

Florida Power

CORPORATION

Crystal River Unit 3

Docket No. 50-302

May 25, 1994
3F0594-01

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Refuel 9 OTSG Inspection, Confirmatory Actions

References: 1. FPC to NRC, 3F0494-09, letter dated April 19, 1994
2. NRC to FPC, 3N0494-21, letter dated April 26, 1994

Dear Sir:

Florida Power Corporation (FPC) provided our strategy for inspection of the Crystal River Unit Three steam generator tubes in reference 1. The NRC staff issued a confirmatory action letter (CAL) for the inspection, reference 2. The scope of the inspection included actions to meet the requirements of Technical Specification (TS) 5.6.2.10 and supplementary actions to disposition low signal-to-noise (S/N) indications.

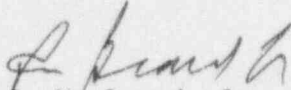
This submittal provides notification of the completion of CAL items No. 1 through 5 as required by CAL item No. 6 prior to entry into Mode 4. Also, the attachment to this submittal provides a summary of FPC's actions to comply with the CAL items No. 1 through 5, provides the results of the Refuel 9 inspections to complete the notifications required by CAL item No. 7, and provides a status and expected completion dates for CAL items No. 8 and 9. This information also fulfills the requirements of TS 5.7.2 for submitting a report within 15 days following inspection of the steam generator tubes.

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The inspection results confirmed the technical basis for the inspection strategy developed to identify all probable indications and to perform repairs as appropriate. This strategy and the preventive sleeving that was performed on 163 tubes in each steam generator provide us with a high degree of confidence of continued excellent steam generator performance and safe operation. The examinations of the four tubes removed will also provide valuable information to further understand the mechanisms that can degrade the tubes.

Sincerely,



P. M. Beard, Jr.
Senior Vice President
Nuclear Operations

PMB/LVC

xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager

NRC CONFIRMATORY ACTION NO. 1

Inspect approximately 23% of the total tubes of each Once Through Steam Generator (OTSG) with the bobbin probe. The sample will be selected on a random basis except that will include all inservice tubes with previously recorded degraded indications and S/Ns.

FPC ACTION

Bobbin Coil Inspection

FPC performed ECT on approximately 25% of the tubes in each OTSG. The bobbin inspection consisted of a random sample of tubes on each OTSG, tubes from special interest areas such as the lane-wedge region, tubes with previously recorded wall loss (1-39% through-wall) and S/Ns. The total bobbin inspection of the "A" OTSG consisted of 3,864 tubes. That sample included 386 tubes from the lane region. The balance of the sample consisted of randomly selected tubes, tubes with recorded wall loss and S/Ns. The total bobbin inspection of the "B" OTSG consisted of 3,864 tubes. The sample included 372 tubes from the lane region. The balance consisted of randomly selected tubes, tubes with recorded wall loss and S/Ns. The detailed results of the bobbin coil inspection of both OTSGs are provided in CAL item No. 7.

NRC CONFIRMATORY ACTION NO. 2

Consider those tubes with S/Ns less than 5:1 with bobbin voltage responses equal to or exceeding 2 volts defective and will repair them. Discuss with the Staff the results of the bobbin inspection and need for expanding bobbin inspection scope before completion.

FPC ACTION

The number of tubes with signal-to-noise ratios less than 5:1 which voltages exceeding 2 volts was two in the "A" OTSG and one in the "B" OTSG. These tubes were plugged. However, the total number of tubes plugged during the ECT and MRPC inspection was 20. FPC discussed these results with the NRC staff and it was concluded that no expansion was warranted. Details of tube identification, location of the indications and their voltages are provided in CAL item No. 7. FPC provided the NRC staff with information regarding this CAL prior to completing the inspection.

NRC CONFIRMATORY ACTION NO. 3

Disposition all indications with S/Ns greater than 5:1 in accordance with the existing TS.

FPC ACTION

During the Refuel 9 bobbin inspection, indications with signal-to-noise ratios greater than 5:1 identified in the OTSGs were assigned through-wall (TW) sizes utilizing the phase angle method and were dispositioned in accordance with the Crystal River unit 3 (CR-3) Technical Specifications. FPC is including a list of tubes per OTSG with imperfections (< 20% TW), degradation (> 20% TW but < 40% TW) and plugged tubes as part of the results provided in CAL item No. 7.

NRC CONFIRMATORY ACTION NO. 4

Conduct an initial motorized rotating pancake coil (MRPC) sample for tube locations exhibiting bobbin voltages equal to or exceeding 0.5 volts. This sample excludes locations exhibiting bobbin voltages equal to or greater than two volts (since the affected tubes must be repaired per item #2 above). This sample also excludes locations inspected at previous outages with MRPC and which exhibited indications exceeding the proposed MRPC sizing criteria (i.e., axial length equal to or exceeding 0.25 inches or circumferential length equal or exceeding 0.60 inches) at that time. (tubes with these previously observed MRPC indications will be repaired). Locations selected for the initial MRPC sample shall include all locations where MRPC inspection during the previous inspections revealed indications exceeding one-half of the proposed MRPC sizing criteria. The balance of the locations selected for the initial 20% MRPC sample will include the locations with the largest available bobbin indications. The median bobbin voltage for all locations included in the 20% initial MRPC sample will be identified. For locations with bobbin voltages less than this mean voltage value, should 1% of these locations exhibit MRPC indications equal to or exceeding the MRPC sizing criteria, additional 10% MRPC samples (of the remaining locations with S/Ns less than 5:1) consisting of locations with the largest available bobbin voltages will be performed until fewer than 1% of the locations in a given sample are found to exceed the MRPC size criteria. Sample expansions may be terminated if all locations with bobbin indications above 0.7 volts have been MRPC inspected. All tubes with MRPC indications equal to or exceeding the MRPC sizing criteria will be repaired.

FPC ACTION

Supplemental MRPC Inspection

FPC performed a 20% non-random sample of S/N indications inspected by MRPC with 3 additional 10% expansions. The initial MRPC sample was composed of 191 S/N indications, 50 in the "A" OTSG and 141 indications in the "B" OTSG. The sample consisted of indications exceeding one-half of the MRPC dimensional criteria of 0.25" axial dimension and 0.60" circumferential dimension (30 indications). The balance of this sample consisted of indications with the largest voltages. The median voltage of all indications in that sample was calculated as 1.06V. The first expansion consisted of 78 indications with voltages greater than 0.8V, 24 indications from the "A" OTSG and 54 from the "B" OTSG. The second expansion consisted of 79 indications with voltages greater than 0.8V, 23 indications from the "A" OTSG and 56 from the "B" OTSG. The third and last expansion consisted of 63 indications with voltages greater than 0.7V, 17 indications from the "A" OTSG and 46 indications from the "B" OTSG. There were a total of 411 S/N indications analyzed (all indications greater than 0.7V) from the S/N population of both OTSGs. A total of six indications from the 9R MRPC inspection exceeded the criteria given in this CAL for axial and circumferential sizing by MRPC. Those tubes were plugged. Additionally, two tubes were administratively plugged based on Refuel 8 data exceeding the CAL Criteria. FPC is providing a list of tubes plugged in CAL item No. 7.

NRC CONFIRMATORY ACTION NO. 5

Perform preventive sleeving of 164 tubes in the lane region of each OTSG.

FPC ACTION

Lane Region Preventive Sleeving

FPC provided in Reference 1 our intent to install 164 sleeves in the wedge lane area of each OTSG. Due to the presence of a foreign object in one of the "A" OTSG tubes considered for sleeving, it was necessary to plug that tube rather than sleeving it as originally planned. Therefore, the total number of tubes sleeved in the "A" OTSG was 163. One of the tubes considered by FPC as a candidate for a sleeve in the "B" OTSG contained metal debris on the tube ID from a tube end repaired in 1979. This prevented the insertion of the sleeve. Since the tube considered contained no indications and was outside the original BWNT recommended sleeving zone, the tube was left in-service. However, FPC will continue the practice of reinspecting the tube every refueling outage. A total number of 163 sleeves installed in the "B" OTSG.

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Attachment
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NRC CONFIRMATORY ACTION NO. 6

Notify me in writing prior to entry into Mode Four that you have completed the above actions with acceptable results.

FPC ACTION

FPC has provided a summary of our actions to satisfy the NRC request regarding each of the above CAL items.

NRC CONFIRMATORY ACTION NO. 7

Provide a summary of the results of the Refuel 9 OTSG tube inspections and repairs no later than 60 days after restart.

FPC ACTION

The Refuel 9 inspection of the CR-3 OTSGs included a combination of EC inspection techniques, the traditional EC bobbin coil and a supplemental MRPC inspection. The results of both inspections are provided below for OTSG "A" and OTSG "B". FPC is providing this information to fulfill the requirements of Technical Specification 5.7.2 for submitting a report within 15 days following the inspection of the OTSG tubes. Additionally, the list of tubes repaired in conjunction with data regarding tubes containing imperfections, degradation and the enclosed list of S/Ns are intended to satisfy the NRC request contained in CAL item No. 7 for a summary of the repairs.

Tubes Plugged OTSG "A"

A total of seven tubes were plugged in the "A" OTSG. The following table show the number of tubes plugged in the "A" OTSG, the location of each plugged tube and a remark stating the reason why it was plugged.

Tube/Row	Location	Reason for Plugging
22-79	11S + 0.61	Voltage > 2V.
27-91	Various (32 indications)	Administrative (MRPC Confirmed as wear)
28-92	08S + 0.67"	Axial \geq 0.25
28-93	08S + 0.56"	Axial \geq 0.25
34-72	02S + 14.64"	Axial > 0.25" (Based on R8 data)
73-8S	05S + 13.59	Voltage > 2V.
77-37		Foreign Object

Bobbin Inspection OTSG "A"

TUBES WITH INDICATIONS GREATER THAN 40% TW

None.

TUBES WITH S/N INDICATION GREATER THAN 2 VOLTS

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
22-79	2.71	S/N	11S + 0.61
73-85	2.09	S/N	05S + 13.59

TUBES WITH IMPERFECTIONS (<20% TW)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
27-89	1.87	12	LTE + 5.09
36-78	0.86	07	06S + 0.11
42-40	1.24	03	10S + 0.00
57-1	1.25	07	06S + 18.31
113-68	7.55	09	06S + 18.31
146-34	1.06	02	08S + 0.00
79-40	0.33	16	10S - 0.52

DEGRADED TUBES (>20% but <40% TW)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
73-128	1.37	23	10S + 0.00
71-47	2.01	27	11S + 25.82
146-50	0.90	22	10S + 0.00
11-7	1.16	38	12S + 0.62
15-30	1.11	30	06S + 0.76
27-91	0.97	30	LTS + 0.24
134-3	1.40	30	12S + 0.68

NEW S/Ns (Voltages >0.5 which have not been documented in previous inspections)

TUBE	VOLTAGE	%TW	LOCATION
77-6	1.13	S/N	15S + 0.00

S/Ns WHICH HAVE EXHIBITED GROWTH (S/Ns with voltages >0.5 which have exhibited a 0.5 volt growth since last inspection)

TUBE	VOLTAGE	%TW S/N	LOCATION
28-92	1.04		08S + 0.63

OBSTRUCTED TUBES PLUGGED DUE TO FOREIGN OBJECTS
77-37

TUBES WITH S/N INDICATIONS

TUBE	VOLTAGE	%TW S/N	LOCATION
2-8	1.62	S/N	12S + 0.60
4-18	0.76	S/N	03S + 9.58
6-7	0.57	S/N	12S + 0.70
6-26	0.33	S/N	11S + 16.19
	0.41	S/N	13S + 9.46
	0.46	S/N	13S + 7.0
	0.51	S/N	14S + 22.29
	0.62	S/N	14S + 7.31
7-27	0.30	S/N	10S - 0.78
	0.71	S/N	07S - 0.84
	1.05	S/N	08S + 0.70
8-21	0.87	S/N	07S + 0.73
8-29	0.43	S/N	12S + 23.44
8-30	0.19	S/N	15S + 9.43
	0.37	S/N	07S + 9.84
	0.37	S/N	06S + 28.65
	0.38	S/N	15S + 15.68
	0.40	S/N	10S + 12.88
	0.41	S/N	07S + 19.54
	0.43	S/N	10S + 23.54
	0.45	S/N	10S + 22.53
	0.46	S/N	LTS + 21.33
	0.47	S/N	LTS + 11.88
	0.48	S/N	LTS + 30.22
	0.50	S/N	04S + 20.10
	0.51	S/N	06S + 29.61
	0.57	S/N	09S + 4.71
	0.57	S/N	10S + 13.89
	0.58	S/N	09S + 5.7
	0.60	S/N	06S + 20.14
	0.63	S/N	08S + 6.89
	0.68	S/N	07S + 8.86
	0.71	S/N	07S + 18.48
	0.73	S/N	LTS + 20.4
	0.79	S/N	LTS + 20.4
	1.22	S/N	LTS + 1.17
	0.66	S/N	LTE + 8.28
	0.66	S/N	08S + 0.58
	0.72	S/N	07S + 0.69
8-31	0.42	S/N	09S + 18.95
8-45	0.46	S/N	07S + 0.69

