

Commonwealth Edison Company

**Zion Station Unit 1
Eddy Current Special Report
Steam Generator Activities
Fall 1993 Refueling Outage #13**

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INTRODUCTION

Zion Nuclear Generating Station is a two unit site, owned and operated by the Commonwealth Edison Company. Each unit incorporates a Westinghouse design Nuclear Steam Supply System which includes a four loop pressurized water reactor rated at 3250 megawatts thermal and turbine generator rated at 1085 megawatts electrical.

This report is a summary of the multifrequency eddy current examination performed during the Fall 1993 Unit One Refueling Outage #13. The examination was performed by ABB/Combustion Engineering Inc. (CE).

During this outage Westinghouse Inconel 600 Mechanical Plugs were removed and replaced by CE Rolled or Welded Plugs.

Sleeving was employed as a method of repairing tubes to keep the affected tubes in service.

All procedures used were reviewed and approved prior to use at Zion Station

PROGRAM

The inspection and data evaluation was performed using:

- Zetec MIZ-18A data acquisition system
- procedures approved in accordance with
 - ASME Section XI 1980 Ed. through Winter 1981 addenda
 - Code Case N-401
- ISIS data management system and Eddy Net analysis system
- probes used:
 - A720M/ULC, A700M/ULC: differential bobbin, magnetic bias, u-bend, lone cone
 - A720SF/RM, A700SF/RM: differential bobbin, spring flex, magnetic bias
 - A640MULC/WG, A640SF/RM/WG: differential bobbin, magnetic bias, wide groove
 - A640XWOUND, A620XWOUND: cross wound and differential bobbin
 - B720MRPC3CPH, B680MROCPH: motorized rotating pancake coil
- frequencies used for examination:
 - Bobbin Coil: 400, 210, 100 and 10 kHz
 - both differential and absolute modes used
 - MRPC: 400, 300, 200 and 10 kHz for straight sections of tubing, 800, 400, 200 and 100 kHz for U-bend section of tubes
 - absolute mode
 - Cross Wound Probe: 800, 400, 150 and 50 kHz
 - differential mode
- certification levels:
 - inspection personnel certified to EC Level I or Level II
 - evaluation personnel certified to EC Level IIA or higher
- analysis system:
 - Zetec Eddy Net two frequency mix used for evaluations
 - Zetec Turbo Mix used for enhanced evaluations of Tube sheet area
- data evaluation:
 - Manual primary analysis, Computer Data Screening (CDS) secondary analysis, Level III final resolution
 - evaluator "proficiency testing" performed using test tapes composed of previous Zion data.
- evaluation setup:
 - primary frequency (400 kHz) reviewed in data window
 - vertical component of differential mix in strip chart display
 - vertical component of absolute outputs in strip chart display

- other frequencies and mixes used as needed for resolution
- primary and secondary evaluations compared by data management
- criteria established for comparison calls exceeding comparison criteria is reviewed by Level III

**ZION STATION
ANALYSIS CODES**

Absolute Drift	ADR
Absolute Drift w/possible indication	ADI
Bad Data	RBD
Bulge	BLG
Copper Deposit	CUD
Dent	DNT
Dent w/possible indication	DNI
Ding	DNG
Distorted Roll Transition	DRT
Distorted Roll Transition w/possible indication	DRI
Distorted Support Signal	DSI
Distorted Top of Tube Sheet	DTS
Distorted Tube Sheet w/possible indication	DTI
ID Chatter	IDC
Indication not found	INF
Indication not reportable	INR
Incomplete Test	RIC
Lead Analyst Review	LAR
No Detectable Defect	NDD
Non-Quantifiable Indication	NQI
Obstruction	OBS
Permeability Variation	PVN
Plugged	PLG
Possible Loose Part	PLP
Sleeve	SLV
Sludge	SLG
Tube Restricted	RTR
Undefined Indication at Support Plate	UDS

INSPECTION PLAN

- Inspection and evaluation on all four SGs performed in parallel.
- 100% of tubes in-service in each SG were tested full length (when possible from hot leg).
- 100% of sleeved tubes were inspected with Cross-Wound Probe.
- 100, randomly selected, row 2 tubes tested with Motorized Rotating Pancake Coil Probe (MRPC) through the U-bend.
- Motorized Rotating Pancake Coil Probe (MRPC) used for greater resolution of distorted indications.
- Primary areas of concern
 - Tube sheet (ODSCC)
 - U-Bends (PWSCC)
 - Roll Transition (PWSCC)

RESULTS

Tubes Inspected and Extent of Inspection (Number of Tubes) with Bobbin Coil

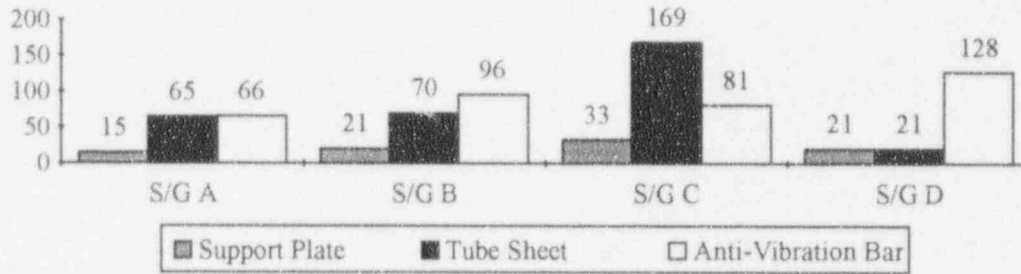
Steam Generator	A	B	C	D
Total Tubes each SG	3388	3388	3388	3388
Plugged Previously	187	313	197	210
Available for Test	3201	3075	3191	3178
Tested Full Length	100%	100%	100%	100%
Not Tested	0%	0%	0%	0%
Tested	3201	3075	3191	3178
Percent of Available Tested	100%	100%	100%	100%

Additional Testing (Number of Tubes)

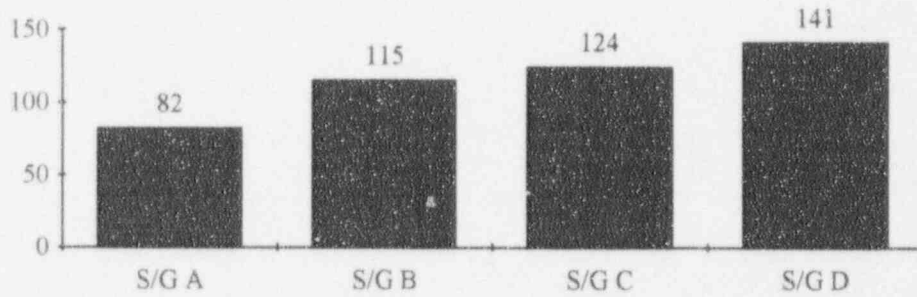
MRPC Testing				
crevice/roll transition	109	98	200	36
U-bend	25	25	25	25
Cross Wound Probe sleeves	112	281	374	38
<u>Total Exams</u>	3447	3479	3790	3277

SUMMARY OF INDICATIONS AND TRENDS

Location Distribution of Indications

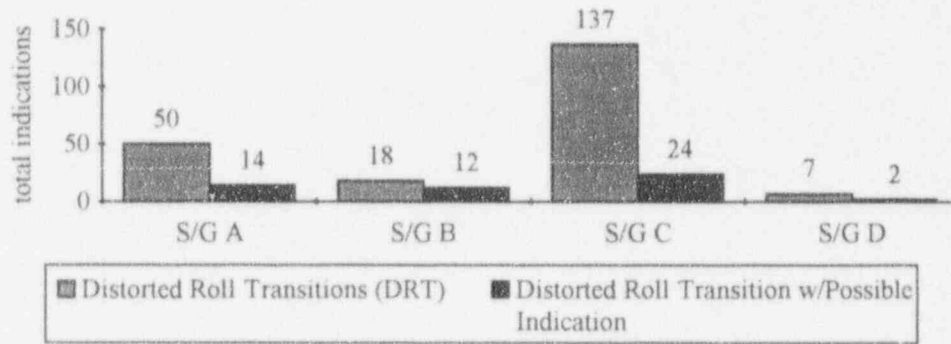


Reportable Indications (20 to 39% through wall)



Reportable Indications are defined as degraded tubing under Technical Specification 4.3.1.B.4.

Roll Transition Indications



All graphical representations of Zion data include total number of indications found. Many tubes have undergone degradation at multiple locations.

See Appendix A for complete listing of 1992 reportable indications.

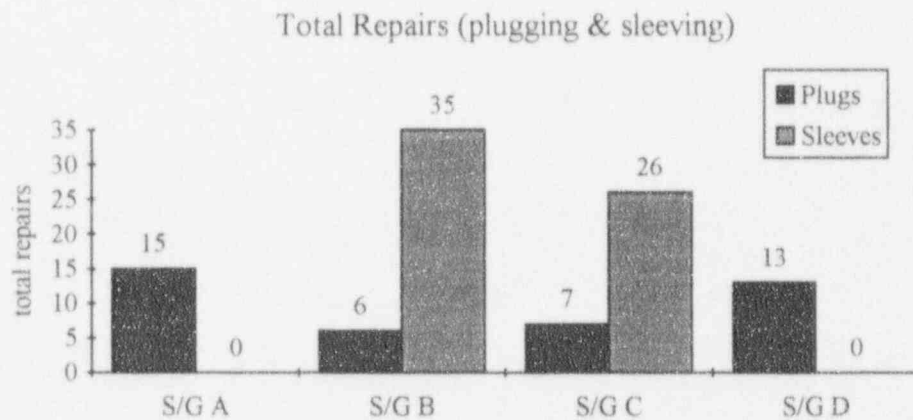
PLUGGING/SLEEVING

Plugging Criteria:

- Defective tubing with through wall indications of 40% or greater (Tech. Spec. 4.3.1 B.4)
 - All Non-Quantifiable Indications (NQI) (Preventive)
 - Distorted Roll Transitions with Indications (DRI) (Preventive)
 - Tube sheet Indications (evaluated on a case-by-case basis) (Preventive)
 - Other Indications (evaluated on a case-by-case basis) (Preventive)

Sleeving Criteria:

- Identical to plugging criteria except that the indications must be located in an area that is repairable by sleeving.



Pluggable/Sleevable Indications (including preventive plugging/sleeving):

Steam Generator	A	B	C	D	Total
Tech. Spec. Plug/Sleeve	0	1	0	0	1
Preventive Plug/Sleeve	15	40	33	13	101
Total Plug/Sleeve	15	41	33	13	102

TUBE REPAIRS

Steam Generator A

15 Tubes Plugged

14	Roll Transition Indications
1	Tube Sheet Crevice Region Indications
0	Other

Steam Generator B

6 Tubes Plugged

0	Roll Transition Indications
5	Tube Sheer Crevice Region Indications
1	Other

35 Tubes Sleeved

11	Roll Transition Indications
24	Crevice Region Indications
0	Other

Steam Generator C

7 Tubes Plugged

2	Roll Transition Indications
4	Tube Sheet Crevice Region Indications
1	Other

26 Tubes Sleeved

25	Roll Transition Indications
1	Tube Sheet Crevice Region Indications
0	Other

Steam Generator D

13 Tubes Plugged

3	Roll Transition Indications
10	Crevice Region Indications
0	Other

Note: Many of these tubes have undergone multiple forms of degradation. Each tube is categorized only under the most conservative category.

Note: See Appendix B for complete list of tubes plugged or sleeved this outage.

CONCLUSIONS

- The indications requiring corrective actions were primarily located at roll transitions and tube sheet crevice regions.
 - Indications at the roll transition section of the tube are presumed to be Stress Corrosion Cracking at the ID of the roll.
 - Indications in the tube sheet crevice are presumed to be the result of OD Stress Corrosion Cracking.
- Zion continues to see no indication of OD Stress Corrosion Cracking at Support Plates.
- No evidence of degradation was noted during sleeve inspections.

