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L-2008-041
10 CFR 50.36

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-00001

APR 0 3 2008

Re: Turkey Point Unit 3
Docket No. 50-250
Steam Generator Tube Inspection Report

The attached Turkey Point Unit 3 End of Cycle (EOC) 22 Steam Generator Tube Inspection Report is submitted to NRC in accordance with Turkey Point Technical Specification 6.9.1.8, and within 180 days after the initial entry to MODE 4 following completion of the inspections performed in accordance to Technical Specification 6.8.4.j, Steam Generator (SG) Program.

The report includes the following:

a. The scope of inspections performed on each SG,
b. Active degradation mechanisms found,
c. Nondestructive examination techniques utilized for each degradation mechanism,
d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,
e. Number of tubes plugged during the inspection outage for each active degradation mechanism,
f. Total number and percentage of tubes plugged to date,
g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and
h. The effective plugging percentage for all plugging in each SG.

Should there be any questions, please contact Paul Infanger at (305) 246-6632.

Sincerely,

William Jefferson, Jr.
Vice President
Turkey Point Nuclear Plant

SM
Attachment
cc: Regional Administrator, Region II, USNRC.
Senior Resident Inspector, USNRC, Turkey Point Plant

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Attachment

Turkey Point Unit 3
EOC 22
Steam Generator Tube Inspection Report

a. The scope of inspection performed on each SG

Turkey Point Unit 3 has three Westinghouse Model 44F replacement steam generators that were installed in 1982. The EOC 22 examination was the fourteenth scheduled in-service examination of the replacement steam generators, and completes fifteen plant cycles since replacement. The tube inspection was completed between September 12 and September 19, 2007. The initial entry in to Mode 4 was on October 9, 2007. The eddy current examination completed during the EOC 22 refueling outage consisted of:

Bobbin coil examination

- Full length examination of all active tubes in Rows 3 and greater.
- Examination of the cold and hot leg straight lengths of tubes in Rows 1 and 2 from the tubesheet entry to the highest support plate.
- Screening of 100% of dings $\leq$ 5 volts in the straight sections.

Plus Point probe (+Point™) examination

- Hot leg tube expansion transitions - Examination of 100% of active hot leg tube expansion transitions over the extent of 17 inches below to 3 inches above the secondary face of the tubesheet. Included within this population was one tube in SG "3A", two tubes in SG "3B" and five tubes in SG "3C" identified with previous NTE indications (No Tube Expansion) that required a full tubesheet inspection from TEH to TSH +3.0 inches.
- Cold Leg Expansion Transitions – All cold leg tube expansion transitions in peripheral high flow regions were examined for foreign object wear +3/-2 inches as referenced from the top of tubesheet. Peripheral high flow regions are defined as the two outermost tubes exposed to the annulus, and row 1 and 2 tubes in columns 1-10 and in columns 83-92. In addition to the high flow regions, the balance of the open row 1 and 2 tubes was examined to complete the periphery examination. Cold leg inspections included one tube in SG "3B" with a previous NTE (No Tube Expansion) that required a full tubesheet inspection from TEC to TSC +3.0 inches. (No tubes were identified with C/L NTE in SGs "3A" or "3C")
- Examination of 50% minimum of the active Row 1 and 2 u-bend regions from the hot leg upper support plate to the cold leg upper support plate was required. All row 1 and 2 u-bend regions not examined at TP3-21 were included.
- Examination of 50% minimum of all hot leg freespan dents/dings > 5 volts between TSH and 06H +1.0" was required. All hot leg freespan dents/dings > 5 volts between TSH and 06H +1.0" not examined during TP3-21 were included.
- Examination of 50% minimum of all u-bend dents/dings (not just Row 1 and 2) was required. All u-bend dents/dings not examined during TP3-21 were included.
- Examination of 50% minimum of all hot leg dents/dings at structures was required. All hot leg dents/dings at structures not examined during TP3-21 were included.
- Diagnostic examinations (Special Interest, SI) were completed as required based on the results from the bobbin coil test.
- Visual examination was completed for 100% of tube plug locations.
- Secondary side visual inspection of steam generator "3B" upper internals was completed.
- Secondary Side upper bundle flush, sludge lancing and FOSAR (foreign object search and retrieval) in all three steam generators (SGs) was completed.

b. Active degradation mechanism found

The EOC 22 examination results for Turkey Point Unit 3 identified wear degradation at broached tube supports, Anti Vibration Bars (AVB), baffle plates, and suspected foreign objects locations as detailed below. The wear degradation at the various tube support structures is not active based on industry guidance. The volumetric wear due to foreign objects is also not active because the foreign objects are no longer present based on secondary side visual examinations.

- Wear at anti-vibration bar tube contacts
- Wear at tube broached support plate tube contacts
- Wear at flow baffle plate tube contacts
- Wear indication at cold leg broached support plate [suspected foreign object, ECT shows Possible Loose Part (PLP)]
- Volumetric indication at cold leg top of tubesheet (suspected foreign object no longer present)
- Single Volumetric indication (SVI) within hot leg tubesheet (degradation mechanism unknown)

The volumetric indications associated with suspected foreign objects were detected as a result of improved analysis methods. For consistency, the foreign object wear indications were sized using the same qualified technique used during the EOC-20 examinations.

There were no indications of degradation in the examination of the U-bends or dings/dents and there was no evidence of corrosion-related degradation.

c. Nondestructive examination techniques utilized for each degradation mechanism

Table 1 – Turkey Point Unit 3 Examination Techniques for EOC 22 (September 2007)

Technique		Industry Qualification	Damage Mechanism	Demonstrated Applicability	Extended Applicability	Depth Sizing Technique Applied	Site-Specific Review Deemed Acceptable	
							Detection	Sizing
1	Bobbin	96001.1 Revision 10	Thinning	Top of Tubesheet and TSP	Above Tubesheet	Differential Mix Phase Analysis	Yes	For Information
2	Bobbin	96004.1 Revision 9	Wear	AVBs TSPs Diagonal and Vertical Straps	PLP Wear (Detection)	Differential Mix Amplitude Analysis (Using Vert-Max)	Yes	For Service* (AVB Only)
3	Bobbin	96004.2 Revision 9	Wear	AVBs TSPs Diagonal and Vertical Straps	PLP Wear (Detection)	Absolute Mix Amplitude Analysis (Using Vert-Max)	Yes	For Information
4	Bobbin	96005.2 Revision 8	Pitting	Freespan in the Presence of Copper	Sludge Pile	Not Sized with Bobbin	Yes	For Information
5	Bobbin	96007.1 Revision 10	IGA/ODSCC	Non-Dented Drilled TSPs	Freespan, Sludge Pile	Not Sized with Bobbin	Yes	For Information
6	Bobbin	96008.1 Revision 13	ODSCC	Sludge Pile (&Non-Dented Eggcrates)	Freespan	Not Sized with Bobbin	Yes	For Information
7	Bobbin	24013.1 Revision 1	ODSCC	Freespan Dings <5.00 Volts	None	Not Sized with Bobbin	Yes	For Information
8	+Point™	96511.1/.2 Revision 15	PWSCC	Low Row U-bend	None	Single Frequency Phase Analysis	Yes	For Information
9	+Point™	20510.1 Revision 5	Circ PWSCC	Expansion Transition	Dent, Dings, Non-Dented Support Structures, Tubesheet	Single Frequency Phase Analysis	Yes	For Information
10	+Point™	20511.1 Revision 7	Axial PWSCC	Expansion Transition	Non-Dented Support Structures, Tubesheet	Single Frequency Phase Analysis	Yes	For Information
11	+Point™	96703.1 Revision 16	Axial PWSCC	Dent	Non-Dented Support Structures, Tubesheet	Single Frequency Phase Analysis	Yes	For Information
12	+Point™	22401.1 Revision 3	Axial ODSCC	Dented Support Structures	Tubesheet, Expansion Transition, Dents, Dings, Non-dented TSP	Single Frequency Phase Analysis	Yes	For Information
13	+Point™	96910.1 Revision 9	Wear	Broached TSP	AVB, Baffle Plate and PLP Wear	Differential Mix Amplitude Analysis (Using Vert-Max)	Yes	For Service
14	+Point™	21998.1 Revision 3	Volumetric	Freespan	None	Single Frequency Amplitude Analysis (Using Peak-Peak)	Yes	For Service only if non-corrosion
15	+Point™	22842.3 Revision 4	Circ ODSCC	Dented Support Structures	None	Length Sizing using From/To	Yes	For Information

