR	
107	131	55	57	0.08	WAR	7	05C	-0.75			Bobbin		CBA	
108	132	28	58	0.65	VOL	18	05H	-0.96	-0.64	0.32	Array	WAR	TPR	NBC
109	133	43	58	0.35	VOL	14	06C	-0.87	-0.59	0.28	Array	WAR	TPR	
109	133	43	58	0.07	WAR	6	06C	-0.73			Bobbin		CBA	
110	134	54	58	0.51	VOL	17	04H	-0.84	-0.37	0.47	Array	WAR	TPR	
110	134	54	58	0.13	WAR	11	04H	-0.59			Bobbin		CBA	
110	135	54	58	0.36	VOL	14	06C	-0.93	-0.62	0.31	Array	WAR	TPR	
110	135	54	58	0.07	WAR	6	06C	-0.81			Bobbin		CBA	
110	136	54	58	0.23	VOL	12	05C	-0.90	-0.62	0.28	Array	WAR	TPR	
110	136	54	58	0.08	WAR	7	05C	-0.76			Bobbin		CBA	
110	137	54	58	0.54	VOL	17	02C	0.31	0.62	0.31	Array	WAR	TPR	
110	137	54	58	0.21	WAR	16	02C	0.39			Bobbin		CBA	
111	138	55	58	0.64	VOL	18	02H	0.20	0.56	0.36	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
111	138	55	58	0.22	WAR	17	02H	0.51			Bobbin		CBA	
111	139	55	58	0.27	VOL	13	03H	-0.82	-0.37	0.45	Array	WAR	TPR	
111	139	55	58	0.17	WAR	14	03H	-0.47			Bobbin		CBA	
111	140	55	58	0.48	VOL	16	04H	-0.87	-0.59	0.28	Array	WAR	TPR	
111	140	55	58	0.17	WAR	14	04H	-0.62			Bobbin		CBA	
111	141	55	58	0.45	VOL	16	05H	-0.95	-0.62	0.33	Array	WAR	TPR	
111	141	55	58	0.12	WAR	10	05H	-0.62			Bobbin		CBA	
112	142	44	59	0.56	VOL	17	04H	-0.79	-0.31	0.48	Array	WAR	TPR	
112	142	44	59	0.1	WAR	9	04H	-0.65			Bobbin		CBA	
113	143	50	59	0.52	VOL	17	03H	-0.73	-0.48	0.25	Array	WAR	TPR	
113	143	50	59	0.08	WAR	7	03H	-0.62			Bobbin		CBA	
114	144	54	59	0.51	VOL	16	01H	-0.65	-0.08	0.57	Array	WAR	TPR	
114	144	54	59	0.1	WAR	9	01H	-0.49			Bobbin		CBA	
114	145	54	59	0.58	VOL	17	04H	-0.79	-0.25	0.54	Array	WAR	TPR	
114	145	54	59	0.17	WAR	14	04H	-0.65			Bobbin		CBA	
115	146	55	59	0.57	VOL	17	01H	-0.65	-0.30	0.35	Array	WAR	TPR	
115	146	55	59	0.15	WAR	13	01H	-0.49			Bobbin		CBA	
115	147	55	59	0.12	WAR	10	03H	0.51			Bobbin		NCA	
115	148	55	59	0.57	VOL	17	07H	-0.89	-0.51	0.38	Array	WAR	TPR	
115	148	55	59	0.09	WAR	8	07H	-0.68			Bobbin		CBA	
115	149	55	59	0.52	VOL	17	08C	-1.04	-0.71	0.33	Array	WAR	TPR	NBC
115	150	55	59	0.37	VOL	15	05C	-0.93	-0.68	0.25	Array	WAR	TPR	NBC
116	151	44	60	0.25	VOL	12	05H	-0.77	-0.54	0.23	Array	WAR	TPR	NBC
117	152	49	60	0.3	VOL	13	06H	-0.82	-0.51	0.31	Array	WAR	TPR	NBC
118	153	52	60	0.49	VOL	16	04H	-0.82	-0.56	0.26	Array	WAR	TPR	
118	153	52	60	0.13	WAR	11	04H	-0.65			Bobbin		CBA	
119	154	54	60	0.53	VOL	17	02H	0.20	0.65	0.45	Array	WAR	TPR	
119	154	54	60	0.13	WAR	11	02H	0.48			Bobbin		CBA	
119	155	54	60	0.51	VOL	17	04H	-0.79	-0.22	0.57	Array	WAR	TPR	
119	155	54	60	0.1	WAR	9	04H	-0.65			Bobbin		CBA	
120	156	34	61	0.36	VOL	14	06H	-0.76	-0.51	0.25	Array	WAR	TPR	
120	156	34	61	0.07	WAR	6	06H	-0.65			Bobbin		CBA	
121	157	41	61	0.37	VOL	15	04H	-0.92	-0.45	0.47	Array	WAR	TPR	
121	157	41	61	0.07	WAR	6	04H	-0.64			Bobbin		CBA	
122	158	53	61	0.35	VOL	14	04H	-0.79	-0.51	0.28	Array	WAR	TPR	
122	158	53	61	0.09	WAR	8	04H	-0.42			Bobbin		CBA	
123	159	54	61	0.29	VOL	13	04H	-0.73	-0.59	0.14	Array	WAR	TPR	
123	159	54	61	0.08	WAR	7	04H	-0.64			Bobbin		CBA	
123	160	54	61	0.31	VOL	14	05H	-0.73	-0.54	0.19	Array	WAR	TPR	NBC
124	161	55	61	0.43	VOL	15	03H	-0.75	-0.14	0.61	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
124	161	55	61	0.13	WAR	11	03H	-0.56			Bobbin		CBA	
125	162	9	62	0.33	VOL	14	07C	-0.90	-0.64	0.26	Array	WAR	TPR	NBC
125	163	9	62	0.35	VOL	14	04C	-0.92	-0.60	0.32	Array	WAR	TPR	
125	163	9	62	0.07	WAR	6	04C	-0.67			Bobbin		CBA	
126	164	24	62	0.5	VOL	16	06H	-1.07	-0.70	0.37	Array	WAR	NBC	TPR
127	165	48	62	0.32	VOL	14	08C	-1.01	-0.68	0.33	Array	WAR	TPR	
127	165	48	62	0.08	WAR	7	08C	-0.85			Bobbin		CBA	
128	166	51	62	0.51	VOL	17	04H	-0.84	-0.48	0.36	Array	WAR	TPR	
128	166	51	62	0.11	WAR	10	04H	-0.64			Bobbin		CBA	
129	167	54	62	0.51	VOL	17	04H	-0.79	-0.48	0.31	Array	WAR	TPR	
129	167	54	62	0.12	WAR	10	04H	-0.62			Bobbin		CBA	
130	168	55	62	0.38	VOL	15	02H	0.33	0.61	0.28	Array	WAR	TPR	NBC
131	169	17	63	0.43	VOL	15	06C	-0.98	-0.55	0.43	Array	WAR	TPR	
131	169	17	63	0.08	WAR	7	06C	-0.77			Bobbin		CBA	
132	170	33	63	0.41	VOL	15	04H	-0.84	-0.50	0.34	Array	WAR	TPR	
132	170	33	63	0.1	WAR	9	04H	-0.67			Bobbin		CBA	
133	171	53	63	0.59	VOL	18	04H	-0.75	-0.22	0.53	Array	WAR	TPR	
133	171	53	63	0.16	WAR	13	04H	-0.59			Bobbin		CBA	
134	172	54	63	0.54	VOL	17	02H	0.36	0.69	0.33	Array	WAR	TPR	
134	172	54	63	0.1	WAR	9	02H	0.50			Bobbin		CBA	
134	173	54	63	0.39	VOL	15	03H	-0.75	-0.42	0.33	Array	WAR	TPR	
134	173	54	63	0.11	WAR	10	03H	-0.58			Bobbin		CBA	
134	174	54	63	0.55	VOL	17	04H	-0.78	-0.47	0.31	Array	WAR	TPR	
134	174	54	63	0.13	WAR	11	04H	-0.61			Bobbin		CBA	
135	175	55	63	0.31	VOL	14	02H	0.25	0.64	0.39	Array	WAR	TPR	
135	175	55	63	0.09	WAR	8	02H	0.50			Bobbin		CBA	
136	176	47	64	0.15	WAR	13	03H	0.48			Bobbin		NCA	
137	177	49	64	0.69	VOL	19	08C	-0.98	-0.62	0.36	Array	WAR	TPR	
137	177	49	64	0.13	WAR	11	08C	-0.84			Bobbin		CBA	
138	178	50	64	0.29	VOL	13	04H	-0.83	-0.58	0.25	Array	WAR	TPR	
138	178	50	64	0.11	WAR	10	04H	-0.64			Bobbin		CBA	
139	179	53	64	0.63	VOL	18	04H	-0.81	-0.31	0.50	Array	WAR	TPR	
139	179	53	64	0.16	WAR	13	04H	-0.61			Bobbin		CBA	
140	180	54	64	0.4	VOL	15	02H	0.22	0.58	0.36	Array	WAR	TPR	
140	180	54	64	0.15	WAR	13	02H	0.50			Bobbin		CBA	
140	181	54	64	0.12	WAR	10	03H	0.50			Bobbin		NCA	
140	182	54	64	0.64	VOL	18	04H	-0.81	-0.33	0.48	Array	WAR	TPR	
140	182	54	64	0.16	WAR	13	04H	-0.61			Bobbin		CBA	
140	183	54	64	0.53	VOL	17	08H	-0.94	-0.60	0.34	Array	WAR	TPR	
140	183	54	64	0.11	WAR	10	08H	-0.74			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
141	184	55	64	0.37	VOL	15	04H	-0.80	-0.55	0.25	Array	WAR	TPR	NBC
141	185	55	64	0.52	VOL	17	02C	0.23	0.58	0.35	Array	WAR	TPR	
141	185	55	64	0.21	WAR	16	02C	0.40			Bobbin		CBA	
142	186	30	65	0.29	VOL	13	04H	-0.99	-0.70	0.29	Array	WAR	TPR	NBC
