



October 6, 2014
L-2014-293
10 CFR 50.36

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

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

The attached Turkey Point Unit 3 Cycle 27 Refueling Outage 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 with Technical Specification 6.8.4.j, Steam Generator (SG) Program.

Should there be any questions, please contact Robert Tomonto, Licensing Manager at (305) 246-7327.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Kiley', is written over a horizontal line.

Michael Kiley
Vice President
Turkey Point Nuclear Plant

Attachments

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

Turkey Point Unit 3
Steam Generator Tube Inspection Report for TP3-27

Background

This report is provided in accordance with Turkey Point Unit 3 Technical Specification (TS) Section 6.9.1.8, "Steam Generator Tube Inspection Report" for the inspection conducted April 1-5, 2014 during refueling outage twenty-seven (TP3-27). The TP3-27 outage designator is also commonly referred to as EOC-26 (End of the 26th Fuel Cycle). Pursuant to Turkey Point Unit 3 Technical Specification 6.9.1.8, this Steam Generator Tube Inspection Report is required to be submitted to the NRC within 180 days after initial entry into Mode 4. Following the TP3-27 refueling outage, Turkey Point Unit 3 initially entered Mode 4 (Hot Shutdown) on April 20, 2014.

Turkey Point Unit 3 has three (3) Westinghouse Model 44F steam generators (SGs), which were installed in 1981/1982 to replace the original Unit 3 SGs. At the completion of Cycle 26 (CY-26), the Unit 3 SGs had accumulated 24.71 Effective Full Power Years (EFPY) of operation. The hot leg operating temperature (T-Hot) of Turkey Point Unit 3 is currently ~610 degrees F.

The TP3-27 SG tube inspections satisfy the surveillance requirements for the third inspection period of 72 Effective Full Power Months (EFPM) in accordance with Turkey Point Unit 3 TS Section 6.8.4.j.d.2.c. TS Section 6.8.4.j.d.2.c requires that 100% of the tubes be inspected every 72 EFPM. For the current inspection period of 72 EFPM, the Turkey Point Unit 3 SGs inspections that were performed are shown below:

- TP3-23 in 2007 (SG Inspection)
- TP3-24 in 2009 (Skip - No SG primary side inspections)
- TP3-25 in 2010 (SG Inspection)
- TP3-26 in 2012 (Skip)
- TP3-27 in 2014 (SG Inspection).

The inspections implemented during TP3-23, TP3-25, and TP3-27 satisfied the TS surveillance requirements for the 3rd In-Service Inspection (ISI) period of 72 EFPM. There are no more SG inspections planned or required for the 3rd ISI period. The next planned refueling outage for Unit 3 is the TP3-28 in the fall 2015, which will be a skip outage for SG primary side inspections. The next scheduled SG inspections will be during TP3-29 refueling outage in the spring 2017. That inspection will be the first inspection in the 4th ISI period of 72 EFPM.

The examination performed during TP3-27 refueling outage met the requirements of the following:

- Technical Specification 6.8.4.j "Steam Generator (SG) Program"
- Steam Generator Management Program: Pressurized Water Reactor Steam Generator Examination Guidelines: Revision 7. EPRI, Palo Alto, CA. 2007 TR-1013706.

Implementation of TSTF-510 (Reference 1) was approved by License Amendments 255 and 251 (Reference 2) on Nov. 6, 2012, and incorporated into the Turkey Point technical specifications to make changes to the sections pertaining to SG tube integrity, the SG program (inspection frequency), and the SG tube inspection report.

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Steam Generator Tube Inspection Report

Each applicable reporting requirement of TS 6.9.1.8 is addressed below in items "a" through "j" for the TP3-27 SG tube inspection performed in 2014.

a. The scope of inspections performed on each SG

All three SGs were examined during TP3-27.

Bobbin Probe

- 100% full length in rows 3 and higher. Rows 1 and 2 examinations were limited to the hot leg (HL) and cold leg (CL) straight sections.

