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April 5, 2011

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

Subject: Duke Energy Carolinas, LLC
Catawba Nuclear Station, Unit 2
Docket Number 50-414
Steam Generator (SG) Tube Inspection Report for End of
Cycle 17 Refueling Outage Pursuant to Technical
Specification (TS) 5.6.8

In accordance with TS 5.6.8, please find attached the subject 180-day report which provides the results of the SG tube inspection associated with the subject outage.

There are no regulatory commitments contained in this letter or its attachment.

If you have any questions concerning this material, please call L.J. Rudy at (803) 701-3084.

Very truly yours,

James R. Morris

LJR/s

Attachment

A001
LJR

Document Control Desk
Page 2
April 5, 2011

xc (with attachment):

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Regional Administrator
U.S. Nuclear Regulatory Commission - Region II
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245 Peachtree Center Ave., NE Suite 1200
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U.S. Nuclear Regulatory Commission
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Attachment

Catawba Unit 2 End of Cycle 17 Steam Generator (SG) Tube Inspection Report

Steam Generator Tube Inspection Report

Catawba Unit 2 2010

Outage EOC 17

Originator/Date: CB Canthow 3/30/11

Checker/Date: DB Mays 3/30/2011

Approved by/Date: P.W. Downing 3/30/11

Catawba 2 EOC17 Steam Generator Tube Inspection Report

Summary of inspections and inspection results:

a) The scope of inspections performed on each SG

The Baseline inspection scope included full length data acquisition and bobbin coil data analysis on all four (4) steam generators as follows.

- 1) *All in-service tubes with the exception of tight radius u-bends in rows 1-5.*

The Special interest inspection scope included data acquisition and analysis of array and/or rotating coil techniques as follows:

- 1) *Special interest based on new bobbin calls*
- 2) *100% of hot leg tubesheet region in all four (4) steam generators from TEH to TSH +3 inches.*
- 3) *100% row 1 u-bends*
- 4) *35% sample of row 2-5 u-bends*
- 5) *20% sample of row 10 u-bends*
- 6) *20% sample of per-heater expansions in all four (4) steam generators*
- 7) *Periphery tubes two tubes deep (TSH to 01H, TSC to 19C) in all 4 steam generators (outer perimeter, open lane and T-slot)*
- 8) *Periphery tubes at the 18th tube support plate on the cold leg (two rows deep) in all four (4) steam generators*
- 9) *New dent indications and existing dent indications not analyzed during EOC16*
- 10) *Bounding inspections two tubes around all Possible Loose Parts(PLP) indications confirmed with array*
- 11) *Bounding inspections two tubes around all historical PLP indications that were still present/confirmed with array.*
- 12) *All hot leg tube support locations for "Seabrook type" tubes with array probe*

The Plug inspection scope was as follows:

- 1) *Visual inspection of all plugs*

b. Active degradation mechanisms found

Degradation found included wear at support structures; wear from foreign objects, and crack-like indications near the tube ends.

c. Non-destructive examination techniques utilized for each degradation mechanism

The bobbin probe was utilized for the detection of wear at support structures and freespans locations and to size some wear at support structures. The array probe was used for detection of indications within the tubesheets and, size tube support plate wear. Plus point was used to size wear from foreign objects.

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

The complete listing for service induced indications is attached.

- e. Number of tubes plugged during the inspection outage for each active degradation mechanism

One tube was plugged for support plate wear in SG 2C.

- f. The total number and percentage of tubes plugged to date

<i>Steam Generator¹</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>Total</i>
<i>Prior to EOC17</i>	<i>69</i>	<i>114</i>	<i>56</i>	<i>89</i>	<i>328</i>
<i>EOC17</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>
<i>Total</i>	<i>69</i>	<i>114</i>	<i>57</i>	<i>89</i>	<i>329</i>
<i>% Plugged</i>	<i>1.51</i>	<i>2.49</i>	<i>1.25</i>	<i>1.94</i>	<i>1.80</i>

1= There are 4578 tubes per steam generator

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

Condition monitoring was met for all degradation. All structural performance criteria were met with more than adequate margin projected through the next planned inspection at EOC18. No in-situ tests or tube pulls were performed.

- h. For Unit 2, following completion of an inspection performed during the end of Cycle 17 Refueling Outage (and any inspections performed during the subsequent Cycle 18 operation), the primary to secondary LEAKAGE rate observed in each SG (if it is not practical to assign leakage to an individual SG, the entire primary to secondary LEAKAGE should be conservatively assumed to be from one SG) during the cycle preceding the inspection which is the subject of the report.

There was no measurable primary to secondary leakage during the preceding Cycle 17 operation.

- i. For Unit 2, following completion of an inspection performed during the End of Cycle 17 Refueling Outage (and any inspections performed during the subsequent Cycle 18 operation) the calculated leakage rate from the portion of the tubes below 20 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident leakage rate from the most limiting accident is less than 3.27 times the maximum primary to secondary LEAKAGE rate, the report shall describe how it was determined, and

There was no degradation detected in the portion of the tubes from 20 inches below the top of the tubesheet that resulted in calculated leakage.

- j. For Unit 2, following completion of an inspection performed during the End of Cycle 17 Refueling Outage (and any inspections performed during subsequent Cycle 18 operation) the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

No indications of slippage were reported.

The complete listings of service induced indications are on the following pages. The codes and their descriptions used in the inspection data base are provided here to assist in review of these lists.

<u>Indication Code</u>	<u>Description</u>
ADI	Absolute Drift Indication
ADS	Absolute Drift Signal
ARC	Circumferential Extent Measurement
BLG	Bulge
BOR	Boron
CHT	Chatter
DEP	Deposit
DNT	Dent
DWI	Dent With Indication
EXP	Expansion
FC	Final Calibration
FCL	Final Calibration Late
HLC	History Location Changed
HNC	Has Not Changed
HNI	Has Not Changed Indication
IC	Initial Calibration
ICR	Incomplete Roll
IDI	Inner Diameter Indication
INF	Indication Not Found
INR	Indication Not Reportable
IPE	Incomplete Parse Extent
IRR	Irregular Roll
L3R	Level III Reviewed Indication
LEN	Axial Extent Measurement
LPI	Loose Part With Indication
MAI I	Multiple Axial Indication
MCI	Multiple Circumferential Indication
MMI	Mixed-Mode Indication
MSG	Analyst Message
MVI	Multiple Volumetric Indication
NDD	No Degradation Detected
NDF	No Degradation Found
NEX	No Expansion
NFC	No Final Calibration
NQI	Non-Quantifiable Indication
NSR	Needs SGME Review
OBS	Test Obstruction
ODI	Outer Diameter Indication
OVR	Over Roll
EXP	Over Expansion
PAC	Previous Array Call
PBC	Previous Bobbin Call
PCT	Percent Indication
PID	Positive Identification
PLG	Plugged
PLP	Possible Loose Parts

PRC	Previous Rotating Call
PRM	Permeability Variation
PVN	Permeability Variation
R36	Retest - Rotating Coil
R3C	Retest With 3-Coil RPC
RAE	Retest - Array Coil is bad or Missing Extent
RBD	Retest - Bad Data
RCL	Retest For Clarification
RGP	Retest with Ghent Probe
RIC	Test Retest - Incomplete
RMB	Retest with Mag-Bias Probe
RNC	Retest - Tube Number Check
ROB	Test Retest - Obstructed
RPD	Retest - Positive Identification
RRC	Retest - Rotating Coil
RVB	Retest - AVB
SAI	Single Axial Indication
SAT	Satisfactory
SCI	Single Circumferential Indication
SCM	SEE COMMENT
SKR	Skip Roll
SLG	Sludge
SSA	Secondary Side Anomaly
SVI	Single Volumetric Indication
UDS	Signal Undefinable Signal
VOL	Volumetric
WAR	Wear