143	187	47	65	0.51	VOL	17	04H	-0.78	-0.45	0.33	Array	WAR	TPR	
143	187	47	65	0.14	WAR	12	04H	-0.67			Bobbin		CBA	
144	188	54	65	0.34	VOL	14	04H	-0.78	-0.45	0.33	Array	WAR	TPR	
144	188	54	65	0.07	WAR	6	04H	-0.61			Bobbin		CBA	
144	189	54	65	0.5	VOL	16	02C	0.17	0.51	0.34	Array	WAR	TPR	
144	189	54	65	0.15	WAR	13	02C	0.42			Bobbin		CBA	
145	190	48	66	0.38	VOL	15	03H	-0.89	-0.58	0.31	Array	WAR	TPR	
145	190	48	66	0.32	VOL	14	03H	-0.83	-0.61	0.22	Array	WAR	TPR	
145	190	48	66	0.23	WAR	18	03H	-0.61			Bobbin		CBA	
145	191	48	66	0.36	VOL	14	04H	-0.87	-0.56	0.31	Array	WAR	TPR	
145	191	48	66	0.09	WAR	8	04H	-0.61			Bobbin		CBA	
146	192	23	67	0.11	WAR	10	03H	0.38			Bobbin		NCA	
147	193	24	67	0.31	VOL	14	05H	-1.04	-0.72	0.32	Array	WAR	TPR	NBC
148	194	32	67	0.41	VOL	15	04H	0.12	0.37	0.25	Array	WAR	TPR	
148	194	32	67	0.12	WAR	10	04H	0.40			Bobbin		CBA	
149	195	53	67	0.72	VOL	19	08C	-1.07	-0.40	0.67	Array	WAR	TPR	
149	195	53	67	0.11	WAR	10	08C	-0.89			Bobbin		CBA	
149	196	53	67	0.64	VOL	18	02C	0.09	0.81	0.72	Array	WAR	TPR	
149	196	53	67	0.21	WAR	16	02C	0.40			Bobbin		CBA	
150	197	54	67	0.71	VOL	19	02C	0.26	0.69	0.43	Array	WAR	TPR	
150	197	54	67	0.27	WAR	20	02C	0.40			Bobbin		CBA	
151	198	32	68	0.29	VOL	13	05H	-1.05	-0.61	0.44	Array	WAR	TPR	
151	198	32	68	0.11	WAR	10	05H	-0.70			Bobbin		CBA	
152	199	51	68	0.11	WAR	10	03H	0.49			Bobbin		NCA	
152	200	51	68	0.38	VOL	15	04H	-0.80	-0.60	0.20	Array	WAR	TPR	
152	200	51	68	0.09	WAR	8	04H	-0.69			Bobbin		CBA	
153	201	52	68	0.23	VOL	12	03C	-0.87	-0.61	0.26	Array	WAR	TPR	
153	201	52	68	0.11	WAR	10	03C	-0.66			Bobbin		CBA	
153	202	52	68	0.46	VOL	16	02C	0.20	0.52	0.32	Array	WAR	TPR	
153	202	52	68	0.15	WAR	13	02C	0.40			Bobbin		CBA	
154	203	53	68	0.25	VOL	12	06C	-0.89	-0.69	0.20	Array	WAR	TPR	NBC
154	204	53	68	0.76	VOL	19	02C	0.23	0.58	0.35	Array	WAR	TPR	
154	204	53	68	0.27	WAR	20	02C	0.43			Bobbin		CBA	
155	205	54	68	0.26	VOL	13	06H	-0.90	-0.58	0.32	Array	WAR	TPR	
155	205	54	68	0.07	WAR	6	06H	-0.64			Bobbin		CBA	
155	206	54	68	0.36	VOL	14	08H	-0.93	-0.58	0.35	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
155	206	54	68	0.11	WAR	10	08H	-0.73			Bobbin		CBA	
155	207	54	68	0.55	VOL	17	08C	-1.04	-0.66	0.38	Array	WAR	TPR	
155	207	54	68	0.18	WAR	15	08C	-0.81			Bobbin		CBA	
155	208	54	68	0.49	VOL	16	06C	-0.92	-0.61	0.31	Array	WAR	TPR	
155	208	54	68	0.12	WAR	10	06C	-0.75			Bobbin		CBA	
155	209	54	68	0.45	VOL	16	02C	0.20	0.58	0.38	Array	WAR	TPR	
155	209	54	68	0.14	WAR	12	02C	0.38			Bobbin		CBA	
156	210	52	69	0.26	VOL	13	03C	0.35	0.55	0.20	Array	WAR	TPR	
156	210	52	69	0.11	WAR	10	03C	0.38			Bobbin		CBA	
156	211	52	69	0.54	VOL	17	02C	0.29	0.60	0.31	Array	WAR	TPR	
156	211	52	69	0.16	WAR	13	02C	0.40			Bobbin		CBA	
157	212	27	70	0.38	VOL	15	04H	-0.89	-0.49	0.40	Array	WAR	TPR	
157	212	27	70	0.21	WAR	16	04H	-0.69			Bobbin		CBA	
158	213	51	70	0.28	VOL	13	08C	-1.04	-0.69	0.35	Array	WAR	TPR	
158	213	51	70	0.13	WAR	11	08C	-0.84			Bobbin		CBA	
159	214	52	70	0.52	VOL	17	04H	-0.86	-0.57	0.29	Array	WAR	TPR	
159	214	52	70	0.14	WAR	12	04H	-0.66			Bobbin		CBA	
159	215	52	70	0.6	VOL	18	08C	-1.01	-0.61	0.40	Array	WAR	TPR	
159	215	52	70	0.15	WAR	13	08C	-0.87			Bobbin		CBA	
160	216	53	70	0.23	VOL	12	03H	-0.85	-0.71	0.14	Array	WAR	TPR	NBC
160	217	53	70	0.19	VOL	11	02C	0.35	0.49	0.14	Array	WAR	TPR	
160	217	53	70	0.11	WAR	10	02C	0.43			Bobbin		CBA	
161	218	40	71	0.46	VOL	16	04H	0.23	0.49	0.26	Array	WAR	TPR	
161	218	40	71	0.19	WAR	15	04H	0.40			Bobbin		CBA	
162	219	47	71	0.48	VOL	16	03H	-0.83	-0.57	0.26	Array	WAR	TPR	
162	219	47	71	0.13	WAR	11	03H	-0.57			Bobbin		CBA	
163	220	53	71	0.77	VOL	20	08C	-0.95	-0.58	0.37	Array	WAR	TPR	
163	220	53	71	0.13	WAR	11	08C	-0.90			Bobbin		CBA	
164	221	8	72	0.29	VOL	13	06C	-1.04	-0.69	0.35	Array	WAR	TPR	NBC
165	222	49	72	0.27	VOL	13	03H	-0.98	-0.57	0.41	Array	WAR	TPR	
165	222	49	72	0.31	VOL	14	03H	-0.80	-0.54	0.26	Array	WAR	TPR	
165	222	49	72	0.19	WAR	15	03H	-0.63			Bobbin		CBA	
165	223	49	72	0.26	VOL	13	04H	-0.95	-0.63	0.32	Array	WAR	TPR	
165	223	49	72	0.1	WAR	9	04H	-0.69			Bobbin		CBA	
165	224	49	72	0.38	VOL	15	08C	-1.07	-0.67	0.40	Array	WAR	TPR	
165	224	49	72	0.14	WAR	12	08C	-0.72			Bobbin		CBA	
166	225	50	72	0.23	VOL	12	04H	-0.78	-0.52	0.26	Array	WAR	TPR	
166	225	50	72	0.11	WAR	10	04H	-0.69			Bobbin		CBA	
167	226	52	72	0.36	VOL	14	07H	-0.95	-0.58	0.37	Array	WAR	TPR	
167	226	52	72	0.07	WAR	6	07H	-0.78			Bobbin		CBA	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
168	227	53	72	0.51	VOL	17	08C	-0.93	-0.55	0.38	Array	WAR	TPR	
168	227	53	72	0.09	WAR	8	08C	-0.90			Bobbin		CBA	
169	228	23	73	0.58	VOL	17	04H	-0.92	-0.61	0.31	Array	WAR	TPR	
169	228	23	73	0.06	WAR	6	04H	-0.66			Bobbin		CBA	
170	229	42	73	0.26	VOL	13	06C	-0.95	-0.66	0.29	Array	WAR	TPR	
170	229	42	73	0.14	WAR	12	06C	-0.81			Bobbin		CBA	
171	230	45	73	0.25	VOL	12	04H	-0.83	-0.57	0.26	Array	WAR	TPR	NBC
171	231	45	73	0.34	VOL	14	08C	-0.99	-0.67	0.32	Array	WAR	TPR	
171	231	45	73	0.11	WAR	10	08C	-0.84			Bobbin		CBA	
172	232	47	73	0.3	VOL	13	03H	-0.80	-0.57	0.23	Array	WAR	TPR	
172	232	47	73	0.18	WAR	15	03H	-0.60			Bobbin		CBA	
172	233	47	73	0.31	VOL	14	04H	-0.88	-0.60	0.28	Array	WAR	TPR	
172	233	47	73	0.15	WAR	13	04H	-0.62			Bobbin		CBA	
173	234	50	73	0.26	VOL	13	06C	-0.95	-0.66	0.29	Array	WAR	TPR	NBC
174	235	52	73	0.32	VOL	14	07H	-0.86	-0.52	0.34	Array	WAR	TPR	
174	235	52	73	0.11	WAR	10	07H	-0.63			Bobbin		CBA	
175	236	20	74	0.31	VOL	14	06C	-0.98	-0.66	0.32	Array	WAR	TPR	NBC
176	237	23	74	0.42	VOL	15	06H	-0.95	-0.60	0.35	Array	WAR	TPR	NBC
177	238	39	74	0.37	VOL	9	04H	-0.91	-0.54	0.37	Array	WAR	TPR	
177	238	39	74	0.37	VOL	15	04H	-0.91	-0.54	0.37	Array	WAR	TPR	
177	238	39	74	0.1	WAR	9	04H	-0.62			Bobbin		CBA	
178	239	43	74	0.26	VOL	13	04H	-0.94	-0.62	0.32	Array	WAR	TPR	NBC