FUTURE INSPECTION PLANS

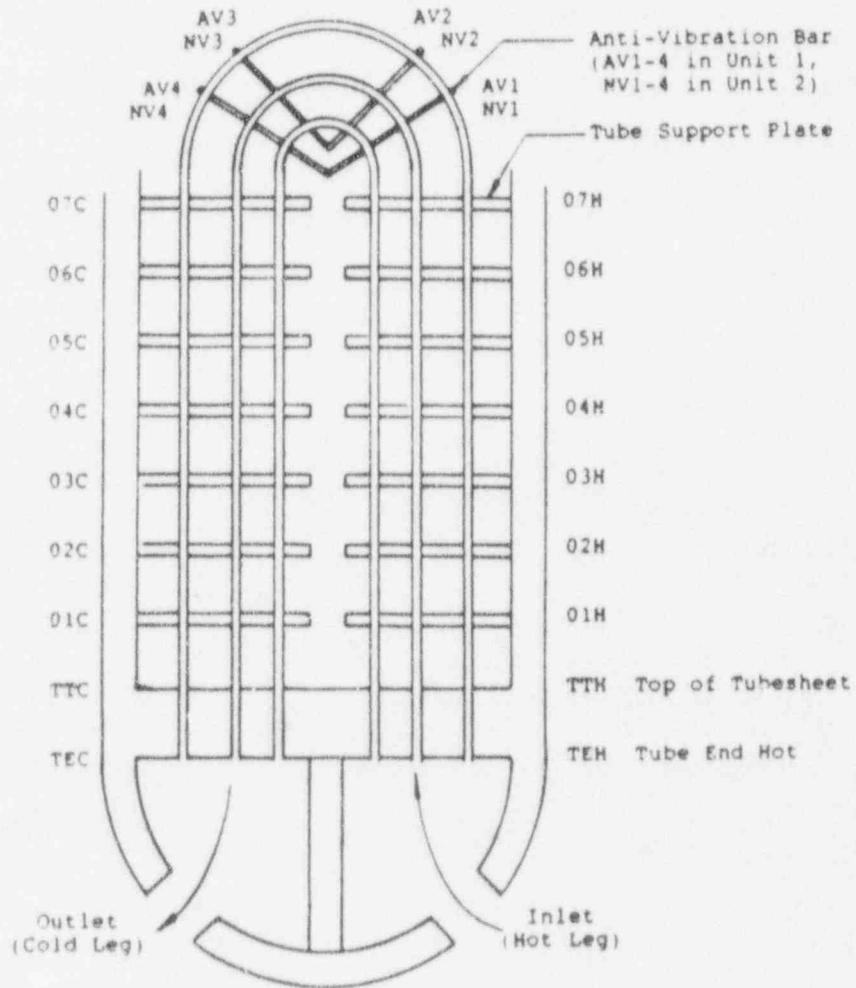
- Zion Station expects to continue the practice of inspecting 100% of in-service tubes.
- Attempts will be made to inspect 100% of these tubes full length.
- Zion will continue to inspect 100% of installed sleeves.
- MRPC tests will continue to be utilized to further quantify indications found with Bobbin Coil Probes.
- All recent industry concerns over tube degradation and inspection transients will be considered while developing future inspection plans.
- Commonwealth Edison continues to investigate causes of tube degradation and prospective preventive actions.

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Steam Generator ECT Engineer

Approved by R. E. Lane Date 5-11-94
Robert E. Lane
Station Support Engineering Supervisor

Appendix A:
Reportable Indications List
(20 to 39% through wall)

Location Diagram:



Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG A
 Outage: OCT/NOV 1993

Date: 11/10/93
 Page: 1

TUBES W/INDICATIONS >= 20% AND <= 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
4 93	AH003	Z1AH01	0.6	1		31	01C - 0.11	A720SF/RM	TEC
5 79	AH004	Z1AH02	0.6	1		26	01H + 14.48	A720SF/RM	TEC
12 63	AH060	Z1AH15	1.8	P 2		23	AV2 + 0.00	A640MJLC/WG	TEC
14 68	AH018	Z1AH05	1.3	P 1		23	07C + 0.21	A720M/ULC	TEC
15 92	AH009	Z1AH03	1.9	1		22	01C + 0.00	A720SF/RM	TEC
17 22	AH066	Z1AH17	2.1	P 2		26	AV4 + 0.00	A720M/ULC	TEC
17 90	AH039	Z1AH12	1.5	P 2		23	AV4 + 0.00	A720M/ULC	TEC
19 39	AH061	Z1AH15	0.6	P 2		21	AV4 - 0.10	A720M/ULC	TEC
22 63	AH061	Z1AH15	0.6	P 2		21	AV2 + 0.00	A720M/ULC	TEC
	AH061	Z1AH15	1.2	P 2		30	AV4 + 0.00	A720M/ULC	TEC
22 66	AH039	Z1AH12	2.0	P 2		27	AV1 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.7	P 2		25	AV2 + 0.00	A720M/ULC	TEC
23 7	AH067	Z1AH17	1.7	P 2		20	AV4 + 0.00	A720M/ULC	TEC
	AH067	Z1AH17	1.7	P 2		21	AV3 + 0.00	A720M/ULC	TEC
23 31	AH061	Z1AH15	0.6	P 2		21	AV2 - 0.05	A720M/ULC	TEC
23 47	AH061	Z1AH15	0.7	P 2		23	AV2 + 0.00	A720M/ULC	TEC
23 52	AH061	Z1AH15	0.9	P 2		26	AV3 - 0.16	A720M/ULC	TEC
23 87	AH010	Z1AH03	3.6	P 1		29	01C - 0.08	A720SF/RM	TEC
24 35	AH061	Z1AH15	0.7	P 2		21	AV4 + 0.00	A720M/ULC	TEC
24 67	AH039	Z1AH12	1.6	P 2		23	AV2 + 0.00	A720M/ULC	TEC
26 52	AH061	Z1AH15	0.8	P 2		23	AV2 - 0.08	A720M/ULC	TEC
26 68	AH039	Z1AH12	1.5	P 2		22	AV1 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	2.3	P 2		29	AV3 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.9	P 2		26	AV2 + 0.00	A720M/ULC	TEC
27 18	AH065	Z1AH16	0.7	P 2		25	AV3 + 0.00	A720M/ULC	TEC
27 80	AH039	Z1AH12	1.4	P 2		21	AV2 + 0.00	A720M/ULC	TEC
28 56	AH061	Z1AH15	0.7	P 2		22	AV1 - 0.18	A720M/ULC	TEC
	AH061	Z1AH15	1.4	P 2		33	AV2 + 0.00	A720M/ULC	TEC
28 81	AH039	Z1AH12	1.5	P 2		22	AV2 + 0.00	A720M/ULC	TEC
28 84	AH039	Z1AH12	1.5	P 2		22	AV1 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.4	P 2		20	AV2 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.4	P 2		21	AV4 + 0.00	A720M/ULC	TEC
31 80	AH009	Z1AH03	1.6	P 1		24	01C - 0.08	A720SF/RM	TEC
31 81	AH039	Z1AH12	2.3	P 2		29	AV2 + 0.00	A720M/ULC	TEC
32 28	AH061	Z1AH15	1.0	P 2		27	AV4 + 0.00	A720M/ULC	TEC
	AH061	Z1AH15	1.0	P 2		28	AV3 + 0.00	A720M/ULC	TEC
32 30	AH061	Z1AH15	0.8	P 2		25	AV4 - 0.15	A720M/ULC	TEC
	AH061	Z1AH15	1.0	P 2		28	AV2 + 0.00	A720M/ULC	TEC
32 53	AH061	Z1AH15	1.1	P 2		30	AV2 - 0.63	A720M/ULC	TEC
32 79	AH039	Z1AH12	1.8	P 2		25	AV2 + 0.00	A720M/ULC	TEC
33 30	AH061	Z1AH15	0.7	P 2		21	AV2 + 0.00	A720M/ULC	TEC
	AH061	Z1AH15	0.6	P 2		20	AV4 + 0.08	A720M/ULC	TEC
33 48	AH061	Z1AH15	0.8	P 2		25	AV2 + 0.00	A720M/ULC	TEC
33 56	AH061	Z1AH15	1.1	P 2		30	AV3 + 0.76	A720M/ULC	TEC
	AH061	Z1AH15	1.1	P 2		30	AV2 + 0.00	A720M/ULC	TEC
33 64	AH039	Z1AH12	1.4	P 2		21	AV4 + 0.00	A720M/ULC	TEC
33 69	AH039	Z1AH12	1.4	P 2		21	AV1 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.3	P 2		20	AV2 + 0.00	A720M/ULC	TEC
33 73	AH039	Z1AH12	1.5	P 2		22	AV4 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.4	P 2		21	AV2 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.3	P 2		20	AV3 + 0.00	A720M/ULC	TEC
34 63	AH039	Z1AH12	1.3	P 2		20	AV1 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	2.1	P 2		28	AV3 + 0.00	A720M/ULC	TEC
34 64	AH039	Z1AH12	2.6	P 2		31	AV2 + 0.00	A720M/ULC	TEC
34 77	AH 13	Z1AH04	0.9	P 1		23	01C - 0.33	A720M/ULC	TEC
	AH013	Z1AH04	0.7	P 1		31	02C + 0.31	A720M/ULC	TEC
34 78	AH013	Z1AH04	2.4	P 1		27	01C - 0.42	A720M/ULC	TEC
34 79	AH013	Z1AH04	1.1	P 1		25	01C - 0.22	A720M/ULC	TEC
35 53	AH061	Z1AH15	0.9	P 2		27	AV4 - 0.05	A720M/ULC	TEC
35 62	AH044	Z1AH12	0.7	P 2		24	AV3 - 0.28	A720M/ULC	TEC
35 77	AH013	Z1AH04	1.4	P 1		29	02C - 0.14	A720M/ULC	TEC
37 74	AH013	Z1AH04	1.2	P 1		30	02C - 0.22	A720M/ULC	TEC
38 60	AH044	Z1AH12	0.6	P 2		22	AV4 + 0.00	A720M/ULC	TEC
	AH044	Z1AH12	0.7	P 2		25	AV2 + 0.13	A720M/ULC	TEC
	AH044	Z1AH12	1.5	P 2		36	AV1 + 0.30	A720M/ULC	TEC
38 73	AH013	Z1AH04	0.8	P 1		33	02C + 0.05	A720M/ULC	TEC
39 32	AH061	Z1AH15	0.7	P 2		23	AV4 - 0.08	A720M/ULC	TEC
	AH061	Z1AH15	0.7	P 2		22	AV3 + 0.28	A720M/ULC	TEC

Owner: Commonwealth Edison
Plant: Zion Unit 1
Component: SG A
Outage: OCT/NOV 1993

Date: 11/10/93
Page: 2

TUBES W/INDICATIONS \geq 20% AND \leq 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TMO	Indication Location	Probe	Extent Tested
39 37	AH061	Z1AH15	0.6	P 2		20	AV3 + 0.00	A720M/ULC	TEC
39 58	AH044	Z1AH12	1.3	P 2		34	AV1 + 0.00	A720M/ULC	TEC
	AH044	Z1AH12	1.6	P 2		37	AV2 + 0.00	A720M/ULC	TEC
39 69	AH039	Z1AH12	1.3	P 2		20	AV2 + 0.00	A720M/ULC	TEC
	AH039	Z1AH12	1.4	P 2		21	AV3 + 0.00	A720M/ULC	TEC
41 33	AH061	Z1AH15	1.2	P 2		31	AV3 + 0.08	A720M/ULC	TEC
41 34	AH061	Z1AH15	0.8	P 2		24	AV3 + 0.00	A720M/ULC	TEC
	AH061	Z1AH15	1.1	P 2		29	AV4 + 0.00	A720M/ULC	TEC
41 35	AH061	Z1AH15	1.1	P 2		29	AV3 + 0.00	A720M/ULC	TEC
41 63	AH039	Z1AH12	2.8	P 2		32	AV3 + 0.00	A720M/ULC	TEC
41 69	AH039	Z1AH12	1.9	P 2		26	AV3 + 0.00	A720M/ULC	TEC
45 58	AH014	Z1AH04	0.7	P 1		23	01C + 0.00	A720M/ULC	TEC
46 50	AH021	Z1AH06	1.3	P 1		21	03C - 0.23	A720M/ULC	TEC
46 51	AH021	Z1AH06	2.3	P 1		27	01C - 0.08	A720M/ULC	TEC

