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**Brian Katz**  
Vice President

February 7, 2006

U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

**Subject: Docket No. 50-361**  
**Special Report: Inservice Inspection of Steam Generator Tubes, Cycle 14**  
**San Onofre Nuclear Generating Station, Unit 2**

**Reference: Steam Generator Program Guidelines, Nuclear Energy Institute Document Number**  
**NEI 97-06, Revision 2**

Dear Sir or Madam:

On January 24, 2006, Southern California Edison (SCE) completed the inservice inspection of steam generator tubes at San Onofre Nuclear Generating Station Unit 2. The attached report is submitted in accordance with Technical Specification (TS) 5.7.2.c reporting requirements:

- Report the number of tubes plugged and tubes sleeved in each steam generator within 15 days of completing the inspection;
- Report the complete results of steam generator tube inspections within 12 months of inspection completion;
- Report the results of steam generator tube inspections which fall into Category C-3 prior to resumption of plant operation.

The attachment to this letter, "Special Report—Inservice Inspection of Steam Generator Tubes," which was prepared in accordance with the referenced industry guidance, satisfies these reporting requirements. The report contains no new commitments.

If you require any additional information, please advise.

Sincerely,

Attachments

cc: **B. S. Mallett, NRC Regional Administrator, Region IV**  
**N. Kalyanam, NRC Project Manager, San Onofre Units 2, and 3**  
**C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3**  
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## **SPECIAL REPORT - INSERVICE INSPECTION OF STEAM GENERATOR TUBES**

### **Regulatory Reporting Requirements**

Reporting Requirement 5.7.2.c of Appendix A, Technical Specification to Facility Operating License NPF-10 requires the number of tubes plugged and tubes sleeved in each steam generator to be reported to the Nuclear Regulatory Commission within 15 days following completion of the inspection.

Reporting Requirement 5.7.2.c of Appendix A, Technical Specification to Facility Operating License NPF-10 requires the results of steam generator tube inspections which fall into Category C-3 to be reported to the Nuclear Regulatory Commission prior to resumption of plant operation.

Reporting Requirement 5.7.2.c of Appendix A, Technical Specification to Facility Operating License NPF-10 requires the complete results of steam generator tube inspections to be reported to the Nuclear Regulatory Commission within 12 months following completion of the inspection.

### **Inspection Scope**

Tables 1A and 1B summarize the inspection scope. Also, when indications by the bobbin probe were non-quantifiable or distorted, the inspection scope included inspection with the Plus Point Probe.

Table 2A provides the list of Nondestructive Examination (NDE) techniques utilized for each degradation mechanism found as a result of the inspection. Other mechanisms that were considered in the inspection planning are included in Table 2B.

### **Inspection Scope Expansion**

There were no significant inspection scope expansions in response to inspection results.

### **Results of the Inservice Inspection of Tubes**

This report satisfies the listed regulatory reporting requirements.

The contents of this report were prepared using the guidance contained in NEI 97-06, Rev. 2, "Steam Generator Program Guidelines." The NEI guidance is an initiative to unify the industry approach towards steam generator issues and strengthen, where necessary, the steam generator program.

Table 3 summarizes the number of tubes repaired and active degradation mechanisms found. Each tube is only counted once in this listing, although it may also have an eddy current indication of a type below the point in the listing where it appears. The Appendices provide the complete results of the steam generator tubing inservice inspection.

The inside diameter of 98 inservice sleeves was found to be reduced. In response to this:

- These 98 tubes have been removed from service by plugging both ends of the tubes.
- The dominant number of the sleeves with reduced diameters that have been experienced at San Onofre Unit 2 have occurred in groups of sleeves that were installed at particular outages (Cycle 12 and 13). Table 5 shows the relationship between the diameter reduction and the outage when the sleeves were installed.
- SCE has removed all sleeves from service that were installed during the Cycle 12 and 13 outages by plugging the respective tubes.

- SCE Nuclear Fuel Management has implemented a conservative assumption that each remaining inservice sleeve may pose the potential for reactor coolant flow blockage, similar to that of a tube that is removed from service by plugging.

### Condition Monitoring

Condition Monitoring demonstrated that performance criteria in the NEI guidance (structural integrity and accident-induced leakage) were met during operation prior to this inspection.

In situ pressure testing was not needed for any sized eddy current indications. All sized indications were below screening criteria of the Electric Power Research Institute (EPRI) In Situ Pressure Testing Guidelines. Tables 8 and 9 list the tubes and sizing information for screening for in situ testing.

The remainder of this section will describe Condition Monitoring for 18 tubes. These tubes had sleeves with reduced diameters, that would not allow planned (rotating plus point probe) inspection of bobbin probe indications and dents at tube supports.

SCE had a technical basis to complete Condition Monitoring on approximately half of these 18 tubes, without in situ pressure testing. Use of all technical resources was consistent with maintaining personnel radiation exposure As Low As Reasonably Achievable (ALARA). A description of that basis follows.

The technical basis that SCE normally uses for bobbin probe detection of Primary Water Stress Corrosion Cracking (PWSCC) at dents  $\leq 2$  volts is an EPRI-qualified technique, named Examination Technique Specification Sheet (ETSS) 96012.1. Westinghouse made this ETSS data set (consisting of tubing with PWSCC crack(s) at a dented tube support). These tube supports were the "drilled plate" type. Thus, SCE normally performs rotating plus point probe exam of all dents  $\geq 2$  volts.

SCE had Westinghouse make a similar data set of assemblies (consisting of tubing with PWSCC crack(s) at a dented tube support). San Onofre Units 2 and 3 have "lattice bar" supports, rather than "drilled plate" supports. The SCE data set had tube supports of the "lattice bar" type to demonstrate detection capabilities at this different tube support type. The SCE data set was extensively tested, resulting in a Westinghouse-developed technique for bobbin probe detection of PWSCC at dents  $\leq 5$  volts (at lattice bar tube supports). This technique met qualification acceptance criteria in Appendix H of the EPRI Pressurized Water Reactor (PWR) Steam Generator Examination Guidelines, and was reviewed/concurred with by an appropriate Qualified Data Analyst (QDA) in accordance with Section 6 of the EPRI PWR SG Examination Guidelines. SCE has previously used this qualified technique only as a reference of the conservatism of SCE use of EPRI ETSS 96012.1.

Condition Monitoring for 8 tubes was successfully completed by a three-step process. The technical basis was the Westinghouse-developed technique for lattice bar supports. As a conservatism, the full 5 volt dent size of the qualification was not considered; only dents  $\leq 4$  volts were considered in this process.

- Step 1 - Review dent history. Acceptance criteria: Dent has a history of rotating probe exam (several inspections).
- Step 2 - Review dent signal. Acceptance criteria: No distortion
- Step 3 - Document successful completion of Condition Monitoring for the tube

Condition Monitoring for the remaining 10 tubes was successfully completed (i.e., no leakage) by In Situ Pressure and Leak Testing. Table 4 is a list of these 10 tubes with related information. The full

length of these tubes was tested, including the sleeve with reduced diameter. Thus, the testing also demonstrated the structural integrity and leakage integrity of the 10 reduced diameter sleeves.

No tubes were removed (pulled) for destructive testing during this outage.

### **Repair of Tubes**

Table 6 provides an itemized listing of the tubes plugged in Steam Generator E-088 along with the corresponding Table 3 category specifying the indication orientation/location.

Table 7 provides an itemized listing of tubes plugged in Steam Generator E-089 along with the corresponding Table 3 category specifying the indication orientation/location.

### **Repair Methods, Number of Tubes Repaired and Effective Plugging Percentage**

All tube plugging was performed using the design, materials, and installation methods of AREVA. A "roll" method was used for all tube plugs. 76 tubes were "stabilized" in the vicinity of the top of the tubesheet using the design, materials, and installation methods of AREVA. sleeving was not used for tube repair for the Cycle 14 outage.

Three hundred eighteen (318) tubes were plugged in Steam Generator E-088 during the Cycle 14 refueling outage. A total of one thousand two hundred fifty-seven (1257) tubes have been plugged. One hundred fifty-nine (159) sleeved tubes are in service. The design number of tubes is 9350 tubes and the sleeve-to-plug equivalency ratio is thirty-eight sleeves per plug. The effective plugging percentage for E-088 is 13.5%.

One hundred sixty-six (166) tubes were plugged in Steam Generator E-089 during the Cycle 14 refueling outage. A total of one thousand one hundred twenty-six (1126) tubes have been plugged. Ninety-seven (97) sleeved tubes are in service. The design number of tubes is 9350 tubes and the sleeve-to-plug equivalency ratio is thirty-eight sleeves per plug. The effective plugging percentage for E-089 is 12.1%.

### **Causes and Corrective Actions**

The degradation detected during this inspection remained within the Technical Specification Category C-3. There is no significant update from previous reports of causes and corrective actions for Category C-3 results. Thus, corrective actions remain unchanged from earlier inspections. As previously reported, these corrective actions are:

Actions have been taken to improve the secondary side chemistry environment for steam generator tubing in both Unit 2 steam generators. These actions have been reviewed by a panel of industry experts for application at San Onofre. The expert panel concurs with these measures. The actions include:

1. Chemical cleaning of the entire tube bundle (full bundle) performed during the Cycle 9 refueling outage in December 1996.
2. Addition of an inhibitor (titanium dioxide) for IGA/SCC immediately after the chemical cleaning for maximum crevice penetration potential. This is ongoing.
3. Use of Ethanolamine (ETA) for pH control of the secondary fluids. This is ongoing.

4. Boric acid addition in the secondary side to help reduce denting of the tube supports and stress corrosion cracking of tubing. This is ongoing.

In addition, SCE reduced the reactor coolant temperature at the steam generator inlet (T-hot) by about 11°F. SCE expects this will reduce stress corrosion cracking of the tubing initiating from the inside diameter of the tubing. The first phase of this change, a reduction of about 4°F, was completed in January 1998. The final phase of this change, a reduction of an additional 7°F, was completed in February 1999.

### **Description of Tables and Appendices**

- Table 1A - Steam Generator E-088 -- Summary of the Inspection Scope for the Unit 2 Cycle 14 (U2C14) Refueling Outage
- Table 1B - Steam Generator E-089 -- Summary of the Inspection Scope for the Unit 2 Cycle 14 (U2C14) Refueling Outage
- Table 2A - List of Nondestructive Examination (NDE) Techniques Utilized for Each Degradation Mechanism Found During the U2C14 Refueling Outage
- Table 2B - List of Nondestructive Examination (NDE) Techniques Utilized for Other Degradation Mechanisms Considered During the U2C14 Refueling Outage
- Table 3 - Number of Tubes Repaired and Active Degradation Mechanisms Found During the U2C14 Refueling Outage
- Table 4 - Summary of Results of In Situ Pressure and Leak Testing for the U2C14 Refueling Outage
- Table 5 - U2C10 through U2C14 Sleeving Summary
- Table 6 - U2C14 Refueling Outage Tubes Plugged, Steam Generator E-088
- Table 7 - U2C14 Refueling Outage Tubes Plugged, Steam Generator E-089
- Table 8 - Measured Sizes of Service-Induced Indications Steam Generator E-088
- Table 9 - Measured Sizes of Service-Induced Indications Steam Generator E-089
- Appendix 1 - Steam Generator Reference Information
- Appendix 2 - Legend for Appendices 3 through 6
- Appendix 3 - Tube Inspection Summary, Steam Generator E-088
- Appendix 4 - Tube Inspection Summary, Steam Generator E-089
- Appendix 5 - Sleeve Inspection Summary, Steam Generator E-088
- Appendix 6 - Sleeve Inspection Summary, Steam Generator E-089

**TABLE 1A – Steam Generator E-088 – Summary of the Inspection Scope for the Unit 2 Cycle 14 (U2C14) Refueling Outage**

	<b>Tubes/Percent</b>
Full length of tube with the bobbin probe (excluding sleeved regions and U-bends for Rows 1-3)	8411/100%
Hot leg expansion transition of unsleeved tubes at the top-of-tubesheet with the Plus Point Probe to an extent of 4 inches above to 13 inches below the top-of-tubesheet	8066/100%
Cold leg expansion transition at the top-of-tubesheet with the Plus Point Probe to an extent of 2 inches above to 13 inches below the top-of-tubesheet	2601/30%
U-bend regions of Rows 1, 2, and 3 with both mid and high frequency Plus Point Probes	179/100%
U-bend regions of Row 4 at the U-bend with the mid frequency Plus Point Probe	57/100%
U-bend regions of Rows 5 through 10 at the U-bend with the mid frequency Plus Point Probe	74/20%
Plus Point Probe examinations of hot leg scallop bar supports with the above adjacent hot leg square bend and the below one support elevation of tubing freespan	81/22%
Plus Point Probe examinations of tube support intersections with dents greater than, or equal to, 2 volts	2701/99% (Note 1)
Plus Point Probe examination of dings greater than, or equal to, 4 volts	395/100%
Plus Point Probe examination of all tube support intersections with quantified wear indications by the bobbin probe	360/100%
Full length of sleeves with the Plus Point Probe	345/100%
Tube below sleeve from bottom of sleeve to -1.25 inches with the Plus Point Probe	345/100%

Note 1 – See Condition Monitoring Section for explanation of why this was not 100%

**TABLE 1B – Steam Generator E-089 – Summary of the Inspection Scope for the Unit 2 Cycle 14 (U2C14) Refueling Outage**

	<b>Tubes/Percent</b>
Full length of tube with the bobbin probe (excluding sleeved regions and U-bends for Rows 1-3)	8390/100%
Hot leg expansion transition of unsleeved tubes at the top-of-tubesheet with the Plus Point Probe to an extent of 4 inches above to 13 inches below the top-of-tubesheet	8201/100%
Cold leg expansion transition at the top-of-tubesheet with the Plus Point Probe to an extent of 2 inches above to 13 inches below the top-of-tubesheet	2567/30%
U-bend regions of Rows 1, 2, and 3 with both mid and high frequency Plus Point Probes	172/100%
U-bend regions of Row 4 at the U-bend with the mid frequency Plus Point Probe	60/100%
U-bend regions of Rows 5 through 10 at the U-bend with the mid frequency Plus Point Probe	74/20%
Plus Point Probe examinations of hot leg scallop bar supports with the above adjacent hot leg square bend and the below one support elevation of tubing freespan	74/20%
Plus Point Probe examinations of tube support intersections with dents greater than, or equal to, 2 volts	1852/99% (Note 1)
Plus Point Probe examination of dings greater than, or equal to, 4 volts	370/100%
Plus Point Probe examination of all tube support intersections with quantified wear indications by the bobbin probe	445/100%
Full length of sleeves with the Plus Point Probe	189/100%
Tube below sleeve from bottom of sleeve to -1.25 inches with the Plus Point Probe	189/100%

Note 1 – See Condition Monitoring Section for explanation of why this was not 100%



**TABLE 2A – List of Nondestructive Examination (NDE) Techniques Utilized for Each Degradation Mechanism Found During the U2C14 Refueling Outage**

Indication Orientation/Location	Probe Type for	
	Detection	Characterization
Axially oriented ID (initiated on the inside-diameter of the tubing wall) indications at tube support locations	Bobbin Plus Point (Note 1)	Plus Point Plus Point
Axially oriented OD (initiated on the outside-diameter of the tubing wall) indications at tube support locations	Bobbin Plus Point (Note 1)	Plus Point Plus Point
Axially oriented OD indications not associated with a tube support (freespace)	Bobbin	Plus Point
Circumferentially oriented ID indications near the expansion transition at the top of the hot leg tubesheet	Plus Point	Plus Point
Circumferentially oriented OD indications near the expansion transition at the top of the hot leg tubesheet	Plus Point	Plus Point
Axially oriented indications in the sludge pile region near the top of the hot leg tubesheet	Plus Point	Plus Point
Axially oriented ID indications near or below the expansion transition at the top of the hot leg tubesheet	Plus Point	Plus Point
Circumferentially oriented ID indications below the expansion transition at the top of the hot leg tubesheet	Plus Point	Plus Point
Indications of wear at tube support locations	Bobbin	Plus Point
Miscellaneous preventive plugging	Bobbin or Plus Point	Plus Point

Note 1: Plus Point technique is used at dents with greater than, or equal to, two volts.

**TABLE 2B – List of Nondestructive Examination (NDE) Techniques Utilized for Other Degradation Mechanisms Considered During the U2C14 Refueling Outage**

<b>Indication Orientation/Location</b>	<b>Detection</b>	<b>Characterization</b>
Circumferentially oriented ID and Circumferentially oriented OD at dented tube supports (dents $\geq 2$ volts)	Plus Point	Plus Point
Axially oriented ID and Circumferentially oriented ID in Low-Row U-bends	Plus Point	Plus Point
Circumferentially oriented ID at the Flanks of Tubing Bends and Axially oriented ID in similar Tubing Bends	Plus Point	Plus Point
Axially oriented OD in Low-Row U-Bends	Plus Point	Plus Point
Circumferentially oriented OD associated with Fort Calhoun tube support configuration (SONGS configuration is different)	Plus Point	Plus Point
Axially oriented OD at dings in tubing freespan (dings $< 4$ volts)	Bobbin	Plus Point
Axially oriented OD and Circumferentially oriented OD at dings in tubing freespan (dings $\geq 4$ volts)	Plus Point	Plus Point
Axially oriented ID and Circumferentially oriented ID at the top of the cold leg tubesheet	Plus Point	Plus Point
Axially oriented OD at the top of the cold leg tubesheet	Plus Point	Plus Point
Axially oriented ID and Circumferentially oriented ID in explosively expanded tubing within the cold leg tubesheet	Plus Point	Plus Point
OD pitting in or above the sludge pile	Bobbin	Plus Point
Tube Plug Degradation	Visual	Visual
Impingement in tubing freespan	Bobbin	Plus Point
Cold Leg Thinning at tube supports	Bobbin	Plus Point
Volumetric indications	Bobbin or Plus Point	Plus Point

**TABLE 3 – Number of Tubes Repaired and Active Degradation Mechanisms Found During the U2C14 Refueling Outage**

	Indication Orientation/Location	Steam Generator	
		E-088	E-089
1	Tubes with axially oriented ID (initiated on the inside-diameter of the tubing wall) indications at tube support locations (ID Axial @ Support)	4	2
2	Tubes with axially oriented OD (initiated on the outside-diameter of the tubing wall) indications at tube support locations (OD Axial @ Support)	32	20
3	Tubes with axially oriented OD indications not associated with a tube support (freespan) (OD Axial @ Freespan)	3	3
4	Tubes with circumferentially oriented ID indications near the expansion transition at the top of the hot leg tubesheet (ID Circ @ TSH)	36	6
5	Tubes with circumferentially oriented OD indications near the expansion transition at the top of the hot leg tubesheet (OD Circ @ TSH)	13	15
6	Tubes with axially oriented OD indications in the sludge pile region near the top of the hot leg tubesheet (OD Axial @ Sludge Pile TSH)	7	7
7	Tubes with axially oriented ID indications below the inlet top-of-tubesheet (ID Axial below TSH)	20	11
8	Tubes with circumferentially oriented ID indications below the inlet top-of-tubesheet (ID Circ below TSH)	8	3
9	Tubes with indications of wear at tube support locations (Wear @ Support)	22	9
10	Sleeved Tubes with obstructions in the sleeved area (OBS @ Sleeve)	43	26
11	Sleeved Tubes with indications of partial obstruction in the sleeved area (PCS @ Sleeve)	19	9
12	Sleeved Tubes Plugged as a preventive measure	111	55
	<b>Total</b>	<b>318</b>	<b>166</b>

**TABLE 4 – Summary of Results of In Situ Pressure and Leak Testing for the U2C14 Refueling Outage**

**STEAM GENERATOR E-088**

TUBE INFORMATION				BOBBIN DATA		IN SITU TEST RESULTS		
REGION	ROW	COL	LOCATION	VOLTS	PROBE SIZE	GPM @ NOPD	GPM @ MSLB	PRESSURE 3xNOPD
EGGCRATE	41	103	DNI @ 06H+0.05	4.36	600UL	0	0	5000
			DNT @ 06H -0.31	8.82	600UL			
			DNT @ 06H+0.58	4.44	600UL			
EGGCRATE	46	72	DNT @ 05H +0.44	6.12	600UL	0	0	5000
			DNT @ 06H+0.66	6.00	600UL			
EGGCRATE	59	65	DNT @ 07H+0.05	3.13	600UL	0	0	5000
EGGCRATE	60	66	DNT @ 06H +0.36	2.89	600UL	0	0	5000
			DNT @ 07H +0.24	2.32	600UL			
EGGCRATE	65	149	DNT @ 06H +0.30	5.69	600UL	0	0	5000

**STEAM GENERATOR E-089**

TUBE INFORMATION				BOBBIN DATA		IN SITU TEST RESULTS		
REGION	ROW	COL	LOCATION	VOLTS	PROBE SIZE	GPM @ NOPD	GPM @ MSLB	PRESSURE 3xNOPD
EGGCRATE	24	112	DNT@06H +0.31	16.21	600UL	0	0	5000
			DNT@04H +0.38	7.32	600UL			
EGGCRATE	31	65	DNI@05H+0.86	0.89	600UL	0	0	5000
			DNT@05H-0.01	2.65	600UL			
EGGCRATE	38	116	DNT@06H +0.24	2.43	600UL	0	0	5000
			DNT@07H-0.49	2.49	600UL			
EGGCRATE	48	74	DNT@06H-0.23	6.22	600UL	0	0	5000
			DNT@03H-0.68	2.65	600UL			
			DNT@06H+0.32	2.61	600UL			
EGGCRATE	55	69	DNT@05H-0.13	3.08	600UL	0	0	5000
			DNT@06H+0.52	5.38	600UL			

NOTES:

- GPM = Gallons per Minute
- NOPD = Normal Operation Pressure Differential
- MSLB = Main Steam Line Break Pressure Differential
- DNT = Dented intersection ≥ 2 Volts
- DNI = Dent with Indication

**TABLE 5 – U2C10 through U2C14 Refueling Outage Sleeving Summary**

**STEAM GENERATOR E-088**

Outage Sleeve Installed	Sleeves Placed in Service	Sleeves With Reduced Diameter in U2C13	Sleeves With Reduced Diameter U2C14	Sleeves with Partial Reduction Indications U2C14
1999 (U2C10)	85	0	2	1
2000 (U2C11)	96	0	1	0
2002 (U2C12)	75	7	14	7
2004 (U2C13)	113	0	27	11

**STEAM GENERATOR E-089**

Outage Sleeve Installed	Sleeves Placed in Service	Sleeves With Reduced Diameter in U2C13	Sleeves With Reduced Diameter U2C14	Sleeves with Partial Reduction Indications U2C14
1999 (U2C10)	52	0	1	0
2000 (U2C11)	52	0	0	0
2002 (U2C12)	43	3	15	6
2004 (U2C13)	51	0	10	3

**TABLE 6 – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

Row	Column	Reason for Plugging Tube (per Table 3)
22	4	OD Axial @ Freespan
37	15	OD Axial @ Support
70	22	OD Axial @ Support
72	22	OD Axial @ Support
82	24	OD Axial @ Support
35	25	Wear @ Support
17	27	Sleeve Preventative
6	30	OD Axial @ Support
27	33	ID Circ @ TSH
10	34	ID Circ @ TSH
11	35	Sleeve Preventative
17	35	Sleeve Preventative
23	35	Sleeve Preventative
18	36	Sleeve Preventative
38	36	Sleeve Preventative
25	39	Sleeve Preventative
95	39	OD Axial @ Support
25	41	Sleeve Preventative
18	42	OD Axial @ Support
44	42	OBS @ Sleeve
7	43	Sleeve Preventative
21	43	OD Axial @ Support
23	43	ID Circ @ TSH
16	44	Sleeve Preventative
52	44	ID Circ @ TSH
6	46	Sleeve Preventative
60	46	ID Circ @ TSH
41	47	OD Axial @ Freespan
22	48	ID Circ @ TSH
15	49	ID Circ @ TSH
25	49	OBS @ Sleeve
33	49	ID Circ @ TSH
35	49	ID Axial below TSH
63	49	OD Circ @ TSH
27	51	ID Circ @ TSH
83	51	ID Circ below TSH
60	52	ID Circ @ TSH
64	52	OBS @ Sleeve
16	54	Sleeve Preventative
18	54	OD Axial @ Support

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

Row	Column	Reason for Plugging Tube (per Table 3)
32	54	Sleeve Preventative
46	54	OD Circ @ TSH
54	54	ID Circ @ TSH
62	54	ID Circ @ TSH
17	55	ID Axial @ Support
27	55	Sleeve Preventative
45	55	Sleeve Preventative
49	55	OD Circ @ TSH
57	55	OBS @ Sleeve
10	56	Sleeve Preventative
16	56	PCS @ Sleeve
30	56	Sleeve Preventative
46	56	Sleeve Preventative
48	56	Sleeve Preventative
64	56	Sleeve Preventative
13	57	PCS @ Sleeve
23	57	Sleeve Preventative
67	57	Sleeve Preventative
20	58	OD Axial @ Support
48	58	Sleeve Preventative
52	58	OD Axial @ Sludge Pile TSH
90	58	OBS @ Sleeve
83	59	OBS @ Sleeve
50	60	ID Axial below TSH
17	61	Sleeve Preventative
43	61	OD Axial @ Support
12	62	PCS @ Sleeve
18	62	Sleeve Preventative
20	62	Sleeve Preventative
62	62	Sleeve Preventative
11	63	Sleeve Preventative
27	63	ID Axial below TSH
43	63	Sleeve Preventative
83	63	OBS @ Sleeve
46	64	ID Circ @ TSH
54	64	Sleeve Preventative
23	65	ID Axial below TSH
41	65	ID Circ below TSH
43	65	Sleeve Preventative
47	65	Sleeve Preventative
49	65	Sleeve Preventative
59	65	OBS @ Sleeve
24	66	ID Axial below TSH
60	66	OBS @ Sleeve