179	240	52	74	0.4	VOL	15	08C	-1.10	-0.73	0.37	Array	WAR	TPR	
179	240	52	74	0.11	WAR	10	08C	-0.82			Bobbin		CBA	
180	241	40	75	0.34	VOL	14	06H	-0.89	-0.63	0.26	Array	WAR	TPR	
180	241	40	75	0.13	WAR	11	06H	-0.63			Bobbin		CBA	
181	242	49	75	0.63	VOL	18	04H	-0.85	-0.51	0.34	Array	WAR	TPR	
181	242	49	75	0.17	WAR	14	04H	-0.65			Bobbin		CBA	
182	243	51	75	0.27	VOL	13	02C	0.32	0.58	0.26	Array	WAR	TPR	NBC
183	244	49	76	0.49	VOL	16	04H	-0.84	-0.53	0.31	Array	WAR	TPR	
183	244	49	76	0.15	WAR	13	04H	-0.62			Bobbin		CBA	
184	245	52	76	0.22	VOL	12	02C	0.35	0.55	0.20	Array	WAR	TPR	
184	245	52	76	0.13	WAR	11	02C	0.43			Bobbin		CBA	
185	246	49	77	0.51	VOL	17	04H	-0.84	-0.42	0.42	Array	WAR	TPR	
185	246	49	77	0.16	WAR	13	04H	-0.65			Bobbin		CBA	
186	247	50	77	0.55	VOL	17	04H	-0.86	-0.57	0.29	Array	WAR	TPR	
186	247	50	77	0.21	WAR	16	04H	-0.66			Bobbin		CBA	
186	248	50	77	0.43	VOL	15	02C	0.29	0.58	0.29	Array	WAR	TPR	
186	248	50	77	0.17	WAR	14	02C	0.43			Bobbin		CBA	
187	249	51	77	0.33	VOL	14	03C	0.23	0.52	0.29	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
187	249	51	77	0.16	WAR	13	03C	0.37			Bobbin		CBA	
187	250	51	77	0.65	VOL	18	02C	0.14	0.58	0.44	Array	WAR	TPR	
187	250	51	77	0.26	WAR	19	02C	0.40			Bobbin		CBA	
188	251	22	78	0.22	VOL	12	04C	-0.92	-0.69	0.23	Array	WAR	TPR	
188	251	22	78	0.14	WAR	12	04C	-0.78			Bobbin		CBA	
189	252	48	78	0.35	VOL	14	03H	-0.80	-0.54	0.26	Array	WAR	TPR	
189	252	48	78	0.15	WAR	13	03H	-0.57			Bobbin		CBA	
190	253	50	78	0.27	VOL	13	03H	0.32	0.58	0.26	Array	WAR	TPR	
190	253	50	78	0.16	WAR	13	03H	0.46			Bobbin		CBA	
190	254	50	78	0.32	VOL	14	04H	-0.81	-0.52	0.29	Array	WAR	TPR	NBC
190	255	50	78	0.32	VOL	14	08C	-0.98	-0.67	0.31	Array	WAR	TPR	
190	255	50	78	0.12	WAR	10	08C	-0.87			Bobbin		CBA	
190	256	50	78	0.33	VOL	14	02C	0.26	0.58	0.32	Array	WAR	TPR	NBC
191	257	51	78	0.66	VOL	18	02C	0.06	0.51	0.45	Array	WAR	TPR	
191	257	51	78	0.2	WAR	16	02C	0.39			Bobbin		CBA	
192	258	50	79	0.35	VOL	14	02C	0.22	0.67	0.45	Array	WAR	TPR	
192	258	50	79	0.06	WAR	6	02C	0.45			Bobbin		CBA	
193	259	51	79	0.27	VOL	13	02C	0.12	0.37	0.25	Array	WAR	TPR	
193	259	51	79	0.12	WAR	10	02C	0.43			Bobbin		CBA	
194	260	22	80	0.38	VOL	15	06C	-1.01	-0.63	0.38	Array	WAR	TPR	
194	260	22	80	0.14	WAR	12	06C	-0.72			Bobbin		CBA	
195	261	33	80	0.41	VOL	15	04H	-0.88	-0.60	0.28	Array	WAR	TPR	
195	261	33	80	0.15	WAR	13	04H	-0.65			Bobbin		CBA	
196	262	47	80	0.36	VOL	14	03H	-0.80	-0.52	0.28	Array	WAR	TPR	
196	262	47	80	0.19	WAR	15	03H	-0.66			Bobbin		CBA	
197	263	7	81	0.47	VOL	16	06C	-1.01	-0.66	0.35	Array	WAR	TPR	NBC
198	264	47	81	0.35	VOL	14	08C	-0.99	-0.64	0.35	Array	WAR	TPR	
198	264	47	81	0.12	WAR	10	08C	-0.78			Bobbin		CBA	
199	265	46	82	0.36	VOL	14	08H	-1.06	-0.68	0.38	Array	WAR	TPR	NBC
200	266	48	82	0.31	VOL	14	02C	0.29	0.52	0.23	Array	WAR	TPR	
200	266	48	82	0.11	WAR	10	02C	0.40			Bobbin		CBA	
201	267	49	82	0.6	VOL	18	02C	0.14	0.58	0.44	Array	WAR	TPR	
201	267	49	82	0.19	WAR	15	02C	0.40			Bobbin		CBA	
202	268	50	82	0.44	VOL	16	02C	0.23	0.55	0.32	Array	WAR	TPR	
202	268	50	82	0.14	WAR	12	02C	0.37			Bobbin		CBA	
203	269	47	83	0.25	VOL	12	02C	0.22	0.51	0.29	Array	WAR	TPR	
203	269	47	83	0.1	WAR	9	02C	0.34			Bobbin		CBA	
204	270	49	83	0.36	VOL	14	04C	-0.84	-0.56	0.28	Array	WAR	TPR	
204	270	49	83	0.1	WAR	9	04C	-0.76			Bobbin		CBA	
204	271	49	83	0.32	VOL	14	02C	0.34	0.59	0.25	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
204	271	49	83	0.1	WAR	9	02C	0.39			Bobbin		CBA	
205	272	47	84	0.36	VOL	14	03H	-0.81	-0.59	0.22	Array	WAR	TPR	
205	272	47	84	0.16	WAR	13	03H	-0.64			Bobbin		CBA	
206	273	48	84	0.56	VOL	17	03H	-0.78	-0.50	0.28	Array	WAR	TPR	
206	273	48	84	0.23	WAR	18	03H	-0.61			Bobbin		CBA	
207	274	46	86	0.28	VOL	13	08C	-1.04	-0.68	0.36	Array	WAR	TPR	
207	274	46	86	0.08	WAR	7	08C	-0.73			Bobbin		CBA	
208	275	44	88	0.42	VOL	15	04H	-0.85	-0.56	0.29	Array	WAR	TPR	
208	275	44	88	0.13	WAR	11	04H	-0.70			Bobbin		CBA	
209	276	12	89	0.29	VOL	13	04C	-0.95	-0.69	0.26	Array	WAR	TPR	
209	276	12	89	0.1	WAR	9	04C	-0.78			Bobbin		CBA	
210	277	46	89	0.11	WAR	10	03H	-0.64			Bobbin		NCA	
211	278	8	92	0.31	VOL	14	06C	-0.98	-0.69	0.29	Array	WAR	TPR	
211	278	8	92	0.1	WAR	9	06C	-0.81			Bobbin		CBA	
212	279	1	94	0.32	VOL	14	04C	-0.89	-0.53	0.36	Array	WAR	TPR	
212	279	1	94	0.09	WAR	8	04C	-0.70			Bobbin		CBA	
213	280	40	96	0.57	VOL	17	04H	-0.76	-0.45	0.31	Array	WAR	TPR	
213	280	40	96	0.13	WAR	11	04H	-0.62			Bobbin		CBA	
214	281	27	99	0.43	VOL	15	04C	-0.84	-0.59	0.25	Array	WAR	TPR	
214	281	27	99	0.09	WAR	8	04C	-0.79			Bobbin		CBA	
215	282	35	100	0.41	VOL	15	04H	-0.81	-0.53	0.28	Array	WAR	TPR	
215	282	35	100	0.09	WAR	8	04H	-0.67			Bobbin		CBA	
215	283	35	100	0.29	VOL	13	05H	0.28	0.56	0.28	Array	WAR	TPR	
215	283	35	100	0.09	WAR	8	05H	0.39			Bobbin		CBA	
216	284	29	103	0.37	VOL	15	06C	-0.93	-0.62	0.31	Array	WAR	TPR	
216	284	29	103	0.1	WAR	9	06C	-0.84			Bobbin		CBA	
217	285	28	105	0.44	VOL	16	06C	-0.90	-0.53	0.37	Array	WAR	TPR	NBC
218	286	27	106	0.53	VOL	17	06C	-0.93	-0.62	0.31	Array	WAR	TPR	
218	286	27	106	0.1	WAR	9	06C	-0.84			Bobbin		CBA	
219	287	13	107	0.35	VOL	14	04C	-0.86	-0.61	0.25	Array	WAR	TPR	
219	287	13	107	0.05	WAR	5	04C	-0.49			Bobbin		CBA	
220	288	21	107	0.36	VOL	14	04C	-0.90	-0.59	0.31	Array	WAR	TPR	NBC
221	289	24	108	0.45	VOL	16	04C	-0.87	-0.59	0.28	Array	WAR	TPR	
221	289	24	108	0.17	WAR	14	04C	-0.70			Bobbin		CBA	
222	290	11	109	0.28	VOL	13	04C	-0.83	-0.40	0.43	Array	WAR	TPR	NBC
223	291	21	109	0.32	VOL	14	04C	-0.90	-0.31	0.59	Array	WAR	TPR	NBC
224	292	11	111	0.36	VOL	14	06C	-0.92	-0.63	0.29	Array	WAR	TPR	NBC
224	293	11	111	0.25	VOL	12	05C	-0.81	-0.61	0.20	Array	WAR	TPR	
224	293	11	111	0.14	WAR	12	05C	-0.78			Bobbin		CBA	
225	294	14	111	0.28	VOL	13	04C	-0.98	-0.46	0.52	Array	WAR	TPR	