*Broached TSP Wear, Baffle Plate wear, and PLP wear should be sized with Technique 13.

Table 1(Cont') – Turkey Point Unit 3 Examination Techniques for EOC 22 (September 2007)

Technique		Industry Qualification	Damage Mechanism	Demonstrated Applicability	Extended Applicability	Depth Sizing Technique Applied	Site-Specific Review Deemed Acceptable	
							Detection	Detection
16	+Point™	21409.1 Revision 4	Axial ODSCC	Support Structures, Freespan, Sludge Pile, Tubesheet Crevice	Tubesheet, Expansion Transition & U-bend Also extended for pits at exp. transition and in sludge pile	Amp: (CEOG Sizing) Freespan, Supports, Sludge Pile Region Phase: Tubesheet/Ubend	Yes	For Information
17	+Point™	21410.1* Revision 4	Circ ODSCC	Expansion Transition	TSP, Freespan, Sludge Pile, Tubesheet, Dents, Dings, U-bend	Single Frequency Phase Analysis	Yes	For Information
18	+Point™ (HF Probe)	99997.1/.2 Revision 9	PWSCC	Low Row U-bend	None	Single Frequency Phase Analysis	No- *Must be site-validated*	For Information
19	+Point™	96703.1 Revision 11	Circ PWSCC	Expansion Transition	Dents, Dings, Tubesheet	Single Frequency Amplitude Analysis (Using Peak-Peak) Based on Max Depth Phase	Yes	For Information
20	.115 Pancake	21401.1 Revision 3	Axial ODSCC	All Locations except Ubends, Dents, Expansions	None	Single Frequency Phase Analysis	+Point™ is the primary detection coil	For Information
21	.115 Pancake	21402.1 Revision 3	Circ ODSCC	Expansion Transition	Sludge Pile	Single Frequency Phase Analysis		For Information
22	.115 Pancake	21503.1 Revision 3	Axial PWSCC	Expansion Transition	Sludge Pile	Single Frequency Phase Analysis	+Point™ is the primary detection coil	For Information
23	.115 Pancake	21504.1 Revision 2	Circ PWSCC	Expansion Transition	Sludge Pile	Single Frequency Phase Analysis		For Information
24	.115 Pancake	99998.1 Revision 4	Pitting	Freespan in the Presence of Copper	Sludge Pile	Single Frequency Amplitude Analysis (Using Peak-Peak)	Info only: Use 96005.2 for pits in the sludge pile	For Information
25	.115 Pancake	96911.1 Revision 8	Wear	Broached TSP	PLP Wear	Absolute Mix Amplitude Analysis (Using Vert-Max)	+Point™ is the primary detection coil	For Service
26	.080 HF Pancake	21505.1 Revision 2	Axial PWSCC	Expansion Transition	Sludge Pile	Single Frequency Phase Analysis		For Information
27	.080 HF Pancake	21506.1 Revision 2	Circ PWSCC	Expansion Transition	Sludge Pile	Single Frequency Phase Analysis		For Information

* The sizing parameters in EPRI ETSS 21410.1 are equivalent to those listed in EPRI Report TR 107197-P1.

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

Turkey Point SG 3A EOC 22

AVB Wear (Note: There are no AVB wear indications ≥40% or PIT, VOL in SG 3A)

Tubes with Bobbin 1-19% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
9	62	0.36	80	P2	TWD	12	AV4	+0.00	TEH	TEC			10	COLD	720UL
22	44	0.31	70	P2	TWD	11	AV4	-0.11	TEH	TEC			8	COLD	720UL
24	10	0.27	144	P2	TWD	8	AV4	-0.17	TEH	TEC			1	COLD	720UL
24	40	0.24	103	P2	TWD	9	AV2	-0.32	TEH	TEC			5	COLD	720UL
25	67	0.28	98	P2	TWD	10	AV2	-0.24	TEH	TEC			14	COLD	720UL
28	59	0.35	102	P2	TWD	12	AV4	-0.06	TEH	TEC			14	COLD	720UL
		0.64	62	P2	TWD	19	AV3	-0.17	TEH	TEC			14	COLD	720UL
		0.30	95	P2	TWD	11	AV1	-0.23	TEH	TEC			14	COLD	720UL
30	52	0.87	104	P2	TWD	19	AV3	-0.02	TEH	TEC			11	COLD	720UL
31	13	0.24	47	P2	TWD	7	AV1	+0.24	TEH	TEC			1	COLD	720UL
31	41	0.31	82	P2	TWD	9	AV4	+0.00	TEH	TEC			6	COLD	720UL
31	44	0.76	114	P2	TWD	19	AV3	+0.34	TEH	TEC			7	COLD	720UL
		0.31	50	P2	TWD	9	AV3	-0.45	TEH	TEC			7	COLD	720UL
32	42	0.32	119	P2	TWD	11	AV3	-0.30	TEH	TEC			8	COLD	720UL
33	15	0.35	158	P2	TWD	10	AV3	-0.34	TEH	TEC			1	COLD	720UL
33	43	0.26	105	P2	TWD	9	AV2	-0.24	TEH	TEC	TWR		8	COLD	720UL
34	31	0.37	74	P2	TWD	12	AV2	+0.00	TEH	TEC			5	COLD	720UL
34	46	0.38	37	P2	TWD	11	AV3	+0.68	TEH	TEC			7	COLD	720UL
38	65	0.59	53	P2	TWD	18	AV3	+0.04	TEH	TEC			14	COLD	720UL

Total Tubes : 16
Total Records: 19

Note: TWR designates that a separate review was completed to evaluate for potential Tube to Tube wear. No intertube wear was reported.

Tubes with Bobbin 20-39% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
28	59	0.95	86	P2	TWD	25	AV2	-0.24	TEH	TEC			14	COLD	720UL
37	47	1.45	85	P2	TWD	30	AV3	+0.09	TEH	TEC			8	COLD	720UL

Total Tubes : 2
Total Records: 2

Wear at Broached Tube Supports

Tubes with Bobbin DSI confirmed as WAR with +Point™ rotating probe

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
12	19	0.23	122	P1	DSI		03H	-0.77	TEH	TEC			3	COLD	720UL
		0.37	92	P5	WAR		03H	-0.67	03H	03H	15	96910.1	37	HOT	680PP

Total Tubes : 1
Total Records: 2

Notes: 1) DSI designates a distorted tube support signal reported by bobbin coil probe.
2) The Util1 field shows the estimated depth using qualified rotating +Point™ sizing which confirms the presence of wear (WAR)

Turkey Point SG 3A EOC 22

Volumetric Wear Indications Associated with Suspected Loose Parts

Tube with Bobbin NQI confirmed as WAR with the +Point™ rotating probe at Cold Leg Tubesheet

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
1	5	0.11	58	P5	WAR		TSC	+3.11	TSC	TSC	7	96910.1	44	COLD	680PP
		0.41	70	5	NQI		TSC	+3.11	06C	TEC			22	COLD	720UL

Total Tubes : 1
Total Records: 2

Note: 1) This indication was detected with the bobbin coil probe and confirmed with rotating +Point™ to be a small wear indication attributed to a foreign object which was no longer present. The indication was sized using 96910.1 to be consistent with the sizing technique used in EOC-20.