+Point™ Probe

- 50% of the HL tubesheets to the extent of top of tubesheet (TTS) +3.00" to TTS -18.11."
Note 1: TTS-18.11" is the approved H* depth.
Note 2: This inspection scope included 50% of the bulges (BLG) and over-expansions (OXP) in the HL tubesheet down to the H* depth.
- All HL and CL Periphery Expansion Transitions - +3"/-2" from top of tubesheet. "Periphery Tubes" are defined as the two outer-most peripheral tubes exposed to the annulus, and all open row 1 and 2 tubes in columns 1-92.
- Tight radius U-bends – 50% sample of rows 1 and 2
- 50% of hot leg freespan dings/dents > 5 volts between Tubesheet Hot Leg (TSH) and the 6th Tube Support on the HL side (06H) + 1.00"
- 50% of dings/dents in U-bends
- 50% of dings/dents at HL tube structures
- All tubes adjacent to previously reported foreign objects that are actively tracked are included in this plan for examination using the rotating +Point™ probe.
- Diagnostic rotating probe examinations (Special Interest, SI) as required based on the results of the bobbin coil.
- Selected wear indications were profiled with line-by-line sizing to provide additional information for Condition Monitoring (CM) and Operational Assessment (OA) purposes.

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Plug Visual Inspection

- Visual inspection in each SG of all installed tube plugs.

Supplemental Primary Side Inspections to address Westinghouse NSAL 12-01

- Visual inspection in each SG of the channel heads in response to NSAL 12-01 "Steam Generator Channel Head Degradation" January 5, 2012

Secondary Side Inspection (SSI) and Cleaning

SSI and cleaning were completed in each SG and included the following activities:

- Upper Bundle Flush
- Sludge Lance
- Foreign Object Search and Retrieval (FOSAR)
- Upper internals visual inspection (in one selected SG)

b. Degradation mechanisms found

The TP3-27 examination results for Turkey Point Unit 3 identified mechanical wear at the following locations:

- Anti-Vibration bar (AVB) contact points in the U-bends
- Broached tube support contact points
- Hot Leg Baffle Plates
- One wear location above HL top of tubesheet where a hard sludge collar was previously located.

In addition to the wear degradation discussed above, there was one (1) axial indication reported in SG 3B near the HL tube-end (which is below the H* depth of TTS-18.11"). On November 5th, 2012, the NRC approved License Amendments (Ref. 3) regarding permanent alternative repair criteria for service-induced degradation detected in the tubesheet region. Reference 3 states: "Tubes with service-induced flaws located greater than 18.11 inches below the top of the tubesheet do not require plugging". Therefore, the tube with the indication below the H* region remained in service.

Since the axial indication was below the H* depth, it was reported as "AOB", which is an acronym for "Axial- Outside (H*) Boundary"

This lower portion of the tubesheet had not been previously inspected, so no previous inspection data exists for the AOB indication below the H* depth.

There were no indications of corrosion-related tube degradation detected above the H* depth during the TP3-27 inspection.

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c. Nondestructive examination techniques utilized for each degradation mechanism

Turkey Point Unit 3 Examination Techniques for TP3-27

Technique		Industry Qualification (ETSS)	Type of Degradation	Demonstrated Applicability	Extended Applicability	Was the Technique Used for Sizing during TP3-27?
1	Bobbin	96001.1 Revision 11	Thinning	Top of Tubesheet and Tube Support Plates (TSPs)	Detection of Thinning Above Tubesheet	No
2	Bobbin	96004.1 Revision 13	Wear	TSPs, Anti-Vibration Bars (AVBs)	None	Yes. Used to size AVB Wear for service.
3	Bobbin	96004.2 Revision 13	Wear	TSPs, AVBs	None	No
4	Bobbin	96005.2 Revision 9	Pitting	Freespan in the Presence of Copper	Detection of Pitting in Sludge Pile	No
5	Bobbin	24013.1 Revision 2	ODSCC	Freespan Dings <5.00 Volts	None	No
6	Bobbin	I-28411 Revision 3	Axial ODSCC	Drilled TSP With or w/o Dents < 2 volts	None	No
7	Bobbin	I-28412 Revision 3	Axial ODSCC	Freespan	None	No
8	Bobbin	I-28413 Revision 3	Axial ODSCC	Broached TSP, Sludge Pile	None	No
9	Bobbin	27091.2 Revision 1	Wear	Foreign Object Wear (with Foreign Object not present)	Detection of Foreign Object Wear (with Foreign Object present)	No
10	+Point™	96511.1/.2 Revision 16	PWSCC	Low Row U-bend	None	No
11	+Point™	I11524 Revision 0	Circumferential PWSCC	Expansion Transition	Detection of Circ PWSCC at Dent, Dings, Non-Dented Support Structures, Tubesheet	No
12	+Point™	20511.1 Revision 8	Axial PWSCC	Expansion Transition	Detection of Axial PWSCC at Non-Dented Support Structures, Tubesheet	No