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

Row	Column	Reason for Plugging Tube (per Table 3)
64	66	OBS @ Sleeve
72	66	OD Circ @ TSH
23	67	ID Axial below TSH
33	67	ID Axial below TSH
43	67	Sleeve Preventative
36	68	Sleeve Preventative
44	68	ID Axial below TSH
48	68	OBS @ Sleeve
78	68	Sleeve Preventative
37	69	Sleeve Preventative
47	69	OBS @ Sleeve
65	69	Sleeve Preventative
30	70	OBS @ Sleeve
48	70	Sleeve Preventative
68	70	Sleeve Preventative
70	70	ID Circ @ TSH
45	71	OD Axial @ Support
53	71	PCS @ Sleeve
46	72	OBS @ Sleeve
56	72	Sleeve Preventative
62	72	Sleeve Preventative
82	72	Sleeve Preventative
55	73	OD Axial @ Sludge Pile TSH
48	74	ID Axial below TSH
54	74	Sleeve Preventative
68	74	Sleeve Preventative
74	74	Sleeve Preventative
81	75	ID Circ @ TSH
99	75	OBS @ Sleeve
145	75	Wear @ Support
44	76	Wear @ Support
70	76	ID Circ @ TSH
98	76	ID Circ @ TSH
53	77	Sleeve Preventative
55	77	Sleeve Preventative
61	77	Sleeve Preventative
63	77	OD Axial @ Sludge Pile TSH
75	77	ID Circ @ TSH
131	77	Wear @ Support
48	78	Wear @ Support
64	78	Sleeve Preventative
80	78	Sleeve Preventative
116	78	OD Circ @ TSH
53	79	OBS @ Sleeve



**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

<b>Row</b>	<b>Column</b>	<b>Reason for Plugging Tube (per Table 3)</b>
78	80	Sleeve Preventative
80	80	OD Circ @ TSH
146	80	Wear @ Support
57	81	ID Axial below TSH
63	81	Sleeve Preventative
75	81	ID Circ below TSH
58	82	Wear @ Support
62	82	ID Axial below TSH
74	82	Wear @ Support
57	83	Wear @ Support
67	83	PCS @ Sleeve
54	84	Wear @ Support
70	84	OBS @ Sleeve
86	84	ID Circ @ TSH
144	84	Wear @ Support
67	85	Wear @ Support
135	85	OD Axial @ Support
80	86	Sleeve Preventative
77	87	ID Circ @ TSH
58	88	Sleeve Preventative
78	88	OD Axial @ Sludge Pile TSH
82	88	Sleeve Preventative
71	89	PCS @ Sleeve
79	89	OD Axial @ Support
95	89	ID Circ @ TSH
68	90	OBS @ Sleeve
92	90	OD Circ @ TSH
144	90	Wear @ Support
59	91	OBS @ Sleeve
63	91	PCS @ Sleeve
67	91	OBS @ Sleeve
77	91	Sleeve Preventative
56	92	OBS @ Sleeve
60	92	Sleeve Preventative
68	92	Sleeve Preventative
98	92	OD Circ @ TSH
55	93	Wear @ Support
69	93	ID Axial below TSH
77	93	Sleeve Preventative
68	94	OBS @ Sleeve
130	94	Wear @ Support
53	95	Sleeve Preventative
85	95	OBS @ Sleeve
72	96	OD Axial @ Sludge Pile TSH

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

Row	Column	Reason for Plugging Tube (per Table 3)
74	96	OD Axial @ Sludge Pile TSH
76	96	OD Circ @ TSH
51	97	Wear @ Support
55	97	Wear @ Support
63	97	OBS @ Sleeve
73	97	Sleeve Preventative
75	97	Sleeve Preventative
77	97	Sleeve Preventative
81	97	OBS @ Sleeve
91	97	OBS @ Sleeve
97	97	Sleeve Preventative
44	98	Wear @ Support
64	98	PCS @ Sleeve
61	99	PCS @ Sleeve
89	99	Sleeve Preventative
48	100	Wear @ Support
50	100	Wear @ Support
68	100	OD Axial @ Sludge Pile TSH
74	100	Sleeve Preventative
100	100	ID Circ @ TSH
51	101	OD Axial @ Support
69	101	Sleeve Preventative
71	101	OD Circ @ TSH
68	102	OBS @ Sleeve
39	103	Wear @ Support
41	103	OBS @ Sleeve
49	103	Sleeve Preventative
57	103	Sleeve Preventative
61	103	Sleeve Preventative
67	103	Sleeve Preventative
69	103	ID Circ below TSH
79	103	Sleeve Preventative
42	104	Sleeve Preventative
52	104	OBS @ Sleeve
62	104	ID Circ below TSH
80	104	OBS @ Sleeve
82	104	Sleeve Preventative
47	105	OBS @ Sleeve
99	105	ID Axial below TSH
32	106	ID Circ @ TSH
34	106	ID Axial below TSH
36	106	Sleeve Preventative
72	106	Sleeve Preventative
82	106	ID Circ @ TSH

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

Row	Column	Reason for Plugging Tube (per Table 3)
30	108	Sleeve Preventative
36	108	PCS @ Sleeve
68	108	OD Circ @ TSH
70	108	PCS @ Sleeve
49	109	Sleeve Preventative
67	109	PCS @ Sleeve
51	111	Sleeve Preventative
55	111	Sleeve Preventative
57	111	Sleeve Preventative
83	111	OBS @ Sleeve
22	112	Sleeve Preventative
42	112	Sleeve Preventative
50	112	Sleeve Preventative
92	112	ID Circ below TSH
17	113	Sleeve Preventative
31	113	ID Axial @ Support
43	113	Sleeve Preventative
24	114	ID Circ @ TSH
44	114	PCS @ Sleeve
46	114	Sleeve Preventative
52	114	PCS @ Sleeve
82	114	OBS @ Sleeve
43	115	ID Circ below TSH
73	115	ID Circ @ TSH
44	116	Sleeve Preventative
46	116	Sleeve Preventative
60	116	Sleeve Preventative
13	117	OD Axial @ Support
55	117	Sleeve Preventative
24	118	ID Axial below TSH
28	118	Sleeve Preventative
30	118	OBS @ Sleeve
13	119	Sleeve Preventative
17	119	ID Axial @ Support
25	119	Sleeve Preventative
51	119	ID Axial below TSH
57	119	Sleeve Preventative
65	119	Sleeve Preventative
75	119	PCS @ Sleeve
83	119	PCS @ Sleeve
22	120	Sleeve Preventative
7	121	Sleeve Preventative
13	121	OBS @ Sleeve
27	121	OBS @ Sleeve

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

<b>Row</b>	<b>Column</b>	<b>Reason for Plugging Tube (per Table 3)</b>
39	121	Sleeve Preventative
65	121	Sleeve Preventative
83	121	PCS @ Sleeve
10	122	OD Axial @ Support
42	122	Sleeve Preventative
48	122	Sleeve Preventative
19	123	Sleeve Preventative
47	123	Sleeve Preventative
85	123	OD Axial @ Support
14	124	ID Circ @ TSH
30	124	ID Circ @ TSH
130	124	ID Axial @ Support
51	125	ID Circ @ TSH
18	126	OD Axial @ Support
60	126	Sleeve Preventative
25	127	OBS @ Sleeve
27	127	Sleeve Preventative
29	127	ID Axial below TSH
47	127	Sleeve Preventative
67	127	ID Circ @ TSH
44	128	ID Axial below TSH
11	129	OD Circ @ TSH
8	130	OD Axial @ Support
16	130	ID Axial below TSH
54	130	ID Circ @ TSH
31	131	ID Circ @ TSH
39	131	OBS @ Sleeve
10	132	PCS @ Sleeve
16	132	ID Circ @ TSH
58	134	PCS @ Sleeve
15	135	OBS @ Sleeve
35	135	ID Axial below TSH
55	135	ID Circ @ TSH
105	135	OD Axial @ Support
78	136	Wear @ Support
15	137	ID Circ below TSH
12	138	OD Axial @ Freespan
18	138	Sleeve Preventative
74	138	OD Axial @ Support
7	139	OBS @ Sleeve
17	139	ID Circ @ TSH
10	140	ID Circ @ TSH
100	142	OD Axial @ Support
12	144	Sleeve Preventative

**TABLE 6 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-088**

<b>Row</b>	<b>Column</b>	<b>Reason for Plugging Tube (per Table 3)</b>
96	144	OD Axial @ Support
37	147	OBS @ Sleeve
19	149	OD Axial @ Support
35	149	Sleeve Preventative
65	149	OBS @ Sleeve
87	149	OD Axial @ Support
33	151	OD Circ @ TSH
57	151	OBS @ Sleeve
83	151	OD Axial @ Support
6	152	OD Axial @ Support
72	156	OD Axial @ Support
69	157	OD Axial @ Support
17	161	OD Axial @ Support
49	165	OD Axial @ Support

**TABLE 7 – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-089**

Row	Column	Reason for Plugging Tube (per Table 3)
52	12	OD Axial @ Support
14	16	ID Axial below TSH
80	24	OD Axial @ Support
87	25	ID Axial @ Support
94	30	OD Axial @ Support
88	32	OD Axial @ Support
91	35	ID Axial @ Support
39	37	Sleeve Preventative
12	38	ID Circ @ TSH
56	38	OBS @ Sleeve
55	41	ID Circ @ TSH
16	42	OBS @ Sleeve
20	42	OD Axial @ Support
28	42	Sleeve Preventative
81	43	Wear @ Support
91	43	OD Axial @ Sludge Pile TSH
46	44	Sleeve Preventative
92	44	OD Axial @ Sludge Pile TSH
9	45	ID Axial below TSH
29	45	OD Axial @ Support
100	46	Sleeve Preventative
116	46	OD Axial @ Support
45	47	PCS @ Sleeve
24	48	OBS @ Sleeve
29	49	Sleeve Preventative
41	49	OD Axial @ Support
47	49	Sleeve Preventative
36	50	OD Circ @ TSH
35	51	OD Axial @ Sludge Pile TSH
50	52	PCS @ Sleeve
126	52	OD Axial @ Freespan
11	53	OD Axial @ Support
25	53	OD Circ @ TSH
29	53	OD Circ @ TSH
39	53	OBS @ Sleeve
103	53	OD Axial @ Support
22	54	OD Axial @ Support
24	54	PCS @ Sleeve
30	54	PCS @ Sleeve
44	54	OBS @ Sleeve
84	54	OD Axial @ Support
90	56	OD Axial @ Support

**TABLE 7 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-089**

Row	Column	Reason for Plugging Tube (per Table 3)
11	57	OD Axial @ Support
16	58	Sleeve Preventative
20	58	OD Circ @ TSH
37	59	Sleeve Preventative
20	60	Sleeve Preventative
22	60	Sleeve Preventative
34	60	OD Circ @ TSH
38	60	PCS @ Sleeve
11	61	OD Circ @ TSH
35	61	Sleeve Preventative
64	62	ID Circ @ TSH
71	63	OBS @ Sleeve
50	64	OD Axial @ Support
31	65	OBS @ Sleeve
43	65	PCS @ Sleeve
64	66	OBS @ Sleeve
70	66	Sleeve Preventative
39	67	Sleeve Preventative
45	67	Sleeve Preventative
69	67	OD Axial @ Sludge Pile TSH
55	69	OBS @ Sleeve
57	69	OBS @ Sleeve
54	70	OD Axial @ Sludge Pile TSH
67	71	Sleeve Preventative
75	71	OD Circ @ TSH
46	72	Sleeve Preventative
76	72	OD Circ @ TSH
75	73	Sleeve Preventative
143	73	Wear @ Support
48	74	OBS @ Sleeve
56	74	OD Circ @ TSH
78	74	Sleeve Preventative
102	74	ID Circ @ TSH
120	74	Wear @ Support
51	75	OBS @ Sleeve
59	77	OD Circ @ TSH
79	77	OD Axial @ Sludge Pile TSH
50	78	Sleeve Preventative
54	78	Sleeve Preventative
57	81	OBS @ Sleeve
65	81	PCS @ Sleeve
145	81	Wear @ Support
60	82	ID Axial below TSH
86	82	PCS @ Sleeve

**TABLE 7 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-089**

Row	Column	Reason for Plugging Tube (per Table 3)
56	84	Wear @ Support
62	84	Wear @ Support
68	84	OBS @ Sleeve
89	85	Sleeve Preventative
96	86	ID Axial below TSH
64	88	OBS @ Sleeve
66	88	Wear @ Support
111	89	OD Circ @ TSH
61	93	OBS @ Sleeve
85	93	Sleeve Preventative
95	93	Sleeve Preventative
83	95	Sleeve Preventative
84	96	OBS @ Sleeve
101	97	Sleeve Preventative
59	99	OBS @ Sleeve
61	99	OD Circ @ TSH
62	100	Sleeve Preventative
43	101	Wear @ Support
41	103	OBS @ Sleeve
57	103	Sleeve Preventative
59	103	OD Axial @ Freespan
143	103	Wear @ Support
106	104	Sleeve Preventative
57	105	Sleeve Preventative
75	105	Sleeve Preventative
116	106	Sleeve Preventative
37	107	Sleeve Preventative
51	107	Sleeve Preventative
97	107	Sleeve Preventative
48	108	OBS @ Sleeve
68	108	ID Axial below TSH
47	109	Sleeve Preventative
26	110	Sleeve Preventative
30	110	OD Axial @ Sludge Pile TSH
37	111	ID Axial below TSH
24	112	OBS @ Sleeve
8	114	OBS @ Sleeve
18	114	Sleeve Preventative
118	114	ID Axial below TSH
13	115	OD Axial @ Support
25	115	PCS @ Sleeve
29	115	Sleeve Preventative
35	115	Sleeve Preventative
77	115	Sleeve Preventative



**TABLE 7 (Cont.) – U2C14 Refueling Outage Tubes Plugged  
STEAM GENERATOR E-089**

Row	Column	Reason for Plugging Tube (per Table 3)
93	115	Sleeve Preventative
12	116	ID Axial below TSH
38	116	OBS @ Sleeve
26	118	Sleeve Preventative
28	118	OBS @ Sleeve
85	119	Sleeve Preventative
12	120	Sleeve Preventative
57	121	ID Axial below TSH
20	122	OD Axial @ Support
85	123	Sleeve Preventative
64	124	ID Axial below TSH
53	125	Sleeve Preventative
81	125	Sleeve Preventative
24	126	OD Axial @ Support
36	126	OBS @ Sleeve
33	127	Sleeve Preventative
38	128	OD Circ @ TSH
102	130	OD Circ @ TSH
3	131	ID Circ below TSH
36	132	Sleeve Preventative
36	134	Sleeve Preventative
27	137	ID Circ @ TSH
12	138	Sleeve Preventative
13	139	Sleeve Preventative
8	140	ID Circ below TSH
10	140	Sleeve Preventative
14	140	OD Circ @ TSH
11	141	Sleeve Preventative
10	142	ID Circ below TSH
81	145	ID Axial below TSH
9	147	OBS @ Sleeve
27	147	Sleeve Preventative
45	147	OD Axial @ Support
8	156	ID Circ @ TSH
65	157	OD Axial @ Support
54	158	OD Axial @ Freespan

**TABLE 8 - Measured Sizes of Service-Induced Indications  
STEAM GENERATOR E-088**

Row	Col	Elev	Inch	Ind	Origin	PP Volts	Depth	PDA	FLDA	PP Length	CA
10	34	TSH	-0.06	SCI	ID	0.64	71	4.17			30
16	130	TSH	-4.4	SAI	ID	0.74	58		N/A	2.17	
17	55	06H	0.3	SAI	ID	0.99	22		N/A	0.29	
17	119	06H	0.48	SAI	ID	0.88	60		57.10	0.3	
17	139	TSH	-0.05	SCI	ID	0.85	59	5.11			45
22	48	TSH	-0.13	SCI	ID	0.92	59	3.78			31
24	66	TSH	-1.8	SAI	ID	0.49	40		N/A	0.33	
24	118	TSH	-1.72	SAI	ID	0.61	49		40.30	0.2	
27	33	TSH	-0.14	SCI	ID	1.16	50	2.83			33
27	63	TSH	-0.91	SAI	ID	0.84	36		N/A	0.16	
27	63	TSH	-1.09	SAI	ID	0.62	42		N/A	0.17	
29	127	TSH	-1.07	SAI	ID	0.66	46		N/A	0.12	
31	113	06H	0.4	SAI	ID	1.16	57		45.52	0.29	
33	49	TSH	-0.08	SCI	ID	0.41	51	2.76			31
33	67	TSH	-3.01	SAI	ID	0.56	39		N/A	0.13	
34	106	TSH	-3.73	SAI	ID	0.64	49		44.60	0.17	
35	49	TSH	-13.34	SAI	ID	0.99	35		N/A	5.63	
35	49	TSH	-8.31	SAI	ID	1.12	49		N/A	8.71	
35	135	TSH	-2.99	SAI	ID	0.63	40		N/A	0.3	
44	68	TSH	-1.72	SAI	ID	0.59	57		N/A	0.17	
44	128	TSH	-2.08	SAI	ID	0.66	33		N/A	0.14	
45	71	05H	0.42	SAI	OD	0.68	52		35.52	0.27	
50	60	TSH	-1.63	SAI	ID	0.57	60		N/A	0.19	
51	119	TSH	-5.53	SAI	ID	0.55	47		42.91	0.17	
51	125	TSH	-0.02	SCI	ID	0.41	47	2.51			31
55	135	TSH	-0.09	SCI	ID	0.76	62	4.05			35
57	81	TSH	-1.39	SAI	ID	0.5	47		N/A	0.73	
60	52	TSH	-0.11	SCI	ID	0.8	83	5.64			39
62	82	TSH	-1.2	SAI	ID	0.57	45		N/A	0.2	
67	127	TSH	-0.08	SCI	ID	0.65	56	3.22			30
69	93	TSH	-3.88	SAI	ID	0.84	57		N/A	0.18	
69	103	TSH	-9.63	SCI	ID	0.4	51	2.37			26
75	77	TSH	0.01	SCI	ID	0.71	77	16.19			79
77	87	TSH	-0.2	SCI	ID	0.56	58	6.28			49
81	75	TSH	-0.04	SCI	ID	0.47	67	3.23			28
86	84	TSH	-0.05	SCI	ID	0.5	42	1.88			26
86	84	TSH	-0.04	SCI	ID	0.61	58	2.47			26
98	76	TSH	-0.1	SCI	ID	0.48	41	2.59			28
99	105	TSH	-0.22	SAI	ID	0.71	34		N/A	0.23	
100	142	06H	0.54	SAI	OD	0.48	46		26.09	1.04	
130	124	06H	0.11	SAI	ID	1.44	21		13.38	0.13	

See notes following Table 9

**TABLE 9 - Measured Sizes of Service-Induced Indications  
STEAM GENERATOR E-089**

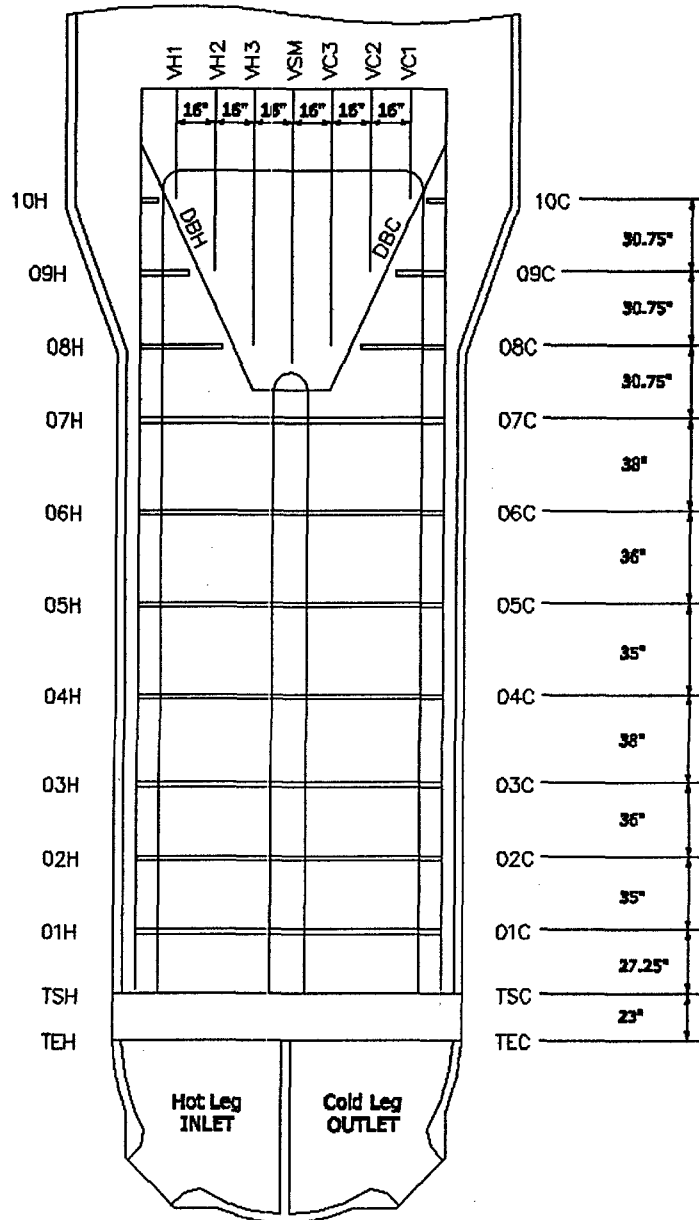
Row	Col	Elev	Inch	Ind	Origin	PP Volts	Depth	PDA	FLDA	PP Length	CA
3	131	TSH	-1.82	SCI	ID	0.51	59	2.79			27
8	156	TSH	-0.06	SCI	ID	0.55	47	3.87			30
9	45	TSH	-15.04	SAI	ID	0.58	47		N/A	0.17	
10	142	TSH	-6.14	SCI	ID	0.83	54	2.89			35
14	16	TSH	-10.51	SAI	ID	0.79	57		N/A	0.2	
24	126	07C	0.7	SAI	OD	0.55	44		33.15	1.38	
27	137	TSH	-0.01	SCI	ID	0.47	57	3.40			30
57	121	TSH	-3.18	SAI	ID	0.91	55		N/A	0.15	
64	124	TSH	-11.64	SAI	ID	0.32	55		N/A	0.17	
68	108	TSH	-14.24	SAI	ID	0.69	60		N/A	0.16	
81	145	TSH	-5.34	SAI	ID	0.66	55		N/A	0.17	
87	25	04H	0.3	SAI	ID	1.6	53		42.45	0.22	
87	25	04H	0.68	SAI	ID	1.36	44		38.42	0.17	
91	35	05H	0.18	SAI	ID	1.64	49		44.86	0.29	
96	86	TSH	-11.91	SAI	ID	1.22	39		N/A	0.18	
118	114	TEH	3.24	SAI	ID	3.57	92		78.74	0.4	

Notes:

PP = Plus Point  
PDA = Percent Degraded Area  
FLDA = Flaw-Length Degraded Area  
CA = Crack Angle (degrees)