2) The Util1 field shows the estimated depth using qualified rotating +Point™ sizing which confirms the presence of wear (WAR)

END SG 3A DATA

Turkey Point SG 3B EOC 22

AVB Wear (Note: There are no AVB wear indications ≥40% or PIT, VOL in SG 3B)

Tubes with Bobbin 1 to 19% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
17	31	0.33	135	P2	TWD	12	AV3	-0.49	TEH	TEC			20	COLD	720UL
		0.19	130	P2	TWD	8	AV4	-0.15	TEH	TEC			20	COLD	720UL
26	20	0.48	149	P2	TWD	12	AV4	+0.09	TEH	TEC			5	COLD	720UL
26	50	0.41	153	P2	TWD	12	AV4	-0.02	TEH	TEC			12	COLD	720UL
30	42	0.51	52	P2	TWD	12	AV1	+0.00	TEH	TEC			9	COLD	720UL
32	27	0.41	48	P2	TWD	10	AV2	+0.02	TEH	TEC			5	COLD	720UL
34	20	0.54	26	P2	TWD	13	AV3	-0.52	TEH	TEC			5	COLD	720UL
34	31	0.51	83	P2	TWD	13	AV2	+0.00	TEH	TEC			7	COLD	720UL
		0.73	87	P2	TWD	17	AV3	+0.00	TEH	TEC			7	COLD	720UL
		0.31	83	P2	TWD	8	AV4	+0.00	TEH	TEC			7	COLD	720UL
34	33	0.52	48	P2	TWD	17	AV3	+0.09	TEH	TEC			8	COLD	720UL
34	52	0.44	72	P2	TWD	13	AV4	+0.04	TEH	TEC			12	COLD	720UL
34	53	0.56	115	P2	TWD	15	AV3	-0.21	TEH	TEC			12	COLD	720UL
34	59	0.60	55	P2	TWD	16	AV2	-0.02	TEH	TEC			12	COLD	720UL
		0.43	73	P2	TWD	12	AV4	-0.09	TEH	TEC			12	COLD	720UL
34	73	0.38	79	P2	TWD	11	AV2	-0.10	TEH	TEC			16	COLD	720UL
35	48	0.75	68	P2	TWD	17	AV2	+0.00	TEH	TEC			9	COLD	720UL
		0.84	107	P2	TWD	19	AV3	+0.04	TEH	TEC			9	COLD	720UL
40	47	0.47	119	P2	TWD	12	AV3	-0.11	TEH	TEC			9	COLD	720UL
41	34	0.37	40	P2	TWD	10	AV2	+0.00	TEH	TEC			7	COLD	720UL
42	53	0.37	50	P2	TWD	11	AV3	-0.04	TEH	TEC			12	COLD	720UL
		0.49	46	P2	TWD	14	AV3	+0.41	TEH	TEC			12	COLD	720UL
		0.37	101	P2	TWD	11	AV4	-0.04	TEH	TEC			12	COLD	720UL
44	37	0.27	105	P2	TWD	9	AV4	+0.21	TEH	TEC			10	COLD	720UL
45	46	0.56	83	P2	TWD	16	AV2	+0.00	TEH	TEC			10	COLD	720UL
45	49	0.28	169	P2	TWD	9	AV4	+0.13	TEH	TEC			12	COLD	720UL

Total Tubes : 19
Total Records: 26

Turkey Point SG 3B EOC 22

AVB Wear

Tubes with Bobbin 20 to 39% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
30	42	0.92	60	P2	TWD	20	AV2	-0.09	TEH	TEC			9	COLD	720UL
		1.20	115	P2	TWD	24	AV3	-0.32	TEH	TEC			9	COLD	720UL
		0.93	92	P2	TWD	20	AV4	-0.19	TEH	TEC			9	COLD	720UL
34	53	1.08	99	P2	TWD	25	AV1	+0.11	TEH	TEC			12	COLD	720UL
		1.22	101	P2	TWD	27	AV2	+0.02	TEH	TEC			12	COLD	720UL

Total Tubes : 2
Total Records: 5

Wear at Broached Tube Supports

Tubes with Bobbin DSI confirmed as WAR with +Point™ rotating probe

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
7	45	0.31	109	P5	WAR		02C	+0.67	02C	02C	12	96910.1	36	COLD	680PP
		0.84	101	P1	DSI		02C	+0.62	TEH	TEC			23	COLD	720UL
		0.41	87	7	PLP		02C	+0.66	02C	02C	LAR		36	COLD	680PP
33	73	0.12	126	P5	WAR		02H	-0.69	02H	02H	5	96910.1	37	HOT	680PP
		0.22	115	P1	DSI		02H	-0.67	TEH	TEC			15	COLD	720UL

Total Tubes : 2
Total Records: 4

Note: 1) The +Point™ rotating probe also identified the presence of a possible loose part (PLP) at the 2nd cold leg broached support location (02C)
2) The Util1 field shows the estimated depth using qualified rotating +Point™ sizing which confirms the presence of wear (WAR)

Wear at Flow Baffle Plate

Tubes with Bobbin DSI confirmed as WAR with +Point™ rotating probe

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
31	77	0.99	48	P1	DSI		BAH	+0.37	TEH	TEC			17	COLD	720UL
		0.13	126	P5	WAR		BAH	+0.53	BAH	BAH	5	96910.1	41	HOT	680PP
39	64	0.42	112	P5	WAR		BAH	-0.38	BAH	BAH	16	96910.1	41	HOT	680PP
		0.45	86	P1	DSI		BAH	-0.27	TEH	TEC			11	COLD	720UL
43	45	0.22	119	P5	WAR		BAH	-0.41	BAH	BAH	9	96910.1	41	HOT	680PP
		0.40	89	P1	DSI		BAH	-0.29	TEH	TEC	TWR		9	COLD	720UL

Total Tubes : 3
Total Records: 6

Notes: 1) DSI designates a distorted tube support signal reported by bobbin coil probe.
2) The Util1 field shows the estimated depth using qualified rotating +Point™ sizing which confirms the presence of wear (WAR)