Number of Tubes: 59
Number of Indications: 82

Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG B
 Outage: OCT/NOV 1993

Date: 11/10/93
 Page: 1

TUBES W/INDICATIONS >= 20% AND <= 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
4	1	BH070	21BH17	1.1	P 1				
5	93	BH012	21BH04	0.6	P 1	32	02C + 0.00	A720M/ULC	TEC
6	2	BH070	21BH17	0.8	P 1	26	01C - 0.12	A720M/ULC	TEC
6	94	BH003	21BH01	0.5	P 1	34	01H + 0.13	A720M/ULC	TEC
8	34	BH001	21BH01	1.1	P 1	33	03H + 0.03	A720SF	TEC
9	3	BH070	21BH17	2.2	P 1	25	07H + 0.08	A720SF	TEC
9	46	BH001	21BH01	1.5	P 1	20	01H + 0.08	A720M/ULC	TEC
		BH001	21BH01	0.4	P 1	36	07C + 0.15	A720SF	TEC
9	93	BH003	21BH01	0.6	P 1	26	05C - 0.03	A720SF	TEC
11	2	BH064	21BH16	0.8	P 1	36	02H - 0.13	A720SF	TEC
12	3	BH064	21BH16	0.6	P 1	28	01H - 0.08	A720M/ULC	TEC
15	5	BH064	21BH16	1.8	P 1	37	01H - 0.10	A720M/ULC	TEC
15	64	BH064	21BH16	1.9	P 2	38	03C + 0.29	A720M/ULC	TEC
15	66	BH037	21BH12	1.5	P 2	27	AV3 + 0.00	A720M/ULC	TEC
16	91	BH037	21BH12	1.5	P 2	23	AV1 + 0.00	A720M/ULC	TEC
17	6	BH066	21BH16	0.8	P 1	23	AV1 + 0.00	A720M/ULC	TEC
20	7	BH066	21BH16	1.0	P 1	38	01C + 0.00	A720M/ULC	TEC
22	8	BH066	21BH16	0.8	P 1	37	05C + 0.26	A720M/ULC	TEC
23	37	BH036	21BH11	1.2	P 2	37	01H + 0.18	A720M/ULC	TEC
23	61	BH037	21BH12	1.4	P 2	20	AV4 + 0.00	A720M/ULC	TEC
		BH037	21BH12	1.5	P 2	22	AV2 + 0.00	A720M/ULC	TEC
25	9	BH066	21BH16	1.8	P 2	23	AV1 + 0.00	A720M/ULC	TEC
26	64	BH037	21BH12	1.3	P 2	27	AV4 + 0.00	A720M/ULC	TEC
		BH037	21BH12	1.8	P 2	21	AV3 + 0.00	A720M/ULC	TEC
26	65	BH037	21BH12	1.9	P 2	26	AV2 + 0.00	A720M/ULC	TEC
27	12	BH066	21BH16	0.7	P 1	27	AV3 + 0.00	A720M/ULC	TEC
27	56	BH061	21BH15	1.6	P 2	38	02C + 0.11	A720M/ULC	TEC
		BH061	21BH15	1.5	P 2	22	AV3 + 0.00	A640SF/RM/WG	TEC
27	65	BH037	21BH12	2.8	P 2	21	AV2 + 0.00	A640SF/RM/WG	TEC
27	85	BH047	21BH13	1.5	P 2	33	AV2 + 0.00	A720M/ULC	TEC
		BH047	21BH13	1.4	P 2	22	AV4 + 0.00	A720M/ULC	TEC
28	44	BH062	21BH15	2.7	P 2	21	AV3 + 0.05	A720M/ULC	TEC
28	46	BH062	21BH15	2.7	P 2	32	AV3 + 0.00	A640SF/RM/WG	TEC
		BH062	21BH15	2.5	P 2	32	AV3 + 0.00	A640SF/RM/WG	TEC
28	50	BH036	21BH11	1.4	P 2	31	AV2 + 0.00	A640SF/RM/WG	TEC
		BH036	21BH11	1.9	P 2	22	AV4 + 0.00	A720M/ULC	TEC
28	51	BH036	21BH11	2.8	P 2	27	AV3 + 0.65	A720M/ULC	TEC
28	52	BH036	21BH11	1.5	P 2	24	AV4 + 0.00	A720M/ULC	TEC
		BH036	21BH11	1.9	P 2	23	AV1 + 0.00	A720M/ULC	TEC
		BH036	21BH11	2.1	P 2	27	AV2 + 0.00	A720M/ULC	TEC
29	14	BH066	21BH16	1.4	P 2	28	AV3 + 0.00	A720M/ULC	TEC
		BH066	21BH16	2.0	P 2	23	AV3 + 0.00	A720M/ULC	TEC
29	39	BH062	21BH15	2.3	P 2	29	AV2 + 0.00	A720M/ULC	TEC
29	61	BH037	21BH12	1.5	P 2	29	AV2 + 0.00	A640SF/RM/WG	TEC
29	65	BH037	21BH12	1.7	P 2	24	AV3 + 0.00	A720M/ULC	TEC
29	75	BH037	21BH12	1.3	P 2	25	AV3 + 0.00	A720M/ULC	TEC
30	82	BH010	21BH03	0.8	P 1	21	AV4 + 0.00	A720M/ULC	TEC
31	13	BH066	21BH16	1.5	P 2	30	01C + 0.23	A720M/ULC	TEC
		BH066	21BH16	1.0	P 1	24	AV2 + 0.00	A720M/ULC	TEC
		BH066	21BH16	1.8	P 2	30	03C + 0.18	A720M/ULC	TEC
		BH066	21BH16	1.5	P 2	27	AV1 + 0.00	A720M/ULC	TEC
31	14	BH066	21BH16	1.3	P 2	24	AV3 + 0.00	A720M/ULC	TEC
		BH066	21BH16	1.3	P 2	21	AV1 + 0.00	A720M/ULC	TEC
31	42	BH062	21BH15	2.8	P 2	22	AV2 + 0.00	A720M/ULC	TEC
31	43	BH062	21BH15	3.0	P 2	32	AV2 + 0.00	A640SF/RM/WG	TEC
		BH062	21BH15	1.4	P 2	34	AV3 + 0.00	A640SF/RM/WG	TEC
32	41	BH036	21BH11	1.8	P 2	20	AV2 + 0.00	A640SF/RM/WG	TEC
32	47	BH062	21BH15	4.4	P 2	26	AV3 + 0.00	A720M/ULC	TEC
		BH062	21BH15	1.6	P 2	39	AV2 + 0.00	A640SF/RM/WG	TEC
		BH062	21BH15	2.5	P 2	23	AV1 + 0.00	A640SF/RM/WG	TEC
32	58	BH037	21BH12	1.8	P 2	31	AV3 + 0.00	A640SF/RM/WG	TEC
		BH037	21BH12	2.5	P 2	26	AV2 + 0.00	A720M/ULC	TEC
32	59	BH037	21BH12	1.5	P 2	31	AV4 + 0.00	A720M/ULC	TEC
		BH037	21BH12	1.6	P 2	23	AV2 + 0.00	A720M/ULC	TEC
		BH037	21BH12	1.5	P 2	24	AV3 + 0.00	A720M/ULC	TEC
32	60	BH062	21BH15	1.4	P 2	24	AV1 + 0.00	A720M/ULC	TEC
32	73	BH037	21BH12	1.3	P 2	20	AV4 + 0.00	A640SF/RM/WG	TEC
		BH037	21BH12	1.2	P 2	22	AV4 + 0.00	A720M/ULC	TEC
						20	AV3 + 0.00	A720M/ULC	TEC

Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG B
 Outage: OCT/NOV 1993

Date: 11/10/93
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TUBES W/INDICATIONS \geq 20% AND \leq 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
33 30	BH036	Z1BH11	1.6	P 2		25	AV1 + 0.00	A720M/ULC	TEC
33 48	BH037	Z1BH12	1.3	P 2		21	AV2 + 0.00	A720M/ULC	TEC
33 58	BH037	Z1BH12	1.2	P 2		20	AV4 + 0.00	A720M/ULC	TEC
33 62	BH037	Z1BH12	1.4	P 2		23	AV3 + 0.00	A720M/ULC	TEC
34 34	BH036	Z1BH11	1.7	P 2		26	AV2 + 0.10	A720M/ULC	TEC
34 41	BH036	Z1BH11	1.4	P 2		22	AV2 + 0.00	A720M/ULC	TEC
34 43	BH036	Z1BH11	1.3	P 2		21	AV3 + 0.00	A720M/ULC	TEC
34 44	BH036	Z1BH11	2.3	P 2		30	AV2 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.5	P 2		23	AV3 + 0.00	A720M/ULC	TEC
34 49	BH036	Z1BH11	2.7	P 2		32	AV3 - 0.36	A720M/ULC	TEC
	BH036	Z1BH11	2.0	P 2		28	AV2 - 0.23	A720M/ULC	TEC
	BH036	Z1BH11	2.0	P 2		28	AV4 + 0.00	A720M/ULC	TEC
34 52	BH036	Z1BH11	1.5	P 2		23	AV1 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.4	P 2		23	AV2 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.5	P 2		23	AV3 - 0.10	A720M/ULC	TEC
34 65	BH036	Z1BH11	1.4	P 2		22	AV1 + 0.00	A720M/ULC	TEC
34 69	BH018	Z1BH05	2.9	1		35	TSC + 4.87	A720M/ULC	TEC
34 75	BH037	Z1BH12	1.3	P 2		21	AV3 + 0.00	A720M/ULC	TEC
35 26	BH036	Z1BH11	1.3	P 2		21	AV2 + 0.00	A720M/ULC	TEC
35 43	BH036	Z1BH11	1.4	P 2		22	AV3 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.8	P 2		26	AV4 + 0.00	A720M/ULC	TEC
35 50	BH036	Z1BH11	1.7	P 2		33	AV2 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.5	P 2		23	AV3 + 0.00	A720M/ULC	TEC
35 53	BH036	Z1BH11	2.0	P 2		28	AV2 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.4	P 2		22	AV1 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	2.5	P 2		31	AV3 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.7	P 2		25	AV4 + 0.00	A720M/ULC	TEC
35 62	BH037	Z1BH12	2.0	P 2		27	AV4 + 0.00	A720M/ULC	TEC
	BH037	Z1BH12	3.5	P 2		36	AV3 + 0.00	A720M/ULC	TEC
35 69	BH018	Z1BH05	2.2	1		22	TSC + 4.77	A720M/ULC	TEC
37 19	BH067	Z1BH16	0.6	P 1		21	O2C - 0.11	A720M/ULC	TEC
37 33	BH036	Z1BH11	3.2	P 2		35	AV3 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.6	P 2		25	AV4 + 0.00	A720M/ULC	TEC
37 35	BH036	Z1BH11	1.4	P 2		25	AV3 + 0.00	A720M/ULC	TEC
37 45	BH036	Z1BH11	1.6	P 2		24	AV2 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.5	P 2		24	AV3 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.9	P 2		27	AV4 + 0.00	A720M/ULC	TEC
37 46	BH036	Z1BH11	1.3	P 2		22	AV2 + 0.00	A720M/ULC	TEC
37 74	BH017	Z1BH05	1.2	P 1		25	O1H + 0.27	A720M/ULC	TEC
38 40	BH036	Z1BH11	1.5	P 2		24	AV1 + 0.00	A720M/ULC	TEC
38 47	BH037	Z1BH12	1.9	P 2		27	AV3 + 0.00	A720M/ULC	TEC
38 50	BH036	Z1BH11	2.5	P 2		31	AV2 - 0.16	A720M/ULC	TEC
	BH036	Z1BH11	3.5	P 2		36	AV1 + 0.00	A720M/ULC	TEC
39 42	BH036	Z1BH11	1.9	P 2		27	AV4 + 0.00	A720M/ULC	TEC
	BH036	Z1BH11	1.3	P 2		22	AV3 + 0.00	A720M/ULC	TEC
43 49	BH037	Z1BH12	1.5	P 2		23	AV3 + 0.00	A720M/ULC	TEC
44 49	BH037	Z1BH12	1.2	P 2		20	AV3 + 0.00	A720M/ULC	TEC

Number of Tubes: 78
 Number of Indications: 115

Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG C
 Outage: OCT/NOV 1993

Date: 11/12/93
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TUBES W/INDICATIONS >= 20% AND <= 39%