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**Turkey Point Unit 3 Examination Techniques for TP3-27
continued**

Technique		Industry Qualification (ETSS)	Type of Degradation	Demonstrated Applicability	Extended Applicability	Technique Used for Sizing during TP3-27?
13	+Point™	96703.1 Revision 17	Axial PWSCC	Dent/Ding	Detection of Axial PWSCC at Non-Dented Support Structures, Tubesheet	No
14	+Point™	22401.1 Revision 4	Axial ODSCC	Dented Support Structures > 2.0 volts	Detection of Axial ODSCC at Tubesheet, Expansion Transition, Dents, Dings,	No
15	+Point™	96910.1 Revision 10	Wear	Broached TSP	Detection and Sizing of Wear at Flow Baffle Plate	Yes Used to size Broached TSP Land Contact Wear and Lower Edge Wear for Service. Also used to size Wear at Flow Baffle Plate for Service.
16	+Point™	21998.1 Revision 4	Volumetric	Freespan	None	No
17	+Point™	22842.3 Revision 5	Circumferential ODSCC	Dented Support Structures	None	No
18	+Point™	21410.1 Revision 6	Circumferential ODSCC	Expansion Transition	Detection of Circumferential ODSCC at TSP, Freespan, Sludge Pile, Tubesheet, Dents, Dings, U-bend	No
19	+Point™	96701.1 Revision 12	Circumferential PWSCC	Expansion Transition	Detection of Circumferential PWSCC at Dents, Dings, Tubesheet	No
20	+Point™	27901.1 Rev. 1 27902.1 Rev. 1 27903.1 Rev. 1 27904.1 Rev. 1 27905.1 Rev. 1 27906.1 Rev. 1 27907.1 Rev. 1	Wear	Foreign Object Wear Shape Morphology Dependent (with Foreign Object not present)	Detection of Foreign Object Wear (with Foreign Object Present)	Yes 27902.1, 27903.1 and 27905.1 were used to size wear slightly below lower edge of Broached TSPs for service. 27903.1 was also used to size small wear indication above the H/L TTS

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**Turkey Point Unit 3 Examination Techniques for TP3-27
continued**

Technique		Industry Qualification (ETSS)	Type of Degradation	Demonstrated Applicability	Extended Applicability	Technique Used for Sizing during TP3-27?
21	+Point™	I-28424 Revision 3	Axial ODSCC	Sludge Pile, Drilled TSP with or w/o dents ≤ 2.0 volts	Detection of Pitting at Expansion transitions	No
22	+Point™	I-28425 Revision 3	Axial ODSCC	Freespan, Broached TSP	None	No
23	+Point™	I-28431 Revision 2	Axial ODSCC	Sludge Pile	None	No
24	+Point™	I-28432 Revision 2	Axial ODSCC	Freespan, Broached TSP	None	No
25	+Point™	21409.1 Revision 7	Axial ODSCC	Support Structures, Freespan Region, Sludge Pile and Tubesheet Crevice	Detection of Axial ODSCC at Expansion Transitions	No
26	+Point™	10411.1 Revision 0	Axial ODSCC	Low-Row U-bends	Detection of Axial ODSCC in all U-bends	No
27	+Point™	10411.2 Revision 0	Axial ODSCC	Low-Row U-bends	Detection of Axial ODSCC in all U-bends	No
28	+Point™	10908.4 Revision 1	Wear	Anti-Vibration Bars (AVBs)	None	No

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

Please see Attachments 2, 3 and 4 for indication listings for SG 3A, 3B and 3C respectively.