END SG 3B DATA

Turkey Point SG 3C EOC 22

AVB Wear (Note: There are no AVB wear indications ≥40% or PIT, VOL in SG 3C)
Tubes with Bobbin 1-19% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
18	26	0.23	36	P2	TWD	11	AV2	+0.11	TEH	TEC			19	COLD	720UL
20	37	0.29	93	P2	TWD	14	AV3	-0.15	TEH	TEC			19	COLD	720UL
21	38	0.36	113	P2	TWD	16	AV3	+0.00	TEH	TEC			7	COLD	720UL
21	62	0.30	67	P2	TWD	13	AV2	+0.00	TEH	TEC			10	COLD	720UL
		0.28	46	P2	TWD	12	AV1	+0.09	TEH	TEC			10	COLD	720UL
23	45	0.46	144	P2	TWD	18	AV3	+0.00	TEH	TEC			7	COLD	720UL
24	11	0.29	95	P2	TWD	14	AV4	-0.15	TEH	TEC			3	COLD	720UL
24	43	0.19	134	P2	TWD	10	AV2	+0.07	TEH	TEC			8	COLD	720UL
24	57	0.32	45	P2	TWD	14	AV2	-0.09	TEH	TEC			10	COLD	720UL
24	59	0.44	101	P2	TWD	17	AV1	+0.09	TEH	TEC			10	COLD	720UL
		0.32	26	P2	TWD	13	AV2	+0.04	TEH	TEC			10	COLD	720UL
		0.24	109	P2	TWD	11	AV3	-0.09	TEH	TEC			10	COLD	720UL
24	63	0.47	26	P2	TWD	19	AV2	+0.00	TEH	TEC			9	COLD	720UL
26	49	0.22	111	P2	TWD	12	AV3	-0.02	TEH	TEC			8	COLD	720UL
26	58	0.36	67	P2	TWD	15	AV3	-0.32	TEH	TEC			10	COLD	720UL
28	60	0.28	64	P2	TWD	13	AV2	+0.00	TEH	TEC			9	COLD	720UL
30	18	0.42	125	P2	TWD	16	AV1	-0.36	TEH	TEC			2	COLD	720UL
30	30	0.36	53	P2	TWD	16	AV1	+0.11	TEH	TEC			5	COLD	720UL
		0.28	140	P2	TWD	14	AV2	+0.15	TEH	TEC			5	COLD	720UL
		0.30	146	P2	TWD	14	AV3	-0.02	TEH	TEC			5	COLD	720UL
30	45	0.22	41	P2	TWD	12	AV2	+0.04	TEH	TEC			8	COLD	720UL
30	51	0.20	108	P2	TWD	10	AV2	+0.00	TEH	TEC			7	COLD	720UL
30	60	0.22	29	P2	TWD	11	AV2	+0.00	TEH	TEC			9	COLD	720UL
30	61	0.24	21	P2	TWD	12	AV4	+0.00	TEH	TEC			9	COLD	720UL
31	15	0.37	76	P2	TWD	13	AV1	+0.17	TEH	TEC			4	COLD	720UL
33	31	0.26	101	P2	TWD	11	AV2	+0.00	TEH	TEC			6	COLD	720UL
33	32	0.45	127	P2	TWD	15	AV2	+0.19	TEH	TEC			6	COLD	720UL
		0.52	109	P2	TWD	17	AV3	+0.24	TEH	TEC			6	COLD	720UL
		0.28	56	P2	TWD	10	AV4	+0.04	TEH	TEC			6	COLD	720UL
33	38	0.30	81	P2	TWD	13	AV3	+0.00	TEH	TEC			7	COLD	720UL
33	45	0.28	98	P2	TWD	13	AV2	+0.00	TEH	TEC			7	COLD	720UL
33	46	0.30	39	P2	TWD	14	AV3	+0.00	TEH	TEC			7	COLD	720UL
33	55	0.37	110	P2	TWD	16	AV3	+0.00	TEH	TEC			9	COLD	720UL
34	32	0.25	93	P2	TWD	12	AV3	-0.30	TEH	TEC			5	COLD	720UL
34	45	0.23	27	P2	TWD	12	AV2	+0.06	TEH	TEC			8	COLD	720UL
34	52	0.26	137	P2	TWD	13	AV3	+0.00	TEH	TEC			8	COLD	720UL
34	56	0.24	145	P2	TWD	11	AV3	-0.04	TEH	TEC			10	COLD	720UL
35	35	0.53	78	P2	TWD	17	AV3	+0.11	TEH	TEC			6	COLD	720UL
35	49	0.30	54	P2	TWD	13	AV3	+0.00	TEH	TEC			7	COLD	720UL
35	51	0.40	122	P2	TWD	18	AV2	-0.02	TEH	TEC			8	COLD	720UL
35	52	0.44	117	P2	TWD	18	AV3	+0.00	TEH	TEC			7	COLD	720UL
35	54	0.30	68	P2	TWD	14	AV1	+0.00	TEH	TEC			9	COLD	720UL
35	57	0.28	33	P2	TWD	13	AV2	+0.00	TEH	TEC			9	COLD	720UL
36	56	0.20	41	P2	TWD	9	AV3	+0.15	TEH	TEC			10	COLD	720UL
37	26	0.29	58	P2	TWD	14	AV4	+0.06	TEH	TEC			5	COLD	720UL
38	25	0.32	47	P2	TWD	15	AV3	-0.09	TEH	TEC			5	COLD	720UL
38	61	0.41	134	P2	TWD	18	AV2	+0.00	TEH	TEC			9	COLD	720UL
38	63	0.42	38	P2	TWD	18	AV2	+0.00	TEH	TEC			9	COLD	720UL
38	65	0.41	133	P2	TWD	16	AV3	+0.06	TEH	TEC			10	COLD	720UL
38	66	0.30	100	P2	TWD	13	AV3	+0.28	TEH	TEC			11	COLD	720UL
39	28	0.20	31	P2	TWD	9	AV4	-0.02	TEH	TEC			6	COLD	720UL
39	54	0.31	98	P2	TWD	14	AV4	+0.00	TEH	TEC			9	COLD	720UL
		0.45	76	P2	TWD	19	AV3	+0.00	TEH	TEC	TWR		9	COLD	720UL
39	55	0.47	48	P2	TWD	19	AV2	+0.00	TEH	TEC	TWR		9	COLD	720UL
40	44	0.34	79	P2	TWD	15	AV3	+0.00	TEH	TEC			7	COLD	720UL
		0.32	68	P2	TWD	14	AV4	+0.00	TEH	TEC			7	COLD	720UL
40	46	0.28	50	P2	TWD	14	AV4	-0.11	TEH	TEC			8	COLD	720UL
40	55	0.50	66	P2	TWD	19	AV3	+0.07	TEH	TEC			10	COLD	720UL
		0.32	47	P2	TWD	14	AV4	-0.11	TEH	TEC			10	COLD	720UL
42	43	0.36	33	P2	TWD	15	AV1	+0.00	TEH	TEC			7	COLD	720UL
43	33	0.41	53	P2	TWD	16	AV3	-0.13	TEH	TEC			6	COLD	720UL
43	35	0.31	51	P2	TWD	11	AV3	+0.04	TEH	TEC			6	COLD	720UL
43	60	0.12	168	P2	TWD	6	AV2	+0.11	TEH	TEC			9	COLD	720UL
45	52	0.20	166	P2	TWD	11	AV4	+0.20	TEH	TEC			8	COLD	720UL

Total Tubes: 54 Total Records: 64

Note: TWR designates that a separate review was completed to evaluate for potential Tube to Tube wear. No intertube wear was reported.