TABLE 5

Steam Generator 11 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
225	294	14	111	0.07	WAR	6	04C	-0.75			Bobbin		CBA	
226	295	4	113	0.44	VOL	16	05C	-0.87	-0.37	0.50	Array	WAR	TPR	
226	295	4	113	0.14	WAR	12	05C	-0.76			Bobbin		CBA	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	11	4	0.37	VOL	15	03H	-0.79	-0.57	0.22	Array	WAR	TPR	
1	1	11	4	0.11	WAR	10	03H	-0.65			Bobbin		CBA	
2	2	6	7	0.42	VOL	15	05C	-0.99	-0.69	0.30	Array	WAR	TPR	NBC
3	3	12	7	0.33	VOL	14	03C	-0.94	-0.58	0.36	Array	WAR	TPR	
3	3	12	7	0.08	WAR	7	03C	-0.72			Bobbin		CBA	
4	4	17	8	0.28	VOL	13	05C	0.14	0.55	0.41	Array	WAR	TPR	
4	4	17	8	0.2	WAR	16	05C	0.38			Bobbin		CBA	
5	5	26	9	0.46	VOL	16	05C	-0.99	-0.69	0.30	Array	WAR	TPR	NBC
6	6	23	10	0.41	VOL	15	05C	-0.96	-0.72	0.24	Array	WAR	TPR	NBC
7	7	33	15	0.35	VOL	14	05C	-0.91	-0.63	0.28	Array	WAR	TPR	
7	7	33	15	0.15	WAR	13	05C	-0.77			Bobbin		CBA	
8	8	35	15	0.32	VOL	14	04C	-0.94	-0.55	0.39	Array	WAR	TPR	
8	8	35	15	0.12	WAR	10	04C	-0.74			Bobbin		CBA	
9	9	36	15	0.13	WAR	11	04C	-0.83			Bobbin		NCA	
9	10	36	15	0.28	VOL	13	03C	-0.91	-0.63	0.28	Array	WAR	TPR	NBC
10	11	35	16	0.38	VOL	15	05C	-0.91	-0.55	0.36	Array	WAR	TPR	
10	11	35	16	0.09	WAR	8	05C	-0.74			Bobbin		CBA	
11	12	37	16	0.43	VOL	15	04C	-0.91	-0.63	0.28	Array	WAR	TPR	
11	12	37	16	0.15	WAR	13	04C	-0.77			Bobbin		CBA	
12	13	34	17	0.42	VOL	15	06C	-0.94	-0.63	0.31	Array	WAR	TPR	
12	13	34	17	0.06	WAR	6	06C	-0.80			Bobbin		CBA	
13	14	36	17	0.3	VOL	13	04C	-0.93	-0.66	0.27	Array	WAR	TPR	
13	14	36	17	0.13	WAR	11	04C	-0.74			Bobbin		CBA	
14	15	32	19	0.37	VOL	15	05C	-0.93	-0.66	0.27	Array	WAR	TPR	NBC
15	16	35	19	0.42	VOL	15	05C	-0.88	-0.58	0.30	Array	WAR	TPR	
15	16	35	19	0.13	WAR	11	05C	-0.71			Bobbin		CBA	
16	17	38	19	0.45	VOL	16	05C	-0.93	-0.63	0.30	Array	WAR	TPR	
16	17	38	19	0.12	WAR	10	05C	-0.82			Bobbin		CBA	
17	18	37	20	0.28	VOL	13	05C	-0.91	-0.66	0.25	Array	WAR	TPR	
17	18	37	20	0.08	WAR	7	05C	-0.77			Bobbin		CBA	
18	19	41	20	0.38	VOL	15	04C	-0.91	-0.63	0.28	Array	WAR	TPR	NBC
19	20	40	21	0.46	VOL	16	05C	-0.91	-0.63	0.28	Array	WAR	TPR	
19	20	40	21	0.1	WAR	9	05C	-0.80			Bobbin		CBA	
20	21	9	22	0.34	VOL	14	05C	-0.93	-0.62	0.31	Array	WAR	TPR	
20	21	9	22	0.08	WAR	7	05C	-0.82			Bobbin		CBA	
21	22	38	22	0.36	VOL	14	05C	-0.94	-0.63	0.31	Array	WAR	TPR	
21	22	38	22	0.1	WAR	9	05C	-0.77			Bobbin		CBA	
22	23	42	23	0.37	VOL	15	05C	-0.93	-0.63	0.30	Array	WAR	TPR	
22	23	42	23	0.14	WAR	12	05C	-0.80			Bobbin		CBA	
23	24	42	25	0.4	VOL	15	05C	-0.93	-0.60	0.33	Array	WAR	TPR	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
23	24	42	25	0.13	WAR	11	05C	-0.79			Bobbin		CBA	
24	25	44	25	0.36	VOL	14	04C	-0.91	-0.63	0.28	Array	WAR	TPR	
24	25	44	25	0.1	WAR	9	04C	-0.74			Bobbin		CBA	
25	26	45	25	0.45	VOL	16	05C	-0.14	0.22	0.36	Array	WAR	TPR	
25	26	45	25	0.11	WAR	10	05C	0.36			Bobbin		CBA	
25	27	45	25	0.48	VOL	16	04C	-0.91	-0.61	0.30	Array	WAR	TPR	
25	27	45	25	0.11	WAR	10	04C	-0.77			Bobbin		CBA	
26	28	44	26	0.44	VOL	16	05C	-0.90	-0.63	0.27	Array	WAR	TPR	
26	28	44	26	0.15	WAR	13	05C	-0.79			Bobbin		CBA	
27	29	46	26	0.53	VOL	17	04C	-0.93	-0.63	0.30	Array	WAR	TPR	
27	29	46	26	0.12	WAR	10	04C	-0.77			Bobbin		CBA	
28	30	43	28	0.48	VOL	16	05C	-0.91	-0.58	0.33	Array	WAR	TPR	
28	30	43	28	0.12	WAR	10	05C	-0.80			Bobbin		CBA	
29	31	44	28	0.32	VOL	14	05C	-0.90	-0.63	0.27	Array	WAR	TPR	
29	31	44	28	0.12	WAR	10	05C	-0.77			Bobbin		CBA	
30	32	45	28	0.46	VOL	16	05C	-0.91	-0.63	0.28	Array	WAR	TPR	
30	32	45	28	0.11	WAR	10	05C	-0.80			Bobbin		CBA	
31	33	47	30	0.37	VOL	15	04H	-0.86	-0.55	0.31	Array	WAR	TPR	
31	33	47	30	0.07	WAR	6	04H	-0.66			Bobbin		CBA	
32	34	48	30	0.36	VOL	14	06H	-0.98	-0.63	0.35	Array	WAR	TPR	
32	34	48	30	0.08	WAR	7	06H	-0.71			Bobbin		CBA	
33	35	49	31	0.27	VOL	13	03C	-0.93	-0.63	0.30	Array	WAR	TPR	
33	35	49	31	0.08	WAR	7	03C	-0.71			Bobbin		CBA	
34	36	47	32	0.67	VOL	18	04H	-0.88	-0.55	0.33	Array	WAR	TPR	
34	36	47	32	0.12	WAR	10	04H	-0.64			Bobbin		CBA	
35	37	48	32	0.34	VOL	14	05H	-0.99	-0.61	0.38	Array	WAR	TPR	NBC
35	38	48	32	0.41	VOL	15	04C	-0.88	-0.63	0.25	Array	WAR	TPR	
35	38	48	32	0.11	WAR	10	04C	-0.80			Bobbin		CBA	
36	39	49	32	0.38	VOL	15	04H	-0.94	-0.61	0.33	Array	WAR	TPR	NBC
37	40	45	33	0.32	VOL	14	04C	-1.05	-0.66	0.39	Array	WAR	TPR	
37	40	45	33	0.11	WAR	10	04C	-0.77			Bobbin		CBA	
38	41	48	34	0.53	VOL	17	04H	-0.87	-0.49	0.38	Array	WAR	TPR	
38	41	48	34	0.12	WAR	10	04H	-0.65			Bobbin		CBA	
39	42	12	35	0.29	VOL	13	06C	-1.27	-0.62	0.65	Array	WAR	TPR	
39	42	12	35	0.05	WAR	5	06C	-0.85			Bobbin		CBA	
40	43	51	35	0.38	VOL	15	05H	-0.87	-0.59	0.28	Array	WAR	TPR	
40	43	51	35	0.12	WAR	10	05H	-0.79			Bobbin		CBA	
41	44	51	36	0.43	VOL	15	03H	0.20	0.53	0.33	Array	WAR	TPR	
41	44	51	36	0.17	WAR	14	03H	0.48			Bobbin		CBA	
41	45	51	36	0.54	VOL	17	04H	-0.87	-0.42	0.45	Array	WAR	TPR	NBC