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

Table 2
Turkey Point Unit 3 Tube Plugging EOC 26 (TP3-27)

Reason for Plugging	SG 3A	SG 3B	SG 3C	Total
Wear indication above HL TTS in the presence of deposits/scale	0	1	0	1
Wear at support structures	0	4	0	4
Permeability Variation (PVN) in the tube freespan	0	1	0	1
Total	0	6	0	6

Note: All tubes were preventatively plugged; none of the plugs were required by Plant Technical Specifications.

f. The number and percentage of tubes plugged to date, and the effective plugging percentage in each steam generator

No tube repair methods (i.e. sleeving) are approved for Turkey Point Unit 3 that would have an effect on the effective plugging percentages. Therefore, the applicable effective plugging percentage is synonymous with the % Plugged in Table 3 below:

Table 3

Turkey Point Unit 3 Steam Generator Cumulative Tube Plugging Summary TP3-27		
SG	# Plugged	% Plugged
3A	48	1.49%
3B	80	2.49%
3C	62	1.93%

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

All tubes satisfied the structural integrity and accident-induced leakage performance criteria based on the CM evaluation performed at the TP3-27 inspection. No tubes required in-situ pressure testing for either tube burst or leakage. Therefore, all tubes met the structural and leakage integrity requirements of the Turkey Point Technical Specifications.

No tube pulls were required.

h. The primary to secondary leakage rate observed in each SG (if it is not practical to assign the 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

No primary to secondary leakage was reported during Cycle 26.

i. The calculated accident induced leakage rate from the portion of the tubes below 18.11 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In addition, if the calculated accident induced leakage rate from the most limiting accident is less than 1.82 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined

The accident induced leakage rate from the portion of the tubes below 18.11 inches from the top of the tubesheet is calculated from any observed normal operating leakage that cannot be attributed to a source other than the tubesheet expansion region. The technical basis for this calculation is contained in the H* Alternate Repair Criteria (ARC) for the Turkey Point plant. For the operating period preceding the TP3-27 inspection, no operational primary-to-secondary leakage was observed. Further, there are no existing degradation mechanisms that have the potential for leakage.

For Turkey Point Unit 3, the maximum operational primary-to-secondary leakage rate from the portion of the tubes below 18.11 inches from the top of the tubesheet is determined by multiplying any normal operating leakage by a factor of 1.82 to determine the accident induced leakage rate. This multiplying factor for leakage is based on H* ARC methodology. Since no operational primary-to-secondary leakage has been observed, the calculated accident induced leakage rate from the portion of the tubes below 18.11 inches from the top of the tubesheet is zero.

Therefore, neither the normal operating leakage limit nor the accident induced leakage limits will be challenged during the next operating period.

j. The results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

Monitoring of tube slippage was completed during the TP3-27 inspections. No tube slippage was reported.

Turkey Point Unit 3
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ADDITIONAL INFORMATION

The following information is included to assist the staff's review of this report.

Abbreviations and Acronyms

ARC	Alternate Repair Criteria
AVB	Anti-Vibration Bar
CL	Cold Leg
CM	Condition Monitoring
EPRI	Electric Power Research Institute
HL	Hot Leg
ISI	In-Service Inspection
OA	Operational Assessment
ODSCC	Outside Diameter Stress Corrosion Cracking
PWSCC	Primary Water Stress Corrosion Cracking
TSH	Tubesheet Hot Leg
TSP	Tube Support Plate
TTS	Top of Tubesheet
TWD	Through Wall Depth
WAR	Mechanical Wear

Three-Letter Reporting Codes used in Listings

DSI	Distorted Support Indication
NDD	No Detectable Degradation
PLP	Potential Loose Part
PVN	Permeability Variation
VOL	Volumetric (Used to Report Certain Wear Indications)
WAR	Mechanical Wear

Outage Designators

TP3-23	=	EOC-22
TP3-24	=	EOC-23
TP3-25	=	EOC-24
TP3-27	=	EOC-26

Turkey Point Unit 3
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References:

1. Technical Specifications Task Force (TSTF) Standard Technical Specifications (STSs) Change Traveler TSTF -510, Revision 2, "Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection," (ADAMS Accession No. ML110610350).
2. License Amendments 255 and 251: F. Saba (NRC) to M. Nazar (FPL), "Turkey Point Nuclear Generating Station Unit Nos. 3 and 4 – Issuance of Amendments Regarding Adoption of TSTF-510, 'Revision to Steam Generator Program Inspection Frequencies and Tube Sample Selection,' (TAC NOS. ME9106 and ME9107)," ADAMS Accession No. ML12297A240), November 6, 2012.
3. License Amendments 254 and 250: F. Saba (NRC) to M. Nazar (FPL), "Turkey Point Nuclear Generating Station Unit Nos. 3 and 4 - Issuance of Amendments Regarding Permanent Alternate Repair Criteria for Steam Generator Tubes (TAC NOS. ME8515 and ME8516)," (ADAMS Accession No. ML12292A342), November 5, 2012.

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3A

SG 3A Indication Listings	
Listing Description	Page No.
Tubes Plugged Listing (No Tubes Plugged)	2
Bobbin WEAR (WAR) at AVB locations 20-100%TWD	2
Bobbin WEAR (WAR) at AVB locations 1-19% TWD	2
+Point™ WEAR (WAR) 1-100% (Broached Support Plates)	3

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3A

Turkey Point Unit 3 (EOC-26)
SG 3A Tubes Plugged Listing

03/14 – EOC26

No tubes required plugging as a result of these inspections in Steam Generator(SG)3A

Turkey Point Unit 3 (EOC-26)
SG 3A

03/14 – EOC26

Bobbin Wear (WAR) at AVB's 20-100%TWD

ROW	COL	%TW	LOCATION	
28	59	24	AV2	+0.00
30	52	20	AV3	-0.12
31	44	23	AV3	+0.38
37	47	29	AV3	+0.23

Total Tubes : 4
Total Records: 4

Turkey Point Unit 3 (EOC-26)
SG 3A

03/14 – EOC26

Bobbin Wear (WAR) at AVB's 1-19%TWD

ROW	COL	%TW	LOCATION	
9	62	9	AV4	+0.00
22	44	9	AV4	+0.07
24	10	12	AV4	-0.19
24	40	10	AV2	+0.00
25	67	8	AV2	-0.30
28	59	11	AV1	+0.00
		18	AV3	+0.00
		13	AV4	+0.00
31	13	7	AV1	-0.03
31	41	12	AV4	+0.94
31	44	11	AV3	-0.28
32	42	10	AV3	-0.21
33	43	8	AV2	-0.14
34	31	12	AV2	+0.07
34	46	12	AV3	+0.42
35	61	11	AV1	+0.14
37	47	6	AV2	-0.42
		9	AV4	-0.02
38	27	10	AV2	-0.21
38	65	18	AV3	+0.00

Total Tubes : 17
Total Records: 20

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3A

Turkey Point Unit 3 (EOC-26)
SG 3A

03/14 – EOC26

+Point Wear (WAR) At Broached Supports 1-100%TWD
(Shown below are the original bobbin "DSI" and corresponding +Point "WAR" report entries)

ROW	COL	IND	%TW	LOCATION	
12	19	DSI	03H	-0.63	Bobbin Coil
		WAR	13 03H	-0.60	+Point Coil

13	4	DSI	05H	-0.56	Bobbin Coil
		WAR	3 05H	-0.55	+Point Coil

14	4	DSI	06C	-0.74	Bobbin Coil
		WAR	17 06C	-0.66	+Point Coil

Total Tubes : 3
Total Records: 6

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

SG 3B Indication Listings	
Listing Description	Page No.
Tubes Plugged Listing (Preventative Tube Plugs)	2
Bobbin WEAR (WAR) at AVB locations 20-100%TWD	2
Bobbin WEAR (WAR) at AVB locations 1-19% TWD	3
+Point™ WEAR (WAR) 1-100% (Broached Support Plates)	4
+Point™ WEAR (WAR) 1-100% (H/L Baffle Plates)	4
+Point™ Volumetric (VOL) 1-100%	5
+Point™ Permeability Variation	6