SG A Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
7	23	2.95	46	102	MAI		TEH 0.14	TSH	TEH					12		HOT	XPMMR610	Tubeheet Exam
15	98	0.18	0	P20	TWD	8	04H -0.50	04H	04H	WAR		IVS		76		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.34	135	146	VOL		04H -0.53	04H	04H	WAR				76		HOT	ZAPF-XP2-E00	HL and CL Special I
23	70	0.20	0	3	TWD	9	03H -0.66	03H	03H			IVS		88		HOT	ZRPS-DH3/PC-	RPC Sizing
		0.29	0	3	TWD	12	05H 0.80	05H	05H			IVS		88		HOT	ZRPS-DH3/PC-	RPC Sizing
		0.18	0	3	TWD	8	05H 0.98	05H	05H			IVS		88		HOT	ZRPS-DH3/PC-	RPC Sizing
		0.15	70	2	VOL		03H -0.64	03H	03H					88		HOT	ZRPS-DH3/PC-	Misc RPC
		0.26	73	2	VOL		05H 0.81	05H	05H					88		HOT	ZRPS-DH3/PC-	Misc RPC
		0.18	81	2	VOL		05H 1.01	05H	05H					88		HOT	ZRPS-DH3/PC-	Misc RPC
27	49	0.36	0	3	TWD	15	18C 0.64	18C	18C			IVS		93		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.39	73	2	VOL		18C 0.66	18C	18C					93		COLD	ZRPS-DH3/PC-	Misc RPC
30	13	0.75	0	P4	TWD	14	AV3 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
30	23	0.30	0	P4	TWD	8	AV2 0.05	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
31	25	0.24	0	P31	TWD	12	02H -0.47	02H	02H	WAR		IVS		84		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.47	69	186	VOL		02H -0.63	02H	02H	WAR				84		HOT	ZAPF-XP2-E00	HL and CL Special I
31	102	0.58	0	P4	TWD	13	AV2 -0.05	TEH	TEC	WAR				23		COLD	EC610LLMC-Z	Bobbin Exam
		0.58	0	P4	TWD	13	AV4 0.08	TEH	TEC	WAR				23		COLD	EC610LLMC-Z	Bobbin Exam
31	103	1.73	0	P4	TWD	23	AV2 -0.10	TEH	TEC	WAR				21		COLD	EC610LLMC-Z	Bobbin Exam
		1.06	0	P4	TWD	17	AV3 -0.03	TEH	TEC	WAR		11		21		COLD	EC610LLMC-Z	Bobbin Exam
		0.53	72	162	VOL		AV3 -0.25	09C	08H	WAR				76		HOT	ZAPF-XP2-E00	UBend Special Inter
		1.76	76	162	VOL		AV2 0.00	09C	08H	WAR				76		HOT	ZAPF-XP2-E00	UBend Special Inter
32	15	0.64	0	P4	TWD	12	AV2 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
33	14	0.44	0	P4	TWD	9	AV4 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
33	23	0.68	0	P4	TWD	13	AV2 0.05	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
33	93	0.76	0	P4	TWD	13	AV2 -0.16	TEH	TEC	WAR				25		COLD	SBPF-LLMC-EC	Bobbin Exam
33	98	0.83	0	P4	TWD	17	AV2 -0.16	TEH	TEC	WAR				23		COLD	EC610LLMC-Z	Bobbin Exam
33	99	0.69	0	P4	TWD	12	AV2 0.00	TEH	TEC	WAR				21		COLD	EC610LLMC-Z	Bobbin Exam
33	100	0.91	0	P4	TWD	18	AV3 0.10	TEH	TEC	WAR				23		COLD	EC610LLMC-Z	Bobbin Exam
34	99	0.74	0	P4	TWD	13	AV3 -0.03	TEH	TEC	WAR				21		COLD	EC610LLMC-Z	Bobbin Exam
		0.72	0	P4	TWD	13	AV4 -0.13	TEH	TEC	WAR				21		COLD	EC610LLMC-Z	Bobbin Exam
35	16	0.68	0	P4	TWD	15	AV2 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
		1.24	0	P4	TWD	21	AV3 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
35	28	0.53	0	P4	TWD	11	AV2 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
		1.19	0	P4	TWD	21	AV3 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
36	98	0.40	0	P4	TWD	10	AV4 0.00	TEH	TEC	WAR				23		COLD	EC610LLMC-Z	Bobbin Exam
37	17	0.30	0	P4	TWD	8	AV2 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
		0.81	0	P4	TWD	15	AV3 -0.08	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
37	27	0.50	0	P4	TWD	12	AV2 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
37	39	0.54	0	P4	TWD	13	AV2 0.00	TEH	TEC	WAR				55		COLD	EC-610-LLMC-	Bobbin Exam
37	77	0.78	0	P4	TWD	15	AV2 0.06	TEH	TEC	WAR				13		COLD	EC610LLMC-Z	Bobbin Exam
		0.96	0	P4	TWD	16	AV3 0.16	TEH	TEC	WAR				13		COLD	EC610LLMC-Z	Bobbin Exam
		0.48	0	P4	TWD	10	AV4 -0.03	TEH	TEC	WAR				13		COLD	EC610LLMC-Z	Bobbin Exam
38	17	0.39	0	P4	TWD	10	AV1 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
		1.00	0	P4	TWD	19	AV3 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
		0.47	0	P4	TWD	12	AV4 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
38	21	0.62	0	P4	TWD	13	AV2 -0.03	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
38	22	0.57	0	P4	TWD	13	AV2 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
		0.44	0	P4	TWD	11	AV3 0.00	TEH	TEC	WAR				59		COLD	LLMC-EC-.610	Bobbin Exam
38	23	0.61	0	P4	TWD	12	AV2 -0.03	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
38	25	0.93	0	P4	TWD	16	AV3 0.00	TEH	TEC	WAR				61		COLD	EC-610-LLMC-	Bobbin Exam
38	89	0.67	0	P4	TWD	13	AV2 0.00	TEH	TEC	WAR				53		COLD	LLMC-EC-.610	Bobbin Exam
		0.83	0	P4	TWD	15	AV3 0.00	TEH	TEC	WAR				53		COLD	LLMC-EC-.610	Bobbin Exam
38	91	0.60	0	P4	TWD	11	AV2 -0.27	TEH	TEC	WAR				25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.63	0	P4	TWD	11	AV4 -0.13	TEH	TEC	WAR				25		COLD	SBPF-LLMC-EC	Bobbin Exam
38	93	0.62	0	P4	TWD	14	AV2 0.00	TEH	TEC	WAR				27		COLD	SBPF-LLMC-EC	Bobbin Exam
38	96	2.51	0	P4	TWD	30	AV2 0.00	TEH	TEC	WAR				27		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.95	0	P4	TWD	19	AV3 -0.24	TEH	TEC	WAR				27		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.87	0	P4	TWD	18	AV4 0.00	TEH	TEC	WAR				27		COLD	SBPF-LLMC-EC	Bobbin Exam
38	97	3.88	0	P4	TWD	34	AV2 -0.16	TEH	TEC	WAR				25		COLD	SBPF-LLMC-EC	Bobbin Exam

SG A Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
38	98	1.32	0	P4	TWD	19	AV3	-0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.07	0	P4	TWD	17	AV4	-0.13	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.12	0	P4	TWD	17	AV2	0.13	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.86	0	P4	TWD	14	AV3	0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.89	0	P4	TWD	15	AV4	-0.27	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
39	21	0.45	0	P4	TWD	10	AV2	0.00	TEH	TEC	WAR			61		COLD	EC-610-LLMC-	Bobbin Exam
39	86	0.29	32	P23	VOL		AV4	0.00	09C	08H	WAR			76		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.32	68	P8	VOL		AV3	0.00	09C	08H	WAR			76		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.63	0	P4	TWD	14	AV3	-0.03	TEH	TEC	WAR	9		11		COLD	EC610LLMC-C	Bobbin Exam
		0.66	0	P4	TWD	15	AV4	0.00	TEH	TEC	WAR	6		11		COLD	EC610LLMC-C	Bobbin Exam
39	96	0.85	85	70	VOL		AV3	0.00	09C	08H	WAR			76		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.62	0	P4	TWD	11	AV3	-0.05	TEH	TEC	WAR	7		25		COLD	SBPF-LLMC-EC	Bobbin Exam
40	18	0.55	0	P4	TWD	13	AV1	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
		2.10	0	P4	TWD	27	AV3	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
40	94	2.07	0	P4	TWD	26	AV2	0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.89	0	P4	TWD	15	AV4	0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
40	95	1.76	0	P4	TWD	23	AV2	-0.05	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.29	0	P4	TWD	19	AV4	-0.18	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
41	30	0.71	0	P4	TWD	14	AV2	0.10	TEH	TEC	WAR			57		COLD	LLMC-EC-.610	Bobbin Exam
41	36	0.90	0	P4	TWD	16	AV3	0.00	TEH	TEC	WAR	16		57		COLD	LLMC-EC-.610	Bobbin Exam
		0.87	72	70	VOL		AV3	0.00	09C	08H	WAR			82		HOT	ZAPF-XP2-E00	UBend Special Inter
41	44	1.22	0	P4	TWD	20	AV1	-0.25	TEH	TEC	WAR			39		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.92	0	P4	TWD	17	AV2	-0.11	TEH	TEC	WAR			39		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.07	0	P4	TWD	19	AV3	0.00	TEH	TEC	WAR			39		COLD	SBPF-LLMC-EC	Bobbin Exam
41	75	0.87	0	P4	TWD	15	AV2	-0.30	TEH	TEC	WAR			17		COLD	EC610LLMC-Z	Bobbin Exam
41	77	0.75	0	P4	TWD	14	AV2	0.30	TEH	TEC	WAR	9		17		COLD	EC610LLMC-Z	Bobbin Exam
		0.49	233	54	VOL		AV2	0.00	09C	08H	WAR			78		HOT	ZAPF-XP2-E00	UBend Special Inter
41	81	2.11	0	P4	TWD	25	AV2	0.27	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
		1.21	0	P4	TWD	18	AV3	0.12	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
		0.89	0	P4	TWD	14	AV4	-0.03	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
41	83	1.03	0	P4	TWD	17	AV2	0.19	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
		1.04	0	P4	TWD	17	AV3	-0.11	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
		0.42	0	P4	TWD	9	AV4	0.03	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
41	85	1.25	0	P4	TWD	20	AV3	0.03	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
41	90	0.94	0	P4	TWD	19	AV3	-0.03	TEH	TEC	WAR			27		COLD	SBPF-LLMC-EC	Bobbin Exam
41	92	1.35	0	P4	TWD	20	AV3	0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.81	0	P4	TWD	14	AV4	0.00	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
41	93	0.94	0	P4	TWD	15	AV3	0.03	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.80	0	P4	TWD	14	AV4	-0.10	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
41	94	1.55	0	P4	TWD	21	AV2	-0.24	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		2.53	0	P4	TWD	29	AV3	0.00	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.78	0	P4	TWD	13	AV4	0.06	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
42	24	0.87	0	P4	TWD	17	AV2	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
		0.70	0	P4	TWD	15	AV3	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
42	81	0.71	0	P4	TWD	12	AV2	0.08	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
		0.73	0	P4	TWD	12	AV4	-0.09	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
42	85	2.47	0	P4	TWD	29	AV2	0.00	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
		1.38	0	P4	TWD	21	AV3	0.00	TEH	TEC	WAR			9		COLD	EC610LLMC-Z	Bobbin Exam
42	91	0.90	0	P4	TWD	15	AV3	-0.08	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
43	23	0.36	0	P4	TWD	10	AV1	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
		0.94	0	P4	TWD	18	AV2	0.00	TEH	TEC	WAR			59		COLD	LLMC-EC-.610	Bobbin Exam
43	91	0.85	0	P4	TWD	14	AV1	-0.08	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.27	0	P4	TWD	19	AV2	0.16	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.98	0	P4	TWD	16	AV3	-0.05	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.63	0	P4	TWD	22	AV4	-0.15	TEH	TEC	WAR			25		COLD	SBPF-LLMC-EC	Bobbin Exam
43	93	0.26	142	P24	VOL		AV4	0.00	09C	08H	WAR			76		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.53	77	162	VOL		AV3	0.00	09C	08H	WAR			76		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.87	0	P4	TWD	14	AV3	0.03	TEH	TEC	WAR	14		25		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.00	0	P4	TWD	16	AV4	-0.05	TEH	TEC	WAR	10		25		COLD	SBPF-LLMC-EC	Bobbin Exam