**Appendix 1**  
**Steam Generator Reference Information**

**Steam Generator  
CE Model 3410 Tube Support Drawing**



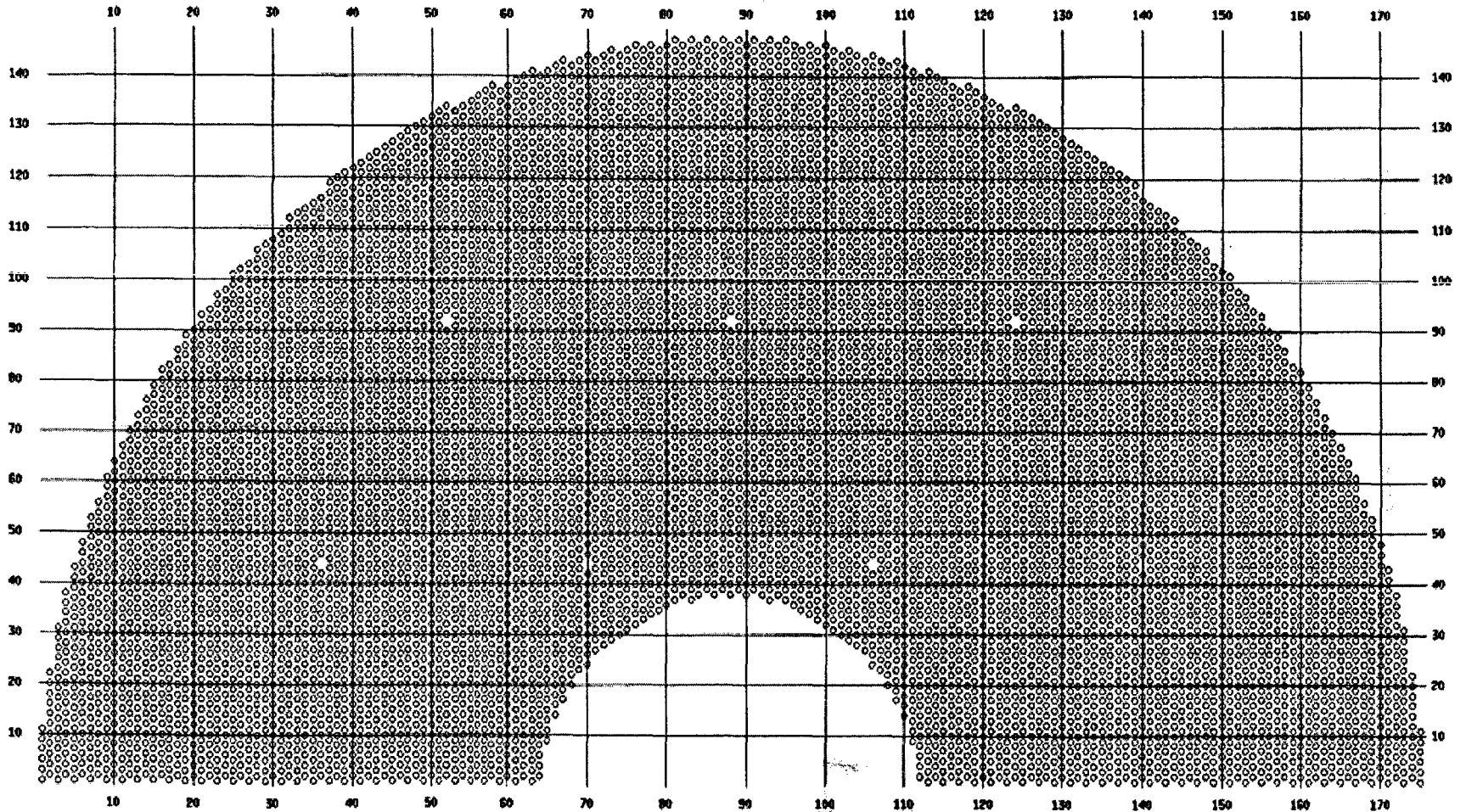
**STEAM GENERATOR TUBE SUPPORT INTERSECTIONS  
ABOVE THE 7<sup>TH</sup> (FULL) EGGCRATE SUPPORT**

<b>SUPPORT INTERSECTIONS</b>															
<b>ROW</b>	<b>STRUCTURES</b>														
122-147	08H	09H	10H	DBH	VH1	VH2	VH3	VSM	VC3	VC2	VC1	DBC	10C	09C	08C
120-121*	08H	09H	10H	DBH	VH1	VH2	VH3	VSM	VC3	VC2	VC1	DBC	10C	09C	08C
115-119	08H	09H		DBH	VH1	VH2	VH3	VSM	VC3	VC2	VC1	DBC		09C	08C
86-114	08H	09H		DBH		VH2	VH3	VSM	VC3	VC2		DBC		09C	08C
84-85*	08H	09H		DBH		VH2	VH3	VSM	VC3	VC2		DBC		09C	08C
83	08H			DBH		VH2	VH3	VSM	VC3	VC2		DBC			08C
51-82	08H			DBH			VH3	VSM	VC3			DBC			08C
49-50*	08H			DBH				VSM				DBC			08C
19-48				DBH				VSM				DBC			
1-18				DBH								DBC			

\* Indicates those rows adjacent to scallop bars

**SOUTHERN CALIFORNIA EDISON, SAN ONOFRE**

**CE MODEL 3410 STEAM GENERATOR**



**Appendix 2**

**Legend for Appendices 3 through 6**



**List of Abbreviations and Format Used to Describe  
Indications from Rotating Probe Testing**

Abbreviations	Explanation of the Abbreviations
SCI	Single Circumferential Indication
MCI	Multiple Circumferential Indications
SAI	Single Axial Indication
MAI	Multiple Axial Indications
MMI	Mixed Mode Indications
SVI	Single Volumetric Indication (i.e. no special axial or circumferential aspect)
MVI	Multiple Volumetric Indications (i.e. no special axial or circumferential aspect)
OBS	Obstruction
PCS	Partially obstructed sleeve

**Format**

In Appendices 3 through 6, a single line of data is associated with each individual rotating probe indication. Below is a descriptive example of the format.

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2
4	12	+P VOLTS	+P DEG	CH#	CODE	%	LOCATION	EXT	EXT	PAN VOLTS	INCHES

- All "I-Code" indications require a single line entry. The example above displays the form of a Resolution Report line. The VOLTS field contains the Plus Point P-to-P voltage of the largest, most representative response. The DEG field contains the corresponding phase angle. The CHN field contains the reporting channel (i.e. the appropriate 300kHz Plus Point channel). The IND field contains the appropriate 3-letter code (see list above). The %TW field indicates the percent wall loss for wear indications. The LOCATION field contains the abbreviation for the referenced landmark and the (FROM-TO) distance for the indication. The EXT fields contain the landmarks of the beginning and end of the test extent. The UTIL 1 field contains the 300kHz pancake P-to-P voltage of the largest, most representative response. Exceptions to this general guidance are provided in paragraphs 2 through 5 below.
- For axial indications of extended length, the location should be ranged (FROM-TO) in the LOCATION field. If the range of such an indication includes any part of a support structure, it should be referenced from that landmark.
- For "I-Code" indications which have both axial and circumferential extent (i.e. SVI, MVI, and MMI), the location should be ranged in the LOCATION field (as above) and the UTIL 2 field should contain the circumferential length.
- Some data lines contain a note abbreviation in the Util 1 column. These are the definitions of these abbreviations:  
LAR: Lead Analyst Reviewed  
LOCOK: Location Verification
- Some data lines contain location codes that are not reflected in Appendix 1 references. These codes and the definition of their locations include:  
SBH - Sleeve Bottom Hot  
STH - Sleeve Top Hot  
WCH - Weld Center Hot

**Appendix 3**  
**Tube Inspection Summary**  
**Steam Generator E-088**

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
6	30	0.37	87	2	SAI	07C	+0.64	07C	DBC	0.25				98	COLD	580PP
		0.17	120	2	SAI	04H	-0.83	04H	04H	0.15				213	HOT	580PP
6	152	0.45	74	2	SAI	07H	-0.07	07H	07H	0.20				228	HOT	580PP
		0.32	58	2	SAI	07H	-0.27	07H	07H	0.13				228	HOT	580PP
		0.26	55	2	SAI	07H	-0.55	07H	07H	0.18				228	HOT	580PP
6	168	0.19	155	P2	TWD	14	04H	TEC	TEH					48	HOT	600UL
8	130	0.31	139	2	SAI	07H	-0.26	07H	07H	0.20				228	HOT	580PP
10	34	0.51	22	P1	SCI	TSH	-0.06	TSH	TSH	0.17				72	HOT	580PP
10	122	0.20	129	2	SAI	05H	+0.75	05H	05H	0.43				228	HOT	580PP
10	140	0.37	26	P1	SCI	TSH	-0.01	TSH	TSH	0.20				83	HOT	580PP
11	129	0.16	123	P1	SCI	TSH	-0.02	TSH	TSH	0.24				108	HOT	580PP
12	138	0.16	98	2	SAI	02H	+4.50	02H	02H	0.77				269	HOT	520ET
		0.21	100	2	SAI	02H	+5.06	02H	02H	0.83				269	HOT	520ET
13	9	0.32	70	P2	TWD	17	05H	TEC	TEH					39	HOT	600UL
13	117	0.49	120	P2	TWD	19	07C	TEH	TEC					34	COLD	600UL
		0.37	87	2	SAI	07C	+0.28	07C	07C	0.27				98	COLD	580PP
14	124	0.31	21	P1	SCI	TSH	-0.08	TSH	TSH	0.15				109	HOT	580PP
15	49	0.37	21	P1	SCI	TSH	-0.02	TSH	TSH	0.16				215	HOT	580PP
15	119	0.30	130	P2	TWD	16	07C	TEH	TEC					35	COLD	600UL
15	137	0.29	22	P1	SCI	TSH	-9.16	TSH	TSH	0.27				116	HOT	580PP
16	130	0.73	21	2	SAI	TSH	-4.40	TO-2.23	TSH	TSH	2.14			108	HOT	580PP
16	132	0.32	29	P1	SCI	TSH	-0.07	TSH	TSH	0.20				113	HOT	580PP
		0.48	16	2	SAI	TSH	-8.80	TSH	TSH	0.17				113	HOT	580PP
17	55	0.97	8	2	SAI	06H	+0.30	06H	06H	0.29				217	HOT	580PP
17	119	0.88	21	2	SAI	06H	+0.48	06H	06H	0.26				240	HOT	580PP
17	139	0.71	25	P1	SCI	TSH	-0.05	TSH	TSH	0.30				120	HOT	580PP
17	161	0.24	121	2	SAI	06H	+0.80	06H	06H	0.25				189	HOT	580PP
		0.34	141	P2	TWD	17	06H	TEC	TEH					30	HOT	600UL
18	42	0.30	91	2	SAI	01H	-0.54	01H	01H	0.27				268	HOT	520ET
18	44	0.20	90	P3	TWD	10	DBH	TEC	TEH					16	HOT	600UL
18	54	0.23	122	2	SAI	02H	-1.12	02H	02H	0.27				268	HOT	520ET
18	126	0.23	112	2	SAI	06H	-0.41	06H	06H	0.14				269	HOT	520ET
19	135	0.46	87	P3	TWD	17	DBH	TEC	TEH					11	HOT	600UL
19	149	0.30	87	2	SAI	06H	+0.28	06H	06H	0.25				190	HOT	580PP
19	159	0.27	62	P2	TWD	14	03H	TEC	TEH					30	HOT	600UL
20	58	0.19	96	2	SAI	02H	-1.13	02H	02H	0.24				268	HOT	520ET
20	68	0.26	37	P3	TWD	22	DBH	TEH	TEC					37	COLD	600UL
20	108	0.19	16	P3	TWD	6	DBH	TEH	TEC					54	COLD	600UL
21	43	0.25	115	2	SAI	05H	+0.79	05H	05H	0.33				208	HOT	580PP
21	67	0.35	54	P3	TWD	14	DBH	TEH	TEC					36	COLD	600UL
22	4	0.19	116	2	SAI	04H	-1.39	04H	04H	0.40				211	HOT	580PP
22	48	0.60	25	P1	SCI	TSH	-0.13	TSH	TSH	0.21				114	HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
23	43	0.25	18	P1	SCI		TSH	-0.10	TSH	TSH	0.18			107	HOT	580PP
23	65	0.35	16	2	SAI		TSH	-1.38	TSH	TSH	0.19			126	HOT	580PP
23	67	0.36	20	2	SAI		TSH	-0.53	TSH	TSH	0.16			126	HOT	580PP
23	109	0.54	128	P2	TWD 20	VSM		+0.89	TEH	TEC				32	COLD	600UL
24	14	0.25	76	P2	TWD 13	VSM		+0.87	TEC	TEH				33	HOT	600UL
24	66	0.57	14	2	SAI		TSH	-1.80	TSH	TSH	0.19			126	HOT	580PP
24	114	0.33	25	P1	SCI		TSH	-0.16	TSH	TSH	0.20			101	HOT	580PP
24	118	0.66	17	2	SAI		TSH	-1.72	TSH	TSH	0.14			105	HOT	580PP
24	156	0.34	76	P2	TWD 17	03H		+0.83	TEC	TEH				30	HOT	600UL
26	146	0.09	16	P3	TWD 9	DBH		+0.28	TEC	TEH				21	HOT	600UL
27	33	0.60	25	P1	SCI		TSH	-0.14	TSH	TSH	0.17			99	HOT	580PP
27	51	0.24	24	P1	SCI		TSH	-0.13	TSH	TSH	0.15			115	HOT	580PP
27	63	0.85	13	2	SAI		TSH	-0.91	TSH	TSH	0.16			127	HOT	580PP
		0.63	14	2	SAI		TSH	-1.09	TSH	TSH	0.17			127	HOT	580PP
29	127	0.66	14	2	SAI		TSH	-1.07	TSH	TSH	0.12			109	HOT	580PP
30	40	0.36	71	P2	TWD 19	02H		-1.16	TEC	TEH				15	HOT	600UL
30	124	0.32	25	P1	MCI		TSH	-0.05	TSH	TSH	0.29			109	HOT	580PP
31	11	0.32	35	P3	TWD 16	DBH		+1.48	TEC	TEH				32	HOT	600UL
31	113	1.14	19	2	SAI		06H	+0.40	06H	06H	0.29			240	HOT	580PP
31	131	0.42	21	P1	SCI		TSH	-0.10	TSH	TSH	0.17			113	HOT	580PP
32	4	0.28	118	P2	TWD 14	01C		-0.89	TEC	TEH				41	HOT	600UL
32	106	0.20	29	P1	SCI		TSH	-0.13	TSH	TSH	0.17			97	HOT	580PP
33	49	0.55	19	P1	SCI		TSH	-0.08	TSH	TSH	0.20			114	HOT	580PP
33	67	0.59	14	2	SAI		TSH	-3.01	TSH	TSH	0.13			127	HOT	580PP
33	105	0.22	110	P3	TWD 13	DBC		-2.03	TEH	TEC				33	COLD	600UL
		0.32	139	P3	TWD 17	DBH		-1.75	TEH	TEC				33	COLD	600UL
		0.13	182	P3	TWD 8	DBC		+1.52	TEH	TEC				33	COLD	600UL
33	151	0.28	118	P1	SCI		TSH	+0.22	TSH	TSH	0.38			137	HOT	580PP
34	106	0.64	17	2	SAI		TSH	-3.73	TSH	TSH	0.16			96	HOT	580PP
34	162	0.27	93	P2	TWD 14	VSM		+0.81	TEC	TEH				30	HOT	600UL
35	25	0.27	49	P2	TWD 15	VSM		+0.88	TEC	TEH				24	HOT	600UL
		0.74	88	P2	TWD 30	VSM		-0.88	TEC	TEH				24	HOT	600UL
35	49	0.98	13	2	SAI		TSH	-13.34	TO-8.71	TSH	TSH	5.63		115	HOT	580PP
		1.10	16	2	SAI		TSH	-8.31	TO+0.40	TSH	TSH	8.71		115	HOT	580PP
35	71	0.55	135	P3	TWD 20	DBC		-2.17	TEH	TEC				36	COLD	600UL
35	135	0.65	13	2	SAI		TSH	-2.99	TSH	TSH	0.3			116	HOT	580PP
37	15	0.30	92	2	SAI		06H	+0.49	06H	06H	0.48			211	HOT	580PP
37	47	0.42	132	P2	TWD 20	VSM		+0.81	TEH	TEC				43	COLD	600UL
37	61	0.42	142	P2	TWD 16	VSM		+0.95	TEH	TEC				40	COLD	600UL
38	24	0.43	46	P2	TWD 22	VSM		-0.78	TEC	TEH				24	HOT	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
39	43	0.44	12	P3	TWD	19	DBC	+1.32	TEC	TEH				16	HOT	600UL
39	71	0.44	139	P3	TWD	16	DBC	-2.21	TEH	TEC				36	COLD	600UL
39	103	0.68	117	P3	TWD	29	DBC	+1.80	STH	TEC				49	COLD	600UL
41	7	0.23	88	P2	TWD	12	VSM	-0.85	TEC	TEH				39	HOT	600UL
41	47	0.12	130	2	SAI		01H	+15.98	01H	01H	0.34			224	HOT	580PP
41	65	0.18	23	P1	SCI		TSH	-4.39	TSH	TSH	0.18			126	HOT	580PP
41	73	0.27	126	P3	TWD	23	DBC	+1.60	TEH	TEC				37	COLD	600UL
		0.32	130	P2	TWD	19	VSM	+1.00	TEH	TEC				37	COLD	600UL
41	101	0.11	150	P2	TWD	9	VSM	-0.80	TEC	TEH				43	HOT	600UL
		0.26	91	P3	TWD	19	DBC	+2.06	TEC	TEH				43	HOT	600UL
		0.18	137	P3	TWD	14	DBH	-1.44	TEC	TEH				43	HOT	600UL
42	74	0.36	26	P3	TWD	12	DBC	-1.78	TEH	TEC				54	COLD	600UL
		0.47	22	P3	TWD	16	DBC	+1.59	TEH	TEC				54	COLD	600UL
42	106	0.68	134	P2	TWD	24	VSM	-0.83	TEH	TEC				32	COLD	600UL
42	158	0.07	55	P3	TWD	6	DBH	+1.29	TEC	TEH				31	HOT	600UL
43	19	0.58	87	P2	TWD	26	02H	+0.84	TEC	TEH				28	HOT	600UL
43	51	0.77	114	P2	TWD	29	VSM	+0.89	TEH	TEC				43	COLD	600UL
43	57	0.47	13	P3	TWD	23	DBC	+2.04	STH	TEC				51	COLD	600UL
43	61	0.26	96	2	SAI		03H	-0.41	03H	03H	0.22			217	HOT	580PP
43	73	0.29	85	P3	TWD	13	DBC	-2.01	TEH	TEC				36	COLD	600UL
43	101	0.26	74	P3	TWD	19	DBC	-1.75	TEC	TEH				43	HOT	600UL
		0.16	9	P3	TWD	13	DBC	+2.07	TEC	TEH				43	HOT	600UL
43	115	0.34	19	P1	MCI		TSH	-2.39	TSH	TSH	0.25			101	HOT	580PP
43	125	0.38	151	P2	TWD	19	VSM	-0.81	TEH	TEC				35	COLD	600UL
44	58	0.23	15	P2	TWD	12	VSM	-1.07	TEH	TEC				41	COLD	600UL
		0.32	132	P2	TWD	16	VSM	+0.83	TEH	TEC				41	COLD	600UL
44	68	0.67	21	2	SAI		TSH	-1.72	TSH	TSH	0.19			123	HOT	580PP
44	76	0.56	155	P3	TWD	25	DBH	+1.79	STH	TEC				4	COLD	600UL
		0.07	22	P3	TWD	3	DBH	-1.78	STH	TEC				4	COLD	600UL
44	98	0.79	18	P3	TWD	35	DBH	+1.48	TEC	TEH				43	HOT	600UL
		0.30	174	P3	TWD	21	DBC	+1.71	TEC	TEH				43	HOT	600UL
		0.20	137	P3	TWD	15	DBH	-1.49	TEC	TEH				43	HOT	600UL
		0.09	133	P3	TWD	8	DBC	-1.67	TEC	TEH				43	HOT	600UL
44	124	0.33	80	P2	TWD	18	VSM	-0.99	TEH	TEC				35	COLD	600UL
44	128	0.66	13	2	SAI		TSH	-2.08	TSH	TSH	0.19			108	HOT	580PP
45	71	1.01	150	2	SAI		05H	+0.42	05H	05H	0.38			271	HOT	520ET
45	73	0.41	107	P3	TWD	18	DBC	-1.89	STH	TEC				51	COLD	600UL
45	145	0.25	103	P2	TWD	13	VSM	+0.85	TEC	TEH				17	HOT	600UL
46	6	0.46	43	P2	TWD	21	VSM	-0.78	TEC	TEH				41	HOT	600UL
		0.16	150	P3	TWD	11	DBC	+1.84	TEC	TEH				41	HOT	600UL
46	54	0.19	108	P1	SCI		TSH	+0.03	TSH	TSH	0.12			119	HOT	580PP
46	64	0.45	24	P1	SCI		TSH	-0.11	TSH	TSH	0.18			123	HOT	580PP
47	109	0.41	121	P2	TWD	19	VSM	+0.87	STH	TEC				48	COLD	600UL
47	125	0.29	116	P2	TWD	16	VSM	+0.76	TEH	TEC				35	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
48	74	0.45	19	2	SAI		TSH	-1.49	TSH	TSH	0.17			111	HOT	580PP
48	76	0.44	54	P3	TWD	17	DBC	-1.74	TEC	TEH				37	HOT	600UL
		0.13	11	P3	TWD	5	DBH	+1.41	TEC	TEH				37	HOT	600UL
48	78	0.86	29	P3	TWD	32	DBH	+0.00	STH	TEC				4	COLD	600UL
48	100	1.01	12	P3	TWD	39	DBC	+1.59	TEC	TEH				43	HOT	600UL
		0.12	169	P3	TWD	10	DBC	-1.52	TEC	TEH				43	HOT	600UL
48	148	0.36	29	P3	TWD	14	DBC	+2.00	TEC	TEH				22	HOT	600UL
49	55	0.13	105	P1	SCI		TSH	+0.06	TSH	TSH	0.14			118	HOT	580PP
49	75	0.33	101	P3	TWD	11	DBH	-1.38	TEH	TEC				54	COLD	600UL
49	165	0.29	48	2	SAI		06H	+0.11	06H	06H	0.19			194	HOT	580PP
50	8	0.27	136	P2	TWD	15	VSM	+0.82	TEC	TEH				39	HOT	600UL
50	60	0.56	21	2	SAI		TSH	-1.63	TSH	TSH	0.19			126	HOT	580PP
50	72	0.22	160	P3	TWD	19	DBC	+2.04	TEH	TEC				37	COLD	600UL
50	98	0.40	101	P2	TWD	25	VSM	-0.81	TEC	TEH				43	HOT	600UL
50	100	0.44	117	P3	TWD	26	DBC	-1.80	TEC	TEH				43	HOT	600UL
50	110	0.58	122	P2	TWD	22	08H	+0.68	TEH	TEC				32	COLD	600UL
50	124	0.36	142	P2	TWD	15	VSM	+0.90	TEH	TEC				34	COLD	600UL
50	164	0.33	57	P2	TWD	16	VSM	+0.83	TEC	TEH				30	HOT	600UL
51	81	0.51	131	P3	TWD	19	DBC	-1.53	TEC	TEH				42	HOT	600UL
		0.51	171	P3	TWD	19	DBH	+1.50	TEC	TEH				42	HOT	600UL
		0.48	147	P3	TWD	18	DBC	+1.93	TEC	TEH				42	HOT	600UL
		0.39	144	P3	TWD	16	DBH	-1.53	TEC	TEH				42	HOT	600UL
51	97	0.74	82	P3	TWD	25	DBH	+1.27	TEC	TEH				42	HOT	600UL
51	101	0.38	113	2	SAI		06H	-0.01	06H	06H	0.25			273	HOT	520ET
51	119	0.55	18	2	SAI		TSH	-5.53	TSH	TSH	0.17			104	HOT	580PP
51	125	0.63	29	P1	SCI		TSH	-0.02	TSH	TSH	0.20			109	HOT	580PP
51	163	0.35	57	P2	TWD	22	VH3	+0.85	TEC	TEH				31	HOT	600UL
52	44	0.37	16	P1	SCI		TSH	-0.16	TSH	TSH	0.16			107	HOT	580PP
52	58	0.21	102	2	SAI		TSH	+0.18	TSH	TSH	0.14			122	HOT	580PP
52	76	0.29	35	P3	TWD	12	DBC	-1.35	TEC	TEH				37	HOT	600UL
53	77	0.43	95	P3	TWD	21	DBC	-1.42	STH	TEC				4	COLD	600UL
53	95	0.33	145	P3	TWD	15	DBC	-1.75	STH	TEC				2	COLD	600UL
54	8	0.35	39	P2	TWD	18	01H	+0.00	TEC	TEH				39	HOT	600UL
		0.18	135	P2	TWD	10	01H	-1.01	TEC	TEH				39	HOT	600UL
54	54	0.36	18	P1	SCI		TSH	-0.11	TSH	TSH	0.17			119	HOT	580PP
54	76	0.37	115	P3	TWD	24	DBC	-1.74	TEC	TEH				38	HOT	600UL
54	84	0.43	30	P3	TWD	26	DBH	+1.27	TEC	TEH				43	HOT	600UL
54	92	0.21	92	P3	TWD	9	DBH	-1.47	TEC	TEH				42	HOT	600UL
54	96	0.59	89	P3	TWD	22	DBH	-1.75	STH	TEC				2	COLD	600UL
54	130	0.40	26	P1	SCI		TSH	-0.02	TSH	TSH	0.15			109	HOT	580PP
55	73	0.17	103	2	SAI		TSH	+0.56	TSH	TSH	0.33			111	HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
55	81	0.21	140	P3	TWD	16	DBH	-1.56	TEC	TEH				43	HOT	600UL
55	91	0.29	64	P3	TWD	12	DBH	-1.72	TEC	TEH				42	HOT	600UL
55	93	0.69	125	P3	TWD	25	DBH	-1.75	STH	TEC				2	COLD	600UL
55	95	0.50	170	P3	TWD	19	DBC	+1.30	TEC	TEH				42	HOT	600UL
55	97	0.42	168	P3	TWD	26	DBH	+1.37	TEC	TEH				43	HOT	600UL
55	135	0.62	35	P1	SCI		TSH	-0.09	TSH	TSH	0.22			117	HOT	580PP
56	12	0.22	140	P2	TWD	12	VSM	-0.75	TEC	TEH				33	HOT	600UL
56	78	0.14	28	P3	TWD	11	DBH	-1.46	TEC	TEH				38	HOT	600UL
56	80	0.43	141	P3	TWD	17	DBC	-1.82	TEC	TEH				42	HOT	600UL
		0.47	81	P3	TWD	18	DBH	-1.90	TEC	TEH				42	HOT	600UL
57	81	0.53	18	2	SAI		TSH	-1.39	TSH	TSH	0.73			134	HOT	580PP
		0.52	113	P3	TWD	29	DBH	-1.58	TEC	TEH				43	HOT	600UL
57	83	1.26	22	P3	TWD	38	DBH	+0.00	STH	TEC				4	COLD	600UL
57	97	0.63	17	P3	TWD	22	DBH	+1.03	TEC	TEH				42	HOT	600UL
57	109	0.39	78	P2	TWD	16	03H	-1.15	TEH	TEC				32	COLD	600UL
57	167	0.44	129	P2	TWD	19	02C	+0.89	TEC	TEH				34	HOT	600UL
58	82	0.63	11	P3	TWD	27	DBC	+1.76	STH	TEC				4	COLD	600UL
58	88	0.43	107	P3	TWD	17	DBC	-1.63	STH	TEC				2	COLD	600UL
58	96	0.18	121	P3	TWD	14	DBH	-1.48	TEC	TEH				43	HOT	600UL
59	25	0.35	123	P2	TWD	19	VH3	-0.82	TEC	TEH				24	HOT	600UL
		0.31	164	P2	TWD	17	VH3	+0.74	TEC	TEH				24	HOT	600UL
59	27	0.24	125	P2	TWD	14	VH3	-0.90	TEC	TEH				25	HOT	600UL
59	95	0.22	61	P3	TWD	17	DBC	+1.92	TEC	TEH				43	HOT	600UL
59	99	0.21	126	P2	TWD	16	01H	-0.26	TEC	TEH				43	HOT	600UL
59	161	0.33	53	P2	TWD	16	VH3	-0.87	TEC	TEH				30	HOT	600UL
60	46	0.25	17	P1	SCI		TSH	-0.11	TSH	TSH	0.14			106	HOT	580PP
60	52	0.98	26	P1	SCI		TSH	-0.11	TSH	TSH	0.26			115	HOT	580PP
60	86	0.29	126	P2	TWD	15	VC3	+1.00	STH	TEC				4	COLD	600UL
61	27	0.37	41	P2	TWD	19	VH3	-0.87	TEC	TEH				24	HOT	600UL
61	31	0.20	94	P2	TWD	12	VH3	+0.85	TEC	TEH				25	HOT	600UL
61	85	0.30	174	P3	TWD	13	DBC	+1.88	TEC	TEH				42	HOT	600UL
61	125	0.32	125	P2	TWD	13	VC3	-0.10	TEH	TEC				34	COLD	600UL
61	167	0.22	108	P2	TWD	11	02C	+0.96	TEC	TEH				34	HOT	600UL
62	24	0.24	133	P2	TWD	14	VH3	+0.78	TEC	TEH				24	HOT	600UL
62	54	0.44	21	P1	SCI		TSH	-0.09	TSH	TSH	0.21			119	HOT	580PP
62	82	0.57	17	2	SAI		TSH	-1.20	TSH	TSH	0.20			134	HOT	580PP
62	104	0.45	27	P1	SCI		TSH	-2.36	TSH	TSH	0.17			96	HOT	580PP
63	11	0.34	100	P2	TWD	17	VH3	-0.78	TEC	TEH				33	HOT	600UL
63	49	0.24	126	P1	SCI		TSH	-0.01	TSH	TSH	0.43			115	HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
63	77	0.14	113	2	SAI		TSH	+0.86	TSH	TSH	0.20			131	HOT	580PP
64	80	0.36	97	P3	TWD	14	DBH	+1.21	TEC	TEH				42	HOT	600UL
64	154	0.30	103	P2	TWD	15	VH3	-1.01	TEC	TEH				22	HOT	600UL
65	81	0.15	121	P3	TWD	12	DBC	-1.49	TEC	TEH				43	HOT	600UL
65	91	0.26	65	P2	TWD	13	VH3	+0.82	TEC	TEH				42	HOT	600UL
65	97	0.24	93	P2	TWD	17	02H	-1.19	TEC	TEH				43	HOT	600UL
66	48	0.56	121	P2	TWD	24	VSM	-0.79	TEH	TEC				43	COLD	600UL
		0.32	129	P2	TWD	16	VSM	+0.90	TEH	TEC				43	COLD	600UL
67	81	0.46	121	P3	TWD	18	DBC	-1.34	TEC	TEH				42	HOT	600UL
67	85	0.62	97	P3	TWD	31	DBC	-1.69	TEC	TEH				43	HOT	600UL
67	87	0.34	71	P3	TWD	14	DBH	+1.32	TEC	TEH				42	HOT	600UL
		0.19	116	P3	TWD	8	DBH	-1.62	TEC	TEH				42	HOT	600UL
67	97	0.38	53	P2	TWD	18	02H	-1.25	TEC	TEH				42	HOT	600UL
67	109	0.26	99	P2	TWD	13	VSM	+0.81	STH	TEC				50	COLD	600UL
67	127	0.59	26	P1	SCI		TSH	-0.08	TSH	TSH	0.19			108	HOT	580PP
67	165	0.69	102	P2	TWD	26	VH3	-0.86	TEC	TEH				34	HOT	600UL
68	100	0.18	109	2	SAI		TSH	+2.53	TSH	TSH	0.24			139	HOT	580PP
68	108	0.40	73	P1	SCI		TSH	+0.05	TSH	TSH	0.60			96	HOT	580PP
68	146	0.51	95	P2	TWD	22	VC3	-0.97	TEC	TEH				17	HOT	600UL
68	158	0.29	93	P2	TWD	15	VH3	-0.87	TEC	TEH				30	HOT	600UL
69	13	0.32	85	P2	TWD	18	VH3	-0.89	TEC	TEH				33	HOT	600UL
69	15	0.48	105	P2	TWD	22	VH3	-0.93	TEC	TEH				33	HOT	600UL
69	85	0.18	144	P3	TWD	8	DBC	-1.69	TEC	TEH				42	HOT	600UL
69	93	0.48	13	2	MAI		TSH	-2.59	TSH	TSH	0.17			136	HOT	580PP
		0.84	20	2	SAI		TSH	-3.88	TSH	TSH	0.18			136	HOT	580PP
69	103	0.54	23	P1	SCI		TSH	-9.63	TSH	TSH	0.17			96	HOT	580PP
69	157	0.16	82	2	SAI		08H	-0.20	08H	08H	0.59			194	HOT	580PP
70	16	0.44	92	P2	TWD	21	VH3	+0.82	TEC	TEH				29	HOT	600UL
70	22	0.42	88	P2	TWD	21	06H	+0.80	TEC	TEH				28	HOT	600UL
		0.22	115	2	SAI		06H	+0.86	06H	06H	0.16			211	HOT	580PP
70	70	0.31	16	P1	SCI		TSH	-0.10	TSH	TSH	0.18			111	HOT	580PP
70	76	0.27	25	P1	SCI		TSH	-0.04	TSH	TSH	0.18			130	HOT	580PP
70	82	0.20	133	P3	TWD	15	DBC	+1.73	TEC	TEH				43	HOT	600UL
70	86	0.26	41	P3	TWD	11	DBH	-1.40	TEC	TEH				42	HOT	600UL
70	92	0.23	103	P2	TWD	11	VSM	-0.82	TEC	TEH				42	HOT	600UL
71	13	0.46	122	P2	TWD	22	VH3	-0.81	TEC	TEH				32	HOT	600UL
71	35	0.28	37	P2	TWD	15	01H	+0.97	TEC	TEH				19	HOT	600UL
71	101	0.17	134	P1	SCI		TSH	-0.04	TSH	TSH	0.20			139	HOT	580PP
72	22	0.14	93	2	SAI		06H	+0.17	06H	06H	0.17			211	HOT	580PP
		0.15	87	2	SAI		06H	+0.75	06H	06H	0.15			211	HOT	580PP
72	66	0.14	85	P1	SCI		TSH	+0.00	TSH	TSH	0.20			122	HOT	580PP



MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
72	70	0.36	109	P2	TWD	15	VC3	-0.73	TEH	TEC				36		COLD	600UL
72	90	0.49	117	P2	TWD	21	VSM	+0.77	TEC	TEH				42		HOT	600UL
		0.25	102	P2	TWD	12	VSM	-0.85	TEC	TEH				42		HOT	600UL
72	96	0.19	109	2	SAI		TSH	+0.26	TSH	TSH	0.17			134		HOT	580PP
72	156	0.15	120	2	SAI		08H	+0.18	08H	08H	0.42			194		HOT	580PP
73	115	0.43	21	P1	SCI		TSH	-0.10	TSH	TSH	0.17			101		HOT	580PP
73	133	0.29	115	P2	TWD	20	VH3	+0.72	TEC	TEH				12		HOT	600UL
74	82	0.59	133	P2	TWD	31	VSM	+0.85	TEC	TEH				43		HOT	600UL
		0.30	139	P2	TWD	20	VSM	-0.85	TEC	TEH				43		HOT	600UL
74	96	0.21	114	2	SAI		TSH	+0.20	TSH	TSH	0.20			136		HOT	580PP
		0.19	109	2	SAI		TSH	+0.46	TSH	TSH	0.17			136		HOT	580PP
74	138	0.25	139	P2	TWD	18	VH3	-0.85	TEC	TEH				12		HOT	600UL
		0.39	97	2	SAI		VH3	+0.10	VH3	VH3	0.40			132		COLD	560P2
74	148	0.15	106	P2	TWD	12	VH3	-0.92	TEC	TEH				21		HOT	600UL
75	77	0.81	31	P1	SCI		TSH	+0.01	TSH	TSH	0.51			130		HOT	580PP
75	81	0.17	24	P1	SCI		TSH	-0.21	TSH	TSH	0.22			134		HOT	580PP
75	141	0.17	135	P2	TWD	14	VH3	-0.92	TEC	TEH				18		HOT	600UL
75	157	0.27	99	P2	TWD	14	VH3	-0.81	TEC	TEH				30		HOT	600UL
76	84	0.26	112	P2	TWD	13	VH3	+0.84	TEC	TEH				42		HOT	600UL
		0.31	90	P2	TWD	15	VH3	-0.86	TEC	TEH				42		HOT	600UL
76	86	0.19	23	P3	TWD	15	DBC	+2.15	TEC	TEH				43		HOT	600UL
76	88	0.36	72	P2	TWD	17	03H	-1.24	TEC	TEH				42		HOT	600UL
76	96	0.19	124	P1	SCI		TSH	+0.02	TSH	TSH	0.29			134		HOT	580PP
76	100	0.19	154	P2	TWD	14	VC3	-0.75	TEC	TEH				43		HOT	600UL
76	112	0.35	95	P2	TWD	15	01H	+0.90	TEH	TEC				32		COLD	600UL
76	134	0.40	128	P2	TWD	19	VH3	+0.69	TEC	TEH				11		HOT	600UL
77	31	0.33	136	P2	TWD	17	VSM	+0.74	TEC	TEH				25		HOT	600UL
		0.21	117	P2	TWD	12	VSM	+0.23	TEC	TEH				25		HOT	600UL
77	33	0.43	71	P2	TWD	21	VSM	+0.77	TEC	TEH				20		HOT	600UL
77	39	0.25	158	P3	TWD	15	DBC	+1.58	TEC	TEH				15		HOT	600UL
77	87	0.74	18	P1	SCI		TSH	-0.20	TSH	TSH	0.32			134		HOT	580PP
78	22	0.30	28	P3	TWD	16	DBC	-1.80	TEC	TEH				28		HOT	600UL
		0.56	84	P2	TWD	26	VC3	-0.94	TEC	TEH				28		HOT	600UL
78	88	0.34	118	2	SAI		TSH	+0.65	TSH	TSH	0.19			136		HOT	580PP
78	136	0.31	54	P3	TWD	28	DBH	-2.08	TEC	TEH				12		HOT	600UL
78	138	0.12	155	P3	TWD	15	DBC	+1.59	TEC	TEH				12		HOT	600UL
78	142	0.25	138	P2	TWD	18	VH3	+0.94	TEC	TEH				18		HOT	600UL
78	144	0.35	30	P3	TWD	24	DBC	+1.59	TEC	TEH				18		HOT	600UL
78	148	0.33	136	P2	TWD	21	08C	-0.92	TEC	TEH				21		HOT	600UL
78	154	0.28	144	P2	TWD	20	VC3	+0.84	TEC	TEH				23		HOT	600UL
		0.12	169	P2	TWD	9	VC3	-0.78	TEC	TEH				23		HOT	600UL
79	15	0.33	15	P3	TWD	17	DBH	+1.49	TEC	TEH				32		HOT	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
79	19	0.22	40	P3	TWD 12	DBC	+1.75	TEC	TEH					28		HOT	600UL
79	23	0.25	63	P3	TWD 13	DBC	+1.77	TEC	TEH					24		HOT	600UL
79	75	0.45	112	P2	TWD 19	VH3	+0.79	TEH	TEC					36		COLD	600UL
79	89	0.26	69	2	SAI	04H	-0.78	04H	04H	0.18				182		HOT	580PP
		0.21	148	P2	TWD 11	04H	-0.82	TEC	TEH					42		HOT	600UL
79	93	0.19	132	P2	TWD 10	VSM	+0.74	TEC	TEH					42		HOT	600UL
79	143	0.17	131	P3	TWD 6	DBC	-1.42	TEC	TEH					17		HOT	600UL
80	80	0.31	96	P1	SCI	TSH	+0.14	TSH	TSH	0.41				130		HOT	580PP
		0.30	95	P2	TWD 15	VSM	-0.82	TEC	TEH					37		HOT	600UL
		0.19	55	P2	TWD 11	VSM	+0.72	TEC	TEH					37		HOT	600UL
80	82	0.27	61	P2	TWD 14	VSM	+0.16	TEC	TEH					42		HOT	600UL
80	86	0.11	19	P3	TWD 6	DBC	+1.98	STH	TEC					4		COLD	600UL
80	94	0.27	72	P2	TWD 13	VC3	-0.78	TEC	TEH					42		HOT	600UL
80	104	0.28	107	P2	TWD 13	VH3	+0.81	STH	TEC					50		COLD	600UL
80	112	0.44	146	P2	TWD 18	VSM	-0.76	TEH	TEC					32		COLD	600UL
81	23	0.36	31	P3	TWD 20	DBC	+1.54	TEC	TEH					15		HOT	600UL
81	75	0.56	23	P1	SCI	TSH	-0.04	TSH	TSH	0.18				149		HOT	580PP
81	107	0.29	112	P3	TWD 16	DBH	-1.24	TEH	TEC					23		COLD	600UL
81	151	0.21	142	P2	TWD 15	VH3	+0.53	TEC	TEH					10		HOT	600UL
		0.11	43	P2	TWD 9	VH3	-0.21	TEC	TEH					10		HOT	600UL
82	24	0.23	129	2	SAI	06H	+0.45	06H	06H	0.3				211		HOT	580PP
82	54	0.78	105	P2	TWD 27	VH3	-0.73	TEH	TEC					7		COLD	600UL
		0.17	172	P2	TWD 7	VH3	+0.94	TEH	TEC					7		COLD	600UL
82	56	0.12	14	P3	TWD 5	DBH	-1.84	TEH	TEC					7		COLD	600UL
82	106	0.39	22	P1	SCI	TSH	+0.00	TSH	TSH	0.17				176		HOT	580PP
82	160	0.21	69	P3	TWD 17	DBH	+2.25	TEC	TEH					10		HOT	600UL
83	51	0.43	25	P1	SCI	TSH	-8.34	TSH	TSH	0.18				164		HOT	580PP
83	151	0.32	64	2	SAI	08H	+0.50	08H	08H	0.19				195		HOT	580PP
84	48	0.49	97	P2	TWD 18	09C	-0.90	TEH	TEC					5		COLD	600UL
85	43	0.35	136	P2	TWD 19	VH2	-0.77	TEC	TEH					8		HOT	600UL
85	123	0.28	119	2	SAI	09C	+1.07	09C	09C	0.44				99		COLD	580PP
86	32	0.16	164	P3	TWD 9	DBC	+1.76	TEC	TEH					13		HOT	600UL
86	84	0.71	22	P1	SCI	TSH	-0.04	TSH	TSH	0.19				172		HOT	580PP
		0.59	18	P1	SCI	TSH	-0.05	TSH	TSH	0.19				172		HOT	580PP
86	112	0.41	59	P2	TWD 15	VH2	+0.79	TEH	TEC					22		COLD	600UL
86	130	0.33	68	P2	TWD 16	VC2	+0.78	TEC	TEH					5		HOT	600UL
87	35	0.29	149	P2	TWD 16	VH2	-0.86	TEC	TEH					7		HOT	600UL
87	37	0.32	134	P2	TWD 17	VH2	+0.75	TEC	TEH					8		HOT	600UL
		0.37	140	P2	TWD 19	VH2	-0.79	TEC	TEH					8		HOT	600UL
87	125	0.44	151	P2	TWD 20	VH2	-0.84	TEH	TEC					27		COLD	600UL
87	149	0.18	96	2	SAI	07H	-0.19	07H	07H	0.54				195		HOT	580PP
		0.21	94	2	SAI	07H	+0.67	07H	07H	0.38				195		HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
88	34	0.26	104	P2	TWD	14	VH2	-0.89	TEC	TEH				8	HOT	600UL
88	48	0.58	114	P2	TWD	20	VH2	-0.82	TEH	TEC				5	COLD	600UL
88	108	0.39	97	P2	TWD	14	VH2	-0.77	TEH	TEC				22	COLD	600UL
88	150	0.30	12	P2	TWD	20	06H	-0.34	TEC	TEH				10	HOT	600UL
89	33	0.34	144	P2	TWD	18	VH2	-0.81	TEC	TEH				14	HOT	600UL
89	35	0.38	78	P2	TWD	20	VH2	-0.93	TEC	TEH				8	HOT	600UL
		0.06	9	P3	TWD	2	DBH	-1.45	TEC	TEH				8	HOT	600UL
89	37	0.42	138	P2	TWD	21	VH2	-0.96	TEC	TEH				7	HOT	600UL
89	103	0.33	101	P2	TWD	17	VH2	-0.80	TEH	TEC				21	COLD	600UL
89	157	0.31	155	P3	TWD	12	DBH	+1.99	TEC	TEH				9	HOT	600UL
90	94	0.40	50	P2	TWD	18	09H	-0.17	TEH	TEC				20	COLD	600UL
92	26	0.55	93	P2	TWD	25	VH2	-0.95	TEC	TEH				16	HOT	600UL
92	36	0.54	91	P2	TWD	26	VH2	-1.03	TEC	TEH				8	HOT	600UL
92	56	0.28	135	P2	TWD	14	09H	-0.68	TEH	TEC				8	COLD	600UL
92	58	0.14	12	P3	TWD	5	DBH	-1.77	TEH	TEC				9	COLD	600UL
92	90	0.43	90	P1	SCI		TSH	+0.05	TSH	TSH	0.43			175	HOT	580PP
92	112	0.45	18	P1	SCI		TSH	-10.34	TSH	TSH	0.19			180	HOT	580PP
93	143	0.40	120	P2	TWD	24	VH2	+0.98	TEC	TEH				10	HOT	600UL
93	153	0.24	96	P2	TWD	16	03C	+0.96	TEC	TEH				10	HOT	600UL
		0.31	47	P2	TWD	20	05C	-0.89	TEC	TEH				10	HOT	600UL
		0.13	109	P2	TWD	10	VC3	-0.90	TEC	TEH				10	HOT	600UL
94	24	0.32	126	P2	TWD	17	VH2	+1.25	TEC	TEH				15	HOT	600UL
94	40	0.32	135	P2	TWD	17	VH2	+1.24	TEC	TEH				8	HOT	600UL
94	138	0.19	43	P3	TWD	8	DBH	-1.84	TEC	TEH				9	HOT	600UL
95	39	0.34	127	P2	TWD	18	VSM	+0.74	TEC	TEH				7	HOT	600UL
		0.26	122	2	SAI		VSM	+0.74	VSM	VSM	0.24			122	COLD	560P2
95	89	0.12	34	P1	SCI		TSH	-0.01	TSH	TSH	0.14			174	HOT	580PP
95	97	0.27	59	P2	TWD	13	VC3	-0.75	TEH	TEC				20	COLD	600UL
96	34	0.32	134	P2	TWD	18	VH2	-1.08	TEC	TEH				8	HOT	600UL
96	102	0.12	35	P3	TWD	6	DBH	-1.35	TEH	TEC				20	COLD	600UL
96	142	0.34	120	P2	TWD	21	VH2	-0.92	TEC	TEH				10	HOT	600UL
96	144	0.12	88	2	SAI		08H	-0.22	08H	08H	0.32			195	HOT	580PP
97	35	0.38	150	P2	TWD	20	VH2	-0.97	TEC	TEH				8	HOT	600UL
98	76	0.54	19	P1	SCI		TSH	-0.10	TSH	TSH	0.14			173	HOT	580PP
98	92	0.20	90	P1	SCI		TSH	+0.00	TSH	TSH	0.20			175	HOT	580PP
99	105	0.71	12	2	SAI		TSH	-0.22	TSH	TSH	0.23			177	HOT	580PP
99	131	0.27	122	P2	TWD	19	VH3	-0.82	TEC	TEH				49	HOT	600UL
		0.17	159	P2	TWD	13	VH3	+0.74	TEC	TEH				49	HOT	600UL
99	149	0.50	102	P2	TWD	22	VH2	+0.84	TEC	TEH				9	HOT	600UL
100	100	0.48	15	P1	SCI		TSH	-0.04	TSH	TSH	0.20			178	HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%tdw.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
100	142	0.54	119	2	SAI		06H	+0.54	06H	06H	1.04			195	HOT	580PP
101	27	0.49	107	P2	TWD	23	VH2	+0.81	TEC	TEH				15	HOT	600UL
101	29	0.38	143	P2	TWD	19	VH2	+0.82	TEC	TEH				13	HOT	600UL
101	77	0.41	83	P3	TWD	20	DBH	+1.32	TEH	TEC				16	COLD	600UL
101	147	0.44	131	P2	TWD	20	VSM	-0.78	TEC	TEH				9	HOT	600UL
102	26	0.32	130	P2	TWD	17	06H	+0.91	TEC	TEH				16	HOT	600UL
102	100	0.25	11	P3	TWD	12	DBH	-1.64	TEH	TEC				20	COLD	600UL
104	40	0.49	65	P3	TWD	22	DBC	+2.10	TEC	TEH				7	HOT	600UL
104	142	0.40	150	P2	TWD	24	VH2	-0.83	TEC	TEH				10	HOT	600UL
104	148	0.31	87	P2	TWD	20	VH2	+0.59	TEC	TEH				10	HOT	600UL
105	135	0.34	137	P2	TWD	16	08H	-0.21	TEC	TEH				5	HOT	600UL
		0.18	128	2	SAI		08H	-0.18	08H	08H	0.20			195	HOT	580PP
106	30	0.29	130	P2	TWD	15	06H	+0.82	TEC	TEH				13	HOT	600UL
106	78	0.24	157	P2	TWD	13	VC2	-0.93	TEH	TEC				16	COLD	600UL
		0.24	150	P2	TWD	13	VC2	+0.80	TEH	TEC				16	COLD	600UL
107	29	0.50	16	P3	TWD	22	DBC	+1.40	TEC	TEH				13	HOT	600UL
107	33	0.20	120	P2	TWD	12	09H	-0.37	TEC	TEH				13	HOT	600UL
107	75	0.38	77	P2	TWD	18	09C	-0.31	TEH	TEC				12	COLD	600UL
107	97	0.32	134	P2	TWD	15	VH3	-0.83	TEH	TEC				20	COLD	600UL
107	125	0.16	79	P3	TWD	8	DBH	-1.51	TEH	TEC				27	COLD	600UL
108	36	0.27	74	P3	TWD	14	DBC	-1.77	TEC	TEH				7	HOT	600UL
108	142	0.11	144	P3	TWD	10	DBH	+1.63	TEC	TEH				10	HOT	600UL
109	113	0.30	14	P3	TWD	16	DBH	+1.85	TEH	TEC				23	COLD	600UL
110	52	0.17	79	P3	TWD	8	DBH	-1.34	TEH	TEC				5	COLD	600UL
110	138	0.25	134	P2	TWD	17	VC3	-0.91	TEC	TEH				10	HOT	600UL
111	37	0.32	35	P3	TWD	18	DBH	+1.10	TEC	TEH				8	HOT	600UL
111	101	0.15	85	P3	TWD	8	DBH	-1.06	TEH	TEC				21	COLD	600UL
112	62	0.60	14	P3	TWD	19	DBH	+2.03	TEH	TEC				9	COLD	600UL
		0.22	68	P3	TWD	8	DBH	-1.50	TEH	TEC				9	COLD	600UL
112	116	0.18	112	P2	TWD	11	VH3	-0.87	TEH	TEC				25	COLD	600UL
112	144	0.73	162	P3	TWD	24	DBH	+1.85	TEC	TEH				9	HOT	600UL
113	37	0.14	137	P3	TWD	8	DBH	+1.68	TEC	TEH				7	HOT	600UL
		0.27	139	P2	TWD	15	VH2	-0.93	TEC	TEH				7	HOT	600UL
113	39	0.30	101	P3	TWD	17	DBH	+1.64	TEC	TEH				8	HOT	600UL
113	41	0.35	95	P2	TWD	19	VH2	-0.68	TEC	TEH				7	HOT	600UL
113	47	0.26	48	P3	TWD	12	DBH	-1.50	TEH	TEC				5	COLD	600UL
114	38	0.22	150	P2	TWD	12	06C	-0.69	TEC	TEH				8	HOT	600UL
114	86	0.11	163	P3	TWD	6	DBH	-1.27	TEH	TEC				19	COLD	600UL
114	96	0.30	125	P2	TWD	16	VH3	-0.84	TEH	TEC				21	COLD	600UL
114	110	0.35	71	P3	TWD	13	DBH	-1.36	TEH	TEC				22	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%td.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
115	69	0.39	78	P2	TWD	16	01H	+0.82	TEH	TEC				11	COLD	600UL
115	83	0.30	123	P3	TWD	14	DBH	-1.50	TEH	TEC				16	COLD	600UL
115	127	0.28	143	P2	TWD	12	VH1	+0.89	TEH	TEC				26	COLD	600UL
115	137	0.28	112	P2	TWD	14	VH2	-0.87	TEC	TEH				9	HOT	600UL
		0.41	137	P2	TWD	19	VH1	-1.00	TEC	TEH				9	HOT	600UL
116	76	0.31	129	P2	TWD	14	VH1	+0.17	TEH	TEC				17	COLD	600UL
116	78	0.16	126	P1	SCI		TSH	-0.07	TSH	TSH	0.45			173	HOT	580PP
116	102	0.42	126	P3	TWD	18	DBH	+0.80	TEH	TEC				20	COLD	600UL
117	55	0.74	125	P2	TWD	26	VH1	-0.75	TEH	TEC				7	COLD	600UL
117	65	0.44	139	P2	TWD	17	VH1	-0.76	TEH	TEC				11	COLD	600UL
117	95	0.31	71	P3	TWD	15	DBH	+1.97	TEH	TEC				21	COLD	600UL
117	105	0.39	91	P2	TWD	19	VH1	-0.98	TEH	TEC				21	COLD	600UL
118	38	0.08	126	P3	TWD	3	DBC	+2.05	TEC	TEH				8	HOT	600UL
118	68	0.22	129	P3	TWD	11	DBH	-1.70	TEH	TEC				12	COLD	600UL
118	72	0.21	151	P3	TWD	11	DBH	-1.97	TEH	TEC				16	COLD	600UL
		0.22	61	P3	TWD	11	DBH	+1.80	TEH	TEC				16	COLD	600UL
118	88	0.24	145	P3	TWD	14	DBH	-1.72	TEH	TEC				19	COLD	600UL
118	90	0.18	27	P3	TWD	11	DBH	-1.72	TEH	TEC				19	COLD	600UL
118	116	0.66	128	P2	TWD	24	09H	-0.10	TEH	TEC				24	COLD	600UL
119	37	0.08	29	P3	TWD	3	DBC	-2.02	TEC	TEH				8	HOT	600UL
		0.24	10	P3	TWD	14	DBC	+2.25	TEC	TEH				8	HOT	600UL
		0.08	124	P2	TWD	3	10C	-1.51	TEC	TEH		LOCOK		8	HOT	600UL
119	45	0.30	161	P2	TWD	17	VH1	-0.94	TEC	TEH				8	HOT	600UL
119	55	0.22	40	P3	TWD	12	DBH	+2.17	TEH	TEC				8	COLD	600UL
119	57	0.56	131	P2	TWD	26	VH1	-0.87	TEH	TEC				8	COLD	600UL
119	61	0.57	150	P2	TWD	21	VH1	-0.88	TEH	TEC				9	COLD	600UL
119	79	0.37	100	P3	TWD	19	DBH	+2.01	TEH	TEC				16	COLD	600UL
119	81	0.55	132	P2	TWD	24	VH1	-0.80	TEH	TEC				16	COLD	600UL
119	95	0.48	106	P3	TWD	19	DBH	-1.77	TEH	TEC				20	COLD	600UL
119	97	0.37	148	P3	TWD	16	DBH	-1.70	TEH	TEC				20	COLD	600UL
119	99	0.33	120	P3	TWD	15	DBH	-1.42	TEH	TEC				20	COLD	600UL
119	101	0.31	121	P3	TWD	16	DBH	-1.87	TEH	TEC				21	COLD	600UL
119	109	0.45	9	P3	TWD	22	DBH	+1.94	TEH	TEC				23	COLD	600UL
119	115	0.51	124	P2	TWD	20	VH1	-0.87	TEH	TEC				24	COLD	600UL
120	38	0.22	124	P3	TWD	13	DBC	+2.25	TEC	TEH				8	HOT	600UL
		0.12	106	P3	TWD	6	DBC	-2.23	TEC	TEH				8	HOT	600UL
120	42	0.38	136	P2	TWD	20	VH1	-0.81	TEC	TEH				8	HOT	600UL
120	66	0.54	109	P3	TWD	20	DBH	-1.59	TEH	TEC				11	COLD	600UL
120	74	0.28	104	P2	TWD	12	10H	-1.25	TEH	TEC				17	COLD	600UL
120	80	0.23	58	P3	TWD	12	DBH	-1.90	TEH	TEC				16	COLD	600UL
120	86	0.23	74	P3	TWD	10	DBH	-1.59	TEH	TEC				18	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
		0.40	117	P2	TWD	16	10H	+1.25	TEH	TEC				18		COLD	600UL
120	92	0.31	49	P3	TWD	11	DBH	-1.85	TEH	TEC				44		COLD	600UL
120	94	0.17	106	P3	TWD	7	DBH	-1.99	TEH	TEC				44		COLD	600UL
120	106	0.28	2	P3	TWD	14	DBH	+1.68	TEH	TEC				21		COLD	600UL
120	138	0.39	133	P3	TWD	15	DBH	-1.53	TEC	TEH				9		HOT	600UL
121	39	0.35	68	P2	TWD	19	03C	-0.91	TEC	TEH				8		HOT	600UL
121	67	0.27	135	P3	TWD	11	DBH	-1.73	TEH	TEC				11		COLD	600UL
121	69	0.32	25	P2	TWD	13	04H	+0.84	TEH	TEC				44		COLD	600UL
121	71	0.18	137	P3	TWD	11	DBH	-1.75	TEH	TEC				16		COLD	600UL
121	125	0.49	126	P2	TWD	19	10H	+0.79	TEH	TEC				26		COLD	600UL
121	137	0.24	153	P3	TWD	10	DBH	-1.84	TEC	TEH				9		HOT	600UL
122	94	0.22	135	P3	TWD	13	DBH	+1.84	TEH	TEC				19		COLD	600UL
122	96	0.38	127	P3	TWD	19	DBH	+1.76	TEH	TEC				21		COLD	600UL
122	112	0.36	39	P2	TWD	13	10H	-1.05	TEH	TEC				22		COLD	600UL
122	114	0.39	118	P2	TWD	16	10H	+0.93	TEH	TEC				24		COLD	600UL
		0.38	142	P3	TWD	15	DBH	+1.75	TEH	TEC				24		COLD	600UL
122	124	0.40	130	P3	TWD	18	DBH	+1.56	TEH	TEC				27		COLD	600UL
123	45	0.30	152	P2	TWD	17	VH1	-1.24	TEC	TEH				7		HOT	600UL
123	65	0.32	128	P3	TWD	15	DBH	-0.08	TEH	TEC				12		COLD	600UL
124	64	0.38	63	P2	TWD	15	10H	-0.86	TEH	TEC				9		COLD	600UL
124	88	0.26	17	P3	TWD	11	DBH	+2.13	TEH	TEC				18		COLD	600UL
125	91	0.26	135	P3	TWD	10	DBH	+1.90	TEH	TEC				44		COLD	600UL
126	86	0.39	132	P3	TWD	19	DBH	+1.86	TEH	TEC				19		COLD	600UL
126	90	0.31	114	P3	TWD	16	DBH	+2.11	TEH	TEC				19		COLD	600UL
126	112	0.57	26	P3	TWD	20	DBH	+1.54	TEH	TEC				22		COLD	600UL
127	53	0.62	95	P2	TWD	27	VH1	-0.93	TEH	TEC				8		COLD	600UL
127	83	0.39	146	P3	TWD	16	DBH	-1.87	TEH	TEC				17		COLD	600UL
127	101	0.21	78	P2	TWD	12	VH3	+0.81	TEH	TEC				21		COLD	600UL
128	60	0.45	51	P2	TWD	18	10H	+0.00	TEH	TEC				7		COLD	600UL
		0.54	137	P2	TWD	21	10H	-1.22	TEH	TEC				7		COLD	600UL
128	68	0.31	32	P3	TWD	13	DBH	+2.04	TEH	TEC				11		COLD	600UL
129	47	0.83	138	P2	TWD	26	VH3	-0.89	TEH	TEC				44		COLD	600UL
129	63	0.30	100	P2	TWD	15	10H	-0.10	TEH	TEC				10		COLD	600UL
129	67	0.26	75	P3	TWD	14	DBH	-1.81	TEH	TEC				12		COLD	600UL
129	75	0.74	94	P2	TWD	29	VH1	-0.31	TEH	TEC				14		COLD	600UL
130	74	0.54	156	P2	TWD	24	10H	-0.91	TEH	TEC				16		COLD	600UL
		0.34	73	P2	TWD	17	10H	-0.10	TEH	TEC				16		COLD	600UL
130	94	0.77	153	P2	TWD	30	10H	-1.02	TEH	TEC				19		COLD	600UL
130	124	1.36	5	2	SAI		06H	+0.11	05H	06H	0.34			245		HOT	580PP
130	128	0.47	89	P2	TWD	18	VH2	-0.50	TEH	TEC				26		COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%tdw.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
131	77	0.79	29	P3	TWD 26	DBH	+1.99	TEH	TEC					30	COLD	600UL
131	83	0.25	71	P3	TWD 11	DBH	-1.85	TEH	TEC					30	COLD	600UL
131	89	0.70	119	P2	TWD 24	10H	+0.95	TEH	TEC					30	COLD	600UL
131	127	0.45	128	P2	TWD 23	03C	+0.84	TEH	TEC					33	COLD	600UL
132	94	0.56	99	P2	TWD 21	10H	+0.93	TEH	TEC					30	COLD	600UL
133	75	0.35	99	P3	TWD 18	DBH	+1.59	TEH	TEC					31	COLD	600UL
133	83	0.32	161	P2	TWD 17	10H	-1.09	TEH	TEC					31	COLD	600UL
133	115	0.55	130	P2	TWD 26	10H	+0.87	TEH	TEC					33	COLD	600UL
134	68	0.21	149	P2	TWD 12	10H	-0.72	TEH	TEC					29	COLD	600UL
134	84	0.21	161	P2	TWD 10	10H	-1.11	TEH	TEC					30	COLD	600UL
134	86	0.92	140	P2	TWD 29	10H	-0.99	TEH	TEC					30	COLD	600UL
134	100	0.43	161	P2	TWD 17	10H	+0.86	TEH	TEC					30	COLD	600UL
135	85	0.22	99	2	SAI	06H	-0.10	06H	06H	0.28				212	HOT	580PP
135	87	0.74	150	P2	TWD 25	10H	-1.09	TEH	TEC					30	COLD	600UL
135	93	0.36	104	P2	TWD 15	10H	+0.95	TEH	TEC					30	COLD	600UL
135	97	0.28	104	P2	TWD 12	10H	+0.91	TEH	TEC					30	COLD	600UL
136	74	0.35	81	P2	TWD 15	10H	-0.99	TEH	TEC					30	COLD	600UL
136	86	0.21	132	P2	TWD 12	10H	-1.06	TEH	TEC					31	COLD	600UL
137	91	0.44	158	P2	TWD 21	10H	-1.14	TEH	TEC					31	COLD	600UL
137	119	0.36	75	P2	TWD 20	01C	-0.93	TEH	TEC					33	COLD	600UL
139	105	0.58	103	P2	TWD 21	10H	+0.88	TEH	TEC					30	COLD	600UL
140	76	0.14	33	P3	TWD 9	DBH	-1.89	TEH	TEC					31	COLD	600UL
140	88	0.26	74	P3	TWD 11	DBH	+2.11	TEH	TEC					30	COLD	600UL
141	63	0.44	27	P3	TWD 17	DBC	+1.77	TEH	TEC					28	COLD	600UL
		0.21	9	P3	TWD 8	DBC	-2.12	TEH	TEC					28	COLD	600UL
141	65	0.30	130	P2	TWD 16	08C	+0.82	TEH	TEC					29	COLD	600UL
141	67	0.63	110	P2	TWD 27	VC1	+0.86	TEH	TEC					29	COLD	600UL
141	77	0.29	97	P3	TWD 16	DBC	+1.93	TEH	TEC					31	COLD	600UL
142	66	0.23	38	P3	TWD 13	DBC	+1.34	TEH	TEC					29	COLD	600UL
142	68	0.22	113	P2	TWD 12	10H	-0.23	TEH	TEC					29	COLD	600UL
142	84	0.41	116	P3	TWD 17	DBC	+1.32	TEH	TEC					30	COLD	600UL
142	86	0.27	100	P3	TWD 12	DBH	+1.91	TEH	TEC					30	COLD	600UL
142	90	0.27	119	P3	TWD 12	DBH	+2.04	TEH	TEC					30	COLD	600UL
142	98	0.29	13	P3	TWD 16	DBC	+1.85	TEH	TEC					31	COLD	600UL
142	104	0.38	23	P3	TWD 16	DBH	+1.71	TEH	TEC					30	COLD	600UL
142	110	0.45	41	P3	TWD 22	DBH	+1.98	TEH	TEC					31	COLD	600UL
143	83	0.30	71	P3	TWD 16	DBC	+1.70	TEH	TEC					31	COLD	600UL
143	89	0.24	47	P3	TWD 11	DBH	-1.75	TEH	TEC					30	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
143	109	0.19	133	P3	TWD	11	DBH	-1.84	TEH	TEC				31	COLD	600UL
144	76	0.34	151	P2	TWD	18	VC2	+0.90	TEH	TEC				31	COLD	600UL
144	78	0.41	114	P3	TWD	20	DBC	-1.92	TEH	TEC				31	COLD	600UL
144	80	0.51	119	P3	TWD	19	DBH	+1.98	TEH	TEC				30	COLD	600UL
144	84	0.69	106	P3	TWD	28	DBC	+1.70	TEH	TEC				31	COLD	600UL
144	86	0.28	129	P3	TWD	12	DBH	+2.02	TEH	TEC				30	COLD	600UL
144	90	0.59	39	P3	TWD	26	DBC	+1.77	TEH	TEC				31	COLD	600UL
144	96	0.41	118	P3	TWD	17	DBH	+1.97	TEH	TEC				30	COLD	600UL
		0.55	91	P3	TWD	20	DBC	+1.46	TEH	TEC				30	COLD	600UL
145	75	0.46	139	P2	TWD	22	VH1	-0.82	TEH	TEC				31	COLD	600UL
		0.40	58	P3	TWD	20	DBC	+1.89	TEH	TEC				31	COLD	600UL
		0.54	74	P3	TWD	25	DBH	+1.99	TEH	TEC				31	COLD	600UL
145	79	0.36	119	P3	TWD	18	DBC	+1.56	TEH	TEC				31	COLD	600UL
145	87	0.30	69	P3	TWD	13	DBC	-2.01	TEH	TEC				30	COLD	600UL
		0.29	51	P3	TWD	12	DBC	+1.52	TEH	TEC				30	COLD	600UL
145	89	0.24	118	P3	TWD	14	DBH	-1.96	TEH	TEC				31	COLD	600UL
		0.32	122	P2	TWD	17	VC1	+0.86	TEH	TEC				31	COLD	600UL
146	80	0.54	56	P3	TWD	25	DBC	+1.74	TEH	TEC				31	COLD	600UL
146	82	0.14	34	P2	TWD	9	03H	-0.17	TEH	TEC				31	COLD	600UL
146	94	0.19	149	P2	TWD	11	02H	+0.88	TEH	TEC				31	COLD	600UL
147	91	0.42	144	P2	TWD	20	VC1	-0.83	TEH	TEC				31	COLD	600UL