Turkey Point SG 3C EOC 22

AVB Wear

Tubes with Bobbin 20-39% TWD Indications

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
21	38	0.56	70	P2	TWD	22	AV2	+0.00	TEH	TEC			7	COLD	720UL
24	63	0.74	110	P2	TWD	26	AV3	+0.00	TEH	TEC			9	COLD	720UL
25	62	0.67	95	P2	TWD	23	AV3	+0.17	TEH	TEC			10	COLD	720UL
		0.55	55	P2	TWD	20	AV2	-0.02	TEH	TEC			10	COLD	720UL
26	58	0.53	93	P2	TWD	20	AV1	+0.30	TEH	TEC			10	COLD	720UL
		0.87	82	P2	TWD	27	AV2	+0.02	TEH	TEC			10	COLD	720UL
28	48	1.09	85	P2	TWD	31	AV2	+0.26	TEH	TEC			8	COLD	720UL
30	30	0.48	78	P2	TWD	20	AV4	-0.06	TEH	TEC			5	COLD	720UL
30	31	0.63	74	P2	TWD	24	AV1	-0.23	TEH	TEC			5	COLD	720UL
		0.65	132	P2	TWD	24	AV2	+0.15	TEH	TEC			5	COLD	720UL
		0.76	77	P2	TWD	26	AV3	-0.06	TEH	TEC			5	COLD	720UL
30	45	0.65	126	P2	TWD	24	AV3	+0.13	TEH	TEC			8	COLD	720UL
30	61	0.81	123	P2	TWD	27	AV2	+0.00	TEH	TEC			9	COLD	720UL
33	31	0.61	119	P2	TWD	21	AV3	+0.00	TEH	TEC			6	COLD	720UL
33	43	0.72	114	P2	TWD	26	AV2	+0.00	TEH	TEC			7	COLD	720UL
		0.99	62	P2	TWD	31	AV3	+0.00	TEH	TEC			7	COLD	720UL
34	31	0.93	101	P2	TWD	30	AV2	+0.11	TEH	TEC			5	COLD	720UL
		1.33	103	P2	TWD	35	AV3	-0.02	TEH	TEC			5	COLD	720UL
34	41	0.99	101	P2	TWD	30	AV4	-0.02	TEH	TEC			8	COLD	720UL
		0.96	97	P2	TWD	29	AV1	+0.13	TEH	TEC			8	COLD	720UL
		1.01	83	P2	TWD	30	AV2	-0.07	TEH	TEC			8	COLD	720UL
		1.07	90	P2	TWD	31	AV3	-0.04	TEH	TEC			8	COLD	720UL
34	44	0.53	96	P2	TWD	21	AV3	-0.09	TEH	TEC			8	COLD	720UL
		0.52	41	P2	TWD	21	AV4	-0.04	TEH	TEC			8	COLD	720UL
35	36	0.65	64	P2	TWD	24	AV2	+0.09	TEH	TEC			5	COLD	720UL
		0.56	141	P2	TWD	22	AV3	+0.02	TEH	TEC			5	COLD	720UL
35	49	0.72	59	P2	TWD	25	AV4	+0.00	TEH	TEC			7	COLD	720UL
35	54	0.48	54	P2	TWD	20	AV2	+0.00	TEH	TEC			9	COLD	720UL
37	28	0.58	78	P2	TWD	20	AV4	+0.00	TEH	TEC			6	COLD	720UL
38	65	0.76	92	P2	TWD	25	AV4	-0.04	TEH	TEC			10	COLD	720UL
		0.74	96	P2	TWD	24	AV2	+0.06	TEH	TEC			10	COLD	720UL
38	71	0.74	128	P2	TWD	25	AV3	+0.00	TEH	TEC			11	COLD	720UL
40	25	0.52	87	P2	TWD	21	AV2	+0.02	TEH	TEC			5	COLD	720UL
		0.89	91	P2	TWD	29	AV3	-0.02	TEH	TEC			5	COLD	720UL
42	31	0.56	47	P2	TWD	22	AV3	-0.02	TEH	TEC			5	COLD	720UL

Total Tubes : 22
Total Records: 35

Wear at Broached Tube Supports

Tubes with Bobbin DSI confirmed as WAR with +Point™ rotating probe

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION		EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
5	85	0.14	84	P5	WAR		03H	-0.70	03H	03H	04	96910.1	42	HOT	680PP
		0.22	93	P1	DSI		03H	-0.63	TEH	TEC			25	COLD	720UL
29	73	0.31	233	P5	WAR		02H	-0.82	02H	02H	10	96910.1	42	HOT	680PP
		0.56	119	P1	DSI		02H	-0.73	TEH	TEC			12	COLD	720UL
32	19	0.16	53	P5	WAR		03H	-0.61	03H	03H	3	96910.1	42	HOT	680PP
		0.17	110	P1	DSI		03H	-0.54	TEH	TEC			1	COLD	720UL

Total Tubes : 3
Total Records: 6

Notes: 1) DSI designates a distorted tube support signal reported by bobbin coil probe.
2) The Util1 field shows the estimated depth using qualified rotating +Point™ sizing which confirms the presence of wear (WAR)

Turkey Point SG 3C EOC 22

Tubes Plugged Listing

ROW	COL	VOLTS	DEG	CHN	IND	%TW	LOCATION	EXT	EXT	UTIL 1	UTIL 2	CAL #	LEG	PROBE
20	67	0.34	265	2	SVI	TSH	-6.01	TSH	TSH	30	21998.1	30	HOT	720PP

Total Tubes : 1
Total Records: 1

Note: 1) SVI is a designation for single volumetric (OD) indication detected with the rotating +Point™ probe while performing the extended hot leg tube sheet examinations of plus 3.0 inches to minus 17.0 inches.

2) This tube was plugged in accordance with technical specification requirements.

END SG 3C DATA

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

Turkey Point Unit 3 Steam Generator Tube Plugging at EOC 22

Degradation Mechanism	SG 3A	SG 3B	SG 3C	Total
Wear at anti-vibration bar tube contacts	0	0	0	0
Wear at tube support plate tube contacts	0	0	0	0
Wear at flow baffle plate tube contacts	0	0	0	0
Volumetric indication (unknown mechanism inside tubesheet)	0	0	1	1
Totals	0	0	1	1

f. Total number and percentage of tubes plugged to date

Turkey Point Unit 3 Steam Generator Cumulative Tube Plugging Summary		
SG	# Plugged	% Plugged
3A	47	1.50
3B	69	2.15
3C	54	1.68

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

The size of each of the wear indications at AVB, Top of Tube Sheet (TTS), broached Tube Support (TSP) and flow baffle (BAH) locations was evaluated and compared to structural limits. As shown in Figures 1 through 4, the wear indications were shallow in depth and within the calculated structural limits. Therefore, all indications met industry requirements for structural integrity. Leakage potential for the tubes was zero. Therefore, these mechanisms remain within the tube integrity performance criteria. Profile analysis of three baffle plate locations was completed for tubes R31 C77, R39 C64, and R43 C45 in SG 3B. The lowest calculated lower 95% burst pressure, taking into account material strength, sizing, and relational uncertainties, is 7760 psi for R39 C64. This value is significantly greater than three times normal operating pressure differential (4552 psi). Therefore, these indications met the structural and leakage integrity performance criteria and in situ pressure testing was not required

The size of the single volumetric indication within the hot leg tubesheet was also compared to the structural limits. This indication (S/G 3C R20 C67) met the initial screening as shown in Figure 5. Subsequent profile analysis and structural evaluations were completed to determine if in situ pressure testing was required. The calculated lower 95% burst pressure, taking into account material strength, sizing, and relational uncertainties, is 6980 psi. This value is significantly greater than three times normal operating pressure differential (4552 psi). Therefore, this indication met the structural and leakage integrity performance criteria and in situ pressure testing was not required

Tube R20 C67 in S/G 3C, Condition Report 2007-28662, was plugged for the outside diameter (OD) volumetric indication detected approximately 6 inches below the hot-leg TTS. This indication is within the tubesheet and the tube-to-tubesheet crevice is closed. Therefore, there is no adverse service environment and this indication is considered to most likely be a result of manufacturing or installation and not service induced.