SG A Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE	SCOPE
44	23	0.51	0	P4	TWD	12	AV1	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
		1.32	0	P4	TWD	22	AV2	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
		3.62	0	P4	TWD	35	AV3	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
		1.01	0	P4	TWD	19	AV4	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
44	25	0.81	0	P4	TWD	17	AV2	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
		0.80	0	P4	TWD	16	AV3	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
44	31	0.65	0	P4	TWD	14	AV2	0.00	TEH	TEC	WAR			55	COLD	EC-610-LLMC-	Bobbin Exam
44	90	0.24	81	166	VOL		AV4	-0.06	09C	08H	WAR			76	HOT	ZAPF-XP2-E00	UBend Special Inter
		0.83	0	P4	TWD	14	AV3	-0.13	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.54	0	P4	TWD	10	AV4	-0.09	TEH	TEC	WAR	7		25	COLD	SBPF-LLMC-EC	Bobbin Exam
44	92	1.26	0	P4	TWD	19	AV3	0.03	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.97	0	P4	TWD	16	AV4	0.03	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
45	26	0.69	0	P4	TWD	15	AV2	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
		1.66	0	P4	TWD	25	AV3	0.00	TEH	TEC	WAR			59	COLD	LLMC-EC-.610	Bobbin Exam
45	90	1.26	0	P4	TWD	19	AV3	-0.08	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
45	91	1.16	0	P4	TWD	18	AV2	0.16	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.07	0	P4	TWD	17	AV3	-0.11	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.84	0	P4	TWD	24	AV4	-0.18	TEH	TEC	WAR			25	COLD	SBPF-LLMC-EC	Bobbin Exam
46	88	0.83	63	70	VOL		AV3	-0.06	09C	08H	WAR			76	HOT	ZAPF-XP2-E00	UBend Special Inter
		0.74	0	P4	TWD	13	AV3	-0.21	TEH	TEC	WAR	8		25	COLD	SBPF-LLMC-EC	Bobbin Exam
47	27	0.90	0	P4	TWD	16	AV2	-0.03	TEH	TEC	WAR	OR		57	COLD	LLMC-EC-.610	Bobbin Exam
		2.36		P4	TWD	28	AV3	0.00	TEH	TEC	WAR			57	COLD	LLMC-EC-.610	Bobbin Exam
48	85	0.26	0	P4	TWD	6	AV3	-0.24	TEH	TEC	WAR	OR		9	COLD	EC610LLMC-Z	Bobbin Exam
		0.26	0	P4	TWD	6	AV4	0.22	TEH	TEC	WAR	OR		9	COLD	EC610LLMC-Z	Bobbin Exam
48	86	0.44	0	P4	TWD	9	AV3	0.00	TEH	TEC	WAR	OR		53	COLD	LLMC-EC-.610	Bobbin Exam
		0.51	0	P4	TWD	10	AV4	-0.06	TEH	TEC	WAR			53	COLD	LLMC-EC-.610	Bobbin Exam
49	70	0.36	0	P4	TWD	10	AV1	0.00	TEH	TEC	WAR			19	COLD	SBPF-LLMC-EC	Bobbin Exam
49	73	0.51	0	P4	TWD	11	AV3	0.00	TEH	TEC	WAR	4		17	COLD	EC610LLMC-Z	Bobbin Exam
49	81	0.65	116	162	VOL		AV1	0.03	09C	08H	WAR			78	HOT	ZAPF-XP2-E00	UBend Special Inter
		0.55	0	P4	TWD	10	AV1	-0.08	TEH	TEC	WAR			13	COLD	EC610LLMC-Z	Bobbin Exam

Total Tubes : 75
 Total Records: 148

SG B Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE	SCOPE	
1	6	1.85	36	130	SAI		TEH	0.06	01H	TEH			70	HOT	ZAPF-XP2-E00	Tubesheet Exam
1	8	3.21	44	122	SAI		TEH	0.09	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	10	5.79	41	122	SAI		TEH	0.24	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	16	9.19	32	122	SAI		TEH	0.15	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	27	45.22	27	126	MCI		TEH	0.09	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	30	9.29	34	14	SCI		TEH	0.21	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	34	8.53	37	6	MAI		TEH	0.17	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	36	6.25	23	134	SAI		TEH	0.12	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	38	7.28	28	158	MAI		TEH	0.41	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	39	3.15	19	158	SAI		TEH	0.15	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	40	8.81	25	146	MAI		TEH	0.24	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	42	5.92	22	166	MAI		TEH	0.12	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	43	3.36	28	174	MAI		TEH	0.18	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	44	8.06	20	174	MAI		TEH	0.12	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	46	6.65	28	174	SAI		TEH	0.10	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	50	9.85	34	98	SCI		TEH	0.10	01H	TEH			10	HOT	XPMMR610	Tubesheet Exam
1	54	13.55	38	18	SCI		TEH	0.18	01H	TEH			22	HOT	XPMMR610	Tubesheet Exam
1	62	17.04	37	34	SCI		TEH	0.18	01H	TEH			22	HOT	XPMMR610	Tubesheet Exam
1	64	3.09	60	26	SAI		TEH	0.39	01H	TEH			22	HOT	XPMMR610	Tubesheet Exam
1	91	4.04	39	42	SAI		TEH	0.06	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
1	94	1.46	33	10	MAI		TEH	0.09	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
1	96	4.38	38	6	MAI		TEH	0.06	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
1	97	8.78	29	142	SAI		TEH	0.12	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
1	99	9.62	37	134	MAI		TEH	0.12	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	14	3.26	25	166	SAI		TEH	0.12	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	27	1.88	60	162	SAI		TEH	0.11	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	30	2.55	29	86	SAI		TEH	0.18	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	33	3.53	23	162	MAI		TEH	0.24	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	34	3.82	27	42	MAI		TEH	0.11	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	36	1.47	5	154	SAI		TEH	0.09	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	39	0.77	44	58	SAI		TEH	0.15	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	44	7.52	26	58	SAI		TEH	0.25	01H	TEH			12	HOT	XPMMR610	Tubesheet Exam
2	70	5.36	54	106	SAI		TEH	0.33	01H	TEH			22	HOT	XPMMR610	Tubesheet Exam
2	76	1.76	24	134	MAI		TEH	0.18	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	77	2.64	33	6	SAI		TEH	0.12	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	78	3.24	32	134	MAI		TEH	0.18	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	79	5.77	16	142	MAI		TEH	0.09	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	82	6.44	32	6	MAI		TEH	0.12	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	83	9.11	29	142	MAI		TEH	0.06	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	84	4.27	36	142	SAI		TEH	0.15	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	86	4.45	25	138	MAI		TEH	0.19	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	91	1.50	18	6	SAI		TEH	0.09	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	92	3.51	16	134	SAI		TEH	0.09	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	93	2.74	14	6	SAI		TEH	0.18	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	95	5.64	36	118	SAI		TEH	0.12	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	97	1.41	36	106	SAI		TEH	0.06	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
2	98	2.66	45	6	SAI		TEH	0.09	01H	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	14	2.81	41	86	SAI		TEH	0.11	TSH	TEH			12	HOT	XPMMR610	Tubesheet Exam
3	21	9.03	25	122	SAI		TEH	0.32	TSH	TEH			14	HOT	XPMMR610	Tubesheet Exam
3	24	4.31	15	174	SAI		TEH	0.19	TSH	TEH			16	HOT	XPMMR610	Tubesheet Exam
3	25	4.53	37	166	SAI		TEH	0.15	TSH	TEH			14	HOT	XPMMR610	Tubesheet Exam
3	29	6.98	37	118	SAI		TEH	0.06	TSH	TEH			14	HOT	XPMMR610	Tubesheet Exam
3	30	6.68	31	90	MAI		TEH	0.15	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
3	33	2.72	28	154	SAI		TEH	0.17	TSH	TEH			8	HOT	XPMMR610	Tubesheet Exam
3	34	1.61	38	6	SAI		TEH	0.21	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
3	36	6.49	25	138	SAI		TEH	0.24	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
3	55	6.34	60	74	SAI		TEH	0.25	TSH	TEH			24	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	70	6.93	29	166	MAI		TEH	0.35	TSH	TEH			24	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	76	8.02	22	190	SAI		TEH	0.15	TSH	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam

SG B Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE	SCOPE
3	77	5.69	18	146	MAI		TEH 0.09	TSH	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	78	4.20	25	26	SAI		TEH 0.19	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	79	3.85	30	38	SAI		TEH 0.16	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	80	2.93	35	118	SAI		TEH 0.16	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	83	1.67	41	58	MAI		TEH 0.13	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	84	3.38	37	130	SAI		TEH 0.06	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	85	1.28	56	186	SAI		TEH 0.19	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	95	1.51	14	130	SAI		TEH 0.16	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
3	99	2.78	28	6	SAI		TEH 0.16	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	14	8.57	27	166	SAI		TEH 0.03	TSH	TEH			12	HOT	XPMMR610	Tubesheet Exam
4	27	3.51	64	130	SAI		TEH 0.36	TSH	TEH			14	HOT	XPMMR610	Tubesheet Exam
4	29	4.52	49	122	SAI		TEH 0.36	TSH	TEH			14	HOT	XPMMR610	Tubesheet Exam
4	34	4.04	42	106	MAI		TEH 0.21	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
4	40	2.83	14	150	SAI		TEH 0.27	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
4	63	7.15	31	178	SAI		TEH 0.18	TSH	TEH			22	HOT	XPMMR610	Tubesheet Exam
4	78	2.89	34	190	MAI		TEH 0.15	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	79	8.12	26	166	MAI		TEH 0.12	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	80	7.70	29	170	SAI		TEH 0.09	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	83	2.36	52	182	SAI		TEH 0.09	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	92	0.98	17	178	SAI		TEH 0.41	01H	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
4	95	2.80	17	182	SAI		TEH 0.10	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	31	2.18	23	162	SAI		TEH 0.24	TSH	TEH			8	HOT	XPMMR610	Tubesheet Exam
5	44	9.15	32	54	SAI		TEH 0.30	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
5	76	6.68	26	142	MAI		TEH 0.18	TSH	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	79	5.26	31	10	SAI		TEH 0.12	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	80	10.89	34	22	MAI		TEH 0.12	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	81	2.12	51	26	MAI		TEH 0.10	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	82	6.99	38	26	SAI		TEH 0.10	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	83	2.10	29	10	SAI		TEH 0.19	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
5	106	4.64	31	182	SAI		TEH 0.16	TSH	TEH			38	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	44	5.06	25	54	SAI		TEH 0.27	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
6	77	10.13	26	190	MAI		TEH 0.15	TSH	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	79	5.11	27	166	MAI		TEH 0.06	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	80	4.63	26	170	SAI		TEH 0.09	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	81	4.66	37	178	SAI		TEH 0.12	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	82	3.37	29	170	MAI		TEH 0.12	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	84	2.30	37	182	SAI		TEH 0.12	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
6	86	1.59	39	26	SAI		TEH 0.22	TSH	TEH			40	HOT	ZAPF-XP2-E00	Tubesheet Exam
7	34	3.52	23	142	SAI		TEH 0.27	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
7	39	7.20	23	162	SAI		TEH 0.41	TSH	TEH			8	HOT	XPMMR610	Tubesheet Exam
7	56	5.80	70	54	MAI		TEH 0.30	TSH	TEH			20	HOT	XPMMR610	Tubesheet Exam
7	74	0.17	0	3	TWD	8	03H -0.69	02H	03H		IVS	92	HOT	ZRPS-DH3/PC-	RPC Sizing
		0.20	96	3	VOL		03H -0.74	02H	03H			92	HOT	ZRPS-DH3/PC-	Misc RPC
7	77	5.15	36	118	MAI		TEH 0.06	TSH	TEH			30	HOT	ZAPF-XP2-E00	Tubesheet Exam
7	79	9.00	23	134	MAI		TEH 0.34	TSH	TEH			34	HOT	ZAPF-XP2-E00	Tubesheet Exam
7	80	5.61	25	6	MAI		TEH 0.12	TSH	TEH			34	HOT	ZAPF-XP2-E00	Tubesheet Exam
7	84	4.44	36	186	SAI		TEH 0.46	TSH	TEH			34	HOT	ZAPF-XP2-E00	Tubesheet Exam
7	86	1.94	41	186	MAI		TEH 0.15	TSH	TEH			34	HOT	ZAPF-XP2-E00	Tubesheet Exam
8	25	1.40	75	102	VOL		05H -0.93	05H	05H		WAR	70	HOT	ZAPF-XP2-E00	HL and CL Special I
		0.68	0	P12	TWD	23	05H -0.36	05H	05H		WAR	70	HOT	ZAPF-XP2-E00	HL and CL Special I
8	28	2.97	40	174	SAI		TEH 0.30	TSH	TEH			16	HOT	XPMMR610	Tubesheet Exam
8	36	4.33	24	10	SAI		TEH 0.27	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
8	48	3.71	27	70	SAI		TEH 0.27	TSH	TEH			6	HOT	XPMMR610	Tubesheet Exam
8	63	5.09	5	190	SAI		TEH 0.18	TSH	TEH			18	HOT	XPMMR610	Tubesheet Exam
8	64	3.31	18	158	MAI		TEH 0.16	TSH	TEH			18	HOT	XPMMR610	Tubesheet Exam
8	80	9.73	29	182	MAI		TEH 0.12	TSH	TEH			36	HOT	ZAPF-XP2-E00	Tubesheet Exam
8	81	2.38	32	170	SAI		TEH 0.12	TSH	TEH			36	HOT	ZAPF-XP2-E00	Tubesheet Exam
8	82	1.93	62	170	SAI		TEH 0.06	TSH	TEH			36	HOT	ZAPF-XP2-E00	Tubesheet Exam
8	84	1.04	44	174	SAI		TEH 0.24	TSH	TEH			36	HOT	ZAPF-XP2-E00	Tubesheet Exam