Total Tubes : 474  
 Total Records: 551



**Appendix 4**  
**Tube Inspection Summary**  
**Steam Generator E-089**

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
3	131	0.53	19	P1	SCI		TSH -1.82	TSH	TSH	0.17				85	HOT	580PP
8	140	0.33	26	P1	SCI		TSH -6.23	TSH	TSH	0.20				85	HOT	580PP
8	156	0.55	24	P1	SCI		TSH -0.06	TSH	TSH	0.20				80	HOT	580PP
9	45	0.55	18	2	SAI		TSH -15.04	TSH	TSH	0.20				64	HOT	580PP
		0.35	13	2	SAI		TSH -14.82	TSH	TSH	0.14				64	HOT	580PP
10	142	0.72	25	P1	SCI		TSH -6.14	TSH	TSH	0.20				85	HOT	580PP
11	51	0.14	85	P3	TWD 6	DBH	-1.66	TEH	TEC					28	COLD	600UL
11	53	0.18	93	2	SAI	04H	+0.75	04H	04H	0.30				172	HOT	580PP
11	57	0.15	116	2	SAI	06H	+0.05	06H	06H	0.26				173	HOT	580PP
11	61	0.24	127	P1	SCI		TSH +0.09	TSH	TSH	0.19				132	HOT	580PP
12	38	0.33	30	P1	SCI		TSH -0.11	TSH	TSH	0.19				79	HOT	580PP
12	116	0.43	24	2	SAI		TSH -1.13	TSH	TSH	0.18				62	HOT	580PP
13	37	0.26	25	P3	TWD 10	DBC	+0.06	TEC	TEH					23	HOT	600UL
13	115	0.23	106	2	SAI	06H	+0.91	06H	06H	0.27				190	HOT	580PP
14	16	0.81	21	2	SAI		TSH -10.51	TSH	TSH	0.2				91	HOT	580PP
14	140	0.18	111	P1	SCI		TSH +0.16	TSH	TSH	0.19				108	HOT	580PP
17	27	0.20	41	P3	TWD 8	DBC	+1.16	TEC	TEH					29	HOT	600UL
18	46	0.39	83	P2	TWD 15	01H	+0.94	TEC	TEH					22	HOT	600UL
18	144	0.32	151	P3	TWD 13	DBH	+1.15	TEC	TEH					20	HOT	600UL
19	109	0.21	134	P3	TWD 13	DBC	+1.98	TEH	TEC					31	COLD	600UL
19	173	0.25	137	P2	TWD 12	VSM	+0.81	TEC	TEH					28	HOT	600UL
20	18	0.62	128	P2	TWD 24	VSM	-0.09	TEC	TEH					40	HOT	600UL
20	42	0.35	77	2	SAI	05H	+0.28	05H	05H	0.22				162	HOT	580PP
20	58	0.20	111	P1	SCI		TSH +0.15	TSH	TSH	0.21				132	HOT	580PP
20	108	0.11	160	P3	TWD 4	DBC	+1.01	TEH	TEC					32	COLD	600UL
20	122	0.49	23	P1	SCI		TSH -0.11	TSH	TSH	0.18				67	HOT	580PP
		0.26	65	2	SAI	07C	-0.36	07C	07C	0.18				97	COLD	580PP
21	67	0.44	123	P2	TWD 17	VSM	+0.91	TEH	TEC					30	COLD	600UL
22	2	0.50	139	P2	TWD 21	VSM	-0.91	TEC	TEH					44	HOT	600UL
22	54	0.26	129	2	SAI	06H	+0.93	06H	06H	0.29				172	HOT	580PP
22	118	0.42	132	P2	TWD 18	07H	+0.94	TEH	TEC					33	COLD	600UL
23	23	0.34	68	P2	TWD 17	07H	+0.59	TEH	TEC					44	COLD	600UL
23	59	0.32	107	P2	TWD 14	01H	+0.85	TEH	TEC					28	COLD	600UL
23	115	0.30	153	P2	TWD 16	VSM	+0.93	TEH	TEC					31	COLD	600UL
24	18	0.25	96	P2	TWD 12	VSM	-0.92	TEC	TEH					40	HOT	600UL
24	126	0.57	100	2	SAI	07C	+0.70	07C	07C	1.23				97	COLD	580PP
24	154	0.23	89	P2	TWD 12	VSM	+0.04	TEC	TEH					25	HOT	600UL
25	53	0.29	104	P1	SCI		TSH +0.10	TSH	TSH	0.28				127	HOT	580PP
27	137	0.86	19	P1	SCI		TSH -0.01	TSH	TSH	0.30				108	HOT	580PP