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION8-47
8-47	0.54	S/N	07S + 0.66
9-31	0.21	S/N	02S + 3.81
9-34	0.39	S/N	12S + 0.67
10-6	0.75	S/N	12S + 0.58
11-14	0.26	S/N	08S + 0.71
	0.32	S/N	08S + 0.80
12-7	0.55	S/N	07S - 0.73
12-9	0.54	S/N	12S + 0.64
12-70	0.73	S/N	10S + 0.66
13-47	0.55	S/N	LTS + 28.70
13-57	0.51	S/N	02S + 22.27
14-8	0.71	S/N	07S - 0.62
16-7	0.29	S/N	07S - 0.69
16-8	0.32	S/N	07S - 0.74
16-9	0.26	S/N	12S + 0.66
	0.37	S/N	07S - 0.71
16-41	0.55	S/N	11S + 16.24
16-47	0.39	S/N	01S + 20.31
17-9	0.19	S/N	08S - 0.74
	0.38	S/N	07S - 0.66
17-75	0.43	S/N	08S + 0.72
18-9	0.27	S/N	08S - 0.68
	0.48	S/N	07S - 0.66
18-25	0.64	S/N	09S + 0.63
18-74	0.90	S/N	06S + 0.66
19-3	0.89	S/N	12S + 0.66
19-30	0.34	S/N	03S + 0.67
19-84	0.37	S/N	08S - 0.82
20-65	0.64	S/N	15S + 11.76
	0.39	S/N	03S + 0.65
21-1	0.37	S/N	11S + 0.69
21-39	0.97	S/N	02S + 35.15
22-59	0.72	S/N	10S + 0.77
22-79	2.71	S/N	11S + 0.61
23-91	0.66	S/N	08S - 0.87
24-7	0.28	S/N	08S - 0.77
	0.60	S/N	12S + 0.63
24-86	0.98	S/N	08S + 31.07
24-88	0.38	S/N	14S + 6.46
	0.50	S/N	08S + 26.32
	0.56	S/N	12S + 4.41
	0.61	S/N	13S + 15.47
	0.61	S/N	13S + 15.52
	0.62	S/N	11S + 5.98
	0.75	S/N	10S + 13.59
	0.88	S/N	11S + 14.75
	0.91	S/N	11S + 24.27
	0.53	S/N	07S + 0.69
	0.67	S/N	08S - 0.82
24-89	0.43	S/N	14S + 4.58
	0.45	S/N	13S + 4.96
	0.48	S/N	14S + 14.57
	0.75	S/N	13S + 31.53
	0.91	S/N	14S + 5.76
25-7	0.47	S/N	08S - 0.63

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
26-90	0.63	S/N	15S + 21.30
	0.78	S/N	15S + 40.20
26-95	0.72	S/N	08S - 0.72
27-89	0.64	S/N	15S + 32.53
	0.68	S/N	15S + 32.02
	0.84	S/N	15S + 22.54
	1.20	S/N	15S + 33.9
	1.50	S/N	15S + 34.79
	1.81	S/N	15S + 34.33
	0.61	S/N	LTE + 3.93
	1.26	S/N	04S - 0.58
	1.41	S/N	LTE + 6.51
27-91	0.40	S/N	08S + 23.35
	0.40	S/N	11S + 3.01
	0.45	S/N	09S + 21.35
	0.46	S/N	02S + 10.46
	0.48	S/N	11S + 10.58
	0.54	S/N	13S + 31.28
	0.56	S/N	11S + 11.54
	0.56	S/N	09S + 31.07
	0.57	S/N	14S + 2.88
	0.63	S/N	02S + 20.24
	0.66	S/N	11S + 21.45
	0.66	S/N	07S + 25.06
	0.66	S/N	12S + 20.46
	0.69	S/N	08S + 0.64
	0.70	S/N	LTS + 19.54
	0.75	S/N	LTS + 38.36
	0.75	S/N	07S + 15.21
	0.78	S/N	08S + 3.47
	0.83	S/N	13S + 12.58
	0.84	S/N	06S + 35.86
	0.86	S/N	11S + 2.11
	0.91	S/N	15S + 24.93
	0.91	S/N	07S + 6.61
	0.92	S/N	13S + 12.98
	1.00	S/N	12S + 30.32
	1.13	S/N	LTS + 37.94
	0.68	S/N	LTE + 15.57
	0.80	S/N	LTE + 14.33
	0.87	S/N	08S + 13.36
	1.37	S/N	LTE + 15.19
	0.52	S/N	07S - 0.77
27-93	0.74	S/N	08S + 12.0
	0.91	S/N	08S + 0.59
27-94	0.57	S/N	14S + 7.18
28-3	0.77	S/N	01S + 19.20

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
28-92	0.34	S/N	11S + 3.16
	0.35	S/N	10S + 31.55
	0.36	S/N	10S + 11.18
	0.40	S/N	12S + 21.98
	0.40	S/N	08S + 15.64
	0.51	S/N	12S + 3.08
	0.56	S/N	10S + 21.69
	0.60	S/N	09S + 14.22
	0.67	S/N	09S + 23.11
	0.67	S/N	11S + 4.40
	0.68	S/N	08S - 0.73
	0.83	S/N	11S + 13.48
28-93	0.76	S/N	07S - 0.74
	0.83	S/N	08S + 0.61
28-95	0.52	S/N	08S + 0.63
29-73	1.04	S/N	03S + 12.16
31-11	0.77	S/N	09S + 0.45
31-32	1.17	S/N	10S + 0.70
31-59	0.78	S/N	11S + 17.43
33-52	0.48	S/N	11S + 35.22
34-72	0.85	S/N	02S + 15.67
35-59	1.53	S/N	12S + 12.36
35-89	0.30	S/N	05S - 0.98
36-113	0.44	S/N	02S - 0.78
37-113	1.40	S/N	11S + 0.72
37-114	0.61	S/N	11S + 0.69
39-1	1.13	S/N	LTS + 23.46
40-69	0.28	S/N	10S + 28.65
40-117	0.66	S/N	13S + 28.69
41-15	0.60	S/N	15S + 14.88
41-116	0.82	S/N	12S + 0.67
	1.15	S/N	11S - 0.75
42-67	0.33	S/N	02S + 36.11
42-68	1.19	S/N	11S + 3.79
42-69	0.49	S/N	09S + 23.93
43-6	0.39	S/N	09S + 0.62
43-16	0.43	S/N	04S + 22.42
43-118	0.41	S/N	12S + 0.65
47-58	1.83	S/N	05S + 22.50
47-69	0.93	S/N	LTS + 42.26
52-11	0.54	S/N	03S + 0.69
53-125	0.31	S/N	13S + 0.75
	0.38	S/N	07S + 0.81
55-96	0.90	S/N	03S + 0.74
56-1	0.68	S/N	12S + 0.56
56-3	0.55	S/N	10S + 0.71
56-5	0.58	S/N	09S + 0.59
57-2	0.51	S/N	08S + 0.67
57-122	0.50	S/N	08S + 31.21

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
58-6	0.35	S/N	09S + 0.61
58-123	1.22	S/N	09S + 14.11
58-125	1.09	S/N	13S + 25.60
59-2	0.65	S/N	08S + 0.61
60-1	0.51	S/N	10S + 0.67
60-65	0.27	S/N	12S + 8.70
60-91	0.21	S/N	12S + 16.46
	0.41	S/N	10S + 17.71
60-103	0.61	S/N	04S + 0.68
61-1	0.93	S/N	09S + 0.59
61-88	0.22	S/N	03S + 30.04
	0.28	S/N	01S + 19.55
	0.33	S/N	02S + 30.16
	0.35	S/N	04S + 9.68
	0.38	S/N	01S + 20.01
	0.45	S/N	10S + 8.81
61-124	0.35	S/N	08S - 0.8
	0.93	S/N	10S + 0.62
62-4	0.68	S/N	07S - 0.72
62-5	0.41	S/N	09S + 0.56
	0.42	S/N	07S - 0.76
62-128	0.37	S/N	11S + 0.0
	0.58	S/N	08S + 0.0
	1.26	S/N	10S + 0.0
63-128	0.15	S/N	LTS + 21.27
	0.23	S/N	LTS + 20.26
	0.26	S/N	LTS + 19.17
	0.31	S/N	LTS + 18.63
	0.32	S/N	LTS + 17.54
	0.42	S/N	LTS + 18.34
	0.50	S/N	LTS + 20.72
	0.62	S/N	LTS + 17.88
	1.34	S/N	LTS + 16.57
	0.42	S/N	08S + 0.0
	0.70	S/N	10S + 0.0
64-69	0.39	S/N	01S + 9.7
	0.39	S/N	05S + 14.08
65-87	0.82	S/N	04S + 0.66
65-129	0.70	S/N	10S + 0.0
66-128	0.45	S/N	08S - 0.81
66-130	0.49	S/N	12S + 0.0
67-62	1.14	S/N	10S + 0.68
67-73	0.34	S/N	12S + 23.93
68-22	0.57	S/N	12S + 0.67
68-130	0.30	S/N	08S - 0.84
	0.38	S/N	11S - 0.81
	0.40	S/N	10S + 0.60
69-76	0.31	S/N	02S + 32.44
69-131	0.48	S/N	10S + 0.58

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
71-69	0.33	S/N	01S + 18.84
71-90	1.36	S/N	11S + 8.47
72-23	0.36	S/N	07S + 0.64
72-61	0.40	S/N	09S - 0.74
72-127	0.80	S/N	10S - 0.56
73-85	2.09	S/N	05S + 13.59
75-124	0.55	S/N	10S + 0.0
	0.65	S/N	11S + 0.0
76-122	0.86	S/N	09S + 0.0
78-80	0.30	S/N	LTS + 24.31
78-107	0.67	S/N	UTS + 8.62
78-123	0.67	S/N	08S - 0.74
79-126	0.45	S/N	10S - 0.81
79-128	0.83	S/N	10S + 0.48
80-29	0.67	S/N	10S - 0.75
80-39	0.45	S/N	10S - 0.75
81-21	0.38	S/N	10S - 0.77
81-59	0.28	S/N	08S - 0.8
81-131	0.47	S/N	11S - 0.76
82-40	0.42	S/N	08S - 0.77
82-53	0.45	S/N	10S + 0.62
82-58	0.35	S/N	10S + 0.68
82-72	0.54	S/N	11S + 27.51
	0.67	S/N	11S + 32.17
82-130	0.70	S/N	LTS + 24.67
	0.57	S/N	11S - 0.66
84-66	0.50	S/N	07S - 0.79
85-9	0.57	S/N	08S - 0.79
85-46	0.26	S/N	09S - 0.7
86-74	0.57	S/N	11S + 16.06
	0.29	S/N	11S + 20.1
86-96	0.57	S/N	15S + 21.62
88-53	0.74	S/N	09S + 0.7
88-129	0.60	S/N	08S - 0.82
89-18	0.68	S/N	LTE + 20.42
89-73	0.25	S/N	04S + 0.68
90-9	0.70	S/N	08S - 0.74
90-72	0.91	S/N	12S + 15.38
90-74	0.32	S/N	06S + 12.34
91-37	0.68	S/N	01S + 27.75
92-16	0.38	S/N	06S + 0.65
94-17	0.27	S/N	12S + 0.64
94-129	0.85	S/N	08S - 0.7
95-74	0.39	S/N	04S + 0.6
95-109	0.40	S/N	12S + 9.14
96-70	0.66	S/N	04S + 0.71
96-83	0.48	S/N	06S + 3.05
	0.62	S/N	03S + 35.55
	0.78	S/N	06S + 27.24
98-7	0.32	S/N	07S - 0.79

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
98-73	0.30	S/N	02S + 3.77
98-99	0.35	S/N	07S + 0.56
100-71	0.31	S/N	01S + 12.15
101-79	0.41	S/N	04S + 0.65
104-119	0.41	S/N	12S + 20.64
107-31	0.44	S/N	09S + 0.68
	0.57	S/N	03S + 0.51
108-68	0.41	S/N	LTS + 40.45
108-70	0.52	S/N	11S + 32.12
108-86	0.32	S/N	05S + 3.47
	0.46	S/N	10S + 27.99
109-72	0.74	S/N	03S + 18.66
110-20	0.61	S/N	LTE + 19.32
111-66	0.49	S/N	05S + 18.83
111-68	0.47	S/N	15S + 10.16
113-112	0.49	S/N	14S + 9.73
114-109	0.40	S/N	07S - 0.92
115-3	0.46	S/N	08S + 0.66
120-77	0.64	S/N	04S + 2.36
121-32	0.51	S/N	05S - 0.7
121-72	0.66	S/N	03S + 38.27
125-63	0.55	S/N	08S + 0.7
125-80	0.57	S/N	04S + 0.67
127-60	0.59	S/N	09S + 0.71
129-69	0.47	S/N	04S + 23.49
130-1	0.61	S/N	08S + 0.71
131-84	0.54	S/N	07S - 0.87
131-89	0.89	S/N	15S + 5.49
133-3	0.52	S/N	10S - 0.73
133-57	0.29	S/N	07S + 20.64
135-63	0.58	S/N	03S + 34.01
	0.98	S/N	05S + 12.96
135-71	1.64	S/N	09S - 0.86
136-49	0.43	S/N	10S + 33.09
136-80	0.68	S/N	08S - 0.67
138-75	0.56	S/N	08S - 0.59
140-55	0.72	S/N	11S + 20.25
140-70	0.43	S/N	08S - 0.75
142-55	0.38	S/N	07S - 0.84
143-48	0.46	S/N	07S - 0.81
146-7	0.34	S/N	07S + 0.71
	0.41	S/N	08S - 0.8
	0.52	S/N	08S + 0.68
146-21	0.55	S/N	07S - 0.83
146-22	0.82	S/N	07S - 0.86
146-26	0.49	S/N	07S - 0.97
146-34	0.66	S/N	07S - 0.11

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION
147-45	0.24	S/N	03S + 7.5
	0.24	S/N	04S + 14.18
	0.24	S/N	03S + 25.33
	0.28	S/N	03S + 18.53
	0.29	S/N	05S + 14.99
	0.32	S/N	03S + 5.87
	0.36	S/N	01S + 4.26
	0.37	S/N	12S + 12.43
	0.38	S/N	11S + 14.63
	0.38	S/N	03S + 36.39
	0.40	S/N	03S + 3.08
	0.49	S/N	11S + 32.56
	0.53	S/N	12S + 18.88
	0.56	S/N	02S + 30.75
148-1	0.40	S/N	07S - 0.85
148-3	0.65	S/N	11S + 0.56
148-36	0.72	S/N	10S + 0.0
149-11	0.91	S/N	08S - 0.77
149-19	0.97	S/N	12S - 0.79
	0.96	S/N	10S + 0.0
149-20	0.79	S/N	10S + 0.0
149-21	0.87	S/N	10S + 0.0
149-28	1.33	S/N	10S + 0.0
150-7	0.72	S/N	10S - 0.74
150-15	0.79	S/N	10S + 0.0
150-16	0.94	S/N	10S + 0.0
150-17	0.63	S/N	10S - 0.30
150-18	0.72	S/N	10S - 0.57

Supplemental MRPC Inspection "A" OTSG

Sample	Sample size	Voltage Range	Failures
Initial 20%	50	> 0.9	1
1st Expansion	24	> 0.8 < 0.9	1
2nd Expansion	23	> 0.73 < 0.8	1
3rd Expansion	17	> 0.7 < 0.73	0

Tubes Plugged "B" OTSG

A total of 13 tubes were plugged in the "B" OTSG. The following table show the number of tubes plugged in the "B" OTSG, the location of each plugged tube and a remark stating the reason why it was plugged.