One existing TSP wear indication in S/G 3B, Tube R7 C45 at support location 02C+0.67 inch showed evidence of a PLP which could not be confirmed by visual examination due to restricted access. The wear indication was first seen in 1990 and essentially has not changed in size since that time. The wear depth was shallow (~13%TW) in 2003 and was sized during the 2007 inspection as 12%TW. The wear rate is low based on tracking data covering 17 years of past operation. All adjacent tubes showed no evidence of wear. Because of the shallow measured depth, long service history without significant change in voltage, as well as the lack of physical evidence of wear to adjacent tubes, the loose part is most likely small and immobile. This tube remains in service and will be tracked during future inspections.

In summary, the structural integrity for all indications met the structural and leakage integrity performance criteria for tube integrity. Therefore, the Turkey Point Unit 3 steam generators satisfy the condition monitoring requirements during the past operating cycle for all detected tube degradation.

h. The effective plugging percentage for all plugging in each SG

No tube repair methods (i.e., sleeving) are approved for Turkey Point Unit 3 that would have an affect on effective plugging percentages. Therefore, the applicable effective plugging percentage for all plugging is shown in "% Plugged" in item f. above.

FIGURE 1

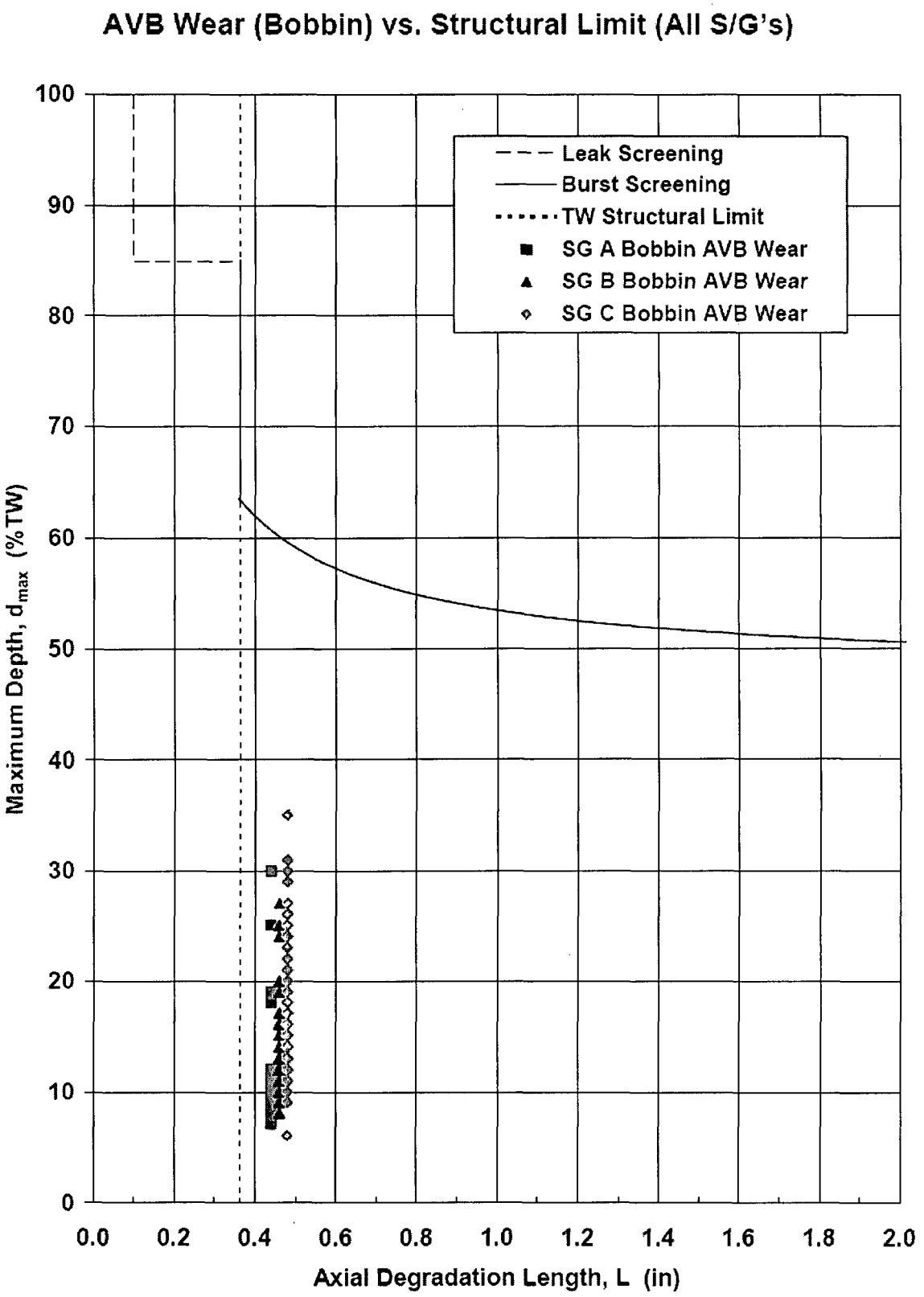

AVB Wear (Bobbin) vs. Structural Limit (All S/G's)
Leak Screening
Burst Screening
TW Structural Limit
SG A Bobbin AVB Wear
SG B Bobbin AVB Wear
SG C Bobbin AVB Wear
Maximum Depth, d_{max} (%TW)
Axial Degradation Length, L (in)
100
90
80
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 2