Row	ul	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
3	1	CH070	Z1CH17	0.9	P 1		28	01H + 0.05	A720M/ULC	TEC
3	2	CH070	Z1CH17	1.4	P 1		33	01H + 0.00	A720M/ULC	TEC
5	2	CH069	Z1CH17	1.0	P 1		23	01H + 0.00	A720M/ULC	TEC
7	61	CH063	Z1CH15	1.2	P 1		33	07H + 0.14	A720M/ULC	TEC
8	2	CH069	Z1CH17	1.8	P 1		20	01C - 0.18	A720M/ULC	TEC
9	3	CH069	Z1CH17	2.2	P 1		32	01C - 0.05	A720M/ULC	TEC
11	61	CH063	Z1CH15	1.5	P 1		35	06C + 0.30	A720M/ULC	TEC
13	3	CH064	Z1CH16	0.8	P 1		26	01H + 0.13	A720M/ULC	TEC
13	50	CH060	Z1CH15	20.7	P 5		20	TEH + 14.52	A620X-WOUND	01H
15	58	CH063	Z1CH15	1.4	P 2		21	AV3 + 0.00	A720M/ULC	TEC
15	70	CH046	Z1CH13	1.9	P 2		24	AV2 + 0.00	A620SFRM/WG	TEC
16	36	CH040	Z1CH11	1.0	P 1		35	07C + 0.17	A640SFRM/WG	TEC
16	60	CH063	Z1CH15	1.3	P 2		20	AV4 + 0.00	A720M/ULC	TEC
16	63	CH063	Z1CH15	1.3	P 2		20	AV2 + 0.00	A720M/ULC	TEC
16	70	CH033	Z1CH11	1.3	P 2		20	AV3 + 0.00	A720M/ULC	TEC
16	79	CH033	Z1CH11	1.4	P 2		21	AV2 + 0.00	A720M/ULC	TEC
17	43	CH062	Z1CH15	1.5	P 2		21	AV2 + 0.00	A620SF/RM/WG	TEC
		CH062	Z1CH15	1.8	P 2		24	AV3 + 0.00	A620SF/RM/WG	TEC
17	62	CH047	Z1CH13	1.7	P 2		27	AV2 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.7	P 2		28	AV3 + 0.00	A720M/ULC	TEC
17	64	CH047	Z1CH13	1.5	P 2		26	AV4 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.8	P 2		28	AV1 + 0.03	A720M/ULC	TEC
		CH047	Z1CH13	2.4	P 2		32	AV3 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.4	P 2		25	AV2 - 0.23	A720M/ULC	TEC
19	22	CH046	Z1CH13	2.7	P 2		30	AV3 + 0.00	A620SFRM/WG	TEC
		CH046	Z1CH13	2.2	P 2		27	AV2 + 0.00	A620SFRM/WG	TEC
19	23	CH068	Z1CH17	2.1	P 2		28	AV3 + 0.00	A720M/ULC	TEC
		CH068	Z1CH17	1.5	P 2		23	AV2 + 0.00	A720M/ULC	TEC
19	59	CH046	Z1CH13	2.4	P 2		28	AV3 + 0.00	A620SFRM/WG	TEC
		CH046	Z1CH13	1.8	P 2		23	AV2 + 0.00	A620SFRM/WG	TEC
19	75	CH033	Z1CH11	1.9	P 2		25	AV3 + 0.00	A720M/ULC	TEC
20	65	CH033	Z1CH11	2.5	P 2		29	AV4 + 0.00	A720M/ULC	TEC
21	46	CH047	Z1CH13	1.5	P 2		26	AV2 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.3	P 2		24	AV1 - 0.05	A720M/ULC	TEC
		CH047	Z1CH13	1.0	P 2		21	AV4 + 0.10	A720M/ULC	TEC
21	70	CH033	Z1CH11	1.3	P 2		20	AV3 + 0.00	A720M/ULC	TEC
		CH033	Z1CH11	2.1	P 2		27	AV2 + 0.00	A720M/ULC	TEC
22	65	CH033	Z1CH11	1.4	P 2		20	AV1 + 0.00	A720M/ULC	TEC
		CH033	Z1CH11	1.7	P 2		23	AV3 + 0.00	A720M/ULC	TEC
23	30	CH047	Z1CH13	1.2	P 2		23	AV2 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.2	P 2		23	AV3 + 0.00	A720M/ULC	TEC
23	40	CH047	Z1CH13	1.1	P 2		21	AV2 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.4	P 2		25	AV3 + 0.00	A720M/ULC	TEC
23	58	CH046	Z1CH13	1.8	P 2		24	AV3 + 0.00	A620SFRM/WG	TEC
24	13	CH066	Z1CH16	1.8	P 2		26	AV4 + 0.00	A720M/ULC	TEC
25	9	CH065	Z1CH16	1.3	P 2		21	AV3 + 0.00	A720M/ULC	TEC
25	42	CH047	Z1CH13	1.7	P 2		27	AV2 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.9	P 2		29	AV3 + 0.00	A720M/ULC	TEC
25	86	CH007	Z1CH03	0.9	P 1		21	01C - 0.11	A720M/ULC	TEC
26	11	CH066	Z1CH16	1.9	P 1		30	02C - 0.13	A720M/ULC	TEC
26	82	CH033	Z1CH11	1.5	P 2		22	AV4 + 0.00	A720M/ULC	TEC
		CH033	Z1CH11	1.4	P 2		20	AV3 + 0.05	A720M/ULC	TEC
28	41	CH020	Z1CH07	0.2	P 1		34	03H - 0.06	A720M/ULC	TEC
29	64	CH047	Z1CH13	1.8	P 2		29	AV3 + 0.00	A720M/ULC	TEC
29	74	CH033	Z1CH11	1.8	P 2		24	AV3 + 0.00	A720M/ULC	TEC
29	81	CH007	Z1CH03	0.4	P 1		24	03C + 0.08	A720M/ULC	TEC
30	13	CH074	Z1CH18	1.8	P 1		36	04H + 0.20	A720M/ULC	TEC
31	80	CH007	Z1CH03	1.6	P 1		38	02C - 0.22	A720M/ULC	TEC
32	43	CH047	Z1CH13	1.6	P 2		27	AV4 + 0.00	A720M/ULC	TEC
		CH047	Z1CH13	1.3	P 2		23	AV3 + 0.00	A720M/ULC	TEC
34	17	CH068	Z1CH17	0.5	P 1		27	03C + 0.08	A720M/ULC	TEC
34	49	CH033	Z1CH11	1.4	P 2		21	AV2 + 0.00	A720M/ULC	TEC
34	50	CH033	Z1CH11	2.3	P 2		28	AV2 + 0.00	A720M/ULC	TEC
34	51	CH033	Z1CH11	1.8	P 2		25	AV3 + 0.00	A720M/ULC	TEC
34	53	CH033	Z1CH11	1.7	P 2		24	AV4 + 0.00	A720M/ULC	TEC
		CH033	Z1CH11	2.0	P 2		26	AV3 + 0.00	A720M/ULC	TEC
34	54	CH033	Z1CH11	2.6	P 2		30	AV2 + 0.00	A720M/ULC	TEC
		CH033	Z1CH11	1.7	P 2		24	AV3 + 0.00	A720M/ULC	TEC

Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG C
 Outage: OCT/NOV 1993

Date: 11/12/93
 Page: 2

TUBES W/INDICATIONS >= 20% AND <= 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
34 59	CH033	Z1CH11	1.4	P 2		21	AV4 + 0.00	A720M/ULC	TEC
34 61	CH033	Z1CH11	1.6	P 2		23	AV4 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.9	P 2		25	AV3 + 0.00	A720M/ULC	TEC
34 77	CH010	Z1CH04	0.7	P 1		22	O2C - 0.28	A720M/ULC	TEC
35 39	CH047	Z1CH13	2.1	P 2		30	AV3 - 0.38	A720M/ULC	TEC
	CH047	Z1CH13	1.3	P 2		24	AV4 + 0.00	A720M/ULC	TEC
35 43	CH047	Z1CH13	1.5	P 2		26	AV4 + 0.00	A720M/ULC	TEC
	CH047	Z1CH13	2.0	P 2		30	AV3 + 0.00	A720M/ULC	TEC
35 53	CH033	Z1CH11	1.4	P 2		20	AV4 + 0.00	A720M/ULC	TEC
35 69	CH033	Z1CH11	1.6	P 2		23	AV4 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.5	P 2		22	AV3 + 0.00	A720M/ULC	TEC
35 74	CH033	Z1CH11	1.5	P 2		22	AV4 + 0.00	A720M/ULC	TEC
35 75	CH033	Z1CH11	2.0	P 2		26	AV3 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.6	P 2		23	AV4 + 0.00	A720M/ULC	TEC
38 42	CH022	Z1CH08	0.6	P 1		23	O7C + 0.14	A720M/ULC	TEC
38 51	CH033	Z1CH11	2.1	P 2		26	AV4 + 0.00	A720M/ULC	TEC
38 64	CH033	Z1CH11	2.9	P 2		32	AV1 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	2.5	P 2		29	AV2 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.4	P 2		21	AV3 + 0.00	A720M/ULC	TEC
38 65	CH033	Z1CH11	2.6	P 2		30	AV2 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	2.8	P 2		31	AV3 + 0.00	A720M/ULC	TEC
38 66	CH033	Z1CH11	2.0	P 2		26	AV3 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.7	P 2		24	AV2 + 0.00	A720M/ULC	TEC
38 70	CH033	Z1CH11	1.3	P 2		20	AV1 + 0.00	A720M/ULC	TEC
38 74	CH033	Z1CH11	1.4	P 2		20	AV1 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	1.6	P 2		23	AV2 + 0.00	A720M/ULC	TEC
39 36	CH025	Z1CH09	0.8	P 1		25	O7C + 0.20	A720M/ULC	TEC
	CH047	Z1CH13	2.2	P 2		31	AV3 + 0.00	A720M/ULC	TEC
	CH047	Z1CH13	1.0	P 1		30	O7C + 0.18	A720M/ULC	TEC
39 50	CH033	Z1CH11	1.9	P 2		25	AV4 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	3.2	P 2		33	AV3 + 0.00	A720M/ULC	TEC
39 53	CH033	Z1CH11	3.4	P 2		34	AV3 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	2.0	P 2		26	AV4 + 0.00	A720M/ULC	TEC
39 69	CH033	Z1CH11	1.4	P 2		21	AV3 + 0.00	A720M/ULC	TEC
40 53	CH033	Z1CH11	2.8	P 2		31	AV4 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	3.0	P 2		32	AV3 + 0.00	A720M/ULC	TEC
41 28	CH024	Z1CH08	0.4	P 1		35	O2C - 0.08	A720M/ULC	TEC
41 41	CH047	Z1CH13	1.5	P 2		25	AV1 + 0.00	A720M/ULC	TEC
41 53	CH033	Z1CH11	3.0	P 2		32	AV2 + 0.00	A720M/ULC	TEC
	CH033	Z1CH11	2.7	P 2		30	AV3 + 0.00	A720M/ULC	TEC
41 54	CH033	Z1CH11	2.7	P 2		31	AV3 + 0.00	A720M/ULC	TEC
41 68	CH012	Z1CH04	1.7	P 1		38	O2C - 0.22	A720M/ULC	TEC
42 30	CH024	Z1CH08	1.6	P 1		23	O2C + 0.11	A720M/ULC	TEC
42 32	CH025	Z1CH09	0.5	P 1		23	O2C + 0.25	A720M/ULC	TEC
42 36	CH025	Z1CH09	0.7	P 1		30	O2C + 0.06	A720M/ULC	TEC
42 67	CH011	Z1CH04	0.4	P 1		28	O2C + 0.16	A720M/ULC	TEC
43 63	CH011	Z1CH04	0.5	P 1		26	TSC + 0.45	A720M/ULC	TEC
43 65	CH011	Z1CH04	0.7	P 1		38	O1C - 0.11	A720M/ULC	TEC
44 39	CH022	Z1CH08	3.8	P 1		32	O2C + 0.17	A720M/ULC	TEC
44 40	CH022	Z1CH08	0.6	P 1		24	O2C + 0.08	A720M/ULC	TEC
44 54	CH018	Z1CH06	1.6	P 1		37	TSC - 0.41	A720M/ULC	TEC
44 56	CH018	Z1CH06	3.3	P 1		34	TSC - 0.29	A720M/ULC	TEC
45 51	CH017	Z1CH06	2.4	P 1		30	O1C - 0.05	A720M/ULC	TEC
45 57	CH018	Z1CH06	1.4	P 1		35	O5H + 0.22	A720M/ULC	TEC
46 61	CH022	Z1CH08	0.9	P 1		37	O4H - 0.19	A720M/ULC	TEC
46 62	CH022	Z1CH08	0.9	P 1		35	O4H + 0.14	A720M/ULC	TEC

Number of Tubes: 89
 Number of Indications: 124

Owner: Commonwealth Edison
 Plant: Zion Unit 1
 Component: SG D
 Outage: OCT/NOV 1993