Tube/Row	Location	Reason for Plugging
26-10	LTS + 0.28"	49% TW
32-71	06S - 0.97"	Axial > 0.25"
41-53	03S - 0.73	41% TW
54-98	05S - 0.14	Axial > 0.25"
70-125	12S + 0.35	Axial > 0.25" (Based on R* data)
85-124	08S + 0.58"	Axial > 0.25"
92-28	LTS + 10.93"	
97-43	LTS + 17.95"	Voltage 2V.
119-63	07S - 0.78	Axial > 0.25"
68-46		Pulled Tube
72-49		Pulled Tube
136-26		Pulled Tube
109-71		Pulled Tube

Bobbin Inspection "B" OTSG

TUBES WITH INDICATIONS GREATER THAN 40% TW:

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
26-10	0.92	49	LTS + 0.28
41-53	1.27	41	03S + 0.73
92-28	1.6	55	LTS + 10.93

TUBES WITH S/N INDICATIONS GREATER THAN 2 VOLTS

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
97-43	3.24	S/N	LTS + 17.95

TUBES WITH IMPERFECTIONS (<20% TW)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
65-121	0.96	19	05S + 0.62
100-33	1.22	2	UTS + 19.82
109-84	0.70	15	07S - 0.76
121-45	1.02	19	07S - 0.78
122-93	0.93	1	15S + 15.58
	3.83	1	13S + 26.52

DEGRADED TUBES (>20% but <40% TW)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
23-68	3.62	20	LTE + 11.48
63-69	1.44	36	07S - 0.74
65-119	1.59	21	05S + 0.59
66-126	1.04	27	04S + 0.68
69-112	2.41	32	04S + 0.68
76-64	1.58	37	07S - 0.70
78-123	2.62	22	09S + 0.60
79-22	0.84	25	11S - 0.46
81-65	1.04	31	10S - 0.71
89-34	1.54	35	LTS + 12.45
106-61	1.21	32	07S - 0.86
129-34	1.19	22	07S - 0.81
132-48	1.12	30	07S - 0.80
140-15	1.92	20	07S - 0.77
144-49	0.96	28	07S - 0.81
144-57	0.91	26	07S - 0.84
148-38	1.27	31	07S + 1.02

NEW S/Ns (Voltages >0.5 which have not been documented in previous inspections)

TUBE	VOLTAGE	%TW	LOCATION	COMMENTS
75-9	0.59	S/N	15S + 0.43	SLEEVED
108-15	0.52	S/N	07S - 0.76	

S/Ns WHICH HAVE EXHIBITED GROWTH (S/Ns with voltages >0.5 which have exhibited a 0.5 volt growth since last inspection)

TUBE	VOLTAGE	%TW	LOCATION	COMMENTS
15-69	1.28	S/N	07S + 0.64	VOLUMETRIC
27-94	1.5	S/N	09S + 0.67	VOLUMETRIC

OTSG-1B TUBES WITH S/N INDICATIONS

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
2-21	0.75	S/N	10S - 0.68
3-24	0.28	S/N	09S - 0.81
4-12	0.35	S/N	08S - 0.78
4-16	0.46	S/N	08S - 0.78
4-19	0.67	S/N	09S + 0.62
4-24	0.49	S/N	09S - 0.85
4-40	0.26	S/N	LTS + 9.60
5-38	0.25	S/N	07S + 0.65
	0.71	S/N	09S - 0.82
5-44	0.32	S/N	09S - 0.84
6-9	0.37	S/N	10S - 0.82
	0.44	S/N	08S + 0.62
6-44	0.44	S/N	07S - 0.76
	0.69	S/N	09S - 0.81
6-46	0.68	S/N	08S - 0.77
6-49	0.29	S/N	09S - 0.82
7-10	0.79	S/N	08S + 0.57
7-11	1.41	S/N	12S + 27.90
	0.31	S/N	08S - 0.86
7-16	0.31	S/N	08S - 0.91
7-19	0.38	S/N	03S - 0.67
7-21	0.24	S/N	03S - 0.72
7-26	0.24	S/N	09S - 0.79
	0.29	S/N	12S - 0.86
	0.42	S/N	07S + 0.64
7-28	0.46	S/N	08S + 0.53
7-29	0.24	S/N	09S + 0.65
	0.40	S/N	08S - 0.52
	0.40	S/N	08S - 0.55
	0.43	S/N	09S - 0.82
	0.69	S/N	07S + 0.66
7-30	0.53	S/N	07S - 0.00
	0.58	S/N	04S - 0.85
	0.95	S/N	09S - 0.00
	1.06	S/N	08S + 0.00
8-4	0.41	S/N	10S - 0.81
8-15	0.56	S/N	07S + 0.64
8-21	0.23	S/N	06S - 0.72
	0.32	S/N	08S + 0.52
8-22	0.35	S/N	08S + 0.53
8-49	0.45	S/N	08S + 0.64
10-9	0.36	S/N	08S + 0.48
10-12	0.79	S/N	09S - 0.81
10-27	0.61	S/N	09S - 0.83
12-1	0.50	S/N	13S + 0.71
	0.80	S/N	08S - 0.81
13-9	0.45	S/N	08S - 0.83
13-22	0.40	S/N	07S - 0.90
13-27	0.41	S/N	03S - 0.72

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
13-30	0.22	S/N	09S - 0.86
13-43	1.64	S/N	09S - 0.82
14-7	0.53	S/N	09S - 0.95
14-34	0.82	S/N	07S - 0.86
15-2	0.57	S/N	10S + 26.32
15-3	0.56	S/N	09S - 0.81
15-5	0.64	S/N	08S - 0.87
15-35	0.72	S/N	09S - 0.85
16-6	0.30	S/N	09S - 0.83
16-38	0.45	S/N	07S - 0.72
16-80	1.24	S/N	09S - 0.83
17-74	1.53	S/N	07S - 0.79
18-21	0.63	S/N	03S - 0.77
19-6	0.48	S/N	09S - 0.90
19-30	0.63	S/N	07S - 0.86
20-50	0.53	S/N	07S - 0.11
21-33	0.32	S/N	03S - 0.69
21-40	0.42	S/N	07S - 0.77
	0.69	S/N	07S - 0.82
22-5	0.56	S/N	08S - 0.81
22-35	0.60	S/N	07S - 0.81
23-12	0.32	S/N	08S - 0.84
23-36	0.66	S/N	03S - 0.72
25-4	0.62	S/N	LTS + 24.58
25-3	0.44	S/N	08S + 24.87
	0.44	S/N	09S + 14.84
	0.59	S/N	13S + 7.34
	0.70	S/N	08S + 5.30
	0.76	S/N	15S + 41.49
	0.78	S/N	15S + 41.94
	0.78	S/N	15S + 22.01
25-10	1.19	S/N	15S + 23.46
	1.21	S/N	15S + 24.76
	0.41	S/N	LTE + 19.08
	0.81	S/N	LTE + 4.20
	1.06	S/N	LTE + 20.14
	1.18	S/N	09S + 0.51
	1.20	S/N	LTE + 20.88
	1.35	S/N	LTE + 21.83
26-9	0.38	S/N	09S + 12.13
	0.47	S/N	11S + 12.16
	0.52	S/N	10S + 10.03
	0.26	S/N	09S + 2.82
	0.66	S/N	09S + 0.57
26-10	0.46	S/N	02S + 4.23
	0.86	S/N	15S + 21.40
	0.89	S/N	15S + 17.35
	1.08	S/N	15S + 17.91
	0.67	S/N	UPS + 18.89
	1.01	S/N	UPS + 17.72
	1.13	S/N	LTE + 5.24
26-10	1.42	S/N	LTE + 5.75
	0.43	S/N	09S + 0.00
	1.09	S/N	08S + 0.00

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
26-26	0.50	S/N	03S - 0.80
26-71	0.57	S/N	LTS + 2.97
27-5	0.52	S/N	09S - 0.79
27-71	1.42	S/N	LTS + 2.91
27-92	0.60	S/N	15S + 21.99
27-94	0.56	S/N	14S + 13.01
	0.59	S/N	12S + 11.15
	0.70	S/N	11S + 9.56
	0.73	S/N	11S + 29.24
28-6	0.54	S/N	09S - 0.85
28-95	0.38	S/N	13S + 5.33
	0.59	S/N	13S + 5.76
29-42	0.52	S/N	03S - 0.69
	0.53	S/N	LTS - 1.25
30-6	0.32	S/N	07S - 0.73
30-11	0.39	S/N	08S - 0.70
30-14	0.43	S/N	09S - 0.84
30-41	0.43	S/N	03S - 0.69
31-7	0.61	S/N	08S - 0.81
31-8	0.37	S/N	07S + 0.64
31-52	0.35	S/N	14S + 13.40
32-71	0.75	S/N	06S - 1.04
33-8	0.31	S/N	09S + 0.56
	0.75	S/N	07S + 0.67
34-8	0.34	S/N	09S - 0.93
34-37	0.31	S/N	LTS + 22.42
	0.36	S/N	LTS + 9.45
	0.41	S/N	LTS + 9.17
	0.49	S/N	LTS + 23.58
	0.50	S/N	LTS + 25.74
	0.52	S/N	LTS + 26.46
34-44	0.31	S/N	03S - 0.69
34-70	0.37	S/N	13S + 18.91
35-20	0.93	S/N	04S - 0.69
35-38	0.27	S/N	LTS + 20.59
	0.28	S/N	LTS + 6.63
	0.36	S/N	LTS + 8.21
	0.36	S/N	LTS + 24.22
	0.39	S/N	LTS + 14.35
	0.56	S/N	LTS + 24.74
	0.70	S/N	LTS + 27.53
35-42	0.87	S/N	09S - 0.82

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
36-40	0.31	S/N	LTS + 30.22
	0.44	S/N	LTS + 10.68
	0.49	S/N	LTS + 26.46
	0.49	S/N	LTS + 8.19
	0.60	S/N	LTS + 21.42
	0.65	S/N	LTS + 7.03
	0.71	S/N	LTS + 28.34
	0.93	S/N	LTS + 23.11
36-44	0.57	S/N	LTS + 7.75
36-7	0.35	S/N	07S + 0.64
36-36	0.52	S/N	07S - 0.90
36-47	0.72	S/N	07S - 0.83
37-8	0.56	S/N	07S + 0.61
37-12	0.59	S/N	09S - 0.72
37-18	0.63	S/N	03S - 0.79
37-40	0.23	S/N	LTS + 13.93
	0.27	S/N	LTS + 6.64
	0.29	S/N	LTS + 25.54
	0.29	S/N	LTS + 29.88
	0.32	S/N	LTS + 13.04
	0.37	S/N	LTS + 12.65
	0.46	S/N	LTS + 22.99
	0.62	S/N	LTS + 25.27
	0.68	S/N	LTS + 23.54
	0.74	S/N	LTS + 5.89
	0.77	S/N	LTS + 9.39
	0.90	S/N	LTS + 27.32
37-41	0.32	S/N	LTS + 22.52
	0.35	S/N	LTS + 29.13
	0.74	S/N	LTS + 7.11
37-44	0.26	S/N	LTS + 15.08
	0.30	S/N	LTS + 7.46
	0.64	S/N	LTS + 5.86
	0.66	S/N	LTS + 8.52
	0.69	S/N	LTS + 26.41
37-48	0.81	S/N	07S - 0.68
38-8	0.41	S/N	08S - 0.79
38-38	0.95	S/N	09S - 0.82
38-41	0.17	S/N	LTS + 30.27
	0.23	S/N	LTS + 14.10
	0.25	S/N	LTS + 28.23
	0.25	S/N	LTS + 8.55
	0.26	S/N	LTS + 11.52
	0.29	S/N	LTS + 13.20
	0.38	S/N	LTS + 24.02
	0.41	S/N	LTS + 10.90
	0.50	S/N	LTS + 7.09
	0.53	S/N	LTS + 26.85
	0.53	S/N	LTS + 8.19
	0.56	S/N	LTS + 10.15
	0.64	S/N	LTS + 6.53
39-8	0.80	S/N	07S + 0.65