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
41	46	51	36	0.23	VOL	12	05H	0.09	0.46	0.37	Array	WAR	TPR	
41	46	51	36	0.09	WAR	8	05H	0.46			Bobbin		CBA	
42	47	50	38	0.4	VOL	15	03H	-0.81	-0.59	0.22	Array	WAR	TPR	
42	47	50	38	0.11	WAR	10	03H	-0.65			Bobbin		CBA	
43	48	52	40	0.39	VOL	15	04H	-0.99	-0.62	0.37	Array	WAR	TPR	
43	48	52	40	0.13	WAR	11	04H	-0.68			Bobbin		CBA	
44	49	51	41	0.38	VOL	15	04H	0.17	0.65	0.48	Array	WAR	TPR	
44	49	51	41	0.28	WAR	20	04H	0.48			Bobbin		CBA	
44	50	51	41	0.37	VOL	15	06H	-0.95	-0.56	0.39	Array	WAR	TPR	
44	50	51	41	0.08	WAR	7	06H	-0.70			Bobbin		CBA	
45	51	52	41	0.75	VOL	19	04H	-0.84	-0.31	0.53	Array	WAR	TPR	
45	51	52	41	0.23	WAR	18	04H	-0.65			Bobbin		CBA	
46	52	29	43	0.34	VOL	14	03H	0.36	0.60	0.24	Array	WAR	TPR	
46	52	29	43	0.2	WAR	16	03H	0.43			Bobbin		CBA	
47	53	22	44	0.55	VOL	17	04H	-0.86	-0.56	0.30	Array	WAR	TPR	NBC
48	54	23	44	0.39	VOL	15	04H	-0.95	-0.68	0.27	Array	WAR	TPR	
48	54	23	44	0.07	WAR	6	04H	-0.70			Bobbin		CBA	
49	55	52	44	0.49	VOL	16	08C	-1.05	-0.66	0.39	Array	WAR	TPR	
49	55	52	44	0.11	WAR	10	08C	-0.91			Bobbin		CBA	
50	56	37	46	0.27	VOL	13	04H	-0.91	-0.57	0.34	Array	WAR	TPR	
50	56	37	46	0.1	WAR	9	04H	-0.68			Bobbin		CBA	
51	57	24	47	0.29	VOL	13	03H	-0.84	-0.60	0.24	Array	WAR	TPR	
51	57	24	47	0.11	WAR	10	03H	-0.68			Bobbin		CBA	
51	58	24	47	0.46	VOL	16	04H	-0.81	-0.57	0.24	Array	WAR	TPR	NBC
52	59	54	47	0.38	VOL	15	06H	-0.81	-0.56	0.25	Array	WAR	TPR	
52	59	54	47	0.14	WAR	12	06H	-0.73			Bobbin		CBA	
53	60	54	48	0.31	VOL	14	04C	0.20	0.51	0.31	Array	WAR	TPR	
53	60	54	48	0.15	WAR	13	04C	0.37			Bobbin		CBA	
54	61	20	49	0.42	VOL	15	05H	-1.00	-0.65	0.35	Array	WAR	TPR	
54	61	20	49	0.09	WAR	8	05H	-0.78			Bobbin		CBA	
55	62	22	49	0.22	VOL	12	03H	-0.79	-0.60	0.19	Array	WAR	TPR	
55	62	22	49	0.13	WAR	11	03H	-0.71			Bobbin		CBA	
56	63	23	49	0.42	VOL	15	03H	-0.92	-0.59	0.33	Array	WAR	TPR	
56	63	23	49	0.13	WAR	11	03H	-0.65			Bobbin		CBA	
56	64	23	49	0.28	VOL	13	04H	-0.92	-0.62	0.30	Array	WAR	TPR	
56	64	23	49	0.05	WAR	5	04H	-0.70			Bobbin		CBA	
57	65	22	50	0.49	VOL	16	05H	-0.92	-0.54	0.38	Array	WAR	TPR	
57	65	22	50	0.13	WAR	11	05H	-0.68			Bobbin		CBA	
58	66	23	50	0.23	VOL	12	05H	-0.86	-0.59	0.27	Array	WAR	TPR	
58	66	23	50	0.11	WAR	10	05H	-0.76			Bobbin		CBA	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
59	67	25	50	0.29	VOL	13	03H	-0.82	-0.57	0.25	Array	WAR	TPR	
59	67	25	50	0.11	WAR	10	03H	-0.66			Bobbin		CBA	
60	68	55	50	0.32	VOL	14	04C	-0.98	-0.71	0.27	Array	TPR	NBC	
61	69	27	51	0.33	VOL	14	07H	-0.90	-0.60	0.30	Array	WAR	TPR	NBC
62	70	54	51	0.41	VOL	18	08C	-1.13	-0.74	0.39	Array	WAR	TPR	
62	70	54	51	0.11	WAR	10	08C	-0.89			Bobbin		CBA	
63	71	24	52	0.45	VOL	16	03H	-0.81	-0.55	0.26	Array	WAR	TPR	
63	71	24	52	0.12	WAR	10	03H	-0.61			Bobbin		CBA	
63	72	24	52	0.53	VOL	17	04H	-0.81	-0.55	0.26	Array	WAR	TPR	
63	72	24	52	0.12	WAR	10	04H	-0.67			Bobbin		CBA	
64	73	18	53	0.54	VOL	17	05H	-0.87	-0.55	0.32	Array	WAR	TPR	
64	73	18	53	0.11	WAR	10	05H	-0.72			Bobbin		CBA	
65	74	22	53	0.4	VOL	15	04H	-0.87	-0.49	0.38	Array	WAR	TPR	NBC
66	75	24	53	0.38	VOL	15	03H	-0.75	-0.55	0.20	Array	WAR	TPR	
66	75	24	53	0.12	WAR	10	03H	-0.64			Bobbin		CBA	
67	76	55	53	0.42	VOL	15	07C	-0.99	-0.68	0.31	Array	WAR	TPR	NBC
68	77	24	54	0.43	VOL	15	03H	-0.75	-0.49	0.26	Array	WAR	TPR	NBC
69	78	54	54	0.36	VOL	14	04C	-0.93	-0.70	0.23	Array	WAR	TPR	NBC
70	79	55	55	0.42	VOL	15	04C	-0.81	-0.56	0.25	Array	WAR	TPR	NBC
70	80	55	55	0.83	VOL	20	02C	-0.64	0.73	1.37	Array	WAR	FLT	
70	80	55	55	0.25	WAR	19	02C	-0.39			Bobbin		CBA	
71	81	23	56	0.36	VOL	14	04H	-0.93	-0.62	0.31	Array	WAR	TPR	NBC
72	82	54	56	0.36	VOL	14	04H	-0.93	-0.67	0.26	Array	WAR	TPR	NBC
73	83	21	57	0.34	VOL	14	04H	-0.72	-0.46	0.26	Array	WAR	TPR	NBC
73	84	21	57	0.29	VOL	13	05H	-0.78	-0.52	0.26	Array	WAR	TPR	NBC
74	85	22	57	0.37	VOL	14	04H	-0.75	-0.49	0.26	Array	WAR	TPR	NBC
75	86	23	57	0.33	VOL	14	04H	-0.72	-0.46	0.26	Array	WAR	TPR	NBC
76	87	25	57	0.36	VOL	14	03H	-0.72	-0.46	0.26	Array	WAR	TPR	NBC
77	88	53	57	0.47	VOL	16	08C	-0.94	-0.59	0.35	Array	WAR	TPR	
77	88	53	57	0.12	WAR	10	08C	-0.91			Bobbin		CBA	
77	89	53	57	0.39	VOL	15	06C	-0.90	-0.59	0.31	Array	WAR	TPR	NBC
78	90	54	57	0.47	VOL	16	08C	-0.94	-0.53	0.41	Array	WAR	TPR	NBC
79	91	55	57	0.35	VOL	14	06H	-1.02	-0.68	0.34	Array	WAR	TPR	NBC
79	92	55	57	0.61	VOL	18	04C	-0.87	-0.56	0.31	Array	WAR	TPR	
79	92	55	57	0.15	WAR	13	04C	-0.64			Bobbin		CBA	
79	93	55	57	0.82	VOL	20	03C	-0.78	-0.11	0.67	Array	WAR	TPR	
79	93	55	57	0.21	WAR	16	03C	-0.59			Bobbin		CBA	
79	94	55	57	0.44	VOL	16	02C	-0.72	-0.28	0.44	Array	WAR	FLT	
79	94	55	57	0.11	WAR	10	02C	-0.50			Bobbin		CBA	
79	95	55	57	0.34	VOL	14	01C	-0.75	-0.25	0.50	Array	WAR	TPR	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
79	95	55	57	0.09	WAR	8	01C	-0.49			Bobbin		CBA	
80	96	47	58	0.34	VOL	14	05H	-0.93	-0.73	0.20	Array	WAR	TPR	NBC
81	97	22	59	0.37	VOL	15	03H	-0.95	-0.72	0.23	Array	WAR	TPR	
81	97	22	59	0.07	WAR	6	03H	-0.81			Bobbin		CBA	
82	98	23	59	0.4	VOL	15	03H	-1.01	-0.72	0.29	Array	WAR	TPR	
82	98	23	59	0.07	WAR	6	03H	-0.78			Bobbin		CBA	
83	99	54	59	0.29	VOL	13	02C	-0.72	0.60	1.32	Array	WAR	FLT	
83	99	54	59	0.11	WAR	10	02C	-0.52			Bobbin		CBA	
84	100	55	59	0.59	VOL	18	04C	-0.78	-0.36	0.42	Array	WAR	TPR	
84	100	55	59	0.12	WAR	10	04C	-0.62			Bobbin		CBA	
84	101	55	59	0.22	VOL	12	01C	-0.61	-0.41	0.20	Array	WAR	TPR	
84	101	55	59	0.09	WAR	8	01C	-0.46			Bobbin		CBA	
85	102	43	60	0.39	VOL	15	04H	-0.72	-0.46	0.26	Array	WAR	TPR	NBC
86	103	48	60	0.38	VOL	15	04H	-0.93	-0.70	0.23	Array	WAR	TPR	NBC
86	104	48	60	0.51	VOL	17	05H	-1.01	-0.65	0.36	Array	WAR	TPR	NBC
87	105	53	60	0.34	VOL	14	05C	0.34	0.62	0.28	Array	WAR	TPR	
87	105	53	60	0.16	WAR	13	05C	0.48			Bobbin		CBA	
88	106	54	60	0.32	VOL	14	04C	-0.81	-0.48	0.33	Array	WAR	TPR	NBC
88	107	54	60	0.16	WAR	13	01C	-0.45			Bobbin		CBA	
88	107	54	60	0.27	VOL	13	01C	-0.20	0.22	0.42	Array	WAR	TPR	
89	108	55	61	0.53	VOL	11	05C	0.25	0.73	0.48	Array	WAR	TPR	