SG B Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
9	27	2.87	30	122	MAI		TEH	0.36	TSH	TEH				14		HOT	XPMMR610	Tubesheet Exam
9	31	2.47	31	42	SAI		TEH	0.21	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
9	65	5.59	33	26	SAI		TEH	0.23	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
9	76	7.28	7	154	MAI		TEH	0.18	TSH	TEH				30		HOT	ZAPF-XP2-E00	Tubesheet Exam
9	77	4.96	28	6	SAI		TEH	0.06	TSH	TEH				30		HOT	ZAPF-XP2-E00	Tubesheet Exam
9	78	3.52	21	118	MAI		TEH	0.19	TSH	TEH				34		HOT	ZAPF-XP2-E00	Tubesheet Exam
9	82	3.97	24	186	SAI		TEH	0.12	TSH	TEH				34		HOT	ZAPF-XP2-E00	Tubesheet Exam
9	85	2.00	33	130	SAI		TEH	0.12	TSH	TEH				34		HOT	ZAPF-XP2-E00	Tubesheet Exam
10	27	4.42	24	3	MAI		TEH	0.07	TEH	TEH				94		HOT	M/+PT-610-11	Misc RPC
10	39	3.04	31	90	SAI		TEH	0.24	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
10	50	1.68	66	18	VOL		04H	-0.66	04H	03H	WAR			70		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.62	0	P36	TWD	21	04H	-0.63	04H	04H	WAR		IVS	70		HOT	ZAPF-XP2-E00	HL and CL Special I
10	64	7.81	16	190	SAI		TEH	0.16	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
10	76	5.32	8	190	MAI		TEH	0.12	TSH	TEH				30		HOT	ZAPF-XP2-E00	Tubesheet Exam
10	78	3.97	29	38	SAI		TEH	0.12	TSH	TEH				30		HOT	ZAPF-XP2-E00	Tubesheet Exam
10	81	1.96	38	174	MAI		TEH	0.06	TSH	TEH				36		HOT	ZAPF-XP2-E00	Tubesheet Exam
10	84	3.14	31	174	SAI		TEH	0.10	TSH	TEH				36		HOT	ZAPF-XP2-E00	Tubesheet Exam
11	2	2.48	91	110	VOL		05H	-0.57	05H	05H	WAR			90		HOT	ZAPF-XP2-E00	HL and CL Special I
		1.03	0	P40	TWD	22	05H	-0.41	05H	05H	WAR		IVS	90		HOT	ZAPF-XP2-E00	HL and CL Special I
11	63	4.78	27	70	SAI		TEH	0.29	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
11	66	6.95	36	90	SAI		TEH	0.28	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
11	69	3.90	35	22	SAI		TEH	0.37	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
11	70	5.42	11	138	SAI		TEH	0.35	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
11	77	8.59	31	102	MAI		TEH	0.30	TSH	TEH				26		HOT	ZAPF-XP2-E00	Tubesheet Exam
12	35	0.19	0	3	TWD	7	11C	-1.10	12C	11C			IVS	71		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.19	90	3	VOL		11C	-0.97	12C	11C				71		COLD	ZRPS-DH3/PC-	Misc RPC
12	36	4.42	25	138	SAI		TEH	0.21	TSH	TEH				6		HOT	XPMMR610	Tubesheet Exam
12	64	10.67	29	22	SAI		TEH	0.26	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
12	92	3.24	35	26	SAI		TEH	0.12	TSH	TEH				30		HOT	ZAPF-XP2-E00	Tubesheet Exam
13	63	6.13	15	166	MAI		TEH	0.23	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
13	70	2.51	19	70	MAI		TEH	0.21	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
14	43	2.71	26	122	SAI		TEH	0.24	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
15	36	7.25	25	138	SAI		TEH	0.24	TSH	TEH				6		HOT	XPMMR610	Tubesheet Exam
15	56	0.67	0	P4	TWD	14	AV4	0.00	TEH	TEC	WAR			27		COLD	LLMC-EC-.610	Bobbin Exam
15	69	3.47	20	22	MAI		TEH	0.18	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
15	70	3.10	6	86	SAI		TEH	0.11	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
16	45	7.29	14	74	MAI		TEH	0.28	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
16	64	5.40	24	70	SAI		TEH	0.26	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
18	40	0.33	0	3	TWD	11	14C	0.58	14C	14C			IVS	71		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.30	68	3	VOL		14C	0.44	14C	14C				71		COLD	ZRPS-DH3/PC-	Misc RPC
18	49	4.09	16	162	SAI		TEH	0.14	TSH	TEH				18		HOT	XPMMR610	Tubesheet Exam
18	64	10.22	36	54	SAI		TEH	0.33	TSH	TEH				20		HOT	XPMMR610	Tubesheet Exam
20	32	3.60	32	118	SAI		TEH	0.33	TSH	TEH				6		HOT	XPMMR610	Tubesheet Exam
21	33	3.11	13	162	SAI		TEH	0.21	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
21	63	5.13	22	174	SAI		TEH	0.22	02H	TEH				18		HOT	XPMMR610	Tubesheet Exam
21	65	5.11	43	134	SAI		TEH	0.18	02H	TEH				18		HOT	XPMMR610	Tubesheet Exam
23	23	0.27	0	3	TWD	10	10C	-0.92	10C	10C			IVS	71		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.25	79	3	VOL		10C	-0.79	10C	10C				71		COLD	ZRPS-DH3/PC-	Misc RPC
23	26	5.96	35	158	SAI		TEH	0.16	TSH	TEH				16		HOT	XPMMR610	Tubesheet Exam
24	63	3.88	19	154	SAI		TEH	0.15	02H	TEH				22		HOT	XPMMR610	Tubesheet Exam
25	31	2.61	10	154	SAI		TEH	0.17	TSH	TEH				8		HOT	XPMMR610	Tubesheet Exam
27	52	0.28	0	3	TWD	10	09C	-0.71	09C	09C			IVS	71		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.28	75	3	VOL		09C	-0.68	09C	09C				71		COLD	ZRPS-DH3/PC-	Misc RPC
27	59	8.60	39	74	SAI		TEH	0.27	02H	TEH				24		HOT	ZAPF-XP2-E00	Tubesheet Exam
27	60	1.38	0	P4	TWD	22	AV2	0.00	TEH	TEC	WAR			27		COLD	LLMC-EC-.610	Bobbin Exam
28	65	0.21	0	3	TWD	9	04H	1.25	04H	05H			IVS	92		HOT	ZRPS-DH3/PC-	RPC Sizing
		0.21	92	3	VOL		04H	1.32	04H	05H				92		HOT	ZRPS-DH3/PC-	Misc RPC
30	21	2.28	55	122	SAI		TEH	0.15	TSH	TEH				10		HOT	XPMMR610	Tubesheet Exam
30	104	0.71	0	P4	TWD	14	AV3	0.00	TEC	TEH	WAR			66		HOT	SBPF-LLMC-EC	Bobbin Exam

SG B Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
		0.69	0	P4	TWD	13	AV1	0.00	TEC	TEH	WAR			66		HOT	SBFF-LLMC-EC	Bobbin Exam
32	33	0.11	102	3	VOL	04H	1.70	04H	05H					92		HOT	ZRPS-DH3/PC-	Misc RPC
		0.11	0	3	TWD	5	04H	1.80	04H	05H			IVS	92		HOT	ZRPS-DH3/PC-	RPC Sizing
32	102	0.58	0	P4	TWD	12	AV1	-0.05	TEH	TEC	WAR			51		COLD	SBFF-LLMC-EC	Bobbin Exam
32	103	0.81	0	P4	TWD	15	AV4	0.00	TEC	TEH	WAR			66		HOT	SBFF-LLMC-EC	Bobbin Exam
		0.72	0	P4	TWD	14	AV3	0.00	TEC	TEH	WAR			66		HOT	SBFF-LLMC-EC	Bobbin Exam
		0.95	0	P4	TWD	16	AV2	0.00	TEC	TEH	WAR			66		HOT	SBFF-LLMC-EC	Bobbin Exam
33	56	2.95	21	142	SAI		TEH	0.14	01H	TEH				18		HOT	XPMMR610	Tubeheet Exam
33	85	0.60	80	150	VOL	09C	-0.70	09C	09C	WAR				90		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.64	0	P43	TWD	16	09C	-0.57	09C	09C	WAR		IVS	90		HOT	ZAPF-XP2-E00	HL and CL Special I
36	98	0.88	0	P4	TWD	16	AV4	0.00	TEH	TEC	WAR			45		COLD	LLMC-EC-.610	Bobbin Exam
36	99	1.03	0	P4	TWD	18	AV4	0.00	TEH	TEC	WAR			45		COLD	LLMC-EC-.610	Bobbin Exam
37	16	1.14	80	90	VOL	05H	-0.90	05H	05H	WAR				70		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.88	0	P38	TWD	26	05H	-0.51	05H	05H	WAR		IVS	70		HOT	ZAPF-XP2-E00	HL and CL Special I
37	98	1.23	0	P4	TWD	20	AV3	0.00	TEH	TEC	WAR			45		COLD	LLMC-EC-.610	Bobbin Exam
37	99	2.01	0	P4	TWD	26	AV4	0.00	TEH	TEC	WAR			45		COLD	LLMC-EC-.610	Bobbin Exam
38	75	0.70	0	P4	TWD	13	AV2	0.08	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam
39	59	0.38	0	P4	TWD	9	AV4	-0.16	TEH	TEC	WAR			25		COLD	EC610LLMC-Z	Bobbin Exam
40	69	0.56	0	P4	TWD	11	AV2	0.00	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam
44	91	1.27	81	58	VOL		AV2	0.00	09C	08H	WAR			72		HOT	ZAPF-XP2-E00	UBend Special Inter
		1.27	0	P4	TWD	21	AV2	0.00	TEH	TEC	WAR			41		COLD	LLMC-EC-.610	Bobbin Exam
		0.83	0	P4	TWD	16	AV4	0.08	TEH	TEC	WAR		8	41		COLD	LLMC-EC-.610	Bobbin Exam
		0.38	82	166	VOL		AV4	0.00	09C	08H	WAR			72		HOT	ZAPF-XP2-E00	UBend Special Inter
45	24	0.68	0	P4	TWD	13	AV4	0.19	TEH	TEC	WAR			9		COLD	EC610LLMC-C	Bobbin Exam
47	27	0.77	0	P4	TWD	14	AV2	0.00	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
		1.52	0	P4	TWD	21	AV3	-0.06	TEH	TEC	WAR			13		COLD	EC610LLMC-Z	Bobbin Exam
		0.93	0	P4	TWD	16	AV4	-0.03	TEH	TEC	WAR		OR	13		COLD	EC610LLMC-Z	Bobbin Exam
47	88	0.71	0	P4	TWD	14	AV2	0.08	TEH	TEC	WAR		OR	41		COLD	LLMC-EC-.610	Bobbin Exam
		0.85	0	P4	TWD	16	AV4	-0.08	TEH	TEC	WAR			41		COLD	LLMC-EC-.610	Bobbin Exam
48	75	0.68	0	P4	TWD	12	AV1	0.00	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam

Total Tubes : 186
 Total Records: 207

SG C Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
1	6	4.86	38	150	SAI		TEH	0.62	01H	TEH				48		HOT	ZAPF-XP2-E00	Tubesheet Exam
1	12	2.16	23	154	SAI		TEH	0.12	01H	TEH				48		HOT	ZAPF-XP2-E00	Tubesheet Exam
1	19	2.73	24	154	SAI		TEH	0.03	01H	TEH				48		HOT	ZAPF-XP2-E00	Tubesheet Exam
1	21	1.99	76	38	SAI		TEH	0.09	01H	TEH				52		HOT	ZAPF-XP2-E00	Tubesheet Exam
3	51	1.40	58	6	SAI		TEH	0.22	TSH	TEH				54		HOT	ZAPF-XP2-E00	Tubesheet Exam
3	78	0.23	0	P32	TWD	7	13C	0.71	13C	13C	WAR		IVS	105		COLD	ZAPF-XP2-E00	HL and CL Special I
5	49	2.64	50	122	SAI		TEH	0.18	TSH	TEH				54		HOT	ZAPF-XP2-E00	Tubesheet Exam
5	51	4.01	30	162	SAI		TEH	0.18	TSH	TEH				54		HOT	ZAPF-XP2-E00	Tubesheet Exam
7	72	0.15	94	3	VOL		04H	-0.64	04H	04H				68		HOT	ZRPS-DH3/PC-	Misc RPC
		0.19	0	3	TWD	8	04H	-0.88	04H	04H			IVS	68		HOT	ZRPS-DH3/PC-	RPC Sizing
10	80	5.80	38	70	MAI		TEH	0.36	TSH	TEH				38		HOT	ZAPF-XP2-E00	Tubesheet Exam
16	52	3.31	28	166	SAI		TEH	0.09	TSH	TEH			OR	38		HOT	ZAPF-XP2-E00	Tubesheet Exam
22	70	4.02	32	154	SAI		TEH	0.06	02H	TEH				32		HOT	ZAPF-XP2-E00	Tubesheet Exam
25	10	0.36	0	3	TWD	14	18C	0.46	18C	18C			IVS	119		COLD	ZRPS-DH3/PC-	RPC Sizing
		0.37	102	3	VOL		18C	0.54	18C	18C				119		COLD	ZRPS-DH3/PC-	Misc RPC
		1.26	105	54	VOL		18C	0.57	18C	18C	WAR			109		COLD	ZAPF-XP2-E00	HL and CL Special I
		0.62	133	22	VOL		18C	0.51	18C	18C	WAR			109		COLD	ZAPF-XP2-E00	HL and CL Special I
27	9	2.22	0	P4	TWD	27	AV2	-0.07	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
28	10	0.89	0	P4	TWD	16	AV2	0.14	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
28	11	0.67	0	P4	TWD	12	AV2	0.00	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
28	105	1.04	0	P4	TWD	18	AV3	-0.17	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam
29	10	0.70	0	P4	TWD	13	AV2	-0.13	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		0.79	0	P4	TWD	14	AV3	0.03	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
29	12	0.67	0	P4	TWD	13	AV2	0.18	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
		0.62	0	P4	TWD	12	AV3	0.00	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
29	14	0.37	0	P4	TWD	8	AV3	0.19	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
30	15	1.22	0	P4	TWD	19	AV4	0.08	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
31	12	1.11	0	P4	TWD	18	AV3	-0.05	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
31	27	2.35	35	42	VOL		AV1	0.00	08H	09C	WAR			115		COLD	ZAPF-XP2-E00	UBend Special Inter
		0.67	0	P4	TWD	15	AV1	0.00	TEH	TEC	WAR		9	75		COLD	LLMC-EC-.610	Bobbin Exam
33	12	1.14	0	P4	TWD	18	AV1	-0.14	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		1.04	0	P4	TWD	17	AV2	-0.28	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		0.97	57	58	VOL		AV1	-0.08	09C	08H	WAR			58		HOT	ZAPF-XP2-E00	UBend Special Inter
33	14	1.00	0	P4	TWD	17	AV2	-0.05	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
		0.73	0	P4	TWD	14	AV3	0.08	TEH	TEC	WAR			81		COLD	EC-610-LLMC-	Bobbin Exam
33	55	1.54	0	P4	TWD	21	AV3	0.00	TEH	TEC	WAR			61		COLD	EC-610-LLMC-	Bobbin Exam
33	100	0.64	0	P4	TWD	12	AV2	0.00	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam
33	101	0.51	0	P4	TWD	10	AV4	0.00	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam
33	102	0.67	0	P4	TWD	12	AV2	-0.03	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam
34	95	16.04	35	66	SCI		TEH	0.10	TSH	TEH				24		HOT	ZAPF-XP2-E00	Tubesheet Exam
35	21	0.61	0	P4	TWD	11	AV4	-0.11	TEH	TEC	WAR		10	79		COLD	LLMC-EC-.610	Bobbin Exam
36	25	0.48	0	P4	TWD	12	AV2	-0.16	TEH	TEC	WAR			75		COLD	LLMC-EC-.610	Bobbin Exam
36	33	0.97	0	P4	TWD	16	AV2	-0.05	TEH	TEC	WAR			75		COLD	LLMC-EC-.610	Bobbin Exam
36	37	0.64	0	P4	TWD	13	AV2	0.08	TEH	TEC	WAR			71		COLD	EC-610-LLMC-	Bobbin Exam
36	98	1.23	77	118	VOL		AV2	0.00	AV2	AV2	WAR			105		COLD	ZAPF-XP2-E00	UBend Special Inter
		0.69	0	P4	TWD	14	AV2	0.05	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam
38	17	0.56	0	P4	TWD	11	AV1	0.00	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		1.51	0	P4	TWD	22	AV2	-0.14	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		1.00	0	P4	TWD	16	AV4	0.00	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
38	23	0.95	0	P4	TWD	16	AV2	0.00	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
		1.04	0	P4	TWD	17	AV4	0.03	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
38	34	0.89	0	P4	TWD	18	AV2	0.14	TEH	TEC	WAR			77		COLD	EC-610-LLMC-	Bobbin Exam
38	97	0.96	0	P4	TWD	18	AV2	0.00	TEH	TEC	WAR			43		COLD	LLMC-EC-.610	Bobbin Exam
38	99	1.53	0	P4	TWD	22	AV3	0.00	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam
		2.42	0	P4	TWD	29	AV4	-0.12	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam
39	17	0.44	0	P4	TWD	9	AV1	0.00	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
39	18	0.74	0	P4	TWD	13	AV2	0.08	TEH	TEC	WAR			79		COLD	LLMC-EC-.610	Bobbin Exam
39	27	0.95	0	P4	TWD	16	AV3	-0.08	TEH	TEC	WAR			75		COLD	LLMC-EC-.610	Bobbin Exam
39	94	0.90	0	P4	TWD	15	AV3	0.08	TEH	TEC	WAR			41		COLD	EC-610-LLMC-	Bobbin Exam