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
39-34	0.57	S/N	09S - 0.80
39-41	0.12	S/N	LTS + 11.91
	0.22	S/N	LTS + 33.72
	0.25	S/N	LTS + 26.56
	0.28	S/N	LTS + 15.38
	0.32	S/N	LTS + 28.64
	0.37	S/N	LTS + 12.56
	0.40	S/N	LTS + 25.17
	0.44	S/N	LTS + 22.10
	0.45	S/N	LTS + 24.10
	0.46	S/N	LTS + 30.20
	0.46	S/N	LTS + 10.13
	0.49	S/N	LTS + 26.22
	0.52	S/N	LTS + 11.23
	0.59	S/N	LTS + 8.24
	1.27	S/N	LTS + 9.62
39-42	0.25	S/N	LTS + 8.05
	0.28	S/N	LTS + 30.82
	0.31	S/N	LTS + 10.61
	0.32	S/N	LTS + 8.70
	0.33	S/N	LTS + 23.10
	0.37	S/N	LTS + 11.76
	0.37	S/N	LTS + 15.38
	0.39	S/N	LTS + 7.49
	0.40	S/N	LTS + 6.96
	0.44	S/N	LTS + 25.48
	0.46	S/N	LTS + 11.96
	0.47	S/N	LTS + 15.72
	0.54	S/N	LTS + 30.40
	0.61	S/N	LTS + 10.10
	0.68	S/N	LTS + 21.84
	0.72	S/N	LTS + 9.15
	0.79	S/N	LTS + 14.26
	0.86	S/N	LTS + 29.64
39-44	0.12	S/N	LTS + 14.60
	0.58	S/N	07S - 0.71
39-45	0.57	S/N	LTS + 25.20
	0.78	S/N	LTS + 8.31
39-46	0.37	S/N	LTS + 6.20
39-49	0.69	S/N	03S - 0.67
39-52	0.61	S/N	09S - 0.81
39-61	0.56	S/N	09S - 0.79
40-8	0.44	S/N	07S + 0.77
40-9	0.41	S/N	07S + 0.60
40-35	0.50	S/N	02S - 0.80
40-42	0.19	S/N	LTS + 29.23
	0.22	S/N	LTS + 27.40
	0.31	S/N	LTS + 9.44
	0.32	S/N	LTS + 10.47
	0.47	S/N	LTS + 7.88

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
40-44	0.17	S/N	LTS + 16.42
	0.18	S/N	LTS + 14.39
	0.20	S/N	LTS + 8.69
	0.24	S/N	LTS + 8.44
	0.46	S/N	LTS + 15.58
40-45	0.28	S/N	LTS + 8.31
40-47	0.17	S/N	LTS + 12.69
	0.32	S/N	LTS + 5.66
	0.53	S/N	LTS + 13.22
	0.56	S/N	LTS + 8.72
40-49	0.75	S/N	07S - 0.77
40-52	0.85	S/N	07S - 0.79
40-116	0.34	S/N	09S - 0.32
41-7	0.41	S/N	07S + 0.68
41-45	0.21	S/N	LTS + 12.83
	0.24	S/N	LTS + 9.16
	0.41	S/N	LTS + 5.97
	0.42	S/N	LTS + 13.24
41-47	0.17	S/N	LTS + 11.26
	0.30	S/N	LTS + 9.11
	0.38	S/N	LTS + 14.27
	0.70	S/N	LTS + 9.36
41-56	0.54	S/N	03S - 0.81
42-39	0.18	S/N	LTS + 13.93
	0.32	S/N	LTS + 7.82
42-41	0.34	S/N	LTS + 9.22
	0.45	S/N	LTS + 10.48
	0.49	S/N	LTS + 8.52
	0.54	S/N	LTS + 7.29
42-42	0.21	S/N	LTS + 7.31
42-45	0.13	S/N	LTS + 14.28
	0.16	S/N	LTS + 15.29
	0.20	S/N	LTS + 11.33
	0.25	S/N	LTS + 15.73
	0.25	S/N	LTS + 12.31
	0.32	S/N	LTS + 11.78
	0.34	S/N	LTS + 10.08
	0.37	S/N	LTS + 13.42
	0.58	S/N	LTS + 6.27
42-48	0.32	S/N	LTS + 13.72
	0.34	S/N	LTS + 15.37
	0.38	S/N	LTS + 8.32
	0.49	S/N	LTS + 9.16
42-69	0.63	S/N	03S - 0.79
43-40	0.20	S/N	LTS + 8.54
43-42	0.19	S/N	LTS + 6.48
	0.31	S/N	LTS + 14.47
	0.41	S/N	LTS + 15.79
	0.52	S/N	LTS + 10.77
	0.71	S/N	LTS + 9.34
43-44	0.60	S/N	03S - 0.74

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
43-45	0.20	S/N	LTS + 8.71
	0.31	S/N	LTS + 6.37
	0.37	S/N	LTS + 7.67
	0.38	S/N	LTS + 16.15
43-49	0.20	S/N	LTS + 14.35
	0.35	S/N	LTS + 8.57
43-76	0.71	S/N	11S + 31.91
43-80	0.69	S/N	12S + 6.70
44-22	0.47	S/N	03S - 0.79
44-44	0.16	S/N	LTS + 10.72
	0.18	S/N	LTS + 15.04
	0.26	S/N	LTS + 11.70
	0.29	S/N	LTS + 9.10
	0.30	S/N	LTS + 10.94
	0.44	S/N	LTS + 7.37
44-46	0.18	S/N	LTS + 13.32
	0.29	S/N	LTS + 14.04
	0.29	S/N	LTS + 9.50
	0.32	S/N	LTS + 12.84
	0.40	S/N	LTS + 15.10
	0.42	S/N	LTS + 10.09
	0.42	S/N	LTS + 8.89
	0.72	S/N	LTS + 8.44
	0.73	S/N	LTS + 12.09
44-48	0.38	S/N	07S - 0.71
44-42	0.47	S/N	LTS + 11.17
44-77	0.60	S/N	03S + 38.07
45-7	0.99	S/N	07S + 0.77
45-35	1.27	S/N	07S - 0.75
45-37	0.24	S/N	LTS + 9.94
	0.37	S/N	LTS + 6.56
	0.38	S/N	LTS + 10.98
	0.40	S/N	LTS + 8.71
45-45	0.43	S/N	LTS + 12.09
45-46	0.28	S/N	LTS + 7.73
	0.40	S/N	LTS + 16.45
	0.53	S/N	LTS + 15.63
	0.54	S/N	LTS + 9.60
	0.56	S/N	LTS + 5.83
	0.59	S/N	LTS + 12.29
	0.63	S/N	LTS + 11.21
	0.76	S/N	LTS + 14.38
45-77	0.77	S/N	01S + 30.29
46-37	0.30	S/N	LTS + 8.68
	0.36	S/N	LTS + 5.30
	0.74	S/N	LTS + 6.47
	0.85	S/N	LTS + 7.95
	1.07	S/N	LTS + 10.54
46-41	0.25	S/N	LTS + 8.54

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
46-44	0.25	S/N	LTS + 11.92
	0.28	S/N	LTS + 15.43
	0.31	S/N	LTS + 8.43
	0.41	S/N	LTS + 11.29
	0.47	S/N	LTS + 7.25
	0.48	S/N	LTS + 8.90
	0.56	S/N	LTS + 24.39
	0.58	S/N	LTS + 13.07
	0.61	S/N	LTS + 6.51
	0.78	S/N	LTS + 14.31
	0.83	S/N	LTS + 10.11
	0.91	S/N	LTS + 5.79
46-46	0.17	S/N	LTS + 12.00
	0.28	S/N	LTS + 11.35
	0.51	S/N	LTS + 13.03
	0.53	S/N	LTS + 15.73
	0.54	S/N	LTS + 8.40
46-67	0.67	S/N	07S - 0.78
46-79	0.26	S/N	09S - 1.57
46-110	0.35	S/N	08S - 0.79
47-7	0.33	S/N	08S + 0.54
	0.82	S/N	07S + 0.67
47-31	1.03	S/N	13S + 9.55
47-48	0.26	S/N	LTS + 7.40
	0.34	S/N	LTS + 14.30
	0.43	S/N	LTS + 8.40
	0.49	S/N	LTS + 6.35
	0.60	S/N	LTS + 12.66
	0.66	S/N	LTS + 8.65
	0.70	S/N	LTS + 5.60
	0.73	S/N	LTS + 14.71
	0.84	S/N	LTS + 10.06
	0.93	S/N	LTS + 11.36
48-7	0.28	S/N	LTS + 18.43
	0.82	S/N	07S + 0.53
48-38	0.21	S/N	LTS + 15.36
	0.34	S/N	LTS + 10.88
	0.39	S/N	LTS + 12.65
	0.61	S/N	LTS + 11.34
48-41	0.27	S/N	LTS + 12.61
48-47	0.22	S/N	LTS + 15.29
	0.24	S/N	LTS + 11.27
	0.32	S/N	LTS + 14.10
	0.37	S/N	LTS + 6.90
	0.44	S/N	LTS + 10.83
	0.48	S/N	LTS + 15.95
	1.04	S/N	LTS + 7.53
48-49	0.68	S/N	LTS + 13.73
49-4	0.38	S/N	08S + 0.69

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
49-35	0.20	S/N	LTS + 10.33
	0.27	S/N	LTS + 11.26
	0.30	S/N	LTS + 5.92
	0.32	S/N	LTS + 9.69
	0.56	S/N	LTS + 12.99
	0.96	S/N	LTS + 7.35
49-38	0.33	S/N	LTS + 5.08
	0.35	S/N	LTS + 11.23
	0.38	S/N	LTS + 6.93
	0.38	S/N	LTS + 9.02
	0.45	S/N	LTS + 6.15
	0.57	S/N	LTS + 13.19
	0.61	S/N	LTS + 10.35
49-41	0.40	S/N	12S + 20.59
	0.42	S/N	LTS + 24.94
49-42	0.18	S/N	LTS + 16.77
	0.24	S/N	LTS + 24.94
	0.49	S/N	LTS + 9.48
	0.51	S/N	LTS + 15.32
	0.53	S/N	LTS + 12.39
	0.66	S/N	LTS + 8.87
49-47	0.38	S/N	LTS + 16.42
	0.68	S/N	LTS + 10.34
	0.72	S/N	LTS + 13.78
	0.75	S/N	LTS + 12.82
	0.48	S/N	03S - 0.74
49-48	0.24	S/N	LTS + 9.35
	0.32	S/N	LTS + 9.96
	0.35	S/N	LTS + 10.51
	0.39	S/N	LTS + 11.62
	0.68	S/N	LTS + 8.33
	0.69	S/N	LTS + 7.42
	0.90	S/N	LTS + 14.18
	0.72	S/N	09S - 0.82
49-49	0.84	S/N	LTS + 13.52
49-50	0.33	S/N	LTS + 12.63
	0.53	S/N	LTS + 9.01
	0.58	S/N	LTS + 11.53
	0.61	S/N	LTS + 13.10
	0.66	S/N	LTS + 6.70
	1.02	S/N	LTS + 10.71
49-52	0.54	S/N	03S - 0.77
49-78	0.35	S/N	12S - 0.56
50-6	0.40	S/N	09S + 0.67
50-33	0.19	S/N	LTS + 12.62
	0.37	S/N	LTS + 5.84
	0.79	S/N	LTS + 7.64
50-34	0.19	S/N	LTS + 11.55
	0.32	S/N	LTS + 6.68
	0.36	S/N	LTS + 10.32

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
50-35	0.15	S/N	LTS + 13.71
	0.18	S/N	LTS + 10.57
	0.23	S/N	LTS + 12.26
	0.30	S/N	LTS + 9.62
	0.40	S/N	LTS + 11.07
	0.43	S/N	LTS + 12.77
	0.48	S/N	LTS + 16.80
	0.86	S/N	LTS + 9.15
50-39	0.22	S/N	LTS + 10.62
50-48	0.22	S/N	LTS + 9.62
	0.23	S/N	LTS + 8.49
	0.32	S/N	LTS + 12.78
	0.34	S/N	LTS + 13.99
50-55	0.46	S/N	07S - 0.72
50-56	0.26	S/N	LTS + 8.48
51-35	0.32	S/N	LTS + 8.28
51-37	0.72	S/N	09S - 0.76
51-42	0.22	S/N	LTS + 16.32
	0.47	S/N	LTS + 7.81
51-48	0.28	S/N	LTS + 7.25
	0.34	S/N	LTS + 8.00
	0.34	S/N	LTS + 8.22
	0.52	S/N	LTS + 11.02
	0.65	S/N	LTS + 9.29
	0.89	S/N	LTS + 6.76
	0.96	S/N	07S - 0.85
51-49	0.31	S/N	LTS + 16.20
	0.39	S/N	LTS + 11.47
	0.50	S/N	LTS + 10.94
	0.75	S/N	LTS + 14.18
51-50	0.51	S/N	07S - 0.77
51-79	0.38	S/N	LTS + 13.12
52-6	0.65	S/N	07S + 0.66
52-30	0.83	S/N	10S - 0.85
52-34	0.13	S/N	LTS + 13.56
	0.27	S/N	LTS + 13.10
	0.28	S/N	LTS + 11.73
	0.29	S/N	LTS + 9.60
	0.32	S/N	LTS + 16.29
	0.36	S/N	LTS + 9.09
	0.50	S/N	LTS + 7.09
	0.51	S/N	LTS + 12.19
	0.55	S/N	LTS + 7.77
52-36	0.22	S/N	LTS + 12.06
	0.26	S/N	LTS + 8.41
	0.29	S/N	LTS + 6.18
	0.33	S/N	LTS + 15.77
	0.52	S/N	LTS + 15.13
	0.67	S/N	LTS + 10.10
	0.68	S/N	LTS + 14.08
	0.98	S/N	LTS + 6.96