89	108	55	61	0.11	WAR	10	05C	0.45			Bobbin		CBA	
90	109	51	62	0.35	VOL	14	08C	-0.94	-0.64	0.30	Array	WAR	TPR	NBC
91	110	55	62	0.41	VOL	15	04C	-0.95	-0.36	0.59	Array	WAR	TPR	
91	110	55	62	0.08	WAR	7	04C	-0.64			Bobbin		CBA	
92	111	54	63	0.62	VOL	12	04C	0.28	0.70	0.42	Array	WAR	TPR	
92	111	54	63	0.12	WAR	10	04C	0.45			Bobbin		CBA	
93	112	55	63	0.33	VOL	14	05C	-0.84	-0.45	0.39	Array	WAR	TPR	
93	112	55	63	0.11	WAR	10	05C	-0.62			Bobbin		CBA	
94	113	52	64	0.56	VOL	17	04H	-0.95	-0.42	0.53	Array	WAR	TPR	
94	113	52	64	0.14	WAR	12	04H	-0.73			Bobbin		CBA	
95	114	55	64	0.35	VOL	14	04C	-0.85	-0.60	0.25	Array	WAR	TPR	
95	114	55	64	0.09	WAR	8	04C	-0.80			Bobbin		CBA	
96	115	23	65	0.44	VOL	16	06H	-0.99	-0.58	0.41	Array	WAR	TPR	NBC
97	116	40	65	0.5	VOL	16	05H	-0.83	-0.52	0.31	Array	WAR	TPR	NBC
98	117	54	65	0.45	VOL	16	04C	-0.83	-0.52	0.31	Array	WAR	TPR	
98	117	54	65	0.17	WAR	14	04C	-0.63			Bobbin		CBA	
99	118	50	69	0.57	VOL	17	03H	-0.81	-0.38	0.43	Array	WAR	TPR	NBC
100	119	53	69	0.47	VOL	16	04H	-0.81	-0.37	0.44	Array	WAR	TPR	
100	119	53	69	0.11	WAR	10	04H	-0.75			Bobbin		CBA	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
101	120	53	70	0.1	WAR	9	04H	0.39			Bobbin		NCA	
101	121	53	70	0.39	VOL	15	08C	-0.99	-0.65	0.34	Array	WAR	TPR	
101	121	53	70	0.12	WAR	10	08C	-0.74			Bobbin		CBA	
102	122	51	71	0.26	VOL	13	06H	-1.01	-0.65	0.36	Array	WAR	TPR	NBC
103	123	41	72	0.49	VOL	16	05H	-0.81	-0.49	0.32	Array	WAR	TPR	NBC
104	124	52	73	0.13	WAR	11	05C	0.48			Bobbin		NCA	
105	125	50	74	0.45	VOL	16	03H	-0.92	-0.45	0.47	Array	WAR	TPR	NBC
106	126	31	76	0.29	VOL	13	04H	-0.98	-0.70	0.28	Array	WAR	TPR	
106	126	31	76	0.06	WAR	6	04H	-0.79			Bobbin		CBA	
107	127	50	76	0.68	VOL	19	05C	-0.95	-0.48	0.47	Array	WAR	TPR	
107	127	50	76	0.1	WAR	9	05C	-0.62			Bobbin		CBA	
108	128	11	77	0.39	VOL	15	04H	-1.01	-0.73	0.28	Array	WAR	TPR	
108	128	11	77	0.11	WAR	10	04H	-0.81			Bobbin		CBA	
109	129	50	77	0.4	VOL	15	04C	-0.85	-0.59	0.26	Array	WAR	TPR	
109	129	50	77	0.12	WAR	10	04C	-0.71			Bobbin		CBA	
110	130	26	82	0.35	VOL	14	04H	-0.98	-0.75	0.23	Array	WAR	TPR	
110	130	26	82	0.12	WAR	10	04H	-0.86			Bobbin		CBA	
111	131	39	83	0.5	VOL	16	06H	-1.07	-0.69	0.38	Array	WAR	TPR	NBC
112	132	47	85	0.13	WAR	11	06H	-0.63			Bobbin		NCA	
113	133	47	86	0.31	VOL	14	04C	-0.91	-0.63	0.28	Array	WAR	TPR	
113	133	47	86	0.11	WAR	10	04C	-0.77			Bobbin		CBA	
114	134	48	86	0.37	VOL	15	05C	-0.96	-0.68	0.28	Array	WAR	TPR	
114	134	48	86	0.1	WAR	9	05C	-0.79			Bobbin		CBA	
114	135	48	86	0.28	VOL	13	04C	-1.01	-0.66	0.35	Array	WAR	TPR	
114	135	48	86	0.07	WAR	6	04C	-0.77			Bobbin		CBA	
115	136	37	87	0.34	VOL	14	03H	-0.95	-0.69	0.26	Array	WAR	TPR	
115	136	37	87	0.1	WAR	9	03H	-0.69			Bobbin		CBA	
115	137	37	87	0.11	WAR	10	05H	0.32			Bobbin		CBA	
115	137	37	87	0.24	VOL	12	05H	0.35	0.49	0.14	Array	WAR	TPR	
116	138	33	88	0.52	VOL	17	06H	-1.10	-0.49	0.61	Array	WAR	TPR	
116	138	33	88	0.07	WAR	6	06H	-0.84			Bobbin		CBA	
117	139	38	89	0.56	VOL	17	05C	-0.80	-0.49	0.31	Array	WAR	TPR	NBC
118	140	40	90	0.41	VOL	15	04H	-0.98	-0.72	0.26	Array	WAR	TPR	NBC
119	141	28	92	0.25	VOL	13	04H	-0.98	-0.75	0.23	Array	WAR	TPR	NBC
120	142	40	92	0.13	WAR	11	05C	0.49			Bobbin		NCA	
121	143	43	92	0.56	VOL	17	06H	-1.04	-0.66	0.38	Array	WAR	TPR	NBC
122	144	37	94	0.25	VOL	12	04C	-0.89	-0.63	0.26	Array	WAR	TPR	
122	144	37	94	0.12	WAR	10	04C	-0.66			Bobbin		CBA	
123	145	39	94	0.29	VOL	13	03H	-0.96	-0.67	0.29	Array	WAR	TPR	
123	145	39	94	0.07	WAR	6	03H	-0.69			Bobbin		CBA	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
124	146	34	96	0.34	VOL	14	03H	-0.93	-0.72	0.21	Array	WAR	TPR	NBC
125	147	36	97	0.37	VOL	15	03H	-0.95	-0.52	0.43	Array	WAR	TPR	NBC
126	148	34	99	0.37	VOL	14	03H	-0.96	-0.64	0.32	Array	WAR	TPR	NBC
126	149	34	99	0.42	VOL	15	06H	-1.01	-0.72	0.29	Array	WAR	TPR	NBC
127	150	36	99	0.32	VOL	14	06H	-1.07	-0.69	0.38	Array	WAR	TPR	
127	150	36	99	0.11	WAR	10	06H	-0.78			Bobbin		CBA	
128	151	35	100	0.45	VOL	16	06H	-1.07	-0.72	0.35	Array	WAR	TPR	
128	151	35	100	0.12	WAR	10	06H	-0.87			Bobbin		CBA	
129	152	32	101	0.74	VOL	19	05C	-0.83	-0.46	0.37	Array	WAR	TPR	
129	152	32	101	0.14	WAR	12	05C	-0.66			Bobbin		CBA	
129	153	32	101	0.39	VOL	15	04C	-0.89	-0.46	0.43	Array	WAR	TPR	NBC
130	154	31	102	0.28	VOL	13	04C	-0.86	-0.52	0.34	Array	WAR	TPR	
130	154	31	102	0.1	WAR	9	04C	-0.69			Bobbin		CBA	
131	155	33	102	0.35	VOL	14	04C	-0.84	-0.52	0.32	Array	WAR	TPR	
131	155	33	102	0.08	WAR	7	04C	-0.69			Bobbin		CBA	
132	156	30	103	0.33	VOL	14	04H	-0.95	-0.72	0.23	Array	WAR	TPR	NBC
133	157	27	105	0.52	VOL	17	05C	-0.95	-0.46	0.49	Array	WAR	TPR	
133	157	27	105	0.11	WAR	10	05C	-0.66			Bobbin		CBA	
134	158	25	106	0.5	VOL	16	04C	-0.86	-0.55	0.31	Array	WAR	TPR	
134	158	25	106	0.09	WAR	8	04C	-0.63			Bobbin		CBA	
135	159	26	106	0.6	VOL	18	05C	-0.78	-0.52	0.26	Array	WAR	TPR	
135	159	26	106	0.11	WAR	10	05C	-0.66			Bobbin		CBA	
135	160	26	106	0.29	VOL	13	04C	-0.81	-0.58	0.23	Array	WAR	TPR	
135	160	26	106	0.09	WAR	8	04C	-0.72			Bobbin		CBA	
136	161	28	106	0.38	VOL	15	05C	-0.81	-0.49	0.32	Array	WAR	TPR	
136	161	28	106	0.09	WAR	8	05C	-0.60			Bobbin		CBA	
136	162	28	106	0.46	VOL	16	04C	-0.78	-0.46	0.32	Array	WAR	TPR	
136	162	28	106	0.11	WAR	10	04C	-0.64			Bobbin		CBA	
137	163	25	107	0.29	VOL	13	04C	-0.83	-0.43	0.40	Array	WAR	TPR	
137	163	25	107	0.14	WAR	12	04C	-0.66			Bobbin		CBA	
138	164	26	107	0.55	VOL	17	04C	-0.84	-0.52	0.32	Array	WAR	TPR	
138	164	26	107	0.07	WAR	7	04C	-0.58			Bobbin		CBA	
139	165	23	108	0.38	VOL	15	04C	-0.87	-0.39	0.48	Array	WAR	TPR	
139	165	23	108	0.11	WAR	10	04C	-0.65			Bobbin		CBA	
140	166	24	108	0.44	VOL	16	05C	-0.93	-0.59	0.34	Array	WAR	TPR	NBC
141	167	25	108	0.5	VOL	16	04C	-0.90	-0.20	0.70	Array	WAR	TPR	
141	167	25	108	0.16	WAR	13	04C	-0.62			Bobbin		CBA	
142	168	21	109	0.4	VOL	15	04C	-0.82	-0.45	0.37	Array	WAR	TPR	
142	168	21	109	0.11	WAR	10	04C	-0.65			Bobbin		CBA	
143	169	11	111	0.31	VOL	14	06C	-0.98	-0.61	0.37	Array	WAR	TPR	