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
29	45	0.33	85	2	SAI		05H	-0.72	05H	05H	0.32			163		HOT	580PP
29	53	0.27	88	P1	SCI		TSH	+0.10	TSH	TSH	0.26			127		HOT	580PP
30	70	0.27	141	P3	TWD	13	DBC	-1.98	TEH	TEC				30		COLD	600UL
30	110	0.19	114	2	SAI		TSH	+0.39	TSH	TSH	0.18			62		HOT	580PP
31	71	0.25	124	P3	TWD	12	DBC	-2.19	TEH	TEC				30		COLD	600UL
		0.55	77	P3	TWD	22	DBH	-1.64	TEH	TEC				30		COLD	600UL
		0.35	53	P3	TWD	16	DBC	+1.97	TEH	TEC				30		COLD	600UL
32	140	0.22	74	P2	TWD	12	VSM	-0.93	TEC	TEH				19		HOT	600UL
34	60	0.16	117	P1	SCI		TSH	+0.08	TSH	TSH	0.22			132		HOT	580PP
		0.14	127	P1	SCI		TSH	+0.10	TSH	TSH	0.14			132		HOT	580PP
		0.16	97	P1	SCI		TSH	+0.01	TSH	TSH	0.19			132		HOT	580PP
		0.48	12	2	SAI		TSH	-2.15	TSH	TSH	0.14			132		HOT	580PP
35	51	0.26	82	2	SAI		TSH	+0.81	TSH	TSH	0.38			128		HOT	580PP
36	50	0.10	83	P1	SCI		TSH	+0.14	TSH	TSH	0.19			128		HOT	580PP
36	104	0.21	85	P3	TWD	11	DBC	-1.95	TEH	TEC				29		COLD	600UL
36	114	0.33	108	P2	TWD	15	02H	+0.88	TEH	TEC				33		COLD	600UL
37	101	0.28	30	P3	TWD	15	DBC	+1.89	TEC	TEH				35		HOT	600UL
37	103	0.43	45	P3	TWD	20	DBH	-1.49	TEH	TEC				29		COLD	600UL
37	111	0.27	17	2	SAI		TSH	-2.16	TSH	TSH	0.14			61		HOT	580PP
38	4	0.34	67	P2	TWD	15	02C	-0.93	TEC	TEH				44		HOT	600UL
		0.30	60	P2	TWD	14	01C	+0.15	TEC	TEH				44		HOT	600UL
38	20	0.27	133	P3	TWD	11	DBH	+0.94	TEC	TEH				39		HOT	600UL
38	128	0.35	101	P1	SCI		TSH	+0.07	TSH	TSH	0.40			55		HOT	580PP
38	156	0.38	100	P2	TWD	17	03H	-0.89	TEC	TEH				26		HOT	600UL
39	101	0.22	84	P3	TWD	11	DBC	-1.91	TEC	TEH				34		HOT	600UL
		0.22	48	P3	TWD	11	DBC	+2.06	TEC	TEH				34		HOT	600UL
40	74	0.52	136	P3	TWD	16	DBC	-1.63	STH	TEC				55		COLD	600UL
40	140	0.22	39	P2	TWD	12	VSM	-0.89	TEC	TEH				19		HOT	600UL
41	49	0.20	132	2	SAI		02H	-0.20	02H	02H	0.36			172		HOT	580PP
		0.33	119	P2	TWD	15	02H	-0.24	TEH	TEC				25		COLD	600UL
41	63	0.40	72	P2	TWD	18	02H	+0.81	TEH	TEC				29		COLD	600UL
41	73	0.36	118	P3	TWD	16	DBC	-1.79	TEH	TEC				30		COLD	600UL
41	75	0.44	121	P3	TWD	20	DBC	+1.83	TEH	TEC				29		COLD	600UL
		0.20	13	P3	TWD	11	DBC	-2.20	TEH	TEC				29		COLD	600UL
41	101	0.44	60	P3	TWD	21	DBC	+1.91	TEC	TEH				35		HOT	600UL
41	103	0.28	125	P2	TWD	12	VSM	+0.91	STH	TEC				48		COLD	600UL
41	143	0.27	79	P2	TWD	14	VSM	+0.79	TEC	TEH				19		HOT	600UL
42	168	0.55	140	P2	TWD	22	VSM	+1.05	TEC	TEH				27		HOT	600UL
42	170	0.77	128	P2	TWD	28	VSM	-0.43	TEC	TEH				28		HOT	600UL
43	101	0.75	93	P3	TWD	27	DBC	+1.65	TEC	TEH				34		HOT	600UL
44	18	0.19	48	P2	TWD	10	VSM	+0.54	TEC	TEH				40		HOT	600UL
		0.41	117	P2	TWD	18	VSM	-0.93	TEC	TEH				40		HOT	600UL
44	50	0.23	145	P3	TWD	12	DBC	+2.19	TEH	TEC				25		COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
44	74	0.55	61	P3	TWD	23	DBC	-2.00	TEH	TEC				29		COLD	600UL
		0.28	54	P3	TWD	14	DBC	+1.78	TEH	TEC				29		COLD	600UL
44	104	0.44	111	P2	TWD	19	VSM	+0.81	TEH	TEC				29		COLD	600UL
		0.06	141	P2	TWD	3	VSM	-0.42	TEH	TEC				29		COLD	600UL
44	112	0.41	139	P2	TWD	18	VSM	-0.76	TEH	TEC				33		COLD	600UL
45	103	0.17	127	P2	TWD	9	VSM	+0.00	TEH	TEC				29		COLD	600UL
		0.54	141	P2	TWD	22	VSM	+0.88	TEH	TEC				29		COLD	600UL
		0.32	110	P2	TWD	15	VSM	-0.73	TEH	TEC				29		COLD	600UL
45	145	0.27	75	P2	TWD	14	VSM	-0.90	TEC	TEH				19		HOT	600UL
45	147	0.27	140	P3	TWD	11	DBH	+1.95	TEC	TEH				20		HOT	600UL
		0.32	111	2	SAI		DBH	+2.05	DBH	DBH	0.27			203		HOT	560P2
46	52	0.27	117	P2	TWD	13	VSM	-0.88	TEH	TEC				28		COLD	600UL
		0.27	155	P2	TWD	13	VSM	+0.80	TEH	TEC				28		COLD	600UL
46	104	0.79	97	P2	TWD	25	VSM	-0.69	TEH	TEC				30		COLD	600UL
		0.26	60	P2	TWD	11	VSM	+0.24	TEH	TEC				30		COLD	600UL
46	128	0.33	140	P2	TWD	14	VSM	-0.90	TEH	TEC				35		COLD	600UL
46	156	0.10	172	P2	TWD	5	VSM	+0.70	TEC	TEH				26		HOT	600UL
		0.56	106	P2	TWD	23	VSM	-1.01	TEC	TEH				26		HOT	600UL
46	162	0.32	78	P2	TWD	15	VSM	+0.88	TEC	TEH				26		HOT	600UL
46	170	0.37	83	P3	TWD	17	DBC	+1.55	TEC	TEH				28		HOT	600UL
47	29	0.51	23	P3	TWD	22	DBH	-1.78	TEH	TEC				44		COLD	600UL
47	33	0.52	67	P3	TWD	21	DBH	+1.70	TEC	TEH				24		HOT	600UL
47	121	0.23	159	P2	TWD	13	VSM	-0.81	TEH	TEC				34		COLD	600UL
48	6	0.47	90	P2	TWD	20	08C	-1.72	TEC	TEH		LOCOK		44		HOT	600UL
48	8	0.33	131	P2	TWD	15	02C	+0.90	TEC	TEH				44		HOT	600UL
48	34	0.25	37	P2	TWD	11	VSM	-0.76	TEC	TEH				23		HOT	600UL
48	66	0.99	153	P2	TWD	29	VSM	-0.91	TEH	TEC				30		COLD	600UL
48	74	0.40	49	P3	TWD	14	DBC	-1.97	STH	TEC				55		COLD	600UL
		0.13	69	P3	TWD	5	DBC	+1.46	STH	TEC				55		COLD	600UL
48	100	0.53	49	P3	TWD	22	DBC	+2.04	TEC	TEH				34		HOT	600UL
48	118	0.49	69	P2	TWD	20	04H	-1.10	TEH	TEC				33		COLD	600UL
48	158	0.71	155	P2	TWD	27	VSM	-0.63	TEC	TEH				25		HOT	600UL
		0.13	168	P2	TWD	7	VSM	+0.91	TEC	TEH				25		HOT	600UL
49	39	0.25	143	P2	TWD	11	VSM	-0.82	TEC	TEH				24		HOT	600UL
49	53	0.48	114	P2	TWD	21	08C	-1.43	TEH	TEC		LOCOK		27		COLD	600UL
49	65	0.34	108	P2	TWD	14	VSM	-0.80	TEH	TEC				30		COLD	600UL
49	75	0.26	142	P3	TWD	13	DBC	-2.24	TEH	TEC				29		COLD	600UL
49	103	0.31	126	P2	TWD	15	VSM	-0.87	TEH	TEC				29		COLD	600UL
49	145	0.54	73	P2	TWD	24	08H	-1.19	TEC	TEH				19		HOT	600UL
49	159	0.57	113	P2	TWD	23	VSM	+0.72	TEC	TEH				26		HOT	600UL
		0.19	70	P2	TWD	10	VSM	-0.21	TEC	TEH				26		HOT	600UL
50	16	0.15	14	P2	TWD	7	08H	+1.07	TEC	TEH				41		HOT	600UL
50	44	0.29	69	P2	TWD	12	VSM	-0.91	TEC	TEH				22		HOT	600UL
50	48	0.30	120	P3	TWD	14	DBH	-1.66	TEH	TEC				25		COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
50	64	0.16	119	2	SAI	08C	+1.48	08C	08C	0.18		LOCOK		99		COLD	580PP
50	74	0.31	36	P3	TWD	14	DBC	TEH	TEC					30		COLD	600UL
		0.26	74	P3	TWD	12	DBC	TEH	TEC					30		COLD	600UL
50	76	0.54	123	P3	TWD	21	DBC	TEC	TEH					28		HOT	600UL
50	78	0.49	107	P3	TWD	19	DBC	STH	TEC					4		COLD	600UL
		0.31	112	P3	TWD	13	DBC	STH	TEC					4		COLD	600UL
50	100	0.47	122	P3	TWD	23	VSM	TEC	TEH					35		HOT	600UL
51	75	0.64	73	P3	TWD	20	DBC	STH	TEC					55		COLD	600UL
51	153	0.60	130	P3	TWD	24	DBC	TEC	TEH					26		HOT	600UL
52	12	0.31	98	2	SAI	VH3	+0.10	VH3	VH3	0.41				205		HOT	560P2
52	76	0.45	83	P3	TWD	18	DBC	TEC	TEH					27		HOT	600UL
52	80	0.60	96	P3	TWD	23	DBC	TEC	TEH					27		HOT	600UL
52	84	0.27	127	P3	TWD	12	DBC	TEC	TEH					27		HOT	600UL
		0.28	141	P3	TWD	12	DBC	TEC	TEH					27		HOT	600UL
		0.63	74	P3	TWD	23	DBH	TEC	TEH					27		HOT	600UL
		0.41	131	P3	TWD	17	DBH	TEC	TEH					27		HOT	600UL
52	96	0.26	24	P3	TWD	12	DBH	TEC	TEH					30		HOT	600UL
52	160	0.45	27	P2	TWD	20	VH3	TEC	TEH					25		HOT	600UL
53	29	0.39	117	P2	TWD	15	VH3	TEC	TEH					29		HOT	600UL
53	77	0.35	119	P3	TWD	15	DBC	TEC	TEH					27		HOT	600UL
53	81	0.23	149	P3	TWD	10	DBC	TEC	TEH					27		HOT	600UL
53	95	0.37	40	P3	TWD	17	DBH	TEC	TEH					30		HOT	600UL
53	145	0.59	110	P2	TWD	25	VH3	TEC	TEH					19		HOT	600UL
54	8	0.27	71	P2	TWD	11	01C	TEC	TEH					45		HOT	600UL
54	48	0.34	21	P3	TWD	16	DBH	TEH	TEC					25		COLD	600UL
54	70	0.16	113	2	SAI	TSH	+0.86	TSH	TSH	0.13				139		HOT	580PP
54	148	0.38	48	P2	TWD	19	VH3	TEC	TEH					19		HOT	600UL
54	158	0.15	109	2	SAI	02H	-12.40	02H	02H	0.16				184		HOT	580PP
55	23	0.55	87	P2	TWD	23	VH3	TEC	TEH					39		HOT	600UL
55	41	0.27	24	P1	SCI	TSH	-0.12	TSH	TSH	0.18				78		HOT	580PP
55	79	0.32	41	P3	TWD	14	DBC	TEC	TEH					27		HOT	600UL
55	85	0.42	88	P3	TWD	17	DBH	TEC	TEH					27		HOT	600UL
55	91	0.32	50	P3	TWD	14	DBC	TEC	TEH					30		HOT	600UL
55	165	0.45	77	P2	TWD	20	VH3	TEC	TEH					27		HOT	600UL
56	8	0.45	51	P2	TWD	20	VH3	TEC	TEH					44		HOT	600UL
56	28	0.59	115	P2	TWD	20	VH3	TEC	TEH					29		HOT	600UL
56	34	0.30	14	P2	TWD	13	VC3	TEC	TEH					23		HOT	600UL
		0.37	21	P2	TWD	16	VH3	TEC	TEH					23		HOT	600UL
		0.48	102	P2	TWD	19	VH3	TEC	TEH					23		HOT	600UL
56	74	0.30	100	P1	SCI	TSH	+0.09	TSH	TSH	0.93				139		HOT	580PP
56	84	0.63	112	P3	TWD	23	DBH	STH	TEC					4		COLD	600UL
		0.85	111	P3	TWD	28	DBC	STH	TEC					4		COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
		0.37	153	P3	TWD	15	DBC	+1.24	STH	TEC				4	COLD	600UL
56	92	0.36	123	P3	TWD	22	DBC	+1.76	TEC	TEH				31	HOT	600UL
		0.14	154	P3	TWD	10	DBC	-1.86	TEC	TEH				31	HOT	600UL
56	146	0.61	127	P2	TWD	25	VH3	-0.76	TEC	TEH				19	HOT	600UL
56	150	0.40	62	P2	TWD	19	VH3	-0.85	TEC	TEH				25	HOT	600UL
56	158	0.44	37	P2	TWD	20	VH3	-0.76	TEC	TEH				25	HOT	600UL
57	69	0.39	27	P3	TWD	13	DBH	+1.98	STH	TEC				55	COLD	600UL
57	79	0.62	101	P3	TWD	23	DBC	-1.76	TEC	TEH				27	HOT	600UL
		0.44	45	P3	TWD	18	DBC	+1.74	TEC	TEH				27	HOT	600UL
57	81	0.59	125	P3	TWD	22	DBC	-1.62	STH	TEC				4	COLD	600UL
57	121	0.92	19	2	SAI		TSH	-3.18	TSH	TSH	0.15			66	HOT	580PP
58	82	0.62	128	P3	TWD	24	DBH	+1.50	TEC	TEH				28	HOT	600UL
58	92	0.33	67	P3	TWD	15	DBH	+1.34	TEC	TEH				30	HOT	600UL
58	94	0.33	41	P3	TWD	21	DBC	-1.62	TEC	TEH				31	HOT	600UL
58	96	0.21	39	P3	TWD	11	DBH	-1.83	TEC	TEH				31	HOT	600UL
58	146	0.58	81	P2	TWD	23	VH3	-0.97	TEC	TEH				20	HOT	600UL
59	31	0.29	52	P2	TWD	12	VH3	-0.97	TEC	TEH				29	HOT	600UL
59	77	0.26	103	P1	SCI		TSH	+0.11	TSH	TSH	0.53			74	HOT	580PP
59	89	0.53	106	P3	TWD	20	DBH	-1.60	STH	TEC				4	COLD	600UL
59	95	0.17	116	P3	TWD	9	DBC	+0.75	TEC	TEH				30	HOT	600UL
		0.28	126	P3	TWD	14	DBH	-2.04	TEC	TEH				30	HOT	600UL
59	103	0.25	116	2	SAI		01H	+5.02	01H	01H	0.58			184	HOT	580PP
59	147	0.34	101	P2	TWD	17	VH3	-0.85	TEC	TEH				19	HOT	600UL
		0.56	100	P2	TWD	24	VH3	+0.79	TEC	TEH				19	HOT	600UL
59	157	0.25	148	P2	TWD	12	VH3	+0.81	TEC	TEH				26	HOT	600UL
		0.22	131	P2	TWD	11	VH3	-0.95	TEC	TEH				26	HOT	600UL
59	159	0.25	120	P2	TWD	13	VH3	+0.70	TEC	TEH				25	HOT	600UL
		0.36	56	P2	TWD	17	VH3	-1.01	TEC	TEH				25	HOT	600UL
60	28	0.38	130	P2	TWD	14	VH3	-0.97	TEC	TEH				29	HOT	600UL
60	30	0.49	104	P2	TWD	18	VH3	-0.89	TEC	TEH				29	HOT	600UL
60	82	0.40	13	2	SAI		TSH	-0.56	TSH	TSH	0.15			76	HOT	580PP
60	88	0.46	142	P3	TWD	19	DBH	+1.73	TEC	TEH				30	HOT	600UL
60	94	0.39	144	P3	TWD	17	DBC	-1.74	TEC	TEH				30	HOT	600UL
		0.47	155	P3	TWD	21	DBH	+1.75	TEC	TEH				30	HOT	600UL
60	146	0.49	101	P2	TWD	22	VH3	-0.83	TEC	TEH				19	HOT	600UL
61	35	0.22	58	P2	TWD	10	VC3	+0.78	TEC	TEH				23	HOT	600UL
61	89	0.36	44	P3	TWD	16	DBC	-1.68	TEC	TEH				30	HOT	600UL
61	99	0.34	118	P1	SCI		TSH	+0.07	TSH	TSH	0.81			75	HOT	580PP
61	103	0.42	15	P3	TWD	19	DBH	+1.57	TEH	TEC				29	COLD	600UL
62	84	0.53	111	P3	TWD	21	DBC	-1.81	TEC	TEH				27	HOT	600UL
		0.72	100	P3	TWD	26	DBH	-2.16	TEC	TEH				27	HOT	600UL
63	19	0.42	125	P2	TWD	18	VH3	-0.95	TEC	TEH				40	HOT	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
63	87	0.69	107	P3	TWD	24	DBH	-1.65	STH	TEC				4	COLD	600UL
		0.40	108	P3	TWD	17	DBC	-1.19	STH	TEC				4	COLD	600UL
63	99	0.19	56	P3	TWD	10	DBC	-1.83	TEC	TEH				34	HOT	600UL
63	145	0.37	108	P2	TWD	18	VH3	+0.87	TEC	TEH				19	HOT	600UL
64	10	0.46	116	P2	TWD	19	03C	-0.97	TEC	TEH				40	HOT	600UL
		0.09	36	P3	TWD	4	DBH	+1.36	TEC	TEH				40	HOT	600UL
64	12	0.50	97	P2	TWD	19	VH3	+0.73	TEC	TEH				41	HOT	600UL
64	62	0.22	21	P1	SCI		TSH	-0.12	TSH	TSH	0.16			139	HOT	580PP
64	82	0.58	99	P3	TWD	22	DBC	+1.50	TEC	TEH				27	HOT	600UL
64	84	0.44	89	P3	TWD	19	DBH	+1.50	TEC	TEH				28	HOT	600UL
64	86	0.35	89	P3	TWD	15	DBH	-1.81	STH	TEC				4	COLD	600UL
64	92	0.24	59	P3	TWD	11	DBC	-1.25	STH	TEC				4	COLD	600UL
		0.19	134	P3	TWD	8	DBH	-1.75	STH	TEC				4	COLD	600UL
64	94	0.24	37	P3	TWD	13	DBC	-1.89	TEC	TEH				31	HOT	600UL
64	124	0.60	13	2	SAI		TSH	-11.64	TSH	TSH	0.17			55	HOT	580PP
64	150	0.31	136	P2	TWD	15	VH3	-0.87	TEC	TEH				25	HOT	600UL
65	155	0.39	78	P2	TWD	18	VH3	-0.72	TEC	TEH				25	HOT	600UL
65	157	0.17	107	2	SAI		02H	-0.16	02H	02H	0.14			184	HOT	580PP
		0.28	101	2	SAI		02H	+0.22	02H	02H	0.16			184	HOT	580PP
66	80	0.28	49	P3	TWD	12	DBC	+1.68	TEC	TEH				27	HOT	600UL
66	84	0.32	23	P3	TWD	14	DBH	-2.08	TEC	TEH				27	HOT	600UL
66	88	0.88	18	P3	TWD	30	DBC	+2.01	TEC	TEH				30	HOT	600UL
66	90	0.30	49	P3	TWD	16	DBC	-1.74	TEC	TEH				31	HOT	600UL
66	94	0.19	145	P3	TWD	10	DBC	-1.40	TEC	TEH				30	HOT	600UL
		0.38	83	P3	TWD	18	DBC	+2.03	TEC	TEH				30	HOT	600UL
66	138	0.32	133	P2	TWD	15	08C	-0.86	TEC	TEH				16	HOT	600UL
66	156	0.44	119	P2	TWD	19	VH3	-1.03	TEC	TEH				26	HOT	600UL
67	83	0.54	92	P3	TWD	21	DBC	-1.70	TEC	TEH				27	HOT	600UL
		0.27	73	P3	TWD	12	DBH	-1.76	TEC	TEH				27	HOT	600UL
67	87	0.32	166	P3	TWD	16	DBH	+1.60	TEC	TEH				31	HOT	600UL
68	40	0.41	110	P2	TWD	17	VC3	+0.91	TEC	TEH				23	HOT	600UL
		0.20	52	P3	TWD	8	DBH	-2.01	TEC	TEH				23	HOT	600UL
68	84	0.23	62	P2	TWD	10	VSM	-0.81	STH	TEC				4	COLD	600UL
		0.23	78	P3	TWD	10	DBH	+2.05	STH	TEC				4	COLD	600UL
		0.19	90	P3	TWD	9	DBC	-1.57	STH	TEC				4	COLD	600UL
68	90	0.25	29	P3	TWD	12	DBH	-1.53	TEC	TEH				30	HOT	600UL
		0.51	86	P3	TWD	21	DBC	-1.73	TEC	TEH				30	HOT	600UL
68	108	0.82	19	2	SAI		TSH	-14.24	TSH	TSH	0.12			59	HOT	580PP
69	67	0.18	107	2	SAI		TSH	+0.07	TSH	TSH	0.15			139	HOT	580PP
69	163	0.31	126	P2	TWD	15	02C	+0.91	TEC	TEH				27	HOT	600UL
70	24	0.25	21	P3	TWD	9	DBC	-1.43	TEC	TEH				38	HOT	600UL
		0.44	6	P3	TWD	16	DBC	+2.05	TEC	TEH				38	HOT	600UL
70	38	0.31	122	P2	TWD	14	VC3	+0.81	TEH	TEC				45	COLD	600UL
70	52	0.51	29	P3	TWD	20	DBC	+1.67	TEH	TEC				28	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
70	90	0.32	147	P3	TWD	17	DBH	-1.80	TEC	TEH				31	HOT	600UL
70	94	0.37	115	P3	TWD	17	DBC	-1.85	TEC	TEH				30	HOT	600UL
70	112	0.42	141	P2	TWD	17	03C	-0.09	TEH	TEC				33	COLD	600UL
70	144	0.47	109	P2	TWD	20	VC3	-0.81	TEC	TEH				20	HOT	600UL
		0.32	32	P2	TWD	15	VSM	-0.85	TEC	TEH				20	HOT	600UL
70	156	0.43	121	P2	TWD	19	VH3	+0.93	TEC	TEH				26	HOT	600UL
		0.39	130	P2	TWD	17	VH3	-0.95	TEC	TEH				26	HOT	600UL
70	158	0.43	102	P2	TWD	19	VH3	+0.72	TEC	TEH				26	HOT	600UL
		0.34	146	P2	TWD	16	VH3	-1.01	TEC	TEH				26	HOT	600UL
71	79	0.48	91	P3	TWD	20	DBC	-1.75	TEC	TEH				28	HOT	600UL
71	91	0.33	139	P3	TWD	17	DBC	-2.20	TEC	TEH				31	HOT	600UL
71	93	0.21	96	P3	TWD	11	DBC	-2.02	TEC	TEH				31	HOT	600UL
71	143	0.46	138	P2	TWD	20	VH3	-0.85	TEC	TEH				20	HOT	600UL
		0.26	135	P2	TWD	13	04C	-0.12	TEC	TEH				20	HOT	600UL
		0.28	141	P2	TWD	13	VC3	-0.89	TEC	TEH				20	HOT	600UL
		0.43	93	P2	TWD	19	VSM	+0.50	TEC	TEH				20	HOT	600UL
71	147	0.64	105	P2	TWD	26	VH3	-0.94	TEC	TEH				19	HOT	600UL
		0.35	107	P2	TWD	17	VC3	-0.89	TEC	TEH				19	HOT	600UL
71	155	0.63	130	P2	TWD	24	VH3	+0.91	TEC	TEH				26	HOT	600UL
		0.51	110	P2	TWD	21	VH3	-1.16	TEC	TEH				26	HOT	600UL
71	157	0.46	93	P2	TWD	20	VH3	+0.87	TEC	TEH				26	HOT	600UL
72	26	0.51	112	P2	TWD	18	VC3	+0.88	TEC	TEH				29	HOT	600UL
72	28	0.19	159	P3	TWD	8	DBC	+0.66	TEC	TEH				29	HOT	600UL
72	36	0.28	30	P3	TWD	11	DBC	+1.99	TEC	TEH				23	HOT	600UL
72	38	0.44	138	P3	TWD	20	DBC	+1.84	TEH	TEC				44	COLD	600UL
72	78	0.20	150	P2	TWD	10	VC3	+0.89	TEC	TEH				27	HOT	600UL
		0.18	148	P2	TWD	9	VH3	+0.86	TEC	TEH				27	HOT	600UL
		0.45	72	P2	TWD	20	VH3	-0.86	TEC	TEH				27	HOT	600UL
72	80	0.28	140	P2	TWD	13	VC3	+0.86	TEC	TEH				27	HOT	600UL
72	84	0.35	133	P3	TWD	15	DBC	-1.83	TEC	TEH				27	HOT	600UL
		0.28	127	P2	TWD	13	VH3	-0.84	TEC	TEH				27	HOT	600UL
72	90	0.31	62	P3	TWD	14	DBC	-1.47	TEC	TEH				30	HOT	600UL
72	114	0.26	126	P2	TWD	14	VC3	+0.87	TEH	TEC				31	COLD	600UL
72	126	0.36	134	P2	TWD	19	VH3	-0.15	TEH	TEC				34	COLD	600UL
		0.40	140	P2	TWD	20	VSM	-0.80	TEH	TEC				34	COLD	600UL
72	154	0.35	88	P2	TWD	17	VH3	+0.04	TEC	TEH				25	HOT	600UL
72	156	0.24	137	P2	TWD	12	VC3	+0.02	TEC	TEH				25	HOT	600UL
73	13	0.38	44	P2	TWD	17	VH3	+0.82	TEC	TEH				40	HOT	600UL
73	51	0.27	134	P3	TWD	11	DBH	-1.44	TEH	TEC				28	COLD	600UL
73	91	0.55	17	P3	TWD	23	DBC	+1.93	TEC	TEH				30	HOT	600UL
74	18	0.19	130	P3	TWD	8	DBC	+1.50	TEC	TEH				40	HOT	600UL
74	44	0.33	121	P2	TWD	13	VSM	+0.61	TEC	TEH				22	HOT	600UL
		0.69	128	P2	TWD	23	VH3	-0.85	TEC	TEH				22	HOT	600UL
74	54	0.10	151	P3	TWD	6	DBH	-1.25	TEH	TEC				27	COLD	600UL



MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.gry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
74	56	0.30	76	P3	TWD	13	DBH	+0.69	TEH	TEC					28		COLD	600UL
74	90	0.41	96	P3	TWD	20	DBC	-1.83	TEC	TEH					31		HOT	600UL
74	94	0.20	79	P3	TWD	14	DBH	-1.88	TEC	TEH					31		HOT	600UL
		0.38	103	P3	TWD	19	DBH	+2.00	TEC	TEH					31		HOT	600UL
74	132	0.27	105	P2	TWD	13	VC3	-0.90	TEC	TEH					16		HOT	600UL
74	140	0.41	140	P3	TWD	16	DBH	+2.22	TEC	TEH					20		HOT	600UL
74	148	0.40	160	P2	TWD	19	VH3	-0.92	TEC	TEH					19		HOT	600UL
		0.35	98	P2	TWD	17	VSM	-0.78	TEC	TEH					19		HOT	600UL
74	156	0.53	47	P2	TWD	22	VC3	-0.95	TEC	TEH					26		HOT	600UL
		0.38	63	P2	TWD	17	VSM	-0.95	TEC	TEH					26		HOT	600UL
		0.63	106	P2	TWD	25	VH3	-1.05	TEC	TEH					26		HOT	600UL
75	23	0.24	24	P3	TWD	11	DBC	+1.69	TEC	TEH					39		HOT	600UL
75	51	0.17	69	P3	TWD	10	DBH	-1.82	TEH	TEC					27		COLD	600UL
75	71	0.37	106	P1	SCI		TSH	+0.10	TSH	TSH	0.47				136		HOT	580PP
75	83	0.43	65	P3	TWD	18	DBC	-1.76	TEC	TEH					27		HOT	600UL
75	87	0.53	105	P3	TWD	24	DBC	-2.21	TEC	TEH					31		HOT	600UL
75	97	0.25	91	P2	TWD	13	VC3	-0.92	TEC	TEH					30		HOT	600UL
		0.22	69	P2	TWD	12	VC3	+0.85	TEC	TEH					30		HOT	600UL
75	103	0.17	153	P2	TWD	9	VC3	+0.87	TEH	TEC					29		COLD	600UL
75	105	0.45	126	P2	TWD	18	VSM	-0.13	STH	TEC					48		COLD	600UL
		0.54	124	P2	TWD	20	VH3	-0.67	STH	TEC					48		COLD	600UL
76	42	0.30	124	P3	TWD	12	DBC	-1.34	TEC	TEH					21		HOT	600UL
76	56	0.56	17	P3	TWD	24	DBH	+1.20	TEH	TEC					27		COLD	600UL
76	72	0.37	100	P1	SCI		TSH	+0.07	TSH	TSH	0.54				136		HOT	580PP
76	78	0.52	115	P2	TWD	21	VC3	+0.87	TEC	TEH					27		HOT	600UL
		0.28	153	P2	TWD	14	VC3	-0.83	TEC	TEH					27		HOT	600UL
		0.23	97	P2	TWD	11	VH3	+0.79	TEC	TEH					27		HOT	600UL
76	90	0.36	93	P3	TWD	16	DBC	-1.47	TEC	TEH					30		HOT	600UL
76	114	0.35	52	P2	TWD	18	VH3	-0.75	TEH	TEC					31		COLD	600UL
76	138	0.19	12	P3	TWD	9	DBC	+1.91	TEC	TEH					15		HOT	600UL
76	142	0.22	111	P2	TWD	12	08C	-0.52	TEC	TEH					19		HOT	600UL
77	27	0.28	65	P3	TWD	10	DBC	-1.69	TEC	TEH					29		HOT	600UL
77	43	0.26	129	P2	TWD	11	VH3	+0.69	TEC	TEH					22		HOT	600UL
77	113	0.25	100	P2	TWD	11	VH3	-0.98	TEH	TEC					33		COLD	600UL
77	137	0.67	93	P2	TWD	26	VSM	-0.89	TEC	TEH					15		HOT	600UL
77	139	0.67	124	P2	TWD	26	VC3	+0.86	TEC	TEH					20		HOT	600UL
		0.34	40	P2	TWD	16	VSM	-0.86	TEC	TEH					20		HOT	600UL
		0.44	122	P2	TWD	19	VH3	-0.95	TEC	TEH					20		HOT	600UL
		0.25	32	P2	TWD	13	VC3	-0.82	TEC	TEH					20		HOT	600UL
78	26	0.35	119	P2	TWD	14	07C	-0.15	TEC	TEH					29		HOT	600UL
78	28	0.14	64	P3	TWD	6	DBC	-1.54	TEC	TEH					29		HOT	600UL
78	44	0.47	125	P2	TWD	18	VSM	-0.81	TEC	TEH					22		HOT	600UL
78	58	0.35	22	P3	TWD	15	DBH	+2.00	TEH	TEC					28		COLD	600UL
78	130	0.35	118	P2	TWD	16	VSM	-0.82	TEC	TEH					16		HOT	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
78	136	0.32	128	P2	TWD	14	VC3	-1.07	STH	TEC				48		COLD	600UL
78	150	0.46	44	P2	TWD	20	VH3	-0.75	TEC	TEH				20		HOT	600UL
78	160	0.32	124	P3	TWD	15	DBC	-1.88	TEC	TEH				26		HOT	600UL
79	43	0.31	44	P2	TWD	14	VH3	-0.78	TEC	TEH				21		HOT	600UL
79	77	0.16	122	2	SAI		TSH	+2.78	TSH	TSH	0.20			74		HOT	580PP
79	79	0.28	149	P2	TWD	14	VH3	-0.81	TEC	TEH				27		HOT	600UL
79	147	0.26	127	P2	TWD	14	VH3	+0.80	TEC	TEH				19		HOT	600UL
80	24	0.26	118	2	SAI		05H	-0.09	05H	05H	0.42			159		HOT	580PP
80	106	0.25	53	P2	TWD	13	VH3	+0.90	TEH	TEC				29		COLD	600UL
80	152	0.61	82	P2	TWD	25	VC3	+0.85	TEC	TEH				25		HOT	600UL
		0.36	130	P2	TWD	17	VSM	+0.98	TEC	TEH				25		HOT	600UL
		0.55	125	P2	TWD	23	VSM	-0.91	TEC	TEH				25		HOT	600UL
		0.79	87	P2	TWD	29	VC3	-0.74	TEC	TEH				25		HOT	600UL
80	160	0.58	130	P3	TWD	24	DBC	-1.57	TEC	TEH				25		HOT	600UL
81	43	1.03	84	P2	TWD	32	VSM	-0.97	TEC	TEH				17		HOT	600UL
		0.81	124	P2	TWD	28	VC3	+0.17	TEC	TEH				17		HOT	600UL
81	55	0.26	42	P2	TWD	14	VH3	-0.76	TEH	TEC				7		COLD	600UL
81	75	0.27	91	P2	TWD	13	VC3	+0.83	TEH	TEC				5		COLD	600UL
81	79	0.68	93	P2	TWD	25	VH3	-0.84	TEH	TEC				19		COLD	600UL
81	105	0.38	146	P2	TWD	17	VH3	+0.91	TEH	TEC				37		COLD	600UL
		0.25	106	P2	TWD	12	VSM	+0.94	TEH	TEC				37		COLD	600UL
81	135	0.22	152	P2	TWD	12	VH3	-0.80	TEC	TEH				5		HOT	600UL
		0.39	125	P2	TWD	18	VH3	+0.80	TEC	TEH				5		HOT	600UL
81	145	0.65	20	2	SAI		TSH	-5.34	TSH	TSH	0.17			133		HOT	580PP
81	159	0.23	80	P2	TWD	11	02H	-0.33	TEC	TEH				15		HOT	600UL
		0.33	102	P2	TWD	16	VH3	-0.83	TEC	TEH				15		HOT	600UL
82	28	0.31	103	P2	TWD	14	VH3	-0.28	TEC	TEH				12		HOT	600UL
		0.38	120	P2	TWD	17	VH3	-0.79	TEC	TEH				12		HOT	600UL
82	44	0.45	103	P2	TWD	19	VH3	+0.83	TEC	TEH				21		HOT	600UL
82	68	0.64	100	P2	TWD	26	VH3	-0.84	TEH	TEC				12		COLD	600UL
		0.29	146	P2	TWD	14	VH3	+0.80	TEH	TEC				12		COLD	600UL
82	148	0.60	120	P2	TWD	25	VH3	-0.85	TEC	TEH				10		HOT	600UL
84	40	0.61	129	P2	TWD	22	VH2	-1.14	TEC	TEH				18		HOT	600UL
84	54	0.18	92	2	SAI		VC3	+0.17	VC3	VC3	0.33			116		COLD	560P2
84	88	0.35	110	P2	TWD	15	VH2	+0.87	TEH	TEC				15		COLD	600UL
86	130	0.33	115	P2	TWD	15	VH2	-0.83	TEC	TEH				5		HOT	600UL
87	25	0.39	24	2	SAI		04H	+0.01	04H	04H	0.25			159		HOT	580PP
		1.67	18	2	SAI		04H	+0.30	04H	04H	0.22			159		HOT	580PP
		1.47	16	2	SAI		04H	+0.68	04H	04H	0.17			159		HOT	580PP
87	49	0.40	102	P2	TWD	16	VH2	+0.91	TEH	TEC				6		COLD	600UL
87	121	0.39	128	P2	TWD	19	VH2	-0.69	TEH	TEC				42		COLD	600UL
88	32	0.41	117	2	SAI		06H	-0.33	06H	06H	0.39			162		HOT	580PP
		0.21	79	2	SAI		06H	+0.63	06H	06H	0.60			162		HOT	580PP
88	40	0.53	134	P2	TWD	20	VH2	-0.80	TEC	TEH				18		HOT	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
		0.27	107	P2	TWD	12	VSM	-0.80	TEC	TEH				18		HOT	600UL
88	44	0.68	134	P2	TWD	25	VH2	-0.82	TEC	TEH				21		HOT	600UL
88	50	0.39	145	P2	TWD	15	VH2	-0.84	TEH	TEC				6		COLD	600UL
88	60	0.41	128	P2	TWD	16	VH2	-0.78	TEH	TEC				10		COLD	600UL
88	88	0.20	118	P2	TWD	10	VH2	+0.90	TEH	TEC				15		COLD	600UL
88	140	0.46	109	P2	TWD	19	VH2	+1.07	TEC	TEH				11		HOT	600UL
88	152	0.38	135	P2	TWD	17	VH2	-0.83	TEC	TEH				15		HOT	600UL
90	20	0.32	142	P2	TWD	14	VH2	+1.02	TEC	TEH				8		HOT	600UL
90	38	0.54	110	P2	TWD	22	VH2	-1.10	TEC	TEH				12		HOT	600UL
90	52	0.62	120	P2	TWD	22	VH2	-0.84	TEH	TEC				6		COLD	600UL
90	56	0.28	136	P2	TWD	13	VC2	-0.68	TEH	TEC				7		COLD	600UL
		0.14	110	2	SAI		VC2	-0.68	VC2	VC2	0.21			116		COLD	560P2
91	35	1.53	19	2	SAI		05H	+0.18	05H	05H	0.29			162		HOT	580PP
		0.20	78	2	SAI		05H	+1.04	05H	05H	0.22			162		HOT	580PP
91	43	0.52	91	P2	TWD	21	06C	-0.92	TEC	TEH				17		HOT	600UL
		0.13	132	2	SAI		TSH	+0.28	TSH	TSH	0.20			113		HOT	580PP
92	44	0.18	63	2	SAI		TSH	+0.66	TSH	TSH	0.30			111		HOT	580PP
		0.09	101	2	SAI		TSH	+1.52	TSH	TSH	0.20			111		HOT	580PP
93	33	0.50	64	P2	TWD	20	VH2	+1.08	TEC	TEH				12		HOT	600UL
93	139	0.39	92	P2	TWD	18	09H	-0.92	TEC	TEH				10		HOT	600UL
94	22	0.26	94	P2	TWD	12	02C	+1.05	TEC	TEH				8		HOT	600UL
		0.52	140	P2	TWD	20	VH2	+0.91	TEC	TEH				8		HOT	600UL
94	26	0.55	121	P2	TWD	21	VH2	+1.00	TEC	TEH				8		HOT	600UL
94	30	0.28	63	P3	TWD	12	DBH	+1.87	TEC	TEH				12		HOT	600UL
		0.29	109	2	SAI		DBH	+1.35	DBH	DBH	0.42			199		HOT	560P2
94	50	0.22	120	P2	TWD	12	05C	-0.11	TEH	TEC				5		COLD	600UL
94	146	0.25	118	P2	TWD	13	VH3	-0.88	TEC	TEH				10		HOT	600UL
94	154	0.45	36	P2	TWD	20	VH2	-1.24	TEC	TEH				16		HOT	600UL
95	35	0.66	64	P2	TWD	25	VH2	+0.97	TEC	TEH				12		HOT	600UL
96	40	0.20	30	P3	TWD	10	DBH	-1.98	TEC	TEH				18		HOT	600UL
96	48	0.49	118	P2	TWD	19	VH2	-0.89	TEH	TEC				6		COLD	600UL
96	52	0.40	133	P2	TWD	16	VH2	-0.80	TEH	TEC				6		COLD	600UL
96	54	0.15	18	P3	TWD	8	DBH	+1.09	TEH	TEC				7		COLD	600UL
96	86	1.25	15	2	SAI		TSH	-11.91	TSH	TSH	0.20			161		HOT	580PP
96	152	0.38	97	P2	TWD	17	VH2	+0.94	TEC	TEH				15		HOT	600UL
97	37	0.56	101	P2	TWD	22	VC3	+0.82	TEC	TEH				12		HOT	600UL
97	147	0.52	50	P2	TWD	23	VH2	+0.86	TEC	TEH				10		HOT	600UL
98	146	0.75	106	P2	TWD	28	VH2	+0.89	TEC	TEH				10		HOT	600UL
100	140	0.86	123	P2	TWD	28	VH2	+0.76	TEC	TEH				11		HOT	600UL
		0.71	108	P2	TWD	25	VH2	-0.82	TEC	TEH				11		HOT	600UL
101	25	0.34	115	P2	TWD	15	08H	+0.60	TEC	TEH				8		HOT	600UL
101	33	0.66	85	P2	TWD	25	VH2	-0.77	TEC	TEH				12		HOT	600UL

MAI,MCI,MMI,MVI,SAI,SCI,SVI,0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
101	39	0.34	61	P2	TWD	15	VH2	+0.78	TEC	TEH				12	HOT	600UL
101	143	0.21	102	P3	TWD	11	DBH	+1.61	TEC	TEH				10	HOT	600UL
101	147	0.33	123	P2	TWD	16	VH2	-0.89	TEC	TEH				10	HOT	600UL
102	56	0.29	130	P2	TWD	15	VH2	-0.82	TEH	TEC				7	COLD	600UL
102	58	0.38	84	P2	TWD	19	VH3	+0.82	TEH	TEC				9	COLD	600UL
		0.29	120	P2	TWD	15	VC3	-0.71	TEH	TEC				9	COLD	600UL
		0.25	121	P2	TWD	13	VC2	-0.82	TEH	TEC				9	COLD	600UL
		0.23	58	P2	TWD	12	VC3	+0.88	TEH	TEC				9	COLD	600UL
102	74	0.36	10	P1	SCI		TSH	+0.00	TSH	TSH	0.13			143	HOT	580PP
102	130	0.24	117	P1	SCI		TSH	+0.11	TSH	TSH	0.27			130	HOT	580PP
103	53	0.26	130	2	SAI		04H	+0.67	04H	04H	0.21			178	HOT	580PP
103	137	0.44	81	P2	TWD	20	VH3	-0.90	TEC	TEH				6	HOT	600UL
104	44	0.41	128	P2	TWD	18	VH2	-0.71	TEC	TEH				21	HOT	600UL
104	94	0.36	138	P2	TWD	16	VSM	-0.83	TEH	TEC				15	COLD	600UL
105	141	0.18	77	P3	TWD	9	DBH	+1.63	TEC	TEH				10	HOT	600UL
105	143	0.20	77	P2	TWD	11	VH2	+1.12	TEC	TEH				10	HOT	600UL
105	147	0.26	88	P2	TWD	13	VH2	+1.08	TEC	TEH				10	HOT	600UL
106	50	0.30	111	P2	TWD	16	VH2	-0.88	TEH	TEC				5	COLD	600UL
106	62	0.28	106	P2	TWD	15	VC2	-0.85	TEH	TEC				9	COLD	600UL
107	33	0.33	70	P3	TWD	15	DBC	+1.61	TEC	TEH				13	HOT	600UL
107	35	0.48	103	P3	TWD	18	DBC	+1.32	TEC	TEH				12	HOT	600UL
107	95	0.38	74	P2	TWD	18	VSM	+0.78	TEH	TEC				14	COLD	600UL
107	103	0.49	87	P2	TWD	20	VH2	-0.89	TEH	TEC				36	COLD	600UL
108	42	0.36	94	P3	TWD	14	DBH	+2.10	TEC	TEH				17	HOT	600UL
		0.43	125	P3	TWD	16	DBH	-2.10	TEC	TEH				17	HOT	600UL
108	48	0.43	119	P2	TWD	17	VH2	-0.79	TEH	TEC				6	COLD	600UL
109	47	0.32	144	P2	TWD	14	VSM	-1.18	TEH	TEC				6	COLD	600UL
		0.26	87	P2	TWD	12	VC3	-0.85	TEH	TEC				6	COLD	600UL
110	34	0.37	121	P2	TWD	16	VH2	+0.85	TEC	TEH				12	HOT	600UL
111	43	0.44	115	P2	TWD	17	VH3	-1.00	TEC	TEH				22	HOT	600UL
111	87	0.35	101	P2	TWD	16	VC2	+0.86	TEH	TEC				14	COLD	600UL
111	89	0.37	34	P2	TWD	17	01H	+0.91	TEH	TEC				14	COLD	600UL
		0.31	127	P1	SCI		TSH	-0.03	TSH	TSH	0.76			161	HOT	580PP
111	99	0.35	44	P2	TWD	16	09C	+0.51	TEH	TEC				14	COLD	600UL
112	144	0.53	50	P3	TWD	20	DBC	+1.74	TEC	TEH				11	HOT	600UL
113	37	0.63	48	P2	TWD	24	VH2	-0.98	TEC	TEH				12	HOT	600UL
113	43	0.47	107	P2	TWD	19	VH2	-0.86	TEC	TEH				21	HOT	600UL
113	53	0.23	86	P2	TWD	11	VC2	-0.52	TEH	TEC				8	COLD	600UL
113	77	0.26	127	P2	TWD	12	VC3	+0.92	TEH	TEC				19	COLD	600UL
113	105	0.41	52	P2	TWD	17	VH2	+0.89	TEH	TEC				39	COLD	600UL
		0.38	96	P2	TWD	16	VH3	+1.00	TEH	TEC				39	COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
113	121	0.41	140	P2	TWD	17	VSM	+0.86	TEH	TEC				39		COLD	600UL
114	36	0.18	18	P3	TWD	7	DBC	-1.36	TEC	TEH				12		HOT	600UL
114	40	0.52	61	P3	TWD	21	DBH	+1.38	TEC	TEH				18		HOT	600UL
114	48	0.39	45	P2	TWD	18	03H	+1.06	TEH	TEC				5		COLD	600UL
114	62	0.24	134	P3	TWD	13	DBH	-1.47	TEH	TEC				12		COLD	600UL
114	136	0.37	132	P2	TWD	17	VC3	+0.79	TEC	TEH				6		HOT	600UL
115	39	0.89	133	P2	TWD	29	VH1	+0.84	TEC	TEH				17		HOT	600UL
115	43	0.62	153	P2	TWD	22	VH1	-0.83	TEC	TEH				22		HOT	600UL
		0.66	142	P2	TWD	23	VH1	+0.81	TEC	TEH				22		HOT	600UL
115	47	0.36	98	P2	TWD	15	VH1	+0.87	TEH	TEC				6		COLD	600UL
115	53	0.39	132	P2	TWD	17	06H	+0.82	TEH	TEC				7		COLD	600UL
115	107	0.27	144	P3	TWD	12	DBH	-1.56	TEH	TEC				41		COLD	600UL
116	46	0.22	119	2	SAI		06H	+0.32	06H	06H	0.43	LAR		162		HOT	580PP
116	58	0.69	110	P2	TWD	23	VH1	-1.02	TEH	TEC				10		COLD	600UL
116	102	0.36	17	P2	TWD	18	VH1	-0.92	TEH	TEC				40		COLD	600UL
116	112	0.50	68	P2	TWD	22	VH1	-0.92	TEH	TEC				40		COLD	600UL
116	116	0.42	15	P2	TWD	19	VH1	-0.94	TEH	TEC				40		COLD	600UL
116	122	0.77	37	P2	TWD	26	VH1	-1.01	TEH	TEC				39		COLD	600UL
116	128	0.51	103	P2	TWD	20	02H	+0.93	TEH	TEC				39		COLD	600UL
116	138	0.66	145	P2	TWD	26	VH2	-1.17	TEC	TEH				6		HOT	600UL
117	59	0.44	31	P3	TWD	18	DBH	-1.07	TEH	TEC				10		COLD	600UL
117	75	0.18	140	P3	TWD	9	DBH	-1.31	TEH	TEC				6		COLD	600UL
117	129	0.41	60	P2	TWD	17	05H	-0.18	TEH	TEC				38		COLD	600UL
118	50	0.54	133	P2	TWD	20	VH1	-0.87	TEH	TEC				6		COLD	600UL
118	52	0.56	138	P2	TWD	20	VH1	-0.80	TEH	TEC				6		COLD	600UL
118	70	0.58	97	P2	TWD	23	VH1	-0.75	TEH	TEC				13		COLD	600UL
118	106	0.38	110	P2	TWD	16	VH1	-0.63	TEH	TEC				41		COLD	600UL
118	114	0.49	137	P2	TWD	22	VH1	-0.79	TEH	TEC				40		COLD	600UL
		3.57	33	2	SAI		TEH	+3.24	TEH	TEH	0.47			174		HOT	580PP
118	128	0.27	102	P2	TWD	12	05H	+0.69	TEH	TEC				39		COLD	600UL
119	79	0.55	117	P2	TWD	22	VH3	+1.01	TEH	TEC				19		COLD	600UL
119	119	0.45	36	P2	TWD	18	10H	-1.06	TEH	TEC		LOCOK		41		COLD	600UL
119	121	0.45	92	P2	TWD	19	10H	-1.09	TEH	TEC		LOCOK		38		COLD	600UL
120	38	0.34	36	P2	TWD	14	10H	+1.30	TEC	TEH		LOCOK		14		HOT	600UL
120	64	0.54	139	P2	TWD	20	VH1	-0.76	TEH	TEC				10		COLD	600UL
120	72	0.38	132	P2	TWD	18	VH1	-0.84	TEH	TEC				12		COLD	600UL
		0.37	155	P2	TWD	17	10H	-1.23	TEH	TEC				12		COLD	600UL
120	74	0.96	124	P2	TWD	32	10H	-1.41	TEH	TEC		LOCOK		12		COLD	600UL
120	98	0.39	64	P2	TWD	16	VH1	-0.87	TEH	TEC				15		COLD	600UL
120	116	0.33	71	P2	TWD	17	VH1	-0.77	TEH	TEC				40		COLD	600UL

MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
121	39	0.31	75	P2	TWD	13	10H	-1.25	TEC	TEH				18	HOT	600UL
121	45	0.61	106	P2	TWD	21	VC2	-0.58	TEC	TEH				22	HOT	600UL
121	47	0.28	124	P2	TWD	15	10H	+0.40	TEH	TEC				5	COLD	600UL
121	57	0.40	85	P2	TWD	15	10C	-1.18	TEH	TEC				10	COLD	600UL
121	83	0.52	127	P2	TWD	21	VC3	-0.94	TEH	TEC				19	COLD	600UL
121	109	0.79	80	P2	TWD	27	10H	-1.51	TEH	TEC		LOCOK		43	COLD	600UL
122	52	0.43	88	P2	TWD	20	VH1	-0.91	TEH	TEC				5	COLD	600UL
122	88	0.29	98	P2	TWD	13	VH1	+0.81	TEH	TEC				15	COLD	600UL
		0.50	78	P2	TWD	20	VH1	-0.83	TEH	TEC				15	COLD	600UL
123	45	0.40	23	P3	TWD	15	DBH	+2.07	TEC	TEH				21	HOT	600UL
123	117	0.23	139	P3	TWD	10	DBH	-1.81	TEH	TEC				41	COLD	600UL
124	50	0.60	138	P2	TWD	22	VH1	-0.99	TEH	TEC				6	COLD	600UL
124	58	0.59	124	P2	TWD	21	VH1	-0.83	TEH	TEC				10	COLD	600UL
124	64	0.41	146	P2	TWD	16	VH1	-0.76	TEH	TEC				10	COLD	600UL
124	98	0.68	19	P3	TWD	23	DBH	+2.00	TEH	TEC				15	COLD	600UL
124	100	0.66	140	P2	TWD	24	VH1	-0.91	TEH	TEC				15	COLD	600UL
125	53	0.34	130	P2	TWD	15	VH1	-0.93	TEH	TEC				8	COLD	600UL
125	55	0.22	98	P3	TWD	9	DBH	+2.07	TEH	TEC				8	COLD	600UL
125	77	0.32	109	P2	TWD	14	VH1	+0.75	TEH	TEC				20	COLD	600UL
		0.23	60	P2	TWD	11	VH1	-0.96	TEH	TEC				20	COLD	600UL
125	97	0.27	113	P2	TWD	12	VH3	+0.87	TEH	TEC				15	COLD	600UL
125	111	0.23	170	P3	TWD	12	DBH	+1.81	TEH	TEC				40	COLD	600UL
125	119	0.28	77	P3	TWD	12	DBH	+1.59	TEH	TEC				41	COLD	600UL
126	48	0.51	126	P2	TWD	19	VH1	-1.20	TEH	TEC				6	COLD	600UL
126	52	0.11	132	2	SAI		06H	+20.18	06H	07H	0.45			191	HOT	580PP
		0.12	127	2	SAI		06H	+21.42	06H	07H	0.47			191	HOT	580PP
		0.24	102	2	SAI		06H	+22.68	06H	07H	0.91			191	HOT	580PP
		0.11	83	2	SAI		06H	+28.53	06H	07H	0.62			191	HOT	580PP
		0.33	126	P2	TWD	15	VH1	-1.09	TEH	TEC				5	COLD	600UL
126	56	0.56	128	P2	TWD	24	VH1	-1.03	TEH	TEC				42	COLD	600UL
126	102	0.23	26	P3	TWD	12	DBH	-1.66	TEH	TEC				42	COLD	600UL
126	108	0.24	127	P3	TWD	11	DBH	-1.55	TEH	TEC				43	COLD	600UL
126	120	0.42	72	P2	TWD	18	VH1	-1.03	TEH	TEC				38	COLD	600UL
126	122	0.57	124	P2	TWD	22	VH1	-1.16	TEH	TEC				39	COLD	600UL
127	111	0.25	147	P2	TWD	11	04H	-0.44	TEH	TEC				41	COLD	600UL
127	123	0.30	121	P2	TWD	14	09C	-1.24	TEH	TEC				38	COLD	600UL
128	56	0.19	167	P3	TWD	11	DBH	+1.99	TEH	TEC				7	COLD	600UL
		0.42	155	P2	TWD	20	VH1	-0.84	TEH	TEC				7	COLD	600UL
128	72	0.23	132	P2	TWD	12	10H	+0.86	TEH	TEC				12	COLD	600UL
		0.32	145	P2	TWD	16	10H	-0.98	TEH	TEC				12	COLD	600UL
128	92	0.44	61	P2	TWD	20	06H	+0.90	TEH	TEC				14	COLD	600UL
129	47	0.49	148	P2	TWD	19	10H	+0.76	TEH	TEC				6	COLD	600UL