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
52-39	0.28	S/N	LTS + 15.72
	0.37	S/N	LTS + 9.67
	0.43	S/N	07S - 0.78
52-40	0.28	S/N	LTS + 26.76
	0.79	S/N	LTS + 12.78
52-41	0.35	S/N	LTS + 7.59
53-43	0.62	S/N	LTS + 8.22
52-81	0.33	S/N	LTS + 14.92
	0.51	S/N	LTS + 12.90
53-39	0.75	S/N	LTS + 12.93
53-49	0.23	S/N	LTS + 9.21
	0.25	S/N	LTS + 13.60
	0.34	S/N	LTS + 8.33
	0.40	S/N	LTS + 7.25
53-59	0.68	S/N	07S - 0.77
53-81	0.17	S/N	LTS + 15.33
	0.22	S/N	LTS + 11.72
	0.25	S/N	LTS + 12.85
	0.52	S/N	LTS + 15.58
	0.57	S/N	LTS + 16.47
53-94	0.15	S/N	06S + 32.55
54-6	0.59	S/N	07S + 0.71
54-33	0.66	S/N	LTS + 9.58
54-35	0.24	S/N	LTS + 7.87
	0.44	S/N	LTS + 8.37
54-37	0.26	S/N	LTS + 17.56
	0.50	S/N	LTS + 9.79
	0.51	S/N	LTS + 8.35
54-40	0.39	S/N	LTS + 10.13
54-51	0.35	S/N	LTS + 9.16
	0.83	S/N	LTS + 12.21
	0.68	S/N	07S - 0.62
54-82	0.35	S/N	LTS + 10.60
54-98	0.98	S/N	05S - 0.28
54-124	0.53	S/N	09S - 0.77
55-32	0.39	S/N	LTS + 7.22
	0.44	S/N	LTS + 14.14
	0.68	S/N	LTS + 13.61
	0.82	S/N	LTS + 7.89
55-41	0.23	S/N	LTS + 11.35
	0.30	S/N	LTS + 15.36
	0.43	S/N	LTS + 13.56
	0.49	S/N	LTS + 10.85
55-49	0.35	S/N	LTS + 12.12
	0.57	S/N	LTS + 9.99
55-54	0.32	S/N	07S - 0.77
55-81	0.15	S/N	LTS + 15.29
	0.27	S/N	LTS + 14.80
	0.32	S/N	LTS + 10.94
	0.83	S/N	LTS + 6.81
55-82	0.46	S/N	LTS + 8.34
56-4	0.43	S/N	08S + 0.69

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
56-28	0.25	S/N	LTS + 7.23
	0.56	S/N	11S + 30.42
56-31	0.18	S/N	LTS + 7.74
56-32	0.35	S/N	LTS + 8.64
	0.42	S/N	LTS + 12.18
56-44	0.38	S/N	LTS + 8.83
	0.50	S/N	LTS + 7.42
	0.55	S/N	LTS + 11.08
	0.64	S/N	LTS + 9.63
	0.64	S/N	LTS + 12.29
	0.67	S/N	LTS + 5.88
	0.69	S/N	LTS + 6.47
	0.82	S/N	LTS + 8.33
56-49	0.26	S/N	LTS + 9.21
56-50	0.19	S/N	LTS + 13.76
	0.21	S/N	LTS + 9.31
	0.41	S/N	LTS + 6.04
	0.48	S/N	LTS + 9.52
	0.54	S/N	LTS + 7.75
	0.56	S/N	LTS + 14.91
	0.60	S/N	LTS + 10.40
	0.61	S/N	LTS + 11.93
56-51	0.21	S/N	LTS + 5.64
	0.32	S/N	LTS + 13.68
	0.37	S/N	LTS + 7.57
	0.52	S/N	LTS + 10.39
	0.56	S/N	LTS + 12.56
	0.81	S/N	LTS + 8.07
56-53	0.32	S/N	LTS + 5.60
	0.35	S/N	LTS + 11.49
	0.74	S/N	13S + 15.99
56-80	0.31	S/N	05S + 22.92
56-82	0.30	S/N	LTS + 13.50
	0.51	S/N	LTS + 6.91
57-27	0.34	S/N	LTS + 10.34
	0.56	S/N	LTS + 9.87
57-38	0.25	S/N	LTS + 12.52
	0.35	S/N	LTS + 7.66
	0.42	S/N	LTS + 5.60
	0.43	S/N	LTS + 13.64
	1.14	S/N	LTS + 12.17
57-39	0.66	S/N	07S - 0.71
57-40	0.38	S/N	LTS + 6.47
	0.46	S/N	LTS + 13.11
57-43	0.27	S/N	LTS + 9.49
57-44	0.21	S/N	LTS + 6.21
	0.28	S/N	LTS + 11.53
	0.35	S/N	LTS + 7.26
	0.35	S/N	LTS + 12.32
	0.47	S/N	LTS + 12.59
	0.53	S/N	LTS + 9.56
57-45	0.41	S/N	LTS + 9.99

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
57-47	0.12	S/N	LTS + 8.91
	0.36	S/N	LTS + 7.11
	0.53	S/N	LTS + 10.46
57-51	0.52	S/N	LTS + 7.96
	0.58	S/N	LTS + 11.41
	0.71	S/N	LTS + 10.30
57-52	0.34	S/N	LTS + 8.48
	0.35	S/N	LTS + 6.64
	0.48	S/N	LTS + 5.15
	0.74	S/N	LTS + 7.28
57-89	0.25	S/N	LTS + 6.56
57-96	0.21	S/N	LTS + 13.69
	0.24	S/N	LTS + 11.71
	0.36	S/N	LTS + 24.00
	0.42	S/N	LTS + 6.68
	0.50	S/N	LTS + 12.67
	0.63	S/N	LTS + 10.05
58-27	0.22	S/N	LTS + 7.80
	0.45	S/N	LTS + 7.34
	0.57	S/N	LTS + 10.43
58-33	0.26	S/N	LTS + 15.34
58-37	0.24	S/N	LTS + 15.97
	0.25	S/N	LTS + 23.95
	0.28	S/N	LTS + 10.21
	0.36	S/N	LTS + 18.62
	0.37	S/N	LTS + 16.49
58-38	0.28	S/N	LTS + 16.27
	0.46	S/N	LTS + 13.31
	0.47	S/N	LTS + 7.97
	0.54	S/N	LTS + 14.66
	0.56	S/N	LTS + 11.29
	0.63	S/N	LTS + 5.75
	0.73	S/N	LTS + 10.09
	1.09	S/N	LTS + 12.34
	1.24	S/N	LTS + 9.59
	1.56	S/N	LTS + 7.51
58-39	0.50	S/N	03S - 0.70
58-41	0.63	S/N	LTS + 11.63
58-44	0.56	S/N	LTS + 8.12
	0.42	S/N	07S - 0.76
58-45	0.23	S/N	LTS + 5.83
	0.31	S/N	LTS + 8.21
	0.46	S/N	LTS + 9.35
	0.47	S/N	LTS + 12.49
	0.49	S/N	LTS + 10.53
	0.60	S/N	LTS + 4.93
	0.65	S/N	LTS + 7.53
	0.73	S/N	LTS + 11.79
58-58	0.29	S/N	03S - 0.76
58-71	0.33	S/N	07S - 0.76
58-83	0.11	S/N	LTS + 12.02
	0.30	S/N	LTS + 6.40

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
58-92	0.20	S/N	LTS + 11.89
58-125	0.45	S/N	08S - 0.79
59-1	0.93	S/N	09S - 0.78
59-25	0.20	S/N	LTS + 10.58
	0.23	S/N	LTS + 6.17
	0.30	S/N	LTS + 11.49
59-26	0.20	S/N	LTS + 12.96
	0.30	S/N	LTS + 7.32
	0.33	S/N	LTS + 8.22
	0.43	S/N	LTS + 6.15
	0.46	S/N	LTS + 8.54
	0.48	S/N	LTS + 10.39
	0.56	S/N	LTS + 11.94
	0.66	S/N	LTS + 11.24
59-31	0.28	S/N	LTS + 8.35
59-39	0.42	S/N	LTS + 15.54
	0.50	S/N	LTS + 11.11
	0.58	S/N	LTS + 12.57
	0.36	S/N	03S - 0.76
59-45	0.29	S/N	LTS + 8.00
	0.46	S/N	07S - 0.67
59-49	0.21	S/N	LTS + 7.66
	0.48	S/N	LTS + 8.50
59-113	0.75	S/N	07S - 0.80
59-120	0.30	S/N	05S - 0.79
59-122	0.56	S/N	07S - 0.82
	1.19	S/N	09S - 0.74
60-38	0.41	S/N	LTS + 14.70
	0.43	S/N	LTS + 11.21
	0.65	S/N	LTS + 12.76
	0.72	S/N	LTS + 9.86
60-48	0.52	S/N	07S - 0.68
60-89	0.17	S/N	LTS + 5.78
60-117	0.48	S/N	07S - 0.77
60-119	1.12	S/N	07S - 0.80
60-126	0.47	S/N	09S - 0.81
61-1	0.59	S/N	09S - 0.78
61-25	0.39	S/N	LTS + 6.66
61-26	0.16	S/N	LTS + 7.04
	0.23	S/N	LTS + 8.77
	0.43	S/N	LTS + 12.61
	0.46	S/N	LTS + 15.07
	0.70	S/N	06S - 0.83
61-29	0.20	S/N	LTS + 11.98
	0.22	S/N	LTS + 14.18
	0.23	S/N	LTS + 7.46
	0.37	S/N	LTS + 10.36
61-38	0.50	S/N	LTS + 9.39
61-42	0.91	S/N	07S - 0.77

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
61-48	0.19	S/N	LTS + 6.94
	0.57	S/N	LTS + 6.50
	0.62	S/N	LTS + 9.22
	0.62	S/N	LTS + 10.91
61-122	0.25	S/N	10S + 5.54
61-124	0.45	S/N	09S + 0.63
62-7	0.46	S/N	15S + 9.52
	0.53	S/N	15S + 20.54
	0.64	S/N	15S + 23.98
62-13	0.68	S/N	03S - 0.67
62-27	0.19	S/N	LTS + 9.55
	0.38	S/N	LTS + 8.23
	0.39	S/N	LTS + 8.91
	0.40	S/N	LTS + 10.23
	0.52	S/N	LTS + 7.34
62-33	0.38	S/N	LTS + 13.23
62-40	0.19	S/N	LTS + 14.33
	0.23	S/N	LTS + 12.57
62-50	0.46	S/N	LTS + 8.24
62-99	0.33	S/N	LTS + 9.21
62-103	0.47	S/N	07S - 0.83
62-106	0.18	S/N	01S + 24.11
62-124	0.31	S/N	08S - 0.77
	0.37	S/N	04S + 7.24
62-5	0.59	S/N	15S + 7.05
63-17	0.31	S/N	LTS + 29.08
63-25	0.32	S/N	05S - 0.80
63-27	0.14	S/N	LTS + 11.15
	0.22	S/N	LTS + 12.42
	0.24	S/N	LTS + 9.65
	0.28	S/N	LTS + 13.89
	0.32	S/N	LTS + 14.69
	0.65	S/N	LTS + 7.56
	0.70	S/N	LTS + 8.56
63-29	0.26	S/N	LTS + 16.63
	0.28	S/N	LTS + 12.30
	0.37	S/N	LTS + 10.11
	0.39	S/N	LTS + 9.85
	0.49	S/N	LTS + 8.14
	0.52	S/N	LTS + 11.41
	0.57	S/N	LTS + 14.80
	0.70	S/N	LTS + 6.52
63-34	1.17	S/N	07S - 0.68
63-39	0.36	S/N	LTS + 15.12
63-44	0.41	S/N	LTS + 8.87
63-45	0.29	S/N	LTS + 9.52
	0.59	S/N	LTS + 6.90
63-125	0.37	S/N	02S + 35.06
64-5	0.66	S/N	09S - 0.81

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
64-28	0.17	S/N	LTS + 10.40
	0.19	S/N	LTS + 6.04
	0.23	S/N	LTS + 8.83
	0.25	S/N	LTS + 9.77
	0.25	S/N	LTS + 12.03
	0.26	S/N	LTS + 13.12
	0.27	S/N	LTS + 26.92
	0.28	S/N	LTS + 10.84
	0.34	S/N	LTS + 8.26
64-39	0.21	S/N	LTS + 16.65
	0.24	S/N	LTS + 11.94
	0.37	S/N	LTS + 6.59
64-46	0.25	S/N	LTS + 8.01
	0.38	S/N	LTS + 11.53
	0.45	S/N	LTS + 9.39
64-51	0.15	S/N	LTS + 10.84
	0.17	S/N	LTS + 9.98
	0.20	S/N	LTS + 6.15
64-68	0.70	S/N	07S - 0.80
64-77	0.56	S/N	07S - 0.74
64-108	0.37	S/N	14S - 0.86
64-121	0.71	S/N	04S + 0.65
64-124	0.32	S/N	06S + 29.06
65-27	0.30	S/N	LTS + 11.55
	0.36	S/N	LTS + 10.20
65-28	0.26	S/N	LTS + 8.05
	0.30	S/N	LTS + 9.27
	0.38	S/N	LTS + 14.18
	0.46	S/N	LTS + 12.37
	0.53	S/N	LTS + 11.40
	0.54	S/N	LTS + 8.55
	0.66	S/N	LTS + 6.39
	0.76	S/N	LTS + 10.24
65-38	0.21	S/N	LTS + 9.01
	0.23	S/N	LTS + 13.23
	0.33	S/N	LTS + 14.32
	0.51	S/N	LTS + 12.40
65-50	0.11	S/N	LTS + 13.69
65-115	0.73	S/N	04S + 0.71
65-122	0.18	S/N	06S + 17.98
	1.02	S/N	05S + 0.65
65-5	0.53	S/N	09S - 0.89
66-28	0.17	S/N	LTS + 6.17
	0.29	S/N	LTS + 7.41
	0.34	S/N	LTS + 11.98
	0.49	S/N	LTS + 14.66
	0.72	S/N	LTS + 8.47
66-36	0.31	S/N	LTS + 10.37
66-37	1.21	S/N	09S - 0.71
66-58	0.61	S/N	07S - 0.81
66-106	0.82	S/N	07S - 0.80
66-111	0.58	S/N	05S + 0.71