TABLE 6

Steam Generator 12 TSP Wear

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
143	169	11	111	0.12	WAR	10	06C	-0.75			Bobbin		CBA	
144	170	4	113	0.56	VOL	17	05C	-0.99	-0.36	0.63	Array	WAR	TPR	
144	170	4	113	0.15	WAR	13	05C	-0.74			Bobbin		CBA	
145	171	6	113	0.37	VOL	15	05C	-0.83	-0.58	0.25	Array	WAR	TPR	
145	171	6	113	0.09	WAR	8	05C	-0.74			Bobbin		CBA	
146	172	5	114	0.27	VOL	13	05C	-0.88	-0.63	0.25	Array	WAR	TPR	
146	172	5	114	0.1	WAR	9	05C	-0.77			Bobbin		CBA	

TABLE 7

Steam Generator 11 Tube Plugging

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	55	60	0.82	VOL	20	03H	-0.76	-0.36	0.40	Array	WAR	TPR	
1	1	55	60	0.3	WAR	21	03H	-0.56			Bobbin		CBA	
1	2	55	60	0.42	VOL	15	07H	-0.85	-0.48	0.37	Array	WAR	TPR	NBC
1	3	55	60	0.29	VOL	13	08C	-1.04	-0.73	0.31	Array	WAR	TPR	NBC
2	4	47	87	0.87	VOL	20	03H	-0.75	-0.47	0.28	Array	WAR	TPR	
2	4	47	87	0.32	WAR	22	03H	-0.61			Bobbin		CBA	

TABLE 8

Steam Generator 12 Tube Plugging

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
1	1	42	54	0.87	VOL	14	AV2	-0.20	0.34	0.54	Array	WAR	FLT	
1	1	42	54	0.3	VOL	9	AV2	-0.11	0.22	0.33	Array	WAR	FLT	
1	1	42	54	0.35	AVB	11	AV2	0.06			Bobbin		CBA	
1	2	42	54	1.26	VOL	17	AV3	-0.25	0.31	0.56	Array	WAR	FLT	
1	2	42	54	1.38	VOL	18	AV3	-0.20	0.34	0.54	Array	WAR	FLT	
1	2	42	54	0.72	AVB	20	AV3	-0.08			Bobbin		CBA	
1	3	42	54	2.42	VOL	24	AV4	-0.25	0.34	0.59	Array	WAR	FLT	
1	3	42	54	1.51	VOL	19	AV4	-0.20	0.37	0.57	Array	WAR	FLT	
1	3	42	54	1.18	AVB	27	AV4	-0.11			Bobbin		CBA	
1	4	42	54	1.9	VOL	21	AV5	-0.25	0.37	0.62	Array	WAR	FLT	
1	4	42	54	1.02	VOL	15	AV5	-0.22	0.39	0.61	Array	WAR	FLT	
1	4	42	54	0.83	AVB	22	AV5	-0.06			Bobbin		CBA	
1	5	42	54	2.5	VOL	25	AV6	-0.22	0.34	0.56	Array	WAR	FLT	
1	5	42	54	0.86	VOL	14	AV6	-0.17	0.42	0.59	Array	WAR	FLT	
1	5	42	54	0.91	AVB	23	AV6	-0.08			Bobbin		CBA	
1	6	42	54	1.23	VOL	17	AV7	-0.17	0.37	0.54	Array	WAR	FLT	
1	6	42	54	0.84	VOL	13	AV7	-0.14	0.37	0.51	Array	WAR	FLT	
1	6	42	54	0.62	AVB	18	AV7	-0.06			Bobbin		CBA	
1	7	42	54	0.56	VOL	11	AV8	-0.17	0.34	0.51	Array	WAR	FLT	
1	7	42	54	0.48	VOL	10	AV8	-0.14	0.31	0.45	Array	WAR	FLT	
1	7	42	54	0.41	AVB	13	AV8	0.08			Bobbin		CBA	
2	8	39	56	1.03	VOL	15	AV2	-0.12	0.43	0.55	Array	WAR	FLT	
2	8	39	56	0.31	AVB	10	AV2	0.03			Bobbin		CBA	
2	9	39	56	1.82	VOL	21	AV3	-0.09	0.43	0.52	Array	WAR	FLT	
2	9	39	56	0.4	AVB	13	AV3	0.09			Bobbin		CBA	
2	10	39	56	0.82	VOL	13	AV4	-0.17	0.35	0.52	Array	WAR	FLT	
2	10	39	56	0.24	AVB	8	AV4	-0.03			Bobbin		CBA	
2	11	39	56	1.12	VOL	16	AV5	-0.17	0.38	0.55	Array	WAR	FLT	
2	11	39	56	0.4	AVB	13	AV5	-0.06			Bobbin		CBA	
2	12	39	56	0.82	VOL	13	AV6	-0.17	0.35	0.52	Array	WAR	FLT	
2	12	39	56	0.48	VOL	10	AV6	-0.14	0.40	0.54	Array	WAR	FLT	
2	12	39	56	0.4	AVB	13	AV6	0.06			Bobbin		CBA	
2	13	39	56	0.3	VOL	9	AV7	-0.14	0.23	0.37	Array	WAR	FLT	
2	13	39	56	0.15	AVB	5	AV7	-0.06			Bobbin		CBA	
2	13	39	56	0.31	VOL	9	AV7	0.06	0.32	0.26	Array	WAR	FLT	
2	14	39	56	0.46	VOL	10	AV8	-0.09	0.32	0.41	Array	WAR	FLT	
2	14	39	56	0.13	AVB	5	AV8	-0.06			Bobbin		CBA	
2	15	39	56	0.14	AVB	5	AV9	-0.09			Bobbin		CBA	
2	15	39	56	0.37	VOL	9	AV9	-0.09	0.30	0.39	Array	WAR	TPR	
3	16	46	56	0.24	VOL	8	AV1	-0.23	0.14	0.37	Array	WAR	FLT	NBC