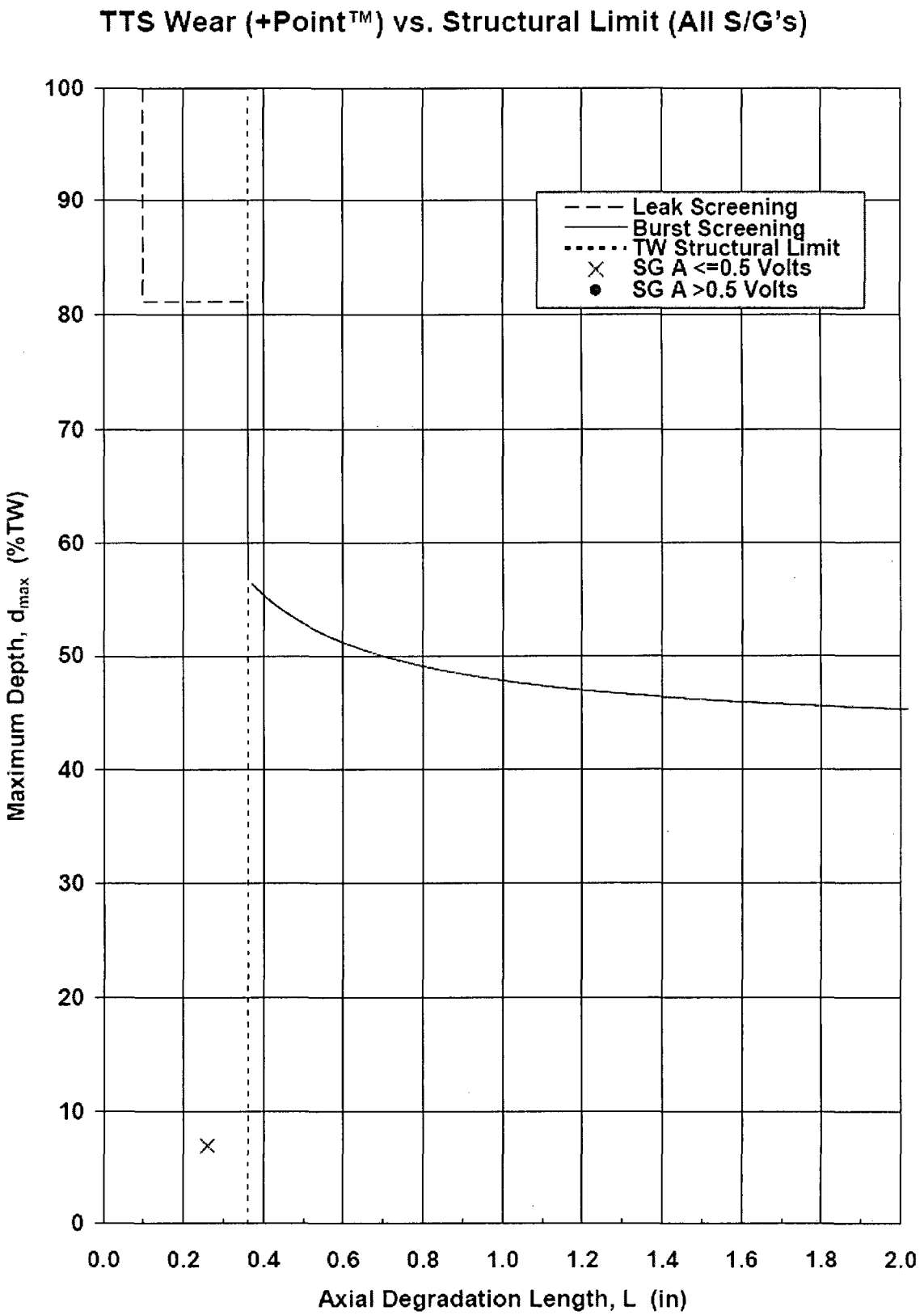

TTS Wear (+Point™) vs. Structural Limit (All S/G's)
Leak Screening
Burst Screening
TW Structural Limit
SG A <=0.5 Volts
SG A >0.5 Volts
Maximum Depth, d_{max} (%TW)
Axial Degradation Length, L (in)
0
10
20
30
40
50
60
70
80
90
100
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 3

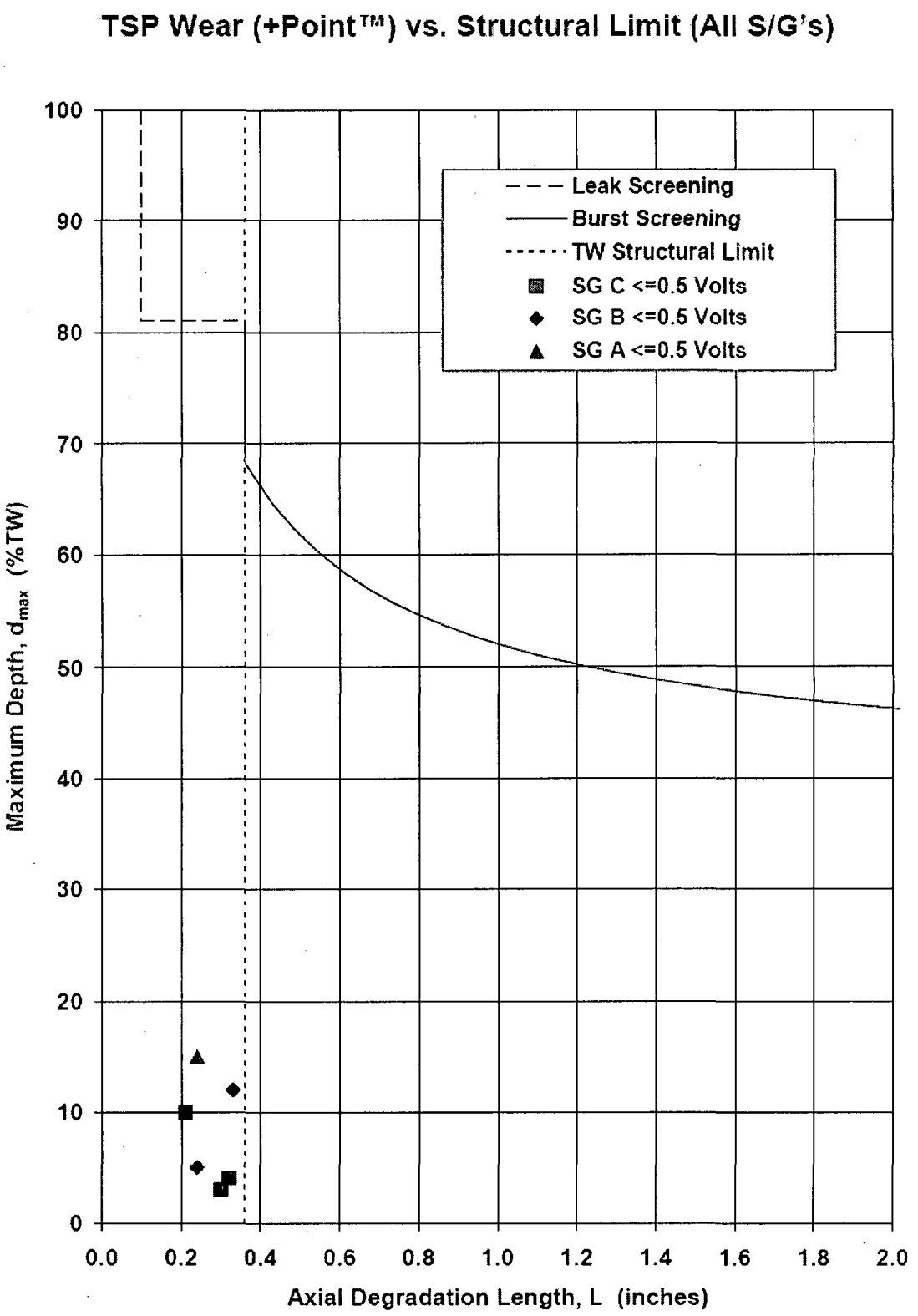

TSP Wear (+Point™) vs. Structural Limit (All S/G's)
Leak Screening
Burst Screening
TW Structural Limit
SG C <=0.5 Volts
SG B <=0.5 Volts
SG A <=0.5 Volts
Maximum Depth, d_{max} (%TW)
Axial Degradation Length, L (inches)
100
90
80
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 4