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
67-33	1.07	S/N	07S - 0.65
67-35	0.26	S/N	LTS + 8.11
67-36	0.21	S/N	LTS + 11.44
	0.27	S/N	LTS + 11.79
	0.35	S/N	LTS + 7.52
	0.36	S/N	LTS + 14.95
	0.46	S/N	LTS + 10.33
	0.56	S/N	08S + 19.87
67-43	0.52	S/N	LTS + 14.53
67-47	0.42	S/N	09S + 0.74
67-52	1.18	S/N	07S - 0.67
67-112	0.45	S/N	04S + 0.56
	0.58	S/N	05S + 0.65
67-113	0.38	S/N	04S + 0.65
68-21	1.41	S/N	08S - 0.90
68-35	0.23	S/N	LTS + 12.72
	0.24	S/N	LTS + 7.65
	0.78	S/N	LTS + 11.88
	0.89	S/N	07S - 0.75
68-38	0.20	S/N	LTS + 13.91
	0.30	S/N	LTS + 11.49
68-42	0.60	S/N	09S + 0.65
68-48	0.65	S/N	09S + 0.68
68-49	0.52	S/N	09S + 0.73
68-50	0.83	S/N	09S + 0.77
68-51	0.45	S/N	09S + 0.82
68-53	0.55	S/N	09S + 0.71
68-56	0.42	S/N	09S + 0.56
68-64	0.42	S/N	09S + 0.64
68-67	0.32	S/N	03S - 0.81
68-69	0.22	S/N	07S - 0.77
68-99	0.47	S/N	LTS + 11.31
68-102	0.71	S/N	07S - 0.77
68-111	0.35	S/N	04S + 0.65
68-125	0.65	S	05S - 0.59
69-42	0.34	S/N	LTS + 13.80
69-45	0.70	S/N	09S + 0.76
69-46	0.63	S/N	07S - 0.69
	0.82	S/N	09S + 0.73
69-47	0.49	S/N	09S + 0.78
69-50	0.41	S/N	09S - 0.73
69-56	0.35	S/N	03S - 0.68
	1.14	S/N	09S - 0.63
	1.31	S/N	07S + 0.68
69-60	0.50	S/N	09S + 0.68
69-61	0.35	S/N	09S - 0.73
69-62	0.40	S/N	09S + 0.70
69-63	0.54	S/N	09S + 0.71
69-64	0.33	S/N	09S + 0.70
69-70	0.32	S/N	04S + 0.62
	0.33	S/N	06S + 0.66
69-99	0.49	S/N	LTS + 10.96

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
70-42	0.21	S/N	LTS + 15.90
	0.33	S/N	LTS + 7.26
	0.47	S/N	LTS + 15.41
	0.68	S/N	LTS + 14.41
70-49	0.51	S/N	09S + 0.72
70-53	0.62	S/N	09S - 0.72
70-58	0.37	S/N	09S + 0.68
70-59	0.58	S/N	09S + 0.68
70-61	0.34	S/N	07S - 0.84
	0.39	S/N	09S - 0.74
	0.59	S/N	09S + 0.68
70-68	0.24	S/N	04S + 0.71
	0.86	S/N	07S - 0.82
70-111	0.60	S/N	04S + 0.71
70-125	0.63	S/N	12S + 0.30
71-43	0.56	S/N	09S + 0.71
71-59	0.37	S/N	09S + 0.65
71-62	0.60	S/N	09S + 0.78
71-68	0.27	S/N	11S - 0.60
71-71	0.46	S/N	08S - 0.61
72-29	0.54	S/N	09S + 3.11
72-58	0.65	S/N	09S + 0.68
72-64	0.48	S/N	10S - 0.70
72-65	0.64	S/N	07S - 0.69
72-67	0.61	S/N	03S - 0.68
73-66	0.28	S/N	06S + 0.75
	0.37	S/N	04S + 0.72
	0.43	S/N	05S + 0.72
	0.59	S/N	05S - 0.64
	0.99	S/N	06S - 0.67
73-74	0.37	S/N	03S + 27.68
75-123	0.77	S/N	04S + 0.58
76-68	0.63	S/N	07S - 0.76
76-119	0.51	S/N	08S + 0.74
76-121	0.29	S/N	08S + 0.65
	0.42	S/N	07S - 0.77
	0.42	S/N	09S - 0.69
77-122	0.26	S/N	10S + 0.25
77-125	0.37	S/N	15S - 0.66
	0.41	S/N	12S - 0.63
	1.23	S/N	11S - 0.55
78-122	0.43	S/N	09S - 0.77
79-66	0.51	S/N	07S - 0.68
79-97	0.42	S/N	LTS + 9.25
79-123	0.36	S/N	06S - 0.81
79-126	0.64	S/N	07S - 0.76
79-127	0.25	S/N	07S - 0.76
80-22	0.41	S/N	LTS + 31.38
	0.88	S/N	LTS + 30.03
80-41	0.39	S/N	14S + 11.86

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
80-58	0.80	S/N	09S - 0.77
	1.11	S/N	07S - 0.80
80-59	0.50	S/N	07S - 0.83
80-65	0.32	S/N	13S - 0.66
	0.35	S/N	10S - 0.71
80-70	0.47	S/N	07S - 0.64
80-126	0.40	S/N	07S - 0.82
80-127	0.26	S/N	09S - 0.14
	0.47	S/N	07S + 0.65
	0.98	S/N	07S - 0.79
81-62	0.50	S/N	09S + 0.76
81-64	1.34	S/N	10S - 0.79
81-122	1.09	S/N	07S - 0.85
81-125	0.54	S/N	07S - 0.74
	0.93	S/N	08S + 0.58
81-127	0.50	S/N	07S - 0.77
82-5	0.82	S/N	09S - 0.82
82-38	0.56	S/N	09S - 0.74
82-63	0.38	S/N	09S - 0.65
82-94	0.22	S/N	LTS + 7.42
	0.35	S/N	LTS + 12.04
82-95	0.20	S/N	LTS + 11.34
	0.21	S/N	LTS + 10.45
	0.29	S/N	LTS + 13.94
	0.69	S/N	LTS + 7.47
83-35	0.67	S/N	03S - 0.75
83-56	0.98	S/N	01S + 31.02
83-61	0.38	S/N	09S + 0.79
	0.42	S/N	07S - 0.65
83-96	0.30	S/N	LTS + 12.63
	0.34	S/N	LTS + 12.93
83-99	0.49	S/N	06S - 0.74
83-100	0.22	S/N	LTS + 5.85
	0.42	S/N	LTS + 7.66
83-131	0.56	S/N	09S - 0.77
84-39	0.57	S/N	11S + 8.77
	1.07	S/N	07S - 0.81
84-75	0.59	S/N	07S - 0.73
84-95	0.38	S/N	LTS + 9.27
	0.44	S/N	LTS + 8.19
84-98	0.28	S/N	LTS + 9.11
	0.71	S/N	LTS + 12.20
84-99	0.32	S/N	LTS + 9.93
	0.34	S/N	LTS + 12.66
	0.38	S/N	LTS + 10.61
	0.38	S/N	LTS + 14.30
	0.43	S/N	LTS + 7.36
	0.74	S/N	LTS + 9.19
84-100	0.48	S/N	LTS + 8.23
85-38	0.64	S/N	03S - 0.89
85-43	0.39	S/N	LTS + 10.14
	0.34	S/N	09S - 0.79

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
85-72	0.49	S/N	06S - 0.78
85-90	0.25	S/N	07S - 0.77
85-93	0.32	S/N	LTS + 9.12
	0.40	S/N	LTS + 12.67
85-95	0.22	S/N	LTS + 8.99
	0.28	S/N	LTS + 11.57
	0.34	S/N	LTS + 13.95
	0.53	S/N	LTS + 9.40
85-97	0.36	S/N	LTS + 13.62
85-98	0.36	S/N	LTS + 9.76
85-99	0.32	S/N	LTS + 13.30
	0.36	S/N	LTS + 9.89
	0.46	S/N	LTS + 7.02
	0.74	S/N	LTS + 11.00
85-124	1.13	S/N	08S + 0.52
85-127	0.38	S/N	07S - 0.80
	0.40	S/N	09S - 0.77
86-6	0.85	S/N	09S + 0.51
86-32	0.34	S/N	LTS + 10.76
	0.56	S/N	LTS + 10.02
86-53	0.87	S/N	07S - 0.78
86-85	0.30	S/N	06S - 0.77
86-94	0.21	S/N	LTS + 14.45
	0.29	S/N	LTS + 16.77
	0.31	S/N	LTS + 8.70
	0.43	S/N	LTS + 14.86
	0.51	S/N	LTS + 12.00
	0.59	S/N	LTS + 7.74
	0.63	S/N	LTS + 11.29
86-99	0.37	S/N	LTS + 9.36
86-108	0.36	S/N	06S - 0.82
87-49	0.86	S/N	06S - 0.82
87-53	0.69	S/N	06S - 0.81
87-94	0.38	S/N	LTS + 15.78
87-98	0.28	S/N	LTS + 8.73
	0.48	S/N	LTS + 7.16
87-112	0.52	S/N	07S + 0.55
88-12	1.28	S/N	07S - 0.79
88-31	0.76	S/N	09S - 0.77
88-47	0.97	S/N	09S - 0.80
88-51	0.62	S/N	03S - 0.79
88-127	0.38	S/N	09S - 0.77
88-128	0.45	S/N	07S - 0.80
89-30	0.33	S/N	03S - 0.88
89-34	0.52	S/N	LTS + 13.59
	0.78	S/N	LTS + 16.92
	0.86	S/N	LTS + 9.06
	1.13	S/N	LTS + 5.78
	1.29	S/N	LTS + 15.15
89-43	0.31	S/N	LTS + 5.37
	0.81	S/N	LTS + 7.00
89-53	0.41	S/N	07S - 0.76

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
89-84	0.35	S/N	07S - 0.74
89-95	0.20	S/N	LTS + 6.75
	0.26	S/N	LTS + 11.78
	0.29	S/N	LTS + 16.07
	0.40	S/N	LTS + 9.24
	0.55	S/N	LTS + 12.99
	0.65	S/N	LTS + 14.59
89-96	0.20	S/N	LTS + 16.38
	0.33	S/N	LTS + 9.33
	0.40	S/N	LTS + 8.34
	0.66	S/N	LTS + 13.51
89-128	0.25	S/N	09S - 0.83
90-40	0.20	S/N	LTS + 11.81
	0.21	S/N	LTS + 12.10
	0.28	S/N	LTS + 11.58
	0.31	S/N	LTS + 14.34
	0.46	S/N	LTS + 8.19
90-43	0.24	S/N	LTS + 6.55
	0.31	S/N	LTS + 12.64
	0.64	S/N	LTS + 8.03
	0.66	S/N	LTS + 10.46
	1.00	S/N	LTS + 6.32
90-44	0.59	S/N	LTS + 10.17
	0.77	S/N	LTS + 7.65
	0.78	S/N	LTS + 8.20
90-48	0.46	S/N	07S - 0.81
90-60	1.10	S/N	07S - 0.79
90-65	0.58	S/N	07S - 0.80
90-94	0.35	S/N	LTS + 14.49
90-96	0.25	S/N	LTS + 5.74
	0.29	S/N	LTS + 6.56
	0.34	S/N	LTS + 12.77
	0.86	S/N	LTS + 9.75
90-98	0.57	S/N	LTS + 7.14
90-99	0.29	S/N	LTS + 12.45
91-23	0.29	S/N	LTS + 9.88
	0.32	S/N	LTS + 28.01
	0.33	S/N	LTS + 9.47
	0.39	S/N	LTS + 14.95
	0.43	S/N	LTS + 10.83
	0.47	S/N	LTS + 27.58
91-37	0.54	S/N	LTS + 10.35
91-126	0.25	S/N	07S - 0.82
92-17	0.94	S/N	09S - 0.87
92-25	0.31	S/N	LTS + 8.20

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
92-28	0.25	S/N	LTS + 26.71
	0.33	S/N	LTS + 28.51
	0.35	S/N	LTS + 13.64
	0.38	S/N	LTS + 14.35
	0.41	S/N	LTS + 5.45
	0.52	S/N	LTS + 29.05
	0.52	S/N	LTS + 26.02
	0.55	S/N	LTS + 8.56
	0.57	S/N	LTS + 12.96
	0.75	S/N	LTS + 12.01
	0.75	S/N	LTS + 25.71
	0.75	S/N	LTS + 14.64
	0.76	S/N	LTS + 12.21
	0.77	S/N	LTS + 30.28
	0.79	S/N	LTS + 8.10
	0.80	S/N	LTS + 9.84
	1.18	S/N	LTS + 8.79
	1.42	S/N	LTS + 6.73
92-36	0.73	S/N	07S - 0.78
92-44	0.38	S/N	LTS + 6.96
	0.46	S/N	LTS + 6.32
	0.49	S/N	LTS + 7.51
	0.63	S/N	LTS + 9.01
	0.67	S/N	LTS + 10.20
92-45	0.54	S/N	LTS + 6.53
92-60	0.87	S/N	07S - 0.77
92-93	0.53	S/N	LTS + 10.13
	0.72	S/N	LTS + 6.46
92-96	0.68	S/N	LTS + 9.61
92-124	0.63	S/N	07S - 0.65
92-126	0.48	S/N	09S - 0.74
	0.72	S/N	07S - 0.85
93-17	0.92	S/N	09S - 0.79
93-22	0.46	S/N	02S + 35.09
93-27	0.40	S/N	LTS + 10.33
	0.58	S/N	LTS + 9.12
	1.26	S/N	LTS + 7.76
93-36	1.02	S/N	09S - 0.77
93-41	0.54	S/N	LTS + 8.30
	0.56	S/N	LTS + 5.95
	0.58	S/N	LTS + 9.86
93-42	0.94	S/N	02S + 30.87
93-79	0.22	S/N	LTS + 10.64
94-39	0.34	S/N	LTS + 16.13
94-41	0.33	S/N	LTS + 12.07
94-42	0.49	S/N	LTS + 8.71
	0.65	S/N	LTS + 6.53
94-43	0.74	S/N	LTS + 7.95
	1.03	S/N	09S - 0.77
94-45	0.42	S/N	LTS + 8.63
	0.49	S/N	LTS + 12.67
94-66	0.56	S/N	07S - 0.82