Date: 11/10/93
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TUBES W/INDICATIONS >= 20% AND <= 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
2 93	DH028	Z1DH07	1.3	P 1		24	01C + 0.00	A700SF/RM	TEC
3 94	DH028	Z1DH07	1.7	P 1		33	01H + 0.17	A700SF/RM	TEC
5 26	DC004	Z1DC01	1.6	P 1		23	07C + 0.18	A720SF/RM	TEH
5 93	DH004	Z1DH04	1.1	P 1		33	01C - 0.20	A720SF/RM	TEC
	DH004	Z1DH04	1.6	P 1		22	01H + 0.19	A720SF/RM	TEC
10 3	DC003	Z1DC01	0.4	1		35	01C - 0.07	A720SF/RM	TEH
14 34	DH024	Z1DH07	2.5	P 2		22	AV3 + 0.00	A720M/UCLC	TEC
15 91	DH009	Z1DH02	0.8	P 1		26	01C - 0.16	A720SF/RM	TEC
16 53	DH025	Z1DH07	2.3	P 2		24	AV1 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	1.9	P 2		20	AV2 + 0.00	A720M/UCLC	TEC
16 63	DH025	Z1DH07	3.2	P 2		29	AV2 + 0.00	A720M/UCLC	TEC
16 90	DH009	Z1DH02	2.9	P 1		36	01C - 0.11	A720SF/RM	TEC
17 34	DH025	Z1DH07	2.5	P 2		25	AV4 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.3	P 2		24	AV1 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.2	P 2		23	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	3.2	P 2		29	AV3 + 0.00	A720M/UCLC	TEC
17 40	DH025	Z1DH07	3.6	P 2		31	AV3 + 0.00	A720M/UCLC	TEC
17 41	DH025	Z1DH07	2.8	P 2		27	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.0	P 2		22	AV3 + 0.00	A720M/UCLC	TEC
17 53	DH029	Z1DH07	1.0	P 2		20	AV3 + 0.00	A720SF/RM	TEC
17 74	DH024	Z1DH07	2.4	P 2		21	AV2 + 0.00	A720M/UCLC	TEC
	DH024	Z1DH07	2.3	P 2		21	AV3 + 0.00	A720M/UCLC	TEC
18 50	DH029	Z1DH07	2.5	P 2		33	AV2 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.1	P 2		22	AV1 + 0.00	A720SF/RM	TEC
18 64	DH024	Z1DH07	2.3	P 2		20	AV2 + 0.00	A720M/UCLC	TEC
18 70	DH024	Z1DH04	3.0	P 2		25	AV2 + 0.00	A720M/UCLC	TEC
18 72	DH024	Z1DH07	2.4	P 2		21	AV2 + 0.00	A720M/UCLC	TEC
18 85	DH024	Z1DH07	2.2	P 2		20	AV3 + 0.00	A720M/UCLC	TEC
18 89	DH010	Z1DH03	1.3	P 1		28	01C - 0.17	A720SF/RM	TEC
18 90	DH010	Z1DH03	2.6	P 1		36	01C - 0.17	A720SF/RM	TEC
19 36	DH025	Z1DH07	2.6	P 2		26	AV3 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	4.0	P 2		33	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.4	P 2		24	AV1 + 0.00	A720M/UCLC	TEC
19 50	DH029	Z1DH07	1.4	P 2		25	AV2 + 0.00	A720SF/RM	TEC
19 55	DH029	Z1DH07	1.2	P 2		22	AV1 + 0.05	A720SF/RM	TEC
	DH029	Z1DH07	1.1	P 2		21	AV2 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.5	P 2		26	AV3 + 0.00	A720SF/RM	TEC
19 69	DH024	Z1DH07	3.8	P 2		31	AV4 + 0.00	A720M/UCLC	TEC
19 70	DH024	Z1DH07	2.3	P 2		21	AV4 + 0.00	A720M/UCLC	TEC
	DH024	Z1DH07	3.2	P 2		27	AV3 + 0.00	A720M/UCLC	TEC
19 88	DH010	Z1DH03	0.6	P 1		36	01C + 0.22	A720SF/RM	TEC
20 26	DH025	Z1DH07	2.6	P 2		26	AV2 + 0.00	A720M/UCLC	TEC
20 49	DH029	Z1DH07	1.2	P 2		22	AV1 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.2	P 2		23	AV2 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.3	P 2		24	AV3 + 0.00	A720SF/RM	TEC
20 89	DH010	Z1DH03	1.5	P 1		20	01C - 0.25	A720SF/RM	TEC
21 35	DH025	Z1DH07	2.1	P 2		23	AV3 + 0.00	A720M/UCLC	TEC
22 32	DH025	Z1DH07	2.1	P 2		22	AV1 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	3.3	P 2		30	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	5.3	P 2		37	AV3 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	3.2	P 2		29	AV4 + 0.00	A720M/UCLC	TEC
22 33	DH025	Z1DH07	3.6	P 2		31	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.9	P 2		28	AV4 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.8	P 2		27	AV3 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	1.8	P 2		21	AV1 + 0.00	A720M/UCLC	TEC
22 41	DH025	Z1DH07	2.8	P 2		27	AV2 + 0.00	A720M/UCLC	TEC
	DH025	Z1DH07	2.2	P 2		23	AV3 + 0.00	A720M/UCLC	TEC
22 49	DH029	Z1DH07	2.9	P 2		36	AV4 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.6	P 2		27	AV3 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.4	P 2		25	AV2 + 0.00	A720SF/RM	TEC
22 87	DH024	Z1DH07	1.0	P 1		24	02C - 0.25	A720M/UCLC	TEC
23 32	DH025	Z1DH07	2.3	P 2		24	AV1 + 0.00	A720M/UCLC	TEC
23 51	DH029	Z1DH07	1.5	P 2		26	AV2 + 0.00	A720SF/RM	TEC
23 52	DH029	Z1DH07	1.2	P 2		22	AV4 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.2	P 2		23	AV3 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.3	P 2		24	AV2 + 0.00	A720SF/RM	TEC
23 54	DH029	Z1DH07	1.5	P 2		26	AV2 + 0.00	A720SF/RM	TEC
	DH029	Z1DH07	1.0	P 2		21	AV4 + 0.00	A720SF/RM	TEC

TUBES W/INDICATIONS >= 20% AND <= 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
		DH029							
23	57	DH024	1.7	P 2		28	AV3 + 0.00	A720SF/RM	TEC
		DH024	2.4	P 2		21	AV3 + 0.00	A720M/ULC	TEC
		DH024	3.1	P 2		26	AV2 + 0.00	A720M/ULC	TEC
23	88	DH010	0.9	P 1		25	01C - 0.17	A720SF/RM	TEC
24	50	DH029	1.3	P 2		24	AV3 + 0.00	A720SF/RM	TEC
		DH029	1.9	P 2		29	AV2 + 0.00	A720SF/RM	TEC
26	63	DH024	3.0	P 2		26	AV3 + 0.00	A720M/ULC	TEC
26	65	DH024	2.5	P 2		22	AV1 + 0.00	A720M/ULC	TEC
26	69	DH024	2.3	P 2		20	AV3 + 0.00	A720M/ULC	TEC
29	83	DH010	0.6	P 1		20	01C + 0.00	A720SF/RM	TEC
32	46	DH025	2.0	P 2		22	AV1 + 0.00	A720M/ULC	TEC
32	47	DH024	2.6	P 2		23	AV2 + 0.00	A720M/ULC	TEC
32	51	DH024	5.8	P 2		39	AV2 + 0.00	A720M/ULC	TEC
32	54	DH024	5.5	P 2		38	AV2 + 0.00	A720M/ULC	TEC
		DH024	3.6	P 2		29	AV3 + 0.00	A720M/ULC	TEC
33	44	DH025	2.3	P 2		24	AV2 + 0.00	A720M/ULC	TEC
		DH025	2.3	P 2		24	AV3 + 0.00	A720M/ULC	TEC
		DH025	2.2	P 2		23	AV4 + 0.00	A720M/ULC	TEC
		DH025	3.5	P 2		31	AV1 + 0.00	A720M/ULC	TEC
33	50	DH024	2.2	P 2		20	AV3 + 0.00	A720M/ULC	TEC
35	44	DH025	2.7	P 2		27	AV1 + 0.00	A720M/ULC	TEC
35	53	DH021	0.3	1		22	TSH + 35.01	A720M/ULC	TEC
36	29	DH025	1.9	P 2		21	AV3 + 0.00	A720M/ULC	TEC
36	41	DH025	3.7	P 2		32	AV2 + 0.00	A720M/ULC	TEC
		DH025	3.0	P 2		28	AV1 + 0.00	A720M/ULC	TEC
36	53	DH024	2.4	P 2		22	AV2 + 0.00	A720M/ULC	TEC
		DH024	3.2	P 2		27	AV1 + 0.00	A720M/ULC	TEC
36	60	DH024	2.3	P 2		21	AV1 + 0.00	A720M/ULC	TEC
		DH024	3.6	P 2		29	AV4 + 0.00	A720M/ULC	TEC
		DH024	5.8	P 2		39	AV2 + 0.00	A720M/ULC	TEC
36	67	DH024	2.3	P 2		20	AV3 + 0.00	A720M/ULC	TEC
36	76	DH012	0.9	P 1		21	03H + 0.17	A720SF/RM	TEC
37	38	DH025	2.2	P 2		23	AV3 + 0.00	A720M/ULC	TEC
37	46	DH025	2.4	P 2		25	AV3 + 0.00	A720M/ULC	TEC
		DH025	2.9	P 2		28	AV2 + 0.00	A720M/ULC	TEC
37	53	DH024	2.3	P 2		21	AV3 + 0.00	A720M/ULC	TEC
37	76	DH012	1.3	P 1		20	01C - 0.05	A720SF/RM	TEC
40	39	DH025	3.5	P 2		31	AV2 + 0.00	A720M/ULC	TEC
		DH025	2.3	P 2		24	AV1 + 0.00	A720M/ULC	TEC
		DH025	1.8	P 2		20	AV3 + 0.00	A720M/ULC	TEC
40	42	DH025	2.5	P 2		25	AV1 + 0.00	A720M/ULC	TEC
40	47	DH024	3.1	P 2		26	AV4 + 0.00	A720M/ULC	TEC
40	53	DH024	2.6	P 2		23	AV3 + 0.00	A720M/ULC	TEC
40	68	DH024	2.3	P 2		20	AV2 + 0.00	A720M/ULC	TEC
41	31	DH025	2.5	P 2		25	AV1 + 0.00	A720M/ULC	TEC
41	32	DH025	3.2	P 2		29	AV2 + 0.00	A720M/ULC	TEC
41	33	DH025	1.8	P 2		20	AV1 + 0.00	A720M/ULC	TEC
41	36	DH025	2.2	P 2		23	AV1 + 0.00	A720M/ULC	TEC
41	39	DH025	2.2	P 2		23	AV2 + 0.00	A720M/ULC	TEC
41	45	DH025	3.4	P 2		30	AV1 + 0.00	A720M/ULC	TEC
41	46	DH025	2.5	P 2		25	AV1 + 0.00	A720M/ULC	TEC
41	50	DH024	2.2	P 2		20	AV2 + 0.00	A720M/ULC	TEC
		DH024	4.0	P 2		32	AV1 + 0.00	A720M/ULC	TEC
41	56	DH024	3.1	P 2		26	AV2 + 0.00	A720M/ULC	TEC
41	59	DH024	2.7	P 2		23	AV2 + 0.00	A720M/ULC	TEC
		DH024	3.4	P 2		28	AV1 + 0.00	A720M/ULC	TEC
42	29	DC013	1.6	1		34	TSC + 1.01	A720SF/RM	TEH
42	31	DC013	0.6	P 1		27	01C + 0.28	A720SF/RM	TEH
42	47	DH024	3.1	P 2		26	AV1 + 0.00	A720M/ULC	TEC
43	33	DC014	0.9	P 1		34	01C + 0.00	A720M/ULC	TEH
43	40	DH025	2.0	P 2		21	AV2 + 0.00	A720M/ULC	TEC
43	44	DH025	2.5	P 2		25	AV1 + 0.00	A720M/ULC	TEC
43	50	DH024	3.5	P 2		29	AV1 + 0.00	A720M/ULC	TEC
		DH024	5.8	P 2		39	AV2 + 0.00	A720M/ULC	TEC
		DH029	3.5	P 2		39	AV2 + 0.00	A720M/ULC	TEC
43	53	DH024	3.0	P 2		26	AV1 + 0.00	A720SF/RM	TEC
		DH024	4.2	P 2		33	AV2 + 0.00	A720M/ULC	TEC
43	55	DH024	3.6	P 2		29	AV2 + 0.00	A720M/ULC	TEC

Owner: Commonwealth Edison
Plant: Zion Unit 1
Component: SG D
Outage: OCT/NOV 1993