TABLE 8

Steam Generator 12 Tube Plugging

Tube #	Ind #	Row	Col	Volts	Ind	Pct	Locn	Inch1	Inch2	Length	PType	Util1	Util2	Util3
3	17	46	56	0.29	VOL	9	AV2	-0.23	0.08	0.31	Array	WAR	FLT	NBC
3	18	46	56	0.69	VOL	12	AV3	-0.34	0.17	0.51	Array	WAR	FLT	
3	18	46	56	0.23	AVB	8	AV3	-0.03			Bobbin		CBA	
3	19	46	56	0.31	VOL	9	AV4	-0.31	0.08	0.39	Array	WAR	FLT	
3	19	46	56	0.13	AVB	5	AV4	-0.08			Bobbin		CBA	
3	20	46	56	1.69	VOL	20	AV5	-0.37	0.20	0.57	Array	WAR	FLT	
3	20	46	56	0.41	VOL	10	AV5	-0.28	0.20	0.48	Array	WAR	FLT	
3	20	46	56	0.6	AVB	18	AV5	0.08			Bobbin		CBA	
3	21	46	56	1.54	VOL	19	AV6	-0.37	0.23	0.60	Array	WAR	FLT	
3	21	46	56	0.73	VOL	13	AV6	-0.31	0.23	0.54	Array	WAR	FLT	
3	21	46	56	0.61	AVB	18	AV6	-0.14			Bobbin		CBA	
3	22	46	56	2.16	VOL	23	AV7	-0.34	0.23	0.57	Array	WAR	FLT	
3	22	46	56	0.61	AVB	18	AV7	0.08			Bobbin		CBA	
3	23	46	56	1.06	VOL	15	AV8	-0.31	0.23	0.54	Array	WAR	FLT	
3	23	46	56	0.31	AVB	10	AV8	0.03			Bobbin		CBA	
3	24	46	56	0.36	VOL	9	AV9	-0.25	0.06	0.31	Array	WAR	FLT	NBC
4	25	55	56	0.51	VOL	17	06H	-0.98	-0.62	0.36	Array	WAR	TPR	NBC
4	26	55	56	0.51	VOL	11	AV4	-0.28	0.20	0.48	Array	WAR	FLT	
4	26	55	56	0.17	AVB	6	AV4	0.03			Bobbin		CBA	
4	27	55	56	2.17	VOL	23	AV5	-0.34	0.22	0.56	Array	WAR	FLT	
4	27	55	56	0.67	AVB	19	AV5	0.06			Bobbin		CBA	
4	28	55	56	1.63	VOL	19	AV6	-0.34	0.25	0.59	Array	WAR	FLT	
4	28	55	56	0.51	AVB	16	AV6	0.11			Bobbin		CBA	
4	29	55	56	1.88	VOL	21	AV7	-0.39	0.31	0.70	Array	WAR	FLT	
4	29	55	56	0.4	AVB	13	AV7	-0.08			Bobbin		CBA	
4	30	55	56	0.39	VOL	15	07C	-0.87	-0.53	0.34	Array	WAR	TPR	NBC
4	31	55	56	0.37	VOL	15	04C	-0.81	-0.56	0.25	Array	WAR	TPR	NBC
4	32	55	56	0.09	WAR	8	03C	-0.98			Bobbin		CBA	
4	32	55	56	0.45	VOL	16	03C	-0.76	-0.50	0.26	Array	WAR	TPR	
5	33	55	60	0.54	VOL	17	07C	-0.84	-0.48	0.36	Array	WAR	TPR	
5	33	55	60	0.14	WAR	12	07C	-0.67			Bobbin		CBA	
5	34	55	60	0.35	VOL	14	06C	-0.82	-0.56	0.26	Array	WAR	TPR	
5	34	55	60	0.13	WAR	11	06C	-0.73			Bobbin		CBA	
5	35	55	60	0.9	VOL	21	02C	-0.73	0.76	1.49	Array	WAR	TPR	
5	35	55	60	0.14	WAR	12	02C	0.48			Bobbin		CBA	
5	36	55	60	0.52	VOL	17	01C	-0.63	-0.11	0.52	Array	WAR	TPR	
5	36	55	60	0.16	WAR	13	01C	-0.42			Bobbin		CBA	

e. *Number of tubes plugged during the inspection outage for each degradation mechanism,*

Table 9 provides the number of tubes plugged during 1R31.

TABLE 9

MECHANISM	SG 11	SG 12
AVB Wear	0	4
TSP Wear	2	1

f. *The number and percentage of tubes plugged to date, and the effective plugging percentage in each steam generator, and*

Table 10 provides the total number and percentage of tubes plugged to date.

TABLE 10

PLUGGING	SG 11	SG 12
TOTAL	8	12
PERCENT	0.16%	0.25%

g. *The results of condition monitoring, including the results of tube pulls and in-situ testing.*

The deepest AVB wear indication reported during 1R31 was 27%TW as reported from the bobbin probe and confirmed as flat wear with the X-Probe™. The condition monitoring (CM) limit for AVB wear is 50%TW with the bobbin coil, which slightly bounds indications measured by the array coil. As the deepest indication is of lesser depth than the CM limit, CM is satisfied.

The deepest TSP wear indication reported during 1R31 was 22%TW as reported from the bobbin probe and confirmed as tapered wear with the X-Probe™. The CM limit for TSP wear is 44%TW with the bobbin coil, which slightly bounds indications measured by the array coil. As the deepest indication is of lesser depth than the CM limit, CM is satisfied.

Additionally, an operation assessment (OA) was performed that provides reasonable assurance that the performance criteria will not be exceeded during the upcoming operating cycles 31, 32 and 33 until the next planned SG inspection.

LEGEND OF FIELDS AND CODES

FIELD	EXPLANATION
Tube #	Distinct ROW/COL combination within each Table
Ind #	Distinct ROW/COL/LOCATION combination within each Table
Row	Row number of tube location
Col	Column number of tube location
Volts	Measured Voltage
Ind	Three Digit Code - see below
Pct	Measured percent through wall
Locn	Location of landmark - see below
Inch1	Measurement in inches from the center of the landmark to the center of the indication for Bobbin records or Measurement in inches from the center of the landmark to the lower edge of the indication for Array records
Inch2	Measurement in inches from the center of the landmark to the upper edge of the indication for Array records
Length	Inch1 minus Inch2
PType	Probe Coil Type – Array or Bobbin
Util1	Clarifying Codes – see below
Util2	Clarifying Codes – see below
Util3	Clarifying Codes – see below

FIELD	CODE	EXPLANATION
Ind	AVB	Anti-Vibration Bar
	VOL	Volumetric
	WAR	Wear
Locn	0?H	? = First through Eighth tube support plate on hot leg side
	AV?	? = First through Ninth anti-vibration bar
	0?C	? = First through Eighth tube support plate on cold leg side
Util1	TPR	Tapered wear
	WAR	Wear
Util2	CBA	Confirmed By Array coil
	FLT	Flat (non-tapered) wear
	NBC	No Bobbin Call
	NCA	Not Confirmed by Array coil
	TPR	Tapered wear
Util3	NBC	No Bobbin Call
	TPR	Tapered wear