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
94-81	0.72	S/N	10S + 18.39
95-5	0.51	S/N	07S - 0.76
95-28	0.33	S/N	LTS + 8.13
95-32	0.25	S/N	LTS + 7.02
	0.33	S/N	LTS + 10.57
	0.58	S/N	LTS + 12.73
95-33	0.40	S/N	LTS + 12.05
95-36	0.26	S/N	LTS + 9.87
	0.36	S/N	LTS + 14.87
95-42	0.34	S/N	LTS + 9.35
95-44	0.58	S/N	LTS + 7.40
95-45	0.33	S/N	LTS + 12.40
95-46	0.21	S/N	LTS + 6.43
	0.49	S/N	LTS + 12.27
95-47	0.18	S/N	LTS + 10.86
95-77	0.35	S/N	01S + 22.28
95-92	0.84	S/N	LTS + 12.94
95-96	0.25	S/N	LTS + 23.90
	0.28	S/N	LTS + 25.87
	0.33	S/N	LTS + 5.43
	0.39	S/N	LTS + 14.54
96-28	0.24	S/N	LTS + 11.67
	0.42	S/N	LTS + 7.27
	1.07	S/N	09S - 0.79
96-29	0.25	S/N	LTS + 7.26
	0.26	S/N	LTS + 6.53
	0.29	S/N	LTS + 9.74
	0.36	S/N	LTS + 11.26
	0.42	S/N	LTS + 13.30
	0.71	S/N	LTS + 26.43
96-39	0.26	S/N	LTS + 7.43
	0.31	S/N	LTS + 15.89
	0.42	S/N	LTS + 14.46
96-40	0.35	S/N	LTS + 10.10
96-42	0.39	S/N	LTS + 13.08
96-43	0.28	S/N	LTS + 13.02
96-44	0.25	S/N	LTS + 6.55
96-47	0.25	S/N	LTS + 14.33
96-66	1.24	S/N	07S - 0.75
96-70	0.96	S/N	07S - 0.78
96-116	0.69	S/N	15S + 23.65
	0.70	S/N	15S + 22.20
97-27	0.73	S/N	LTS + 12.38
	0.98	S/N	LTS + 11.20
97-43	0.37	S/N	LTS + 8.10
	3.24	S/N	LTS + 17.95
97-45	0.25	S/N	LTS + 8.24
	0.43	S/N	LTS + 4.32
	0.43	S/N	LTS + 3.37
97-48	1.76	S/N	15S + 27.50
97-94	0.68	S/N	03S + 5.65

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
97-95	0.23	S/N	LTS + 11.86
	0.54	S/N	LTS + 8.11
98-23	0.56	S/N	UTS + 5.12
98-36	0.60	S/N	LTS + 10.77
	0.67	S/N	LTS + 14.50
98-38	0.17	S/N	LTS + 8.42
	0.25	S/N	LTS + 17.92
	0.60	S/N	LTS + 10.08
98-43	0.40	S/N	LTS + 15.19
	0.68	S/N	LTS + 10.03
	0.69	S/N	LTS + 12.48
98-47	0.23	S/N	LTS + 16.89
98-92	0.23	S/N	LTS + 17.13
	0.31	S/N	LTS + 8.69
98-93	0.17	S/N	LTS + 14.08
	0.19	S/N	LTS + 7.01
	0.20	S/N	LTS + 8.74
	0.21	S/N	LTS + 5.77
	0.26	S/N	LTS + 16.04
	0.32	S/N	LTS + 14.56
	0.39	S/N	LTS + 7.28
98-95	0.31	S/N	LTS + 23.16
	0.95	S/N	LTS + 7.00
99-34	0.45	S/N	LTS + 13.08
	0.60	S/N	LTS + 12.73
99-41	0.36	S/N	LTS + 10.60
	0.88	S/N	03S - 0.76
99-42	0.33	S/N	LTS + 9.97
99-43	0.23	S/N	LTS + 7.99
99-94	0.29	S/N	LTS + 8.63
	0.31	S/N	LTS + 7.14
	0.31	S/N	LTS + 10.34
	0.34	S/N	LTS + 7.49
	0.70	S/N	LTS + 6.00
99-95	0.21	S/N	LTS + 9.48
	0.28	S/N	LTS + 8.12
	0.32	S/N	LTS + 6.26
100-3	0.31	S/N	09S - 0.80
100-27	0.26	S/N	LTS + 11.07
	0.34	S/N	LTS + 12.10
	0.34	S/N	LTS + 5.90
	0.47	S/N	LTS + 9.37
	0.52	S/N	LTS + 8.99
	0.60	S/N	LTS + 7.80
	0.86	S/N	07S - 0.82
100-32	0.21	S/N	LTS + 13.19
	0.39	S/N	LTS + 7.03
	0.43	S/N	LTS + 6.07
	0.44	S/N	LTS + 9.47
	0.96	S/N	LTS + 8.35
100-33	0.34	S/N	LTS + 11.07

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
100-37	0.50	S/N	LTS + 18.30
	0.51	S/N	LTS + 11.06
	0.59	S/N	12S + 31.00
100-41	0.48	S/N	LTS + 14.52
100-58	0.23	S/N	02S + 28.72
100-91	0.22	S/N	LTS + 16.99
	0.36	S/N	LTS + 8.03
	0.45	S/N	LTS + 14.48
	0.78	S/N	LTS + 11.73
100-94	0.22	S/N	LTS + 9.48
	0.47	S/N	LTS + 7.54
100-98	0.88	S/N	UTS + 12.06
	1.66	S/N	UTS + 12.82
101-24	0.64	S/N	09S - 0.74
101-31	0.28	S/N	LTS + 8.12
	0.36	S/N	LTS + 13.59
	0.47	S/N	LTS + 28.00
	0.61	S/N	LTS + 11.35
	0.62	S/N	LTS + 9.74
	0.68	S/N	LTS + 12.50
	0.88	S/N	LTS + 12.02
101-37	0.33	S/N	LTS + 17.69
	0.45	S/N	LTS + 11.21
	0.59	S/N	LTS + 17.10
101-41	0.43	S/N	LTS + 16.24
	0.81	S/N	LTS + 15.02
101-43	0.24	S/N	LTS + 9.27
101-45	0.35	S/N	LTS + 17.07
	0.45	S/N	LTS + 16.45
101-74	0.31	S/N	07S + 8.40
101-90	0.24	S/N	LTS + 8.31
101-91	0.16	S/N	LTS + 27.25
	0.95	S/N	LTS + 8.98
101-93	0.11	S/N	LTS + 10.50
	0.19	S/N	LTS + 12.65
	0.23	S/N	LTS + 9.35
	0.25	S/N	LTS + 12.30
	0.25	S/N	LTS + 13.72
	0.27	S/N	LTS + 26.02
	0.28	S/N	LTS + 7.98
	0.35	S/N	LTS + 10.98
	0.39	S/N	LTS + 6.23
	0.58	S/N	LTS + 6.58
	0.74	S/N	LTS + 7.44
	0.79	S/N	LTS + 5.24
102-43	0.18	S/N	LTS + 13.28
	0.34	S/N	LTS + 12.36
102-46	1.52	S/N	07S - 0.81
102-68	0.32	S/N	04S - 0.86
102-91	0.18	S/N	LTS + 9.00
102-95	1.17	S/N	07S - 0.79
103-5	1.17	S/N	09S + 0.62

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
103-34	0.27	S/N	LTS + 11.39
	0.35	S/N	LTS + 8.79
	0.36	S/N	LTS + 6.49
	0.42	S/N	LTS + 14.51
	0.42	S/N	LTS + 13.07
	0.45	S/N	LTS + 9.83
	0.53	S/N	LTS + 9.47
	0.54	S/N	LTS + 25.20
	0.58	S/N	LTS + 7.14
	0.61	S/N	LTS + 10.43
	0.62	S/N	LTS + 10.80
	0.65	S/N	LTS + 8.47
	0.81	S/N	LTS + 16.86
103-35	0.25	S/N	LTS + 25.63
	0.31	S/N	LTS + 8.43
	0.42	S/N	LTS + 11.73
	0.46	S/N	LTS + 15.15
	0.59	S/N	LTS + 9.94
	0.83	S/N	LTS + 9.63
	0.17	S/N	LTS + 24.64
103-37	0.37	S/N	LTS + 15.40
	0.53	S/N	LTS + 9.99
103-44	0.27	S/N	LTS + 14.50
	0.31	S/N	LTS + 17.23
	0.35	S/N	LTS + 9.60
	0.45	S/N	LTS + 13.82
	0.69	S/N	LTS + 12.25
	0.99	S/N	LTS + 11.57
103-55	0.31	S/N	07S - 0.82
103-81	0.52	S/N	03S + 11.67
103-90	0.23	S/N	LTS + 7.68
	0.28	S/N	LTS + 13.71
	0.30	S/N	LTS + 12.03
	0.40	S/N	LTS + 5.32
	0.40	S/N	LTS + 8.96
	0.44	S/N	LTS + 12.94
	0.48	S/N	LTS + 9.68
	0.63	S/N	LTS + 11.71
	0.67	S/N	LTS + 7.05
	1.05	S/N	LTS + 8.14
103-93	0.58	S/N	LTS + 8.19
103-97	0.35	S/N	04S - 0.76
104-31	0.91	S/N	LTS + 10.12
104-33	0.55	S/N	LTS + 5.51
	0.81	S/N	LTS + 6.52
	0.81	S/N	LTS + 8.45
104-36	0.22	S/N	LTS + 17.14
	0.48	S/N	LTS + 6.94
104-37	0.20	S/N	LTS + 13.33
104-46	0.78	S/N	07S - 0.78
104-51	0.34	S/N	LTS + 10.17
	0.76	S/N	LTS + 9.75

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
104-77	0.17	S/N	LTS + 8.27
	0.24	S/N	LTS + 10.90
	0.24	S/N	LTS + 7.14
104-119	0.43	S/N	08S + 0.60
105-20	0.36	S/N	07S - 0.79
105-32	0.23	S/N	LTS + 12.04
	0.25	S/N	LTS + 11.48
	0.42	S/N	LTS + 12.52
	0.48	S/N	LTS + 9.40
	0.54	S/N	LTS + 16.19
	0.75	S/N	LTS + 7.83
	1.00	S/N	LTS + 8.22
105-34	0.27	S/N	LTS + 14.49
	0.29	S/N	LTS + 9.03
	0.41	S/N	LTS + 12.61
	0.55	S/N	LTS + 10.54
105-36	0.73	S/N	LTS + 10.01
105-42	1.73	S/N	07S - 0.73
105-43	0.27	S/N	LTS + 11.80
	0.31	S/N	LTS + 16.58
	0.34	S/N	LTS + 12.22
	0.54	S/N	LTS + 18.01
105-87	0.43	S/N	07S - 0.79
105-90	0.27	S/N	LTS + 6.51
105-113	0.90	S/N	07S - 0.79
105-122	0.44	S/N	07S - 0.79
106-33	0.46	S/N	LTS + 12.79
106-35	0.27	S/N	LTS + 7.28
	0.35	S/N	LTS + 6.36
	0.37	S/N	LTS + 8.70
106-38	1.39	S/N	07S - 0.83
106-47	0.31	S/N	LTS + 14.90
	0.48	S/N	LTS + 14.29
	0.57	S/N	LTS + 9.62
106-55	0.41	S/N	07S - 0.81
106-92	0.34	S/N	03S - 0.81
106-97	0.51	S/N	02S - 0.73
106-116	0.32	S/N	09S - 0.84
106-117	0.39	S/N	09S - 0.81
107-23	0.65	S/N	07S - 0.78
107-32	0.22	S/N	LTS + 7.13
	0.49	S/N	LTS + 9.25
107-48	0.79	S/N	LTS + 12.29
107-50	0.21	S/N	LTS + 10.09
	0.25	S/N	LTS + 5.71
	0.41	S/N	LTS + 10.94
	0.90	S/N	LTS + 9.31
108-15	0.52	S/N	07S - 0.76
108-31	0.41	S/N	LTS + 8.86
	0.59	S/N	LTS + 7.26

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
108-33	0.22	S/N	LTS + 8.33
	0.25	S/N	LTS + 13.69
	0.29	S/N	LTS + 13.01
	0.34	S/N	LTS + 10.58
0.	0.53	S/N	LTS + 12.65
	0.74	S/N	LTS + 6.36
108-42	0.17	S/N	LTS + 16.58
	0.37	S/N	LTS + 13.45
	0.39	S/N	LTS + 15.65
	0.41	S/N	LTS + 9.19
	0.53	S/N	LTS + 11.15
	0.64	S/N	07S - 0.80
108-44	0.39	S/N	LTS + 14.99
108-47	0.36	S/N	LTS + 5.43
	0.42	S/N	LTS + 13.42
	0.52	S/N	LTS + 8.83
	0.65	S/N	LTS + 6.66
109-29	0.39	S/N	LTS + 8.75
	0.42	S/N	LTS + 7.97
	0.61	S/N	LTS + 5.41
109-31	0.25	S/N	LTS + 6.58
	0.32	S/N	LTS + 12.35
109-32	0.46	S/N	LTS + 11.97
	0.67	S/N	LTS + 7.04
	0.94	S/N	LTS + 9.52
109-45	0.86	S/N	07S - 0.78
109-52	1.13	S/N	07S - 0.83
109-60	0.25	S/N	03S - 0.77
109-84	0.40	S/N	03S - 0.75
110-29	0.27	S/N	L1S + 13.05
	0.35	S/N	LTS + 10.50
	0.39	S/N	LTS + 12.30
	0.41	S/N	LTS + 7.68
110-41	0.83	S/N	LTS + 9.06
110-42	0.46	S/N	07S - 0.82
110-45	0.71	S/N	LTS + 11.16
110-47	0.47	S/N	LTS + 8.76
110-70	0.50	S/N	03S + 26.41
111-41	0.14	S/N	LTS + 15.12
	0.15	S/N	LTS + 7.54
	0.19	S/N	LTS + 11.94
	0.21	S/N	LTS + 6.83
	0.24	S/N	LTS + 13.30
	0.28	S/N	LTS + 8.49
	0.30	S/N	LTS + 10.64
	0.36	S/N	LTS + 10.85
	0.58	S/N	LTS + 9.14
111-47	0.18	S/N	LTS + 8.97
	0.21	S/N	LTS + 7.68
	0.34	S/N	LTS + 7.96
111-66	0.60	S/N	07S - 0.79