Date: 11/10/93
Page: 3

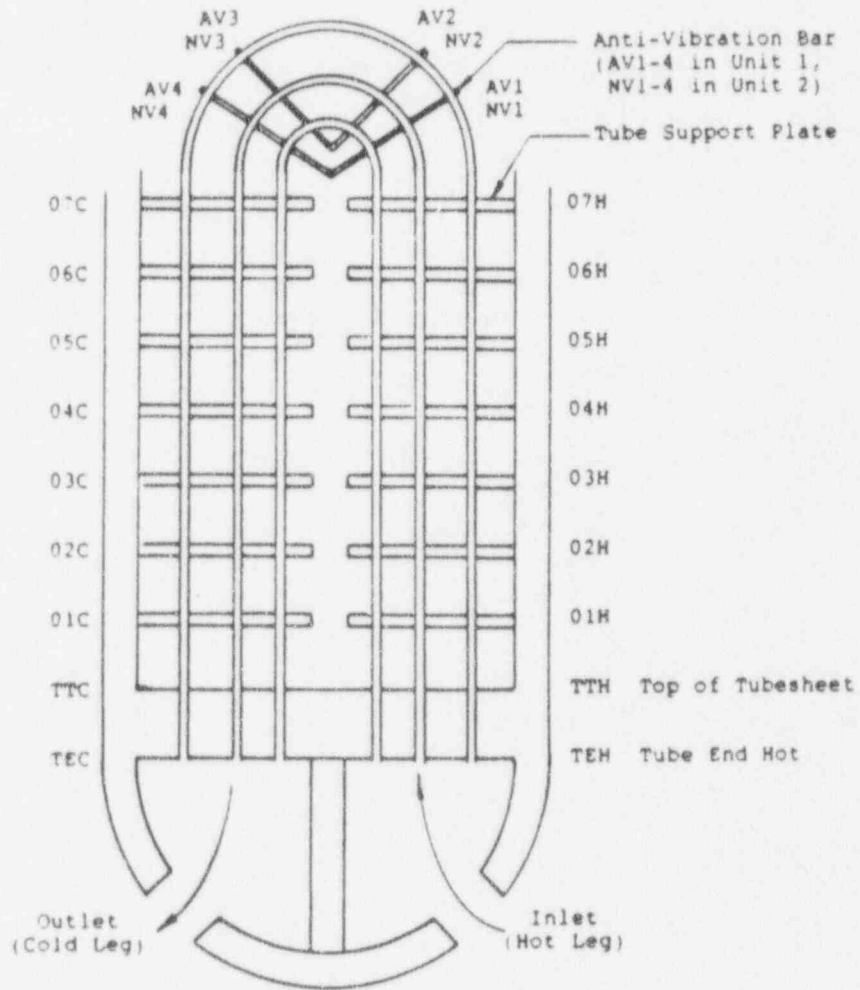
TUBES W/INDICATIONS \geq 20% AND \leq 39%

Row/Col	Reel	Optical Disk No	Volts	Chan.	Ind. Desc.	%TWD	Indication Location	Probe	Extent Tested
44 54	DH021	Z1DH06	2.2	P 1		38	01C + 0.11	A720M/ULC	TEC
45 37	DH025	Z1DH07	2.7	P 2		26	AV1 + 0.00	A720M/ULC	TEC
	DH025	Z1DH07	2.6	P 2		26	AV2 + 0.00	A720M/ULC	TEC
45 44	DC018	Z1DC06	1.5	P 1		29	01C + 0.05	A720M/ULC	TEH
45 47	DH019	Z1DH05	2.4	P 1		30	01C + 0.13	A720SF/RM	TEC

Number of Tubes: 94
Number of Indications: 141

**Appendix B:
Repair List**

Location Diagram:



COMMONWEALTH EDISON
 ZION UNIT 1
 COMPONENT: SG A
 OUTAGE: OCT/NOV 1993
 REPAIR LIST REPORT
 SORTED COL/ROW

Date: 11/10/93
 Page: 1
 TIME: 1430

FINAL REPAIR LIST

PREPARED BY: *Alan P. Putnam*
 Signature ABB/CE Representative

Date: 11-10-93

REVIEWED BY: *James H. Kuntz*
 Signature ABB/CE Representative

Date: 11-10-93

ISSUED BY: *Thomas M. Cook*
 Signature CECO Representative

Date: 11-10-93

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
3 9	11.0	P 2	ADI		TEH + 10.0	LYNCH DE	TEC	11/10/93	A720M/ULC
	3.5	1	MAI		TEH + 7.7	LOOPER V	TSH	11/10/93	B720MRPC3CPH
	4.2	1	MAI		TEH + 6.1	LOOPER V	TSH	11/09/93	B720MRPC3CPH
	11.0	ADI	DIA		TEH + 10.3 to + 6.3	LYNCH DE	TEC	11/09/93	A700SF/RM
6 18	6.3	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	11.8	1	MAI		TEH + 2.2	LYNCH DE	TEH+4	11/10/93	B720MRPC3CPH
	6.3	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720SF/RM
8 20	4.7	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/10/93	A720M/ULC
	6.5	1	MAI		TEH + 2.4	LYNCH DE	TEH+4	11/10/93	B720MRPC3CPH
	4.7	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720SF/RM
17 24	2.9	P 3	DRI		TEH + 2.4	LYNCH DE	TEC	11/10/93	A720M/ULC
	14.7	1	MAI		TEH + 1.9	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	2.9	DRI	DIA		TEH + 2.4	LOOPER V	TEC	11/09/93	A720M/ULC
19 24	3.0	P 3	DRI		TEH + 2.4	LYNCH DE	TEC	11/10/93	A720M/ULC
	7.0	1	MAI		TEH + 2.0	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	3.0	DRI	DIA		TEH + 2.4	LOOPER V	TEC	11/09/93	A720M/ULC
7 25	2.6	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/10/93	A720M/ULC
	5.4	1	MAI		TEH + 2.2	LYNCH DE	TEH+4	11/10/93	B720MRPC3CPH
	2.6	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720SF/RM

COMPONENT: SG A
OUTAGE: OCT/NOV 1993

REPAIR LIST REPORT
SORTED COL/ROW

FINAL REPAIR LIST

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
15 26	3.1	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/10/93	A720M/ULC
	10.9	1	SAI		TEH + 2.4	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	3.1	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720M/ULC
12 28	1.7	P 3	DRI		TEH + 2.5	LYNCH DE	TEC	11/10/93	A720M/ULC
	4.0	1	MAI		TEH + 2.4	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	1.7	DRI	DIA		TEH + 2.5	LOOPER V	TEC	11/09/93	A720M/ULC
18 31	5.0	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	5.4	1	MAI		TEH + 2.0	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	5.0	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
7 33	4.7	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	4.7	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720SF/RM
20 33	3.8	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	3.4	1	MAI		TEH + 2.1	LOOPER V	TSH+4	11/10/93	B720MRPC3CPH
	3.8	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
19 37	4.6	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	9.9	1	MAI		TEH + 2.2	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	4.6	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
19 38	2.7	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	14.7	1	SAI		TEH + 2.6	HOLDEN T	TEH+9	11/10/93	B720MRPC3CPH
	2.7	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
7 40	10.9	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/10/93	A720M/ULC
	10.2	1	MAI		TEH + 2.2	LOOPER V	TEH+9	11/10/93	B720MRPC3CPH
	10.9	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/06/93	A720SF/RM
18 41	1.8	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/10/93	A720M/ULC
	4.4	1	MAI		TEH + 2.1	LOOPER V	TEH+4	11/10/93	B720MRPC3CPH
	1.8	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720M/ULC

NUMBER OF TUBES REPORTED: 15
NUMBER OF OUTSTANDING EXAMS: 0

COMMONWEALTH EDISON
 ZION UNIT 1
 COMPONENT: SG B
 OUTAGE: OCT/NOV 1993
 REPAIR LIST REPORT
 SORTED COL/ROW

Date: 11/09/93
 Page: 1
 TIME: 1820

FINAL REPAIR LIST

PREPARED BY: *C. M. Day*
 Signature ABB/CE Representative

Date: 11-9-93

REVIEWED BY: *James M. Kenedy*
 Signature ABB/CE Representative

Date: 11-9-93

ISSUED BY: *Thomas J. Cook*
 Signature CECO Representative

Date: 11-9-93

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
3 11	0.4	P 1	NQI		TEH + 6.8	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.0	1	SAI		TEH + 8.9	LYNCH DE	TEH18	11/09/93	B720MRPC3CPH
	0.4	NQI	DIA		TEH + 6.8	LOOPER V	TEC	11/09/93	A700SF/RM
	3.3	1	PVN		03H + 50.0To+ 0.1	LOOPER V	TEC	11/08/93	A700SF/RM
	3.1	1	PVN		04H + 17.2To+ 0.0	LOOPER V	TEC	11/08/93	A700SF/RM
18 12	1.1	P 1	NQI		TEH + 9.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.5	1	SAI		TEH + 8.3	LYNCH DE	TEH18	11/09/93	B720MRPC3CPH
	1.6	1	SAI		TEH + 10.9	LYNCH DE	TEH18	11/09/93	B720MRPC3CPH
	1.1	NQI	DIA		TEH + 9.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	6.4	1	PVN		04H + 42.0	LYNCH DE	TEC	11/08/93	A720M/ULC
18 17	1.2	P 2	ADI		TEH + 6.0To+ 9.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	3.2	1	SAI		TEH + 9.0	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.2	ADI	DIA		TEH + 6.4To+ 9.9	LYNCH DE	TEC	11/09/93	A720M/ULC
28 18	2.8	P 2	ADI		TEH + 11.0To+ 8.1	LYNCH DE	TEC	11/09/93	A720M/ULC
	4.5	1	MAI		TEH + 9.2	LYNCH DE	TEH15	11/09/93	B720MRPC3CPH
	2.8	ADI	DIA		TEH + 11.1To+ 8.1	LYNCH DE	TEC	11/09/93	A720M/ULC
22 19	2.6P	1		92	TEH + 9.5	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.4	P 1	NQI		TEH + 5.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	4.0	1	SAI		TEH + 5.6	LYNCH DE	TEH12	11/09/93	B720MRPC3CPH
	8.5	1	SAI		TEH + 9.8	LYNCH DE	TEH12	11/09/93	B720MRPC3CPH
	2.6	92	DIA		TEH + 9.5	LYNCH DE	TEC	11/09/93	A720M/ULC
1.4	NQI	DIA		TEH + 5.4	LYNCH DE	TEC	11/09/93	A720M/ULC	

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FINAL REPAIR LIST

Row/Col	Volts CH Ind.	%TW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
19 20	0.9P 1	80	TEH + 10.0	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.5 P 1 NQI		TEH + 7.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.4 1 SAI		TEH + 9.7	LYNCH DE	TEH14	11/09/93	B720MRPC3CPH
	1.6 1 SAI		TEH + 6.0	LYNCH DE	TEH14	11/09/93	B720MRPC3CPH
	0.5 NQI DIA		TEH + 7.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.9 80 DIA		TEH + 10.0	LYNCH DE	TEC	11/09/93	A720M/ULC
4 21	0.3 P 2 ADI		TEH + 7.7	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.9 1 MAI		TEH + 4.6	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	2.0 ADI DIA		TEH + 12.1To+ 3.3	LOOPER V	TEC	11/09/93	A720M/ULC
	0.3 ADI DIA		TEH + 7.7	LOOPER V	TEC	11/04/93	A720M/ULC
19 21	1.3P 1	82	TEH + 7.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.3 P 2 ADI		TEH + 3.0To+11.5	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.7 1 SAI		TEH + 7.5	LYNCH DE	TEH14	11/09/93	B720MRPC3CPH
	2.4 1 SAI		TEH + 8.4	LYNCH DE	TEH18	11/09/93	B720MRPC3CPH
	1.3 82 DIA		TEH + 7.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.3 ADI DIA		TEH + 3.8To+11.5	LYNCH DE	TEC	11/09/93	A720M/ULC
22 22	0.8P 1	85	TEH + 9.8	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.8 1 SAI		TEH + 10.1	LYNCH DE	TEH17	11/09/93	B720MRPC3CPH
	0.8 85 DIA		TEH + 9.8	LYNCH DE	TEC	11/09/93	A720M/ULC
34 25	0.3 P 1 NQI		TEH + 11.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.8 P 1 NQI		TEH + 7.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.4 1 SAI		TEH + 11.3	LYNCH DE	TEH21	11/09/93	B720MRPC3CPH
	3.7 1 SAI		TEH + 8.0	LYNCH DE	TEH21	11/09/93	B720MRPC3CPH
	0.3 NQI DIA		TEH + 11.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.8 NQI DIA		TEH + 7.9	LYNCH DE	TEC	11/09/93	A720M/ULC
20 27	1.4 1 MAI		TEH + 4.7	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	0.5 P 1 NQI		TEH + 5.0	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.5 NQI DIA		TEH + 5.0	LOOPER V	TEC	11/09/93	A720M/ULC
14 31	3.7 P 3 DRI		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	8.1 1 MAI		TEH + 2.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	3.7 DRI DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC

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Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
34 31	0.6	P 1	NQI		TEH + 8.7	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.5	1	SAI		TEH + 8.4	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	0.6	NQI	DIA		TEH + 8.7	LOOPER V	TEC	11/09/93	A720M/ULC
12 33	21.7	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	10.9	1	MAI		TEH + 2.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	21.1	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
27 34	2.2	P 2	ADI		TEH + 12.0To+ 7.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.3	1	MAI		TEH + 10.1	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	2.2	ADI	DIA		TEH + 12.1To+ 7.3	LOOPER V	TEC	11/09/93	A720M/ULC
26 35	2.3	P 2	ADI		TEH + 8.0To+ 3.6	LYNCH DE	TEC	11/09/93	A720M/ULC
	4.1	1	MAI		TEH + 7.3	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	2.3	ADI	DIA		TEH + 8.1To+ 3.6	LOOPER V	TEC	11/09/93	A720M/ULC
13 36	9.0	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	16.5	1	MAI		TEH + 2.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	9.0	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720M/ULC
24 36	1.3	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.3	1	MAI		TEH + 7.6	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	0.7	P 1	NQI		TEH + 7.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	12.4	1	SAI		TEH + 2.7	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.3	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720M/ULC
	0.7	NQI	DIA		TEH + 7.4	LOOPER V	TEC	11/09/93	A720M/ULC
2 37	2.4	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	11.0	4	SAI		TEH + 1.9	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	2.4	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A700SF/RM
	3.1	1	PVM		OSH + 11.7To+22.1	LOOPER V	TEC	11/04/93	A700SF/RM
21 37	8.3	1	MAI		TEH + 8.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.2	P 1	NQI		TEH + 7.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.2	NQI	DIA		TEH + 7.9	LOOPER V	TEC	11/09/93	A720M/ULC

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Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
19 40	1.8	P 2	ADI		TEH + 5.5	LYNCH DE	TEC	11/04/93	A720M/ULC
	1.9	4	PVM		TEH + 5.5	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.8		ADI DIA		TEH + 5.5	LYNCH DE	TEC	11/09/93	A720M/ULC
26 40	1.3	P 1	NQI		TEH + 6.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	6.8	4	SAI		TEH + 6.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.3		NQI DIA		TEH + 6.4	LYNCH DE	TEC	11/09/93	A720M/ULC
31 40	1.2	P 1	NQI		TEH + 9.7	LYNCH DE	TEC	11/09/93	A720M/ULC
	3.0	1	SAI		TEH + 9.1	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.2		NQI DIA		TEH + 9.7	LYNCH DE	TEC	11/09/93	A720M/ULC
5 42	1.6	P 1	NQI		TEH + 5.8	LYNCH DE	TEC	11/09/93	A720M/ULC
	5.6	1	SAI		TEH + 5.6	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.6		NQI DIA		TEH + 5.8	LYNCH DE	TEC	11/09/93	A720SF
25 42	5.9	P 2	ADI		TEH + 6.0To+ 3.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	4.2	1	MAI		TEH + 5.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	5.9		ADI DIA		TEH + 6.6To+ 3.9	LYNCH DE	TEC	11/09/93	A720M/ULC
14 43	7.0	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	6.0	1	MAI		TEH + 2.3	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	7.0		DRI DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720M/ULC
26 43	3.0	P 2	ADI		TEH + 6.9	LYNCH DE	TEC	11/09/93	A720M/ULC
	3.0	1	MAI		TEH + 6.6	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	3.0		ADI DIA		TEH + 6.9	LYNCH DE	TEC	11/09/93	A720M/ULC
30 43	1.9	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	5.0	4	MAI		TEH + 2.6	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.9		DRI DIA		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
29 49	1.7	P 2	ADI		TEH + 7.5	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.4	1	MAI		TEH + 7.2	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	1.7		ADI DIA		TEH + 7.5	LYNCH DE	TEC	11/09/93	A720M/ULC
	5.7	1	PVN		04H + 8.0	LYNCH DE	TEC	11/03/93	A720M/ULC

FINAL REPAIR LIST

Row/Col	Volts	CH	Ind. Desc.	%TW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
	6.8	1	PVM		04H + 15.3	LYNCH DE	TEC	11/03/93	A720M/ULC
32 49	0.5	P 1	NQI		TEH + 10.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.3	1	SAI		TEH + 7.8	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	0.5	NQI	DIA		TEH + 10.4	LOOPER V	TEC	11/09/93	A720M/ULC
32 50	2.5	1	MAI		TEH + 8.4	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	9.2	P 1	NQI		TEH + 9.6	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.4	NQI	DIA		TEH + 9.2	LOOPER V	TEC	11/09/93	A720M/ULC
27 52	0.8	P 2	ADI		TEH + 18.2 to + 3.0	LYNCH DE	TEC	11/09/93	A720M/ULC
	3.8	1	SAI		TEH + 7.5	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	0.8	ADI	DIA		TEH + 3.1 to + 18.2	LYNCH DE	TEC	11/09/93	A720M/ULC
14 54	4.6	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	10.8	1	SAI		TEH + 2.3	LYNCH DE	TEH+9	11/09/93	B720MRPC3CPH
	4.6	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720M/ULC
29 54	4.0	P 2	ADI		TEH + 6.7	LYNCH DE	TEC	11/09/93	A720M/ULC
	1.9	1	MAI		TEH + 7.0	LYNCH DE	TSH	11/09/93	B720MRPC3CPH
	4.0	ADI	DIA		TEH + 6.7	LYNCH DE	TEC	11/09/93	A720M/ULC
12 55	3.1	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/09/93	A720M/ULC
	6.2	1	SAI		TEH + 2.6	LYNCH DE	TEH+9	11/09/93	B720MRPC3CPH
	3.1	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/09/93	A720M/ULC
2 56	21.6	P 3	DRI		TEH + 2.4	LYNCH DE	TEC	11/09/93	A720M/ULC
	0.8	P 1	NQI		TEH + 9.8	LYNCH DE	TEC	11/09/93	A720M/ULC
	5.7	1	SAI		TEH + 1.9	LYNCH DE	TEH15	11/09/93	B720MRPC3CPH
	3.0	1	SAI		TEH + 9.1	LYNCH DE	TEH15	11/09/93	B720MRPC3CPH
	0.8	NQI	DIA		TEH + 9.8	LOOPER V	TEC	11/09/93	A700SF/RM
	21.6	DRI	DIA		TEH + 2.4	LOOPER V	TEC	11/09/93	A700SF/RM
			NDD		+ 0.0	LOOPER V	07C	11/06/93	B680MRPCPH
14 56	5.0	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
	5.2	1	MAI		TEH + 2.3	LYNCH DE	TEH+9	11/09/93	B720MRPC3CPH
	5.0	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720M/ULC

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Row/Col	Volts CH Ind.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
34 57	4.2 P 2 PID 2.6P 2	40	AV3 + 0.0 AV3 + 0.1	LOOPER V LYNCH DE	TEC TEC	11/04/93 11/04/93	A700SF/RM A720M/ULC
3 58	5.1 1 MAI 0.9 P 1 NQI 0.9 NQI DIA		TEH + 3.8 TEH + 4.2 TEH + 4.2	LYNCH DE LYNCH DE LOOPER V	TEH+8 TEC TEC	11/09/93 11/09/93 11/09/93	B720MRPC3CPH A720M/ULC A700SF/RM
3 69	3.9 P 2 ADI 2.4 1 SAI 3.9 ADI DIA		TEH + 6.5 TEH + 7.2 TEH + 6.5	LYNCH DE LYNCH DE LOOPER V	TEC TSH TEC	11/09/93 11/09/93 11/09/93	A720M/ULC B720MRPC3CPH A700SF/RM
15 73	1.9 P 3 DRI 11.2 1 MAI 1.9 DRI DIA		TEH + 2.2 TEH + 2.4 TEH + 2.2	LYNCH DE LYNCH DE LOOPER V	TEC TSH TEC	11/09/93 11/09/93 11/09/93	A720M/ULC B720MRPC3CPH A720M/ULC

NUMBER OF TUBES REPORTED: 41
NUMBER OF OUTSTANDING EXAMS: 0

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FINAL REPAIR LIST

PREPARED BY:

Alice P. Putnam

Signature ABB/CE Representative

Date: 11-11-93

REVIEWED BY:

James M. Russell

Signature ABB/CE Representative

Date: 11-11-93

ISSUED BY:

T. H. Cook

Signature CECO Representative

Date: 11-11-93

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
4 5			OBS			LOOPER V	07H	11/10/93	A620SFRM/WG
2 11	3.3	P 2	ADI		TEH + 6.3	LOOPER V	TEC	11/10/93	A720M/ULC
	2.0	1	SAI		TEH + 6.8To+ 3.9	LOOPER V	TEH+8	11/10/93	B720MRPC3CPH
	3.3	ADI	DIA		TEH + 6.3	LOOPER V	TEC	11/09/93	A720M/ULC
			NDD		+ 0.0	LYNCH DE	07C	11/08/93	B680MRPCPH
8 12	2.8	P 3	DRI		TEH + 2.3	LOOPER V	TEC	11/10/93	A720M/ULC
	12.7	1	MAI		TEH + 2.1	LOOPER V	TEH+8	11/10/93	B720MRPC3CPH
	2.8	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/09/93	A720M/ULC
6 13	4.8	P 2	ADI		TEH + 4.0	LOOPER V	TEC	11/10/93	A720M/ULC
	4.8	1	SAI		TEH + 3.5	LOOPER V	TEH+8	11/10/93	B720MRPC3CPH
	4.8	ADI	DIA		TEH + 4.0	LOOPER V	TEC	11/09/93	A720M/ULC
19 14	2.8	P 2	ADI		TEH + 12.0To+ 7.8	LOOPER V	TEC	11/10/93	A720M/ULC
	3.5	1	SAI		TEH + 8.6	LOOPER V	TSH	11/10/93	B720MRPC3CPH
	2.8	ADI	DIA		TEH + 12.6To+ 7.8	LYNCH DE	TEC	11/09/93	A720M/ULC
30 18	2.5	P 3	ADI		TEH + 7.2	LOOPER V	TEC	11/10/93	A720M/ULC
	2.7	P 2	ADI		TEH + 12.5	LOOPER V	TEC	11/10/93	A720M/ULC
	1.2	1	SAI		TEH + 6.8	LOOPER V	TSH	11/11/93	B720MRPC3CPH
	2.7	ADI	DIA		TEH + 12.5	LYNCH DE	TEC	11/09/93	A720M/ULC
	2.5	ADI	DIA		TEH + 7.2	LYNCH DE	TEC	11/10/93	A720M/ULC

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Row/Col	Volts	CH Ind. Desc.	%TW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
10 19	3.3	P 3 DRI		TEH + 2.5	LYNCH DE	TEC	11/11/93	A720M/ULC
	7.4	1 SAI		TEH + 2.2	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	3.3	DRI DIA		TEH + 2.5	LOOPER V	TEC	11/07/93	A720M/ULC
18 21	0.6	P 1 NQI		TEH + 6.7	LOOPER V	TEC	11/10/93	A720M/ULC
	1.1	1 SAI		TEH + 7.5	LOOPER V	TEH13	11/10/93	B720MRPC3CPH
	0.6	NQI DIA		TEH + 6.7	LYNCH DE	TEC	11/09/93	A720M/ULC
26 21	2.8	P 2 ADI		TEH + 13.9To+ 3.0	LOOPER V	TEC	11/10/93	A720M/ULC
	1.3	1 SAI		TEH + 7.4	LOOPER V	TSH	11/10/93	B720MRPC3CPH
	2.8	ADI DIA		TEH + 3.0To+13.9	LYNCH DE	TEC	11/09/93	A720M/ULC
16 23	3.1	P 3 DRI		TEH + 2.5	LYNCH DE	TEC	11/11/93	A720M/ULC
	1.2	1 MAI		TEH + 6.6	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	4.8	1 MAI		TEH + 2.4	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	1.0	P 1 NQI		TEH + 6.5	LYNCH DE	TEC	11/11/93	A720M/ULC
	3.1	DRI DIA		TEH + 2.5	LOOPER V	TEC	11/07/93	A720M/ULC
	1.0	NQI DIA		TEH + 6.5	LOOPER V	TEC	11/07/93	A720M/ULC
20 23	2.8	P 3 DRI		TEH + 2.3	LOOPER V	TEC	11/10/93	A720M/ULC
	10.2	1 MAI		TEH + 2.4	LOOPER V	TEH+9	11/10/93	B720MRPC3CPH
	2.8	DRI DIA		TEH + 2.3	LYNCH DE	TEC	11/09/93	A720M/ULC
32 30	4.2	P 3 DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	5.6	1 MAI		TEH + 2.4	LOOPER V	TEH10	11/11/93	B720MRPC3CPH
	4.2	DRI DIA		TEH + 2.3	LYNCH DE	TEC	11/08/93	A720M/ULC
20 31	4.6	P 3 DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.5	1 MAI		TEH + 2.5	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	4.6	DRI DIA		TEH + 2.2	LOOPER V	TEC	11/08/93	A720M/ULC
17 34	6.2	P 3 DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	8.6	1 SAI		TEH + 2.6	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	6.2	DRI DIA		TEH + 2.2	LOOPER V	TEC	11/08/93	A720M/ULC