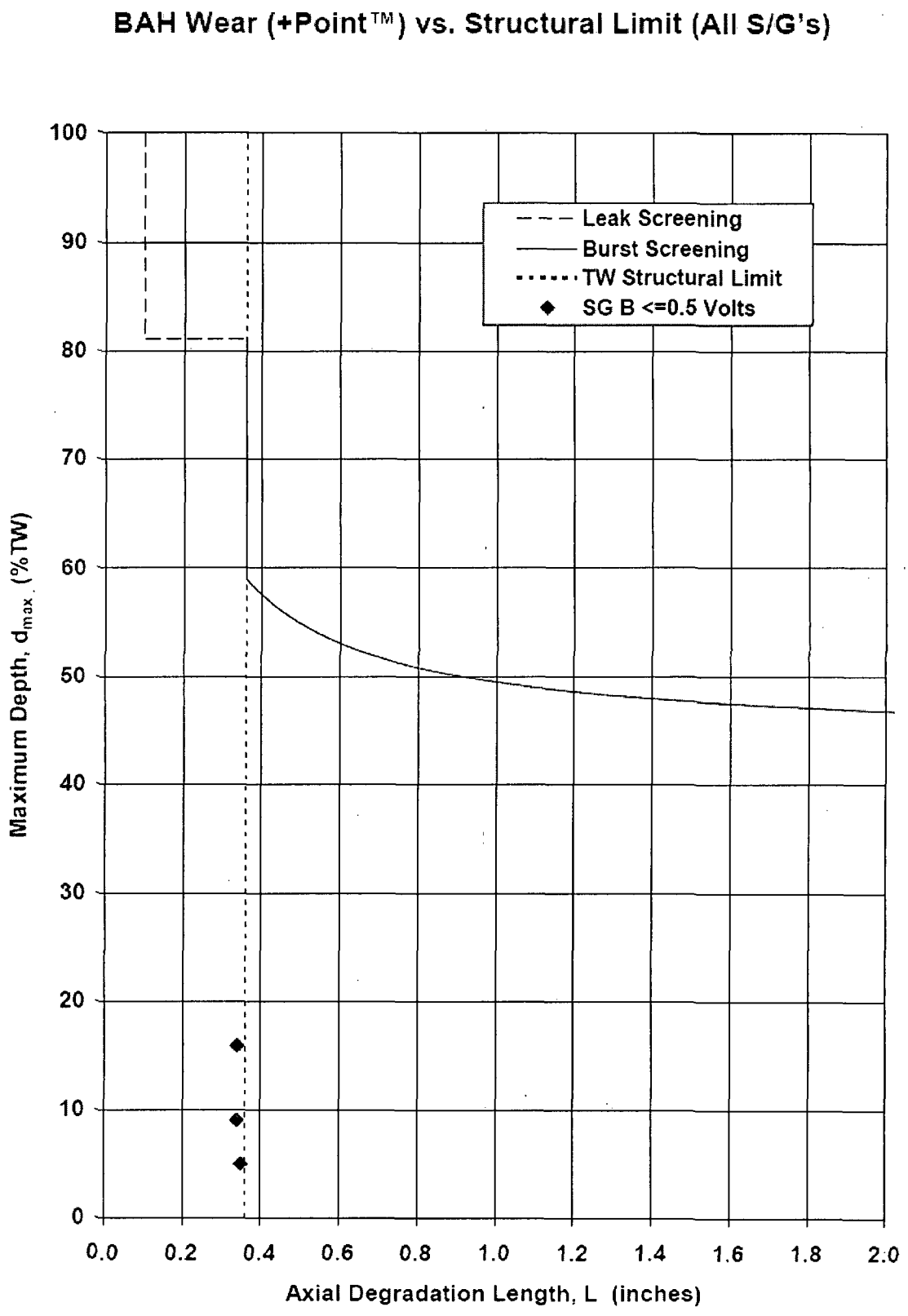
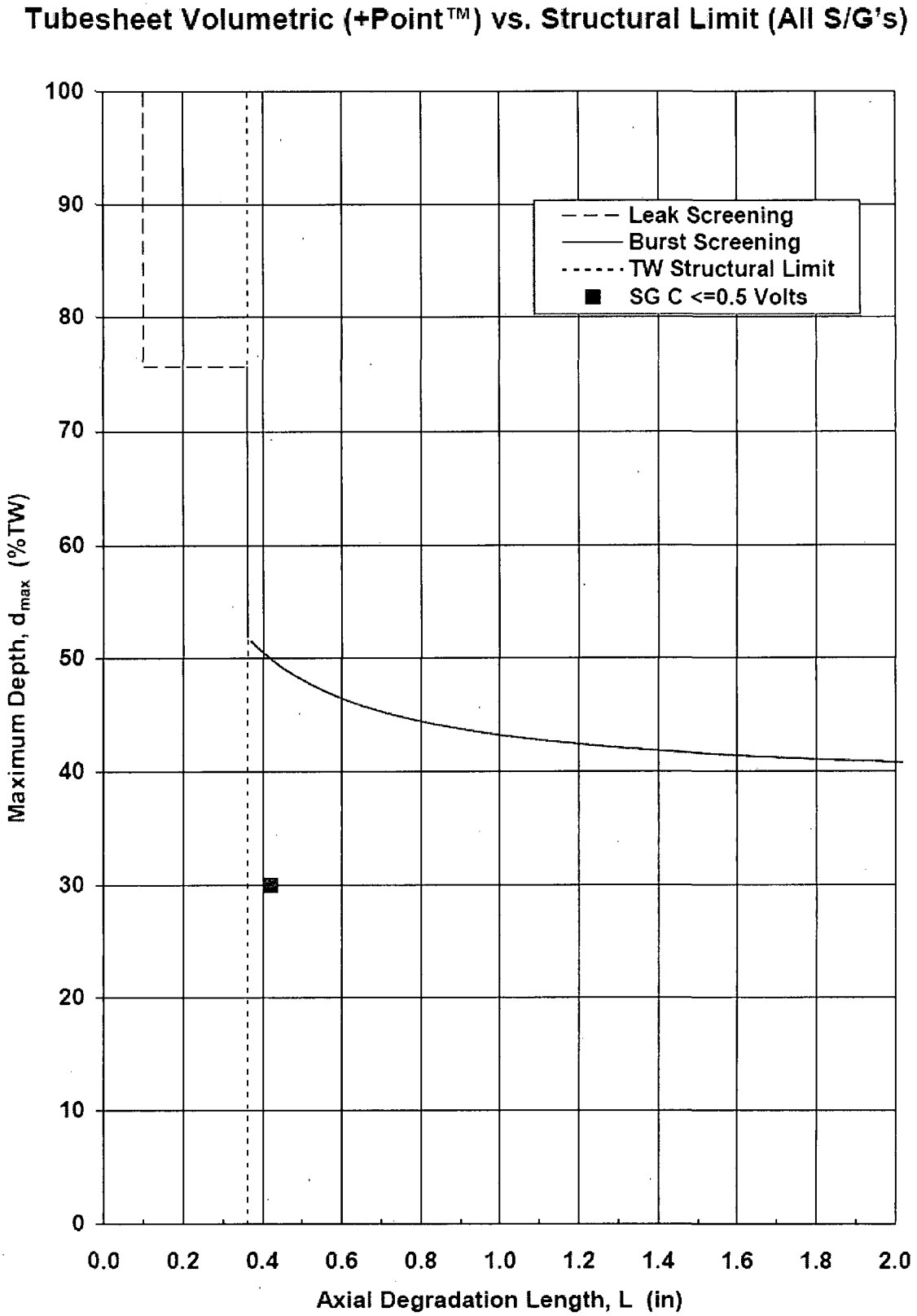

BAH Wear (+Point™) vs. Structural Limit (All S/G's)
Leak Screening
Burst Screening
TW Structural Limit
SG B <=0.5 Volts
Maximum Depth, $d_{max.}$ (%TW)
Axial Degradation Length, L (inches)
100
90
80
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

FIGURE 5


Tubesheet Volumetric (+Point™) vs. Structural Limit (All S/G's)
Leak Screening
Burst Screening
TW Structural Limit
SG C <=0.5 Volts
Maximum Depth, d_{max} (%TW)
100
90
80
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
Axial Degradation Length, L (in)