SG C Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL #	LEG	PROBE	SCOPE
39	97	0.32	0	P4	TWD	7	AV1	0.08	TEH	TEC	WAR			41	COLD	EC-610-LLMC-	Bobbin Exam
		0.53	0	P4	TWD	10	AV2	0.13	TEH	TEC	WAR			41	COLD	EC-610-LLMC-	Bobbin Exam
		0.57	0	P4	TWD	11	AV3	-0.08	TEH	TEC	WAR			41	COLD	EC-610-LLMC-	Bobbin Exam
		0.85	0	P4	TWD	15	AV4	-0.10	TEH	TEC	WAR			41	COLD	EC-610-LLMC-	Bobbin Exam
40	20	0.98	0	P4	TWD	17	AV2	0.06	TEH	TEC	WAR			81	COLD	EC-610-LLMC-	Bobbin Exam
40	22	0.82	0	P4	TWD	15	AV2	0.14	TEH	TEC	WAR			81	COLD	EC-610-LLMC-	Bobbin Exam
40	27	0.84	0	P4	TWD	15	AV2	0.10	TEH	TEC	WAR			75	COLD	LLMC-EC-.610	Bobbin Exam
41	20	1.08	0	P4	TWD	17	AV1	0.03	TEH	TEC	WAR			79	COLD	LLMC-EC-.610	Bobbin Exam
		0.80	0	P4	TWD	14	AV2	0.03	TEH	TEC	WAR			79	COLD	LLMC-EC-.610	Bobbin Exam
		0.90	0	P4	TWD	15	AV3	-0.08	TEH	TEC	WAR			79	COLD	LLMC-EC-.610	Bobbin Exam
42	90	0.17	0	3	TWD	7	18C	0.60	18C	18C			IVS	119	COLD	ZRPS-DH3/PC-	RPC Sizing
		0.18	100	3	VOL		18C	0.66	18C	18C				119	COLD	ZRPS-DH3/PC-	Misc RPC
43	93	0.33	0	P4	TWD	6	AV2	0.00	TEH	TEC	WAR			45	COLD	EC-610-LLMC-	Bobbin Exam
		0.53	0	P4	TWD	10	AV3	0.00	TEH	TEC	WAR			45	COLD	EC-610-LLMC-	Bobbin Exam
		0.43	0	P4	TWD	8	AV4	-0.06	TEH	TEC	WAR			45	COLD	EC-610-LLMC-	Bobbin Exam
44	23	0.73	0	P4	TWD	13	AV3	-0.21	TEH	TEC	WAR		10	75	COLD	LLMC-EC-.610	Bobbin Exam
44	81	2.64	0	P4	TWD	31	AV2	0.00	TEH	TEC	WAR			51	COLD	EC-610-LLMC-	Bobbin Exam
		1.57	0	P4	TWD	23	AV3	-0.17	TEH	TEC	WAR			51	COLD	EC-610-LLMC-	Bobbin Exam
		0.77	0	P4	TWD	15	AV4	0.21	TEH	TEC	WAR			51	COLD	EC-610-LLMC-	Bobbin Exam
49	59	2.28	0	P1	TWD	39	13C	0.76	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		0.67	0	P9	TWD	19	13C	0.55	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		0.77	0	P9	TWD	21	13C	0.42	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		1.69	0	P1	TWD	33	13C	-0.24	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		0.84	0	P9	TWD	22	13C	-0.42	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		1.13	0	P1	TWD	26	13C	-0.48	13C	13C			IVS	107	COLD	ZAPF-XP2-E00	RPC Sizing
		2.88	134	10	VOL		13C	0.45	13C	13C	WAR			107	COLD	ZAPF-XP2-E00	HL and CL Special I
		2.28	0	P1	TWD	39	13C	0.48	13C	13C	WAR		IVS&32	107	COLD	ZAPF-XP2-E00	HL and CL Special I
		0.84	0	P9	TWD	22	13C	0.03	13C	13C	WAR		IVS&19	107	COLD	ZAPF-XP2-E00	HL and CL Special I
		1.17	111	10	VOL		13C	-0.06	13C	13C	WAR			107	COLD	ZAPF-XP2-E00	HL and CL Special I
49	76	0.64	96	130	VOL		AV1	-0.21	08H	09C	WAR		OR	105	COLD	ZAPF-XP2-E00	UBend Special Inter
		1.76	0	P4	TWD	23	AV1	-0.22	TEH	TEC	WAR		OR	49	COLD	EC-610-LLMC-	Bobbin Exam
49	79	0.59	0	P4	TWD	12	AV1	0.06	TEH	TEC	WAR		8	51	COLD	EC-610-LLMC-	Bobbin Exam
		0.62	109	130	VOL		AV1	0.06	08H	09C	WAR			105	COLD	ZAPF-XP2-E00	UBend Special Inter

Total Tubes : 56
 Total Records: 92

SG D Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL	1	UTIL	2	CAL	#	LEG	PROBE	SCOPE
1	84	4.68	55	138	SAI		TEH	0.21	01H	TEH				14		HOT	XPMMR610	Tubesheet Exam
6	28	2.96	99	146	SAI		TEH	0.25	TSH	TEH				36		HOT	ZAPF-XP2-E00	Tubesheet Exam
15	80	0.45	81	2	VOL		03H	-0.86	03H	03H				90		HOT	ZRPS-DH3/PC-	Misc RPC
		0.26	0	3	TWD	11	03H	-0.81	03H	03H			IVS	90		HOT	ZRPS-DH3/PC-	RPC Sizing
17	55	0.41	91	162	VOL		01H	0.31	01H	01H	WAR			80		HOT	ZAPF-XP2-E00	HL and CL Special I
		0.33	0	P25	TWD	12	01H	0.29	01H	01H	WAR		IVS	80		HOT	ZAPF-XP2-E00	HL and CL Special I
25	107	1.34	0	P4	TWD	22	AV2	0.00	TEH	TEC	WAR			57		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.61	0	P4	TWD	13	AV3	0.00	TEH	TEC	WAR			57		COLD	SBPF-LLMC-EC	Bobbin Exam
27	107	1.06	76	118	VOL		AV2	0.19	09C	08H	WAR			82		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.90	0	P4	TWD	17	AV2	0.27	TEH	TEC	WAR			57		COLD	SBPF-LLMC-EC	Bobbin Exam
28	10	0.37	0	P4	TWD	9	AV3	-0.17	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.69	0	P4	TWD	15	AV4	-0.03	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
28	71	1.14	0	P4	TWD	19	AV2	0.00	TEH	TEC	WAR			37		COLD	SBPF-LLMC-EC	Bobbin Exam
28	105	1.24	0	P4	TWD	23	AV2	0.11	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
29	104	0.52	0	P4	TWD	9	AV2	0.00	TEH	TEC	WAR			51		COLD	SBPF-LLMC-EC	Bobbin Exam
30	102	1.07	0	P4	TWD	21	AV3	0.13	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
32	12	0.49	0	P4	TWD	12	AV2	0.03	TEH	TEC	WAR		11	13		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.20	89	22	VOL		AV2	0.19	09C	08H	WAR			78		HOT	ZAPF-XP2-E00	UBend Special Inter
32	96	0.96	0	P4	TWD	20	AV2	0.29	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
33	13	1.59	0	P4	TWD	25	AV2	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.75	0	P4	TWD	16	AV3	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.77	0	P4	TWD	16	AV4	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
33	15	0.55	0	P4	TWD	12	AV4	0.00	TEH	TEC	WAR			15		COLD	EC610LLMC-Z	Bobbin Exam
33	28	0.59	77	146	VOL		AV2	0.00	09C	08H	WAR			78		HOT	ZAPF-XP2-E00	UBend Special Inter
		0.45	0	P4	TWD	11	AV2	0.00	TEH	TEC	WAR		11	17		COLD	EC610LLMC-Z	Bobbin Exam
33	79	0.51	0	P4	TWD	13	AV2	-0.08	TEH	TEC	WAR			41		COLD	SBPF-LLMC-EC	Bobbin Exam
33	81	0.38	0	P4	TWD	7	AV2	0.10	TEH	TEC	WAR			43		COLD	SBPF-LLMC-EC	Bobbin Exam
34	98	1.30	0	P4	TWD	23	AV2	-0.30	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
34	99	0.88	0	P4	TWD	13	AV2	-0.13	TEH	TEC	WAR			51		COLD	SBPF-LLMC-EC	Bobbin Exam
34	100	0.83	0	P4	TWD	18	AV3	0.00	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
35	14	3.05	0	P4	TWD	34	AV2	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.01	0	P4	TWD	19	AV4	-0.03	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
35	17	5.27	53	66	SCI		TEH	0.28	01H	TEH				42		HOT	ZAPF-XP2-E00	Tubesheet Exam
35	43	4.88	67	110	SCI		TEH	0.27	TSH	TEH				48		HOT	ZAPF-XP2-E00	Tubesheet Exam
35	96	0.20	0	P4	TWD	7	AV2	-0.03	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
36	16	0.81	0	P4	TWD	17	AV1	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		2.97	0	P4	TWD	33	AV2	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.94	0	P4	TWD	18	AV3	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.01	0	P4	TWD	19	AV4	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
36	65	1.40	0	P4	TWD	22	AV3	0.29	TEH	TEC	WAR			37		COLD	SBPF-LLMC-EC	Bobbin Exam
36	93	1.14	0	P4	TWD	16	AV2	-0.06	TEH	TEC	WAR			51		COLD	SBPF-LLMC-EC	Bobbin Exam
36	94	0.52	0	P4	TWD	14	AV1	-0.16	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.65	0	P4	TWD	16	AV2	-0.08	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
36	96	0.78	0	P4	TWD	17	AV2	0.00	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.44	0	P4	TWD	12	AV3	0.08	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
36	97	1.19	0	P4	TWD	16	AV2	-0.05	TEH	TEC	WAR			51		COLD	SBPF-LLMC-EC	Bobbin Exam
36	98	0.99	0	P4	TWD	20	AV3	0.11	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
36	100	1.83	120	18	VOL		AV3	0.78	09C	08H	WAR			82		HOT	ZAPF-XP2-E00	UBend Special Inter
		1.45	96	98	VOL		AV3	0.28	09C	08H	WAR			82		HOT	ZAPF-XP2-E00	UBend Special Inter
		1.70	0	P4	TWD	28	AV3	0.28	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.92	0	P4	TWD	19	AV3	-0.25	TEH	TEC	WAR			53		COLD	SBPF-LLMC-EC	Bobbin Exam
37	17	1.22	0	P4	TWD	21	AV2	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.03	0	P4	TWD	19	AV4	-0.11	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
38	18	1.79	0	P4	TWD	26	AV2	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		1.47	0	P4	TWD	23	AV4	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
38	19	0.63	0	P4	TWD	13	AV2	0.00	TEH	TEC	WAR			15		COLD	EC610LLMC-Z	Bobbin Exam
38	20	0.88	0	P4	TWD	17	AV2	-0.06	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
		0.77	0	P4	TWD	16	AV4	0.00	TEH	TEC	WAR			13		COLD	SBPF-LLMC-EC	Bobbin Exam
38	21	0.67	0	P4	TWD	14	AV2	0.03	TEH	TEC	WAR			15		COLD	EC610LLMC-Z	Bobbin Exam