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FINAL REPAIR LIST

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
7 35	10.3	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	12.3	1	MAI		TEH + 1.8	LYNCH DE	TEH+4	11/11/93	B720MRPC3CPH
	9.4	1	MAI		TEH + 2.0	LYNCH DE	TEH+4	11/07/93	B720MRPC3CPH
	10.3	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/07/93	A720M/ULC
7 46	7.5	P 3	DRI		TEH + 2.1	LYNCH DE	TEC	11/11/93	A720M/ULC
	3.6	1	MAI		TEH + 2.1	LYNCH DE	TEH+4	11/11/93	B720MRPC3CPH
	7.5	DRI	DIA		TEH + 2.1	LOOPER V	TEC	11/07/93	A720M/ULC
9 48	21.3	P 3	DRI		TEH + 2.1	LYNCH DE	TEC	11/11/93	A720M/ULC
	3.4	1	MAI		TEH + 2.2	LYNCH DE	TEH+4	11/11/93	B720MRPC3CPH
	11.7	1	MAI		TEH + 1.0	LYNCH DE	TEH+4	11/07/93	B720MRPC3CPH
	21.3	DRI	DIA		TEH + 2.1	LYNCH DE	TEC	11/07/93	A700SF/RM
	5.5	DRI	DIA		TEH + 2.1	LOOPER V	07M	11/05/93	A720M/ULC
14 51	3.8	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.7	1	MAI		TEH + 2.3	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	3.8	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/10/93	A720M/ULC
5 52	5.1	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	7.8	1	MAI		TEH + 2.5	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	5.1	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/10/93	A720M/ULC
10 54	4.7	P 3	DRI		TEH + 2.0	LYNCH DE	TEC	11/11/93	A720M/ULC
	5.6	1	MAI		TEH + 2.4	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	4.7	DRI	DIA		TEH + 2.0	LOOPER V	TEC	11/10/93	A720M/ULC
32 54	5.3	P 3	DRI		TEH + 2.1	LYNCH DE	TEC	11/11/93	A720M/ULC
	5.2	1	MAI		TEH + 2.3	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	5.3	DRI	DIA		TEH + 2.1	LOOPER V	TEC	11/07/93	A720M/ULC
12 56	2.8	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.6	1	MAI		TEH + 2.4	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	2.8	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/10/93	A720M/ULC

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ZION UNIT 1

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Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
11 58	2.5	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	10.6	1	MAI		TEH + 2.3	LOOPER V	TEH+9	11/10/93	B720MRPC3CPH
	20.2	1	SAI		TEH + 1.7	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	2.5	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/10/93	A720M/ULC
8 61	4.3	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	3.8	1	MAI		TEH + 2.5	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	4.3	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/10/93	A720M/ULC
19 61	6.4	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	4.1	1	MAI		TEH + 2.8	LOOPER V	TEH10	11/11/93	B720MRPC3CPH
	6.4	DRI	DIA		TEH + 2.2	LYNCH DE	TEC	11/08/93	A720M/ULC
10 64	9.4	P 3	DRI		TEH + 2.6	LYNCH DE	TEC	11/11/93	A720M/ULC
	9.4	1	MAI		TEH + 2.5	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	9.4	DRI	DIA		TEH + 2.6	LOOPER V	TEC	11/10/93	A720M/ULC
7 68	4.1	P 3	DRI		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.6	1	SAI		TEH + 2.2	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	4.1	DRI	DIA		TEH + 2.2	LOOPER V	TEC	11/07/93	A720M/ULC
16 68	9.9	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	7.7	1	MAI		TEH + 2.2	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	9.9	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/07/93	A720M/ULC
3 70	3.5	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	14.1	1	MAI		TEH + 2.0	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	3.5	DRI	DIA		TEH + 2.3	LYNCH DE	TEC	11/07/93	A700SF/RM
21 70	8.7	P 3	DRI		TEH + 1.0	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.2	1	MAI		TEH + 2.4	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
			NDD		TEH + 2.2	LYNCH DE	TEC	11/11/93	A720M/ULC
	20.2	1	SAI		TEH + 1.5	LOOPER V	TEH+9	11/11/93	B720MRPC3CPH
	29.1	1	SAI		TEH + 1.2	LOOPER V	TEH+9	11/08/93	B720MRPC3CPH
	1.3P 2			20	AV3 + 0.0	LOOPER V	TEC	11/05/93	A720M/ULC
	2.1P 2			27	AV2 + 0.0	LOOPER V	TEC	11/05/93	A720M/ULC
	5.6	NQI	DIA		TEH + 1.3	LYNCH DE	TEC	11/08/93	A720M/ULC
	8.7	NQI	DIA		TEH + 0.7	LYNCH DE	TEC	11/08/93	A720M/ULC

COMMONWEALTH EDISON
 ZION UNIT 1
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FINAL REPAIR LIST

Row/Col	Volts	CH	Ind. Desc.	XTW	Indication Location	Analyst	Extent Tested	Complete Date	Probe
7 72	5.4	P 3	DRI		TEH + 2.3	LYNCH DE	TEC	11/11/93	A720M/ULC
	6.3	1	MAI		TEH + 1.0	LOOPER V	TEH+4	11/07/93	B720MRPC3CPH
	14.0	1	SAI		TEH + 1.8	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	5.4	DRI	DIA		TEH + 2.3	LOOPER V	TEC	11/07/93	A720M/ULC
6 76	14.0	P 3	DRI		TEH + 1.4	LYNCH DE	TEC	11/11/93	A720M/ULC
	10.6	1	MAI		TEH + 1.1	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	14.0	DRI	DIA		TEH + 1.4	LOOPER V	TEC	11/07/93	A720M/ULC
11 78	6.3	P 3	DRI		TEH + 2.5	LYNCH DE	TEC	11/11/93	A720M/ULC
	4.8	1	MAI		TEH + 2.0	LOOPER V	TEH+4	11/11/93	B720MRPC3CPH
	17.2	1	MAI		TEH + 1.0	LOOPER V	TEH+4	11/07/93	B720MRPC3CPH
	6.3	DRI	DIA		TEH + 2.5	LYNCH DE	TEC	11/07/93	A720M/ULC
	3.5	1	PVN		07H + 12.5	LYNCH DE	TEC	11/03/93	A720M/ULC

NUMBER OF TUBES REPORTED: 33
 NUMBER OF OUTSTANDING EXAMS: 0

COMPONENT: SG D
OUTAGE: OCT/NOV 1993

REPAIR LIST REPORT
SORTED COL/ROW

FINAL REPAIR LIST

PREPARED BY:

Alice P. Putnam

Date: 11/5/93

Signature ABB/CE Representative

REVIEWED BY:

James M. Russell

Date: 11-5-93

Signature ABB/CE Representative

ISSUED BY:

Thomas M. Cook 151

Date: 11-5-93

Signature CECO Representative

Row/Col	Volts	CH	Ind.	XTW	Indication	Analyst	Extent	Complete	Probe
			Desc.		Location		Tested	Date	
✓ 7 10	2.9	P 2	ADI		TEH + 12.0To+ 3.7	RUSSELL	TEC	11/04/93	A720M/ULC
	4.0	1	SAI		TEH + 9.4	HOLDEN T	TSH	11/04/93	B720MRPC3CPH
	2.9		ADI DIA		TEH + 12.3To+ 3.7	LOOPER V	TEH	11/04/93	A720SF/RM
✓ 5 13	2.9	P 2	ADI		TEH + 4.0To+ 6.6	RUSSELL	TEC	11/04/93	A720M/ULC
	1.4	1	SAI		TEH + 4.6	HOLDEN T	TSH	11/04/93	B720MRPC3CPH
	2.9		ADI DIA		TEH + 4.0To+ 6.6	LOOPER V	TEH	11/04/93	A720SF/RM
✓ 13 14	0.4	P 1	NQI		TEH + 9.6	RUSSELL	TEC	11/04/93	A720M/ULC
	1.0	1	SAI		TEH + 9.6	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	0.4		NQI DIA		TEH + 9.6	LYNCH DE	TEH	11/03/93	A720M/ULC
✓ 13 30	7.0	P 3	DRI		TEH + 2.3	RUSSELL	TEC	11/04/93	A720M/ULC
	12.9	4	MAI		TEH + 2.1	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	7.0		DRI DIA		TEH + 2.3	LOOPER V	TEH	11/03/93	A720M/ULC
✓ 13 37	3.0	P 0	DRI		TEH + 2.1	RUSSELL	TEC	11/04/93	A720M/ULC
	13.8	4	MAI		TEH + 2.1	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	3.0		DRI DIA		TEH + 2.1	LYNCH DE	TEC	11/03/93	A720M/ULC
✓ 6 53	0.9	P 1	NQI		TEH + 3.6	RUSSELL	TEC	11/04/93	A720M/ULC
	8.8	1	SAI		TEH + 2.6	LOOPER V	TSH	11/04/93	B720MRPC3CPH
	8.7		NQI DIA		TEH + 3.6	LOOPER V	TEH	11/04/93	A720SF/RM

COMPONENT: SG D
OUTAGE: OCT/NOV 1993

REPAIR LIST REPORT
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FINAL REPAIR LIST

Row/Col	Volts CH Ind.	%TW Ind.	Indication Location	Analyst	Extent Tested	Complete Date	Probe
✓ 7 54	2.3P 1	86	TEH + 3.8	RUSSELL	TEC	11/04/93	A720M/ULC
	2.8 1 SAI		TEH + 4.6	HOLDEN T	TSH	11/04/93	B720MRPC3CPH
	2.3 86 DIA		TEH + 3.8	LYNCH DE	TEH	11/04/93	A720SF/RM
✓ 8 54	1.6 P 1 NQI		TEH + 2.6	RUSSELL	TEC	11/04/93	A720M/ULC
	14.5 1 SAI		TEH + 2.7	HOLDEN T	TSH	11/04/93	B720MRPC3CPH
	1.6 NQI DIA		TEH + 2.6	LYNCH DE	TEH	11/04/93	A720SF/RM
✓ 5 58	0.6 P 1 NQI		TEH + 5.2	RUSSELL	TEC	11/04/93	A720M/ULC
	1.9 1 SAI		TEH + 5.9	HOLDEN T	TSH	11/04/93	B720MRPC3CPH
	0.6 NQI DIA		TEH + 5.2	LYNCH DE	TEH	11/04/93	A720SF/RM
✓ 2 60	4.0 4 MAI		TEH + 5.7	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	0.7 P 1 NQI		TEH + 6.8	RUSSELL	TEC	11/04/93	A720M/ULC
	0.7 NQI DIA		TEH + 6.8	LYNCH DE	TEH	11/03/93	A700SF/RM
✓ 31 61	2.3 P 2 ADI		TEH + 14.2	RUSSELL	TEC	11/04/93	A720M/ULC
	3.8 4 SAI		TEH + 12.6	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	2.3 ADI DIA		TEH + 14.2	LYNCH DE	TEC	11/03/93	A720SF/RM
✓ 31 65	1.1 P 2 ADI		TEH + 7.0to+ 5.4	RUSSELL	TEC	11/04/93	A720M/ULC
	11.1 7 MAI		TEH + 5.7	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	1.1 ADI DIA		TEH + 7.5to+ 5.4	LYNCH DE	TEC	11/03/93	A720SF/RM
✓ 8 77	0.6 P 1 NQI		TEH + 3.3	RUSSELL	TEC	11/04/93	A720M/ULC
	5.8 4 SAI		TEH + 3.0	LYNCH DE	TSH	11/04/93	B720MRPC3CPH
	0.6 NQI DIA		TEH + 3.3	LOOPER V	TEC	11/03/93	A720SF/RM

NUMBER OF TUBES REPORTED: 13
NUMBER OF OUTSTANDING EXAMS: 0