MAI,MCI,MMI,MVI,SAI,SCI,SVI,0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
		0.37	44	P3	TWD 16	DBH	-1.53	TEH	TEC					6	COLD	600UL
		0.36	137	P3	TWD 15	DBH	+1.64	TEH	TEC					6	COLD	600UL
129	49	0.34	103	P2	TWD 14	VH1	-0.87	TEH	TEC					6	COLD	600UL
		0.35	96	P2	TWD 14	VH1	+0.91	TEH	TEC					6	COLD	600UL
129	73	0.23	99	P3	TWD 10	DBH	+2.02	TEH	TEC					13	COLD	600UL
129	89	0.14	57	P2	TWD 7	VH2	-0.89	TEH	TEC					15	COLD	600UL
		0.22	136	P2	TWD 11	VH2	+0.93	TEH	TEC					15	COLD	600UL
129	109	0.36	146	P2	TWD 16	10H	-0.99	TEH	TEC					43	COLD	600UL
130	48	0.37	85	P2	TWD 15	02C	-0.17	TEH	TEC					6	COLD	600UL
130	74	0.34	121	P2	TWD 15	10H	+0.83	TEH	TEC					13	COLD	600UL
130	78	0.18	53	P2	TWD 9	10H	-1.20	TEH	TEC					19	COLD	600UL
130	94	0.45	123	P2	TWD 18	VH1	-0.85	TEH	TEC					15	COLD	600UL
		0.39	106	P2	TWD 16	VH1	+0.83	TEH	TEC					15	COLD	600UL
132	56	0.47	102	P2	TWD 22	VH1	-0.96	TEH	TEC					21	COLD	600UL
132	74	0.25	77	P3	TWD 14	DBH	+1.72	TEH	TEC					21	COLD	600UL
132	106	0.60	126	P2	TWD 25	10H	-1.12	TEH	TEC					42	COLD	600UL
132	122	0.45	134	P2	TWD 21	VH1	-0.74	TEH	TEC					42	COLD	600UL
133	55	0.21	89	P2	TWD 9	02H	+0.25	TEH	TEC					22	COLD	600UL
133	81	0.48	121	P2	TWD 18	VH1	+0.92	TEH	TEC					22	COLD	600UL
133	119	0.49	88	P2	TWD 20	VH1	+0.97	TEH	TEC					43	COLD	600UL
133	125	0.32	65	P2	TWD 15	01C	+0.90	TEH	TEC					43	COLD	600UL
134	64	0.26	85	P2	TWD 11	VH3	-0.89	TEH	TEC					22	COLD	600UL
		0.27	131	P2	TWD 12	VC3	-0.81	TEH	TEC					22	COLD	600UL
134	76	0.34	94	P2	TWD 17	VH1	-0.82	TEH	TEC					21	COLD	600UL
134	80	0.41	5	P3	TWD 16	DBH	+2.04	TEH	TEC					22	COLD	600UL
134	124	0.21	99	P2	TWD 11	VC3	+0.62	01C	TEH					105	HOT	600UL
135	67	0.32	141	P3	TWD 17	DBH	-1.61	TEH	TEC					21	COLD	600UL
135	71	0.20	70	P3	TWD 12	DBH	-1.56	TEH	TEC					21	COLD	600UL
136	68	0.44	62	P2	TWD 21	VH1	-0.77	TEH	TEC					21	COLD	600UL
136	76	0.31	10	P3	TWD 12	DBH	+2.03	TEH	TEC					22	COLD	600UL
136	78	0.31	58	P2	TWD 16	VH1	+0.85	TEH	TEC					21	COLD	600UL
		0.20	101	P3	TWD 11	DBH	+1.53	TEH	TEC					21	COLD	600UL
136	110	0.21	53	P2	TWD 11	VH1	-1.02	TEH	TEC					42	COLD	600UL
136	116	0.23	89	P2	TWD 13	VH1	-1.04	TEH	TEC					42	COLD	600UL
137	69	0.29	64	P2	TWD 12	VH1	+0.55	TEH	TEC					22	COLD	600UL
137	71	0.28	89	P3	TWD 12	DBH	-1.66	TEH	TEC					22	COLD	600UL
137	117	0.42	109	P2	TWD 18	VH1	-0.21	TEH	TEC					43	COLD	600UL
		0.34	144	P3	TWD 14	DBH	+2.00	TEH	TEC					43	COLD	600UL
138	58	0.46	30	P3	TWD 17	DBH	+1.72	TEH	TEC					22	COLD	600UL
138	64	0.25	124	P2	TWD 11	10H	+0.84	TEH	TEC					22	COLD	600UL
138	80	0.34	71	P2	TWD 17	VH1	-0.85	TEH	TEC					21	COLD	600UL
138	102	0.35	109	P2	TWD 17	VH1	-0.63	TEH	TEC					42	COLD	600UL

MAI,MCI,MMI,MVI,SAI,SCI,SVI,0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
138	116	0.53	111	P2	TWD	21	VH1	-0.79	TEH	TEC				43	COLD	600UL
139	61	0.23	99	P2	TWD	10	09C	-1.15	TEH	TEC				22	COLD	600UL
139	103	0.51	114	P2	TWD	22	VH2	+0.87	TEH	TEC				42	COLD	600UL
139	115	0.24	131	P3	TWD	11	DBH	+1.64	TEH	TEC				43	COLD	600UL
140	76	0.36	77	P2	TWD	18	VH1	-0.85	TEH	TEC				21	COLD	600UL
140	90	0.32	54	P2	TWD	15	VH1	-0.85	TEH	TEC				26	COLD	600UL
140	112	0.36	93	P3	TWD	15	DBC	+1.23	TEH	TEC				43	COLD	600UL
141	67	0.28	75	P2	TWD	12	09C	-1.05	TEH	TEC				22	COLD	600UL
141	89	0.30	141	P2	TWD	15	VH1	-0.68	TEH	TEC				25	COLD	600UL
141	103	0.27	51	P2	TWD	13	VH3	-1.00	TEH	TEC				43	COLD	600UL
		0.25	78	P2	TWD	12	VH3	+0.98	TEH	TEC				43	COLD	600UL
141	109	0.46	95	P2	TWD	21	VH3	+0.00	TEH	TEC				42	COLD	600UL
142	72	0.36	111	P3	TWD	18	DBC	+1.55	TEH	TEC				21	COLD	600UL
142	88	0.29	86	P2	TWD	13	VH1	-0.90	TEH	TEC				26	COLD	600UL
142	92	0.48	97	P2	TWD	21	VH1	-0.85	TEH	TEC				25	COLD	600UL
143	71	0.26	113	P2	TWD	11	VH2	-0.93	TEH	TEC				22	COLD	600UL
		0.52	127	P3	TWD	19	DBH	+2.25	TEH	TEC				22	COLD	600UL
		0.63	102	P2	TWD	22	VH1	-0.87	TEH	TEC				22	COLD	600UL
		0.56	106	P2	TWD	20	VH1	+0.76	TEH	TEC				22	COLD	600UL
143	73	0.36	106	P2	TWD	14	VH1	+0.87	TEH	TEC				22	COLD	600UL
		1.06	124	P2	TWD	30	VC1	-0.82	TEH	TEC				22	COLD	600UL
		0.77	89	P2	TWD	25	VC2	-0.85	TEH	TEC				22	COLD	600UL
		0.41	135	P3	TWD	16	DBC	+1.89	TEH	TEC				22	COLD	600UL
		0.49	115	P3	TWD	18	DBC	-1.33	TEH	TEC				22	COLD	600UL
143	75	0.25	63	P3	TWD	14	DBC	-1.70	TEH	TEC				21	COLD	600UL
143	81	0.35	81	P2	TWD	14	VC1	-0.80	TEH	TEC				22	COLD	600UL
143	87	0.43	103	P3	TWD	19	DBC	+2.04	TEH	TEC				25	COLD	600UL
		0.32	139	P2	TWD	15	10C	+0.82	TEH	TEC				25	COLD	600UL
		0.18	91	P3	TWD	9	DBC	-1.86	TEH	TEC				25	COLD	600UL
143	91	0.22	36	P3	TWD	11	DBH	+1.65	TEH	TEC				25	COLD	600UL
143	103	0.64	72	P3	TWD	25	DBH	+1.89	TEH	TEC				42	COLD	600UL
143	109	0.57	94	P3	TWD	21	DBC	-1.93	TEH	TEC				43	COLD	600UL
144	78	0.23	138	P2	TWD	13	VC1	+0.85	TEH	TEC				21	COLD	600UL
144	84	0.23	100	P3	TWD	13	DBC	-1.83	TEH	TEC				21	COLD	600UL
		0.14	58	P3	TWD	8	DBC	+1.75	TEH	TEC				21	COLD	600UL
144	90	0.25	99	P2	TWD	12	VH1	-0.87	TEH	TEC				26	COLD	600UL
144	102	0.25	120	P3	TWD	13	DBH	-1.59	TEH	TEC				42	COLD	600UL
145	81	0.16	51	P2	TWD	9	VH1	+0.22	TEH	TEC				42	COLD	600UL
		0.83	129	P2	TWD	31	VH1	+0.90	TEH	TEC				21	COLD	600UL
		0.61	29	P3	TWD	26	DBH	+1.60	TEH	TEC				21	COLD	600UL
145	89	0.38	116	P2	TWD	18	VC2	+0.85	TEH	TEC				25	COLD	600UL
		0.23	156	P3	TWD	12	DBH	+2.00	TEH	TEC				25	COLD	600UL
145	99	0.48	128	P3	TWD	19	DBH	+2.16	TEH	TEC				26	COLD	600UL
145	103	0.69	114	P3	TWD	24	DBH	+1.59	TEH	TEC				43	COLD	600UL
146	78	0.49	110	P3	TWD	18	DBH	+1.48	TEH	TEC				22	COLD	600UL



MAI, MCI, MMI, MVI, SAI, SCI, SVI, 0-100%TWD

QUERY: rpc\_icode\_and\_0-100%twd.qry

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
146	88	0.60	42	P3	TWD	23	DBC	+1.75	TEH	TEC				26		COLD	600UL

Total Tubes : 504  
Total Records: 639

**Appendix 5**  
**Sleeve Inspection Summary**  
**Steam Generator E-088**

All OBS and PCS in sleeves

QUERY: QueryM1[1]

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE
44	42	0.56	16	4	PCS	SBH	+5.66	TO+7.05	SBH	SBH				56	HOT	500SP
					OBS	SBH	+7.05		SBH	SBH				77	HOT	500SP
25	49	0.64	22	4	PCS	SBH	+2.74	TO+3.87	SBH	SBH				56	HOT	500SP
					OBS	SBH	+3.93		SBH	SBH				77	HOT	500SP
64	52	1.27	357	4	PCS	SBH	+2.84	TO+8.31	SBH	SBH				59	HOT	500SP
					OBS	SBH	+8.31		SBH	SBH				76	HOT	500SP
57	55	1.30	19	4	PCS	SBH	+2.86	TO+5.96	SBH	SBH				59	HOT	500SP
					OBS	SBH	+5.96		SBH	SBH				76	HOT	500SP
16	56	0.99	13	4	PCS	SBH	+1.55	TO+11.58	SBH	STH				56	HOT	500SP
13	57	1.54	189	4	PCS	SBH	+2.24	TO+9.67	SBH	STH					HOT	500SP
90	58	1.05	13	4	PCS	SBH	+2.72	TO+4.66	SBH	SBH				59	HOT	500SP
					OBS	SBH	+4.66		SBH	SBH				76	HOT	500SP
83	59				OBS	SBH	+2.74		SBH	SBH					HOT	500SP
12	62	0.14	67	4	PCS	SBH	+9.28	TO+15.53	SBH	STH				56	HOT	500SP
83	63	1.39	14	4	PCS	SBH	+3.07	TO+7.03	SBH	SBH				59	HOT	500SP
					OBS	SBH	+7.03		SBH	SBH				71	HOT	500SP
59	65	0.36	32	4	PCS	SBH	+2.88	TO+3.34	SBH	SBH				60	HOT	500SP
					OBS	SBH	+3.27		SBH	SBH				71	HOT	500SP
60	66	0.99	5	4	PCS	SBH	+11.64	TO+12.57	SBH	SBH				60	HOT	500SP
					OBS	SBH	+7.23		SBH	SBH				71	HOT	500SP
64	66	1.16	19	4	PCS	SBH	+4.10	TO+8.67	SBH	SBH				60	HOT	500SP
					OBS	SBH	+8.62		SBH	SBH				71	HOT	500SP
48	68	0.34	55	4	PCS	SBH	+2.83	TO+3.51	SBH	SBH				60	HOT	500SP
					OBS	SBH	+3.52		SBH	SBH				71	HOT	500SP
47	69	1.06	19	4	PCS	SBH	+2.87	TO+6.89	SBH	SBH				59	HOT	500SP
					OBS	SBH	+6.89		SBH	SBH				71	HOT	500SP
30	70	1.29	12	4	PCS	SBH	+3.35	TO+5.85	SBH	SBH				59	HOT	500SP
					OBS	SBH	+5.85		SBH	SBH				71	HOT	500SP
53	71	0.86	18	4	PCS	SBH	+2.51	TO+15.86	SBH	STH				60	HOT	500SP
46	72	1.10	9	4	PCS	SBH	+3.09	TO+9.16	SBH	SBH				59	HOT	500SP
					OBS	SBH	+9.16		SBH	SBH				71	HOT	500SP
99	75	1.37	13	4	PCS	SBH	+3.03	TO+5.17	SBH	SBH				59	HOT	500SP
					OBS	SBH	+5.17		SBH	SBH				71	HOT	500SP
44	76	0.34	181	4	OBS	SBH	+6.57		SBH	SBH					HOT	500SP
53	79	1.10	35	4	PCS	SBH	+2.72	TO+6.39	SBH	SBH				61	HOT	500SP
					OBS	SBH	+6.71		SBH	SBH				71	HOT	500SP
67	83	1.98	15	4	PCS	SBH	+4.20	TO+8.87	SBH	STH				63	HOT	500SP
70	84	1.25	42	4	PCS	SBH	+2.94	TO+7.89	SBH	SBH					HOT	500SP
					OBS	SBH	+7.89		SBH	SBH				71	HOT	500SP
71	89	1.03	27	4	PCS	SBH	+6.09	TO+15.47	SBH	STH				63	HOT	500SP
68	90	0.53	98	4	PCS	SBH	+2.68	TO+8.25	SBH	SBH					HOT	500SP
					OBS	SBH	+8.25		SBH	SBH				71	HOT	500SP
59	91			4	OBS	SBH	+3.21		SBH	SBH				76	HOT	500SP
63	91	1.01	180	4	PCS	WCH	-0.68	TO-4.29	SBH	STH				63	HOT	500SP
67	91	0.90	9	4	OBS	SBH	+2.62		SBH	SBH				76	HOT	500SP
56	92	0.42	3	4	OBS	SBH	+3.06		SBH	SBH		NOSIP			HOT	500SP
68	94	1.35	7	4	PCS	SBH	+2.78	TO+6.08	SBH	SBH				63	HOT	500SP
					OBS	SBH	+6.08		SBH	SBH				76	HOT	500SP
85	95				OBS	SBH	+2.87		SBH	SBH				71	HOT	500SP

All OBS and PCS in sleeves

QUERY: QueryM1[1]

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
63	97	1.53	31	4	PCS		SBH +2.82 TO+8.29	SBH	SBH					63		HOT	500SP
					OBS		SBH +8.29	SBH	SBH					76		HOT	500SP
81	97	1.28	7	4	PCS		SBH +2.66 TO+5.33	SBH	SBH					63		HOT	500SP
					OBS		SBH +5.33	SBH	SBH					71		HOT	500SP
91	97				OBS		SBH +3.18	SBH	SBH							HOT	500SP
64	98	0.90	12	4	PCS		SBH +2.88 TO+15.62	SBH	STH					63		HOT	500SP
61	99	0.38	15	4	PCS		SBH +9.14 TO+14.98	SBH	STH							HOT	500SP
68	102				OBS		SBH +2.75	SBH	SBH					76		HOT	500SP
41	103				OBS		SBH +3.53	SBH	SBH					71		HOT	500SP
52	104	1.48	23	4	PCS		SBH +2.79 TO+11.51	SBH	SBH					57		HOT	500SP
					OBS		SBH +11.55	SBH	SBH					76		HOT	500SP
80	104	1.27	31	4	PCS		SBH +2.59 TO+8.85	SBH	SBH					57		HOT	500SP
					OBS		SBH +6.97	SBH	SBH					71		HOT	500SP
47	105	0.90	40	4	PCS		SBH +2.86 TO+7.73	SBH	SBH					55		HOT	500SP
					OBS		SBH +7.73	SBH	SBH					76		HOT	500SP
36	108	1.05	37	4	PCS		SBH +3.59 TO+5.97	SBH	SBH					55		HOT	500SP
		1.51	191	4	PCS		SBH +3.59 TO+15.97	SBH	STH					71		HOT	500SP
70	108	1.50	13	4	PCS		SBH +7.75 TO+15.77	SBH	STH					58		HOT	500SP
67	109	0.87	167	4	PCS		SBH +9.70 TO+15.80	SBH	STH							HOT	500SP
83	111				OBS		SBH +2.72	SBH	SBH					71		HOT	500SP
44	114	0.93	41	4	PCS		SBH +5.18 TO+11.88	SBH	STH					55		HOT	500SP
52	114	1.43	20	4	PCS		SBH +2.47 TO+9.23	SBH	STH					58		HOT	500SP
82	114	1.34	10	4	PCS		SBH +2.66 TO+7.91	SBH	SBH							HOT	500SP
					OBS		SBH +7.81	SBH	SBH					71		HOT	500SP
30	118				OBS		SBH +3.65	SBH	SBH							HOT	500SP
75	119	1.73	190	4	PCS		SBH +4.67 TO+15.96	SBH	STH					58		HOT	500SP
83	119	1.76	179	4	PCS		SBH +6.50 TO+15.47	SBH	STH							HOT	500SP
13	121	0.92	22	4	PCS		SBH +2.73 TO+8.57	SBH	SBH					71		HOT	500SP
					OBS		SBH +8.80	SBH	SBH					248		HOT	500SP
27	121	0.89	32	4	PCS		SBH +2.83 TO+5.25	SBH	SBH					55		HOT	500SP
					OBS		SBH +5.25	SBH	SBH					71		HOT	500SP
83	121	1.52	190	4	PCS		SBH +5.28 TO+15.92	SBH	STH					58		HOT	500SP
25	127	1.32	18	4	PCS		SBH +2.79 TO+8.75	SBH	SBH					55		HOT	500SP
					OBS		SBH +8.75	SBH	SBH					71		HOT	500SP
39	131	1.26	192	4	PCS		SBH +2.93 TO+8.55	SBH	SBH					58		HOT	500SP
					OBS		SBH +8.34	SBH	SBH					71		HOT	500SP
10	132	14.48	134	4	PCS		SBH +1.74 TO+12.52	STH	SBH					55		HOT	500SP
58	134	1.20	14	4	PCS		SBH +0.31 TO+7.12	STH	SBH					58		HOT	500SP
15	135	1.21	13	4	PCS		SBH +2.78 TO+6.34	SBH	SBH							HOT	500SP
					OBS		SBH +6.14	SBH	SBH					71		HOT	500SP
7	139	1.06	183	4	PCS		SBH +1.92 TO+3.44	SBH	SBH					58		HOT	500SP
					OBS		SBH +4.10	SBH	SBH					71		HOT	500SP
37	147				OBS		SBH +2.88	SBH	SBH							HOT	500SP
65	149	1.24	17	4	PCS		SBH +2.59 TO+4.50	SBH	SBH					58		HOT	500SP
					OBS		SBH +4.36	SBH	SBH					61		HOT	500SP
57	151	1.23	20	4	PCS		SBH +0.91 TO+4.28	SBH	SBH					58		HOT	500SP
		1.27	8	4	OBS		SBH +5.75	SBH	SBH					71		HOT	500SP

All OBS and PCS in sleeves

QUERY: QueryM1[1]

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
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Total Tubes : 63  
Total Records: 96

**Appendix 6**  
**Sleeve Inspection Summary**  
**Steam Generator E-089**

All OBS and PCS in sleeves

QUERY: QueryM1[1]

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
56	38				OBS		SBH +3.09	SBH	SBH			73	HOT	500SP
16	42				OBS		SBH +3.89	SBH	SBH				HOT	500SP
45	47	1.30	8	P1	PCS		SBH +4.57 TO+15.77	SBH	STH			57	HOT	500SP
24	48	0.83	15	4	PCS		SBH +2.84 TO+5.72	SBH	SBH			73	HOT	500SP
					OBS		SBH +5.76	SBH	SBH				HOT	500SP
50	52	1.40	4	4	PCS		SBH +7.86 TO+13.54	SBH	STH			57	HOT	500SP
39	53	1.20	188	4	PCS		SBH +2.85 TO+6.69	SBH	SBH			63	HOT	500SP
					OBS		SBH +6.69	SBH	SBH			73	HOT	500SP
24	54	1.11	186	4	PCS		SBH +8.95 TO+16.09	SBH	STH			57	HOT	500SP
30	54	1.44	13	4	PCS		SBH +5.31 TO+11.06	SBH	STH			63	HOT	500SP
44	54				OBS		SBH +3.36	SBH	SBH			73	HOT	500SP
38	60	1.63	24	4	PCS		SBH +7.68 TO+15.71	SBH	STH			63	HOT	500SP
71	63				OBS		SBH +2.99	SBH	SBH			73	HOT	500SP
31	65				OBS		SBH +3.19	SBH	SBH				HOT	500SP
43	65	1.94	182	4	PCS		SBH +2.66 TO+15.67	SBH	STH			63	HOT	500SP
64	66	0.88	21	4	PCS		SBH +2.90 TO+4.10	SBH	SBH			57	HOT	500SP
					OBS		SBH +4.10	SBH	SBH			73	HOT	500SP
55	69				OBS		SBH +3.18	SBH	SBH				HOT	500SP
57	69	0.66	29	P1	PCS		SBH +2.75 TO+3.79	SBH	SBH			57	HOT	500SP
					OBS		SBH +3.78	SBH	SBH			73	HOT	500SP
48	74	1.17	167	4	PCS		SBH +2.98 TO+9.16	SBH	SBH			57	HOT	500SP
					OBS		SBH +9.16	SBH	SBH			180	HOT	500SP
51	75	1.20	172	4	PCS		SBH +3.01 TO+8.51	SBH	SBH			57	HOT	500SP
					OBS		SBH +8.51	SBH	SBH			73	HOT	500SP
57	81				OBS		SBH +3.13	SBH	SBH			70	HOT	500SP
65	81	0.60	32	4	PCS		SBH +3.01 TO+16.02	SBH	STH			51	HOT	500SP
86	82	1.82	9	4	PCS		SBH +4.43 TO+10.83	STH	SBH				HOT	500SP
68	84	1.05	3	4	PCS		SBH +2.76 TO+8.92	SBH	SBH				HOT	500SP
					OBS		SBH +8.92	SBH	SBH			70	HOT	500SP
64	88				OBS		SBH +2.53	SBH	SBH				HOT	500SP
61	93				OBS		SBH +2.90	SBH	SBH				HOT	500SP
84	96				OBS		SBH +2.56	SBH	SBH				HOT	500SP
59	99				OBS		SBH +2.97	SBH	SBH				HOT	500SP
41	103				OBS		SBH +2.92	SBH	SBH				HOT	500SP
48	108	1.40	185	4	PCS		SBH +2.60 TO+10.00	SBH	SBH			46	HOT	500SP
					OBS		SBH +9.93	SBH	SBH			70	HOT	500SP
24	112				OBS		SBH +2.45	SBH	SBH				HOT	500SP
8	114	1.01	186	4	PCS		SBH +2.63 TO+4.03	SBH	SBH			46	HOT	500SP
					OBS		SBH +4.03	SBH	SBH			70	HOT	500SP
25	115	1.20	184	4	PCS		SBH +1.98 TO+7.83	SBH	STH			46	HOT	500SP
38	116				OBS		SBH +2.07	SBH	SBH			70	HOT	500SP
28	118				OBS		SBH +2.55	SBH	SBH				HOT	500SP
36	126	1.49	185	4	PCS		SBH +2.43 TO+6.49	SBH	SBH			46	HOT	500SP
					OBS		SBH +6.49	SBH	SBH			70	HOT	500SP
9	147	1.33	9	4	PCS		SBH +2.95 TO+8.98	SBH	SBH			46	HOT	500SP
					OBS		SBH +8.98	SBH	STH			70	HOT	500SP

All OBS and PCS in sleeves

QUERY: QueryM1[1]

ROW	LINE	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE
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Total Tubes : 35  
Total Records: 46