SG D Service Induced Degradation

QUERY: QueryM1[1]

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE	SCOPE
38	22	3.07	122	110	MCI		TEH 0.34	TSH	TEH			44	HOT	ZAPP-XP2-E00	Tubesheet Exam
38	26	0.59	0	P4	TWD 13		AV2 0.00	TEH	TEC	WAR		17	COLD	EC610LLMC-Z	Bobbin Exam
38	64	0.99	0	P4	TWD 15		AV2 0.11	TEH	TEC	WAR		39	COLD	SBPF-LLMC-EC	Bobbin Exam
38	78	1.07	0	P4	TWD 16		AV3 0.18	TEH	TEC	WAR		43	COLD	SBPF-LLMC-EC	Bobbin Exam
38	90	0.81	0	P4	TWD 15		AV2 0.00	TEH	TEC	WAR		45	COLD	EC610LLMC-Z	Bobbin Exam
38	93	1.83	0	P4	TWD 22		AV2 0.16	TEH	TEC	WAR		51	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.60	0	P4	TWD 10		AV3 0.00	TEH	TEC	WAR		51	COLD	SBPF-LLMC-EC	Bobbin Exam
38	94	0.86	0	P4	TWD 19		AV3 -0.14	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
39	81	0.56	0	P4	TWD 10		AV2 0.34	TEH	TEC	WAR		43	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.67	0	P4	TWD 11		AV4 0.00	TEH	TEC	WAR		43	COLD	SBPF-LLMC-EC	Bobbin Exam
39	90	0.86	0	P4	TWD 16		AV2 0.00	TEH	TEC	WAR		45	COLD	EC610LLMC-Z	Bobbin Exam
39	96	0.89	0	P4	TWD 19		AV3 0.00	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
39	98	0.49	0	P4	TWD 13		AV1 0.00	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
40	93	0.91	0	P4	TWD 14		AV2 -0.06	TEH	TEC	WAR		51	COLD	SBPF-LLMC-EC	Bobbin Exam
40	94	1.62	0	P4	TWD 26		AV2 0.22	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.62	0	P4	TWD 26		AV3 -0.11	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
40	97	0.62	0	P4	TWD 15		AV1 -0.16	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.66	0	P4	TWD 16		AV3 0.16	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
41	20	0.75	0	P4	TWD 16		AV4 0.00	TEH	TEC	WAR		13	COLD	SBPF-LLMC-EC	Bobbin Exam
41	77	1.09	0	P4	TWD 21		AV2 0.01	TEH	TEC	WAR		41	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.72	0	P4	TWD 16		AV3 -0.10	TEH	TEC	WAR		41	COLD	SBPF-LLMC-EC	Bobbin Exam
42	23	1.46	0	P4	TWD 23		AV2 -0.03	TEH	TEC	WAR		15	COLD	EC610LLMC-Z	Bobbin Exam
		0.56	0	P4	TWD 12		AV4 0.00	TEH	TEC	WAR		15	COLD	EC610LLMC-Z	Bobbin Exam
42	30	0.80	0	P4	TWD 17		AV2 0.00	TEH	TEC	WAR		17	COLD	EC610LLMC-Z	Bobbin Exam
42	32	0.84	0	P4	TWD 18		AV2 -0.08	TEH	TEC	WAR		17	COLD	EC610LLMC-Z	Bobbin Exam
42	85	1.22	0	P4	TWD 18		AV2 0.00	TEH	TEC	WAR		47	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.63	0	P4	TWD 11		AV3 0.00	TEH	TEC	WAR		47	COLD	SBPF-LLMC-EC	Bobbin Exam
43	22	0.69	0	P4	TWD 15		AV1 -0.21	TEH	TEC	WAR	OR	13	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.83	0	P4	TWD 17		AV2 -0.03	TEH	TEC	WAR	OR	13	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.92	0	P4	TWD 27		AV3 0.00	TEH	TEC	WAR	OR	13	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.37	0	P4	TWD 23		AV4 0.00	TEH	TEC	WAR	OR	13	COLD	SBPF-LLMC-EC	Bobbin Exam
43	29	0.47	0	P4	TWD 8		AV2 0.00	TEH	TEC	WAR		19	COLD	EC610LLMC-Z	Bobbin Exam
43	78	1.68	0	P4	TWD 22		AV2 0.03	TEH	TEC	WAR		43	COLD	SBPF-LLMC-EC	Bobbin Exam
		3.11	0	P4	TWD 32		AV3 -0.03	TEH	TEC	WAR		43	COLD	SBPF-LLMC-EC	Bobbin Exam
44	24	0.97	0	P4	TWD 19		AV3 -0.11	TEH	TEC	WAR		13	COLD	SBPF-LLMC-EC	Bobbin Exam
44	34	0.59	0	P4	TWD 15		AV2 0.15	TEH	TEC	WAR	12	21	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.56	72	38	VOL		AV2 0.15	09C	08H	WAR		78	HOT	ZAPP-XP2-E00	UBend Special Inter
44	46	1.78	0	P4	TWD 25		AV3 -0.03	TEH	TEC	WAR	OR	25	COLD	SBPF-LLMC-EC	Bobbin Exam
44	90	0.65	0	P4	TWD 13		AV1 0.11	TEH	TEC	WAR		45	COLD	EC610LLMC-Z	Bobbin Exam
44	91	0.74	0	P4	TWD 17		AV2 0.00	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
		1.07	0	P4	TWD 21		AV4 -0.06	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
45	91	0.79	0	P4	TWD 18		AV2 0.11	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
		0.85	0	P4	TWD 19		AV4 -0.15	TEH	TEC	WAR		53	COLD	SBPF-LLMC-EC	Bobbin Exam
47	87	0.64	0	P4	TWD 13		AV4 -0.07	TEH	TEC	WAR	OR	45	COLD	EC610LLMC-Z	Bobbin Exam
48	82	0.64	0	P4	TWD 15		AV1 0.05	TEH	TEC	WAR		41	COLD	SBPF-LLMC-EC	Bobbin Exam
49	37	0.37	0	P4	TWD 7		AV1 -0.12	TEH	TEC	WAR		23	COLD	EC610LLMC-Z	Bobbin Exam
49	45	0.90	0	P22	TWD 25		13C 0.56	13C	13C	WAR	IVS	87	COLD	ZAPP-XP2-E00	HL and CL Special I
		0.32	135	46	VOL		13C 0.42	13C	13C	WAR		87	COLD	ZAPP-XP2-E00	HL and CL Special I
49	74	0.58	0	P4	TWD 10		AV4 0.00	TEH	TEC	WAR	OR	39	COLD	SBPF-LLMC-EC	Bobbin Exam
49	84	0.80	0	P4	TWD 15		AV1 0.00	TEH	TEC	WAR	OR	41	COLD	SBPF-LLMC-EC	Bobbin Exam

Total Tubes : 73
 Total Records: 109