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
111-71	0.41	S/N	07S - 0.74
	0.48	S/N	03S - 0.77
112-17	0.66	S/N	LTS + 7.29
112-40	0.25	S/N	LTS + 12.08
	0.39	S/N	LTS + 14.52
	0.40	S/N	LTS + 13.60
	0.49	S/N	LTS + 25.21
	0.51	S/N	LTS + 13.33
	0.52	S/N	LTS + 9.31
	0.65	S/N	LTS + 9.99
	0.70	S/N	LTS + 6.65
112-43	0.20	S/N	LTS + 10.34
	0.22	S/N	LTS + 9.80
	0.28	S/N	LTS + 8.55
112-82	0.60	S/N	07S - 0.80
112-101	0.27	S/S	07S - 0.80
113-39	0.49	S/N	LTS + 6.23
	0.63	S/N	LTS + 11.23
	0.64	S/N	LTS + 10.41
	0.65	S/N	LTS + 15.42
	0.73	S/N	LTS + 12.05
113-41	0.28	S/N	LTS + 15.26
	0.30	S/N	LTS + 10.50
	0.37	S/N	LTS + 12.18
	0.54	S/N	LTS + 10.28
113-48	0.23	S/N	LTS + 11.92
	0.24	S/N	LTS + 9.82
	0.24	S/N	LTS + 24.72
	0.30	S/N	LTS + 10.84
	0.31	S/N	LTS + 14.65
	0.32	S/N	LTS + 8.28
	0.35	S/N	LTS + 15.67
	0.43	S/N	LTS + 16.97
	0.49	S/N	LTS + 15.45
	0.59	S/N	LTS + 14.10
114-39	0.33	S/N	09S - 0.81
114-44	0.35	S/N	LTS + 16.98
	0.46	S/N	LTS + 7.62
114-47	0.41	S/N	LTS + 11.27
114-70	0.69	S/N	07S - 0.80
114-85	0.24	S/N	07S - 0.83
115-43	0.65	S/N	07S - 0.83
115-46	0.47	S/N	03S - 0.81
115-100	0.47	S/N	07S - 0.77
116-39	0.56	S/N	03S - 0.79
116-42	0.59	S/N	LTS + 23.54
116-49	1.28	S/N	07S - 0.79
116-52	0.44	S/N	07S - 0.70
116-61	0.35	S/N	07S - 0.80
116-74	0.22	S/N	02S + 35.84
116-80	0.42	S/N	07S - 0.83

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
117-43	0.35	S/N	LTS + 8.38
117-44	0.27	S/N	LTS + 12.26
	0.34	S/N	LTS + 14.71
	0.38	S/N	LTS + 12.96
	0.42	S/N	LTS + 5.51
	0.49	S/N	LTS + 14.43
	0.51	S/N	LTS + 15.81
	0.54	S/N	LTS + 10.00
	0.54	S/N	LTS + 7.88
	0.68	S/N	LTS + 8.47
	0.70	S/N	LTS + 11.15
	0.71	S/N	LTS + 9.06
	0.92	S/N	LTS + 7.48
117-71	0.70	S/N	07S - 0.76
117-73	0.70	S/N	07S - 0.80
118-36	0.25	S/N	LTS + 26.12
118-39	0.22	S/N	LTS + 6.71
	0.25	S/N	LTS + 9.03
	0.31	S/N	LTS + 8.28
118-40	0.18	S/N	LTS + 13.88
	0.31	S/N	LTS + 6.35
	0.31	S/N	LTS + 24.57
	0.37	S/N	LTS + 11.01
	0.46	S/N	LTS + 25.16
	0.57	S/N	LTS + 8.67
	0.59	S/N	LTS + 23.32
118-66	0.54	S/N	03S - 0.75
	0.77	S/N	07S - 0.75
118-89	0.44	S/N	07S - 0.91
118-99	0.54	S/N	07S - 0.76
119-12	0.77	S/N	07S - 0.84
119-20	0.33	S/N	09S - 0.86
119-48	1.15	S/N	07S - 0.81
119-63	0.97	S/N	07S - 0.79
119-66	0.53	S/N	07S - 0.81
120-63	0.68	S/N	07S - 0.83
120-97	0.68	S/N	07S - 0.78
120-102	0.38	S/N	09S - 0.76
	0.67	S/N	07S - 0.77
121-47	0.48	S/N	10S + 7.38
121-48	0.48	S/N	07S - 0.73
121-49	0.54	S/N	07S - 0.90
	0.56	S/N	01S + 25.59
121-78	0.56	S/N	03S - 0.76
122-89	0.62	S/N	07S - 0.36
122-102	0.60	S/N	07S - 0.93
123-10	0.90	S/N	07S + 6.55
	0.94	S/N	07S + 5.59
123-74	0.63	S/N	07S - 0.82
123-93	0.41	S/N	07S - 0.76

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
124-8	0.37	S/N	09S + 13.37
	0.47	S/N	09S + 21.74
	0.51	S/N	09S + 10.04
	0.52	S/N	14S + 12.12
	0.54	S/N	10S + 10.94
	0.56	S/N	14S + 9.51
	0.60	S/N	14S + 11.64
	0.67	S/N	08S + 12.33
	0.69	S/N	09S + 23.55
	0.86	S/N	09S + 22.53
124-17	0.53	S/N	07S - 0.79
124-48	0.70	S/N	07S - 0.73
125-10	0.31	S/N	15S + 18.96
	0.34	S/N	09S + 12.72
	0.38	S/N	09S + 4.84
	0.46	S/N	11S + 4.69
	0.50	S/N	09S + 13.68
	0.66	S/N	15S + 38.41
125-63	0.35	S/N	07S - 0.77
125-89	0.92	S/N	07S - 0.79
125-98	0.33	S/N	07S - 0.85
	0.51	S/N	10S - 0.71
126-43	0.46	S/N	07S - 0.85
126-53	0.70	S/N	07S - 0.80
127-8	0.31	S/N	09S + 23.95
	0.37	S/N	15S + 22.13
	0.40	S/N	11S + 24.85
	0.40	S/N	12S + 6.71
	0.42	S/N	09S + 13.90
	0.42	S/N	08S + 5.13
	0.43	S/N	06S + 8.28
	0.44	S/N	08S + 15.37
	0.48	S/N	14S + 28.15
	0.50	S/N	04S + 17.31
	0.53	S/N	08S + 33.95
	0.60	S/N	05S + 24.94
	0.67	S/N	06S + 17.03
	0.67	S/N	02S + 19.16
	0.67	S/N	09S + 4.60
	0.71	S/N	12S + 14.71
	1.40	S/N	LTE + 3.11
127-18	0.34	S/N	11S - 0.82
127-58	0.94	S/N	07S - 0.80
127-96	0.75	S/N	10S - 0.68
128-53	0.91	S/N	13S - 0.84
129-52	0.49	S/N	03S - 0.75
	0.70	S/N	07S - 0.75
130-14	0.47	S/N	07S + 0.66
	0.65	S/N	09S - 0.82
130-23	0.75	S/N	07S - 0.81
130-40	0.56	S/N	07S - 0.81
130-47	0.72	S/N	07S - 0.78

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
130-57	0.38	S/N	07S + 28.76
130-92	0.58	S/N	10S - 0.74
131-50	0.74	S/N	07S - 0.81
132-30	0.67	S/N	07S - 0.76
132-36	0.55	S/N	07S - 0.80
132-45	0.79	S/N	07S - 0.81
132-49	0.47	S/N	07S - 0.82
132-58	0.64	S/N	07S - 0.78
132-63	1.14	S/N	07S - 0.76
133-35	0.62	S/N	07S - 0.76
133-49	0.46	S/N	07S - 0.82
134-7	0.54	S/N	09S + 0.60
134-29	0.64	S/N	07S - 0.78
134-38	0.87	S/N	07S - 0.79
134-39	0.51	S/N	07S - 0.81
134-44	0.38	S/N	08S + 16.50
134-63	0.76	S/N	07S - 0.76
134-78	0.48	S/N	07S - 0.80
135-29	0.82	S/N	07S - 0.77
135-43	0.52	S/N	09S - 0.89
	0.57	S/N	07S - 0.82
135-47	0.46	S/N	07S - 0.83
136-32	1.04	S/N	07S - 0.74
136-49	0.62	S/N	07S - 0.79
137-3	0.58	S/N	10S + 0.66
137-77	0.37	S/N	07S - 0.85
138-2	0.37	S/N	11S - 0.75
	0.83	S/N	10S + 0.63
138-20	0.37	S/N	07S - 0.80
138-30	0.89	S/N	07S - 0.80
139-21	0.59	S/N	07S - 0.76
139-29	0.34	S/N	07S - 0.81
139-33	0.34	S/N	07S - 0.77
139-74	1.19	S/N	07S - 0.88
140-21	0.98	S/N	07S - 0.69
140-32	0.49	S/N	07S - 0.82
141-29	0.81	S/N	13S - 0.84
141-57	0.58	S/N	07S - 0.85
141-59	0.55	S/N	14S - 0.88
141-61	0.31	S/N	05S + 0.38
142-11	0.43	S/N	07S - 0.75
142-12	0.57	S/N	07S - 0.78
142-14	0.83	S/N	07S - 0.80
142-24	0.53	S/N	07S - 0.77
142-38	0.41	S/N	03S - 0.82
	0.50	S/N	07S - 0.82
142-42	0.37	S/N	10S + 22.32
142-57	0.41	S/N	07S - 0.85
143-31	0.52	S/N	07S - 0.79
144-12	0.98	S/N	07S - 0.89
144-13	0.57	S/N	07S - 0.74
144-15	0.77	S/N	07S - 0.78

TUBES WITH S/N INDICATIONS (continued)

TUBE	VOLTAGE	%TW	LOCATION OF INDICATION
144-22	0.55	S/N	07S - 0.79
144-24	0.47	S/N	07S - 0.77
144-56	0.58	S/N	07S - 0.84
145-8	0.68	S/N	07S - 0.83
145-12	0.34	S/N	07S - 0.75
145-28	0.54	S/N	07S - 0.80
145-35	0.69	S/N	07S - 0.80
146-14	1.25	S/N	07S - 0.89
146-18	0.51	S/N	07S - 0.82
146-26	0.35	S/N	07S + 0.67
	0.91	S/N	09S - 0.78
	1.02	S/N	08S - 0.76
146-30	0.45	S/N	07S - 0.86
146-47	0.51	S/N	07S - 0.88
147-12	0.69	S/N	07S - 0.77
147-17	0.32	S/N	07S - 0.64
147-23	0.47	S/N	07S + 0.79
	0.48	S/N	09S - 0.84
	0.71	S/N	03S - 0.80
147-24	0.49	S/N	07S - 0.77
147-32	0.41	S/N	09S + 0.52
147-44	0.31	S/N	10S - 0.69
	0.57	S/N	07S - 0.86
148-17	0.62	S/N	07S + 0.52
148-38	0.56	S/N	10S - 0.77
149-11	0.65	S/N	07S - 0.74
149-13	1.17	S/N	10S + 0.55
149-30	0.51	S/N	10S + 0.63
	0.59	S/N	10S - 0.66
149-32	0.41	S/N	10S + 0.66
150-15	0.38	S/N	10S + 0.63
	0.81	S/N	07S - 0.83
151-1	0.33	S/N	10S - 0.72
151-3	0.53	S/N	10S - 0.79
151-10	0.40	S/N	10S - 0.80
	0.56	S/N	10S + 0.64
151-12	0.66	S/N	10S - 0.70
151-13	0.47	S/N	13S + 0.62
	0.56	S/N	10S + 0.61
	1.11	S/N	10S - 0.75
183-1	0.36	S/N	12S + 0.64

Supplemental MRPC Inspection "B" OTSG

Sample	Sample Size	Voltage Range	Failures
Initial 20%	141	> 0.9V	3
1st Expansion	54	> 0.8V	0
2nd Expansion	56	>0.73V	1
3rd Expansion	46	> 0.7V < 0.73V	0

NRC CONFIRMATORY ACTION NO. 8

Pull four tube samples with indications at the 7th and 9th tube support plates and distorted tube sheet signals at the lower tube support face. Perform destructive and non-destructive examinations of these tubes to evaluate the flaw morphology, casual factors, structural and leakage integrity implications, and field detection capabilities. Submit the results of the Refuel 9 OTSG inspections and examinations no later than November 30, 1994.

FPC ACTION

Tube Pull

FPC has pulled 4 tubes from the "B" OTSG. Metallurgical analyses will be performed on these tubes. The tubes selected had S/N indications at the 7th and 9th tube support plates as well as other indications of interest for CR-3. The tubes selected were examined by bobbin coil and MRPC probes to compare the data acquisition and repeatability capabilities of the various techniques versus the conclusions of the metallurgical analysis. The tubes that were removed from service were:

Row/Tube No.	Type of Indication	Location
68-46	C-1 (banana)	LTSF
	S/N	7TH TSP
	S/N	9TH TSP
72-49	C-3 (ding)	LTSF
	S/N	7th TSP
	S/N	9th TSP
136-26	C-1	LTSF
	36% TW	7TH TSP
109-71	37% TW	7TH TSP
	S/N	3RD TSP

FPC expects to have results from the tube pull available by November 30, 1994 as requested by the NRC in this CAL-Item.

NRC CONFIRMATORY ACTION NO. 9

Provide a proposed license amendment based on your evaluation of the tube pull data no later than May 31, 1995.

FPC ACTION

FPC intends to request a license amendment based on the data from the CR-3 tube pull performed during Refuel 9. FPC expects that data to be available to support the May 31, 1995 date requested by the NRC.