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

**Turkey Point Unit 3 (EOC-26)
SG 3B Tubes Plugged Listing**

03/14 – EOC26

EOC26 ECT Results for Tubes Plugged

ROW	COL	IND	%TW	LOCATION	
3	43	VOL	31	TSH	+0.99
43	45	WAR	26	BAH	-0.27
39	64	WAR	26	BAH	-0.33
5	65	VOL	25	02H	-0.84
23	71	PVN		02C	-20.90
18	80	VOL	35	02H	-0.90

Total Tubes : 6
Total Records: 6

Note: All tubes were preventively plugged. No tubes exceeded Tech Spec Plugging criteria.

**Turkey Point Unit 3 (EOC-26)
SG 3B**

03/14 – EOC26

Bobbin Wear (WAR) at AVB's 20-100%TWD

ROW	COL	%TW	LOCATION	
30	42	21	AV2	+0.05
		26	AV3	+0.21
		21	AV4	+0.00
34	53	26	AV1	+0.00
		28	AV2	+0.00
34	59	20	AV2	+0.00
35	48	21	AV3	+0.25
		26	AV2	-0.09

Total Tubes : 4
Total Records: 8

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

Turkey Point Unit 3 (EOC-26)
SG 3B

03/14 – EOC26

Bobbin Wear (WAR) at AVB's 1-19%TWD

ROW	COL	%TW	LOCATION	
====	====	===	=====	
17	31	12	AV3	-0.49
		8	AV4	-0.09
26	20	15	AV4	+0.07
26	50	11	AV4	-0.02
30	42	13	AV1	+0.14
32	27	12	AV2	+0.00
34	20	12	AV3	-0.49
34	31	10	AV1	+0.00
		15	AV2	+0.00
		19	AV3	+0.00
		11	AV4	+0.00
34	33	16	AV3	+0.05
34	52	12	AV4	-0.09
34	53	16	AV3	+0.00
34	59	14	AV4	+0.00
		12	AV1	+0.00
34	73	11	AV2	+0.07
35	48	19	AV3	-0.18
35	62	14	AV1	+0.00
		18	AV2	+0.00
36	46	10	AV1	+0.32
37	32	10	AV2	+0.44
40	47	17	AV3	+0.32
41	34	11	AV2	+0.16
42	53	11	AV3	+0.00
		14	AV4	+0.00
		16	AV3	+0.42
44	37	5	AV4	+0.07
		6	AV4	+0.35
45	46	13	AV2	-0.09
45	49	8	AV4	+0.07

Total Tubes : 22
Total Records: 31

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

Turkey Point Unit 3 (EOC-26)
SG 3B

03/14 – EOC26

+Point Wear (WAR) At Broached Supports 1-100%TWD
(Shown below are the original bobbin "DSI" and corresponding +Point "WAR" report entries)

ROW	COL	IND	%TW	LOCATION		
5	87	DSI	03H	-0.55	Bobbin Coil	
		WAR	6 03H	-0.53	+Point Coil	
21	42	DSI	03C	+0.60	Bobbin Coil	
		WAR	7 03C	+0.57	+Point Coil	
26	41	DSI	03C	+0.65	Bobbin Coil	
		WAR	13 03C	+0.62	+Point Coil	
33	73	DSI	02H	-0.65	Bobbin Coil	
		WAR	4 02H	-0.66	+Point Coil	

Total Tubes : 4
Total Records: 8

Turkey Point Unit 3 (EOC-26)
SG 3B

03/14 – EOC26

+Point Wear (WAR) At H/L Baffle Plates 1-100%TWD
(Shown below are the original bobbin "DSI" and corresponding +Point "WAR" report entries)

ROW	COL	IND	%TW	LOCATION		
39	64	DSI	BAH	-0.25	Bobbin Coil	
		WAR	26 BAH	-0.33	+Point Coil	
42	44	DSI	BAH	-0.38	Bobbin Coil	
		WAR	6 BAH	-0.45	+Point Coil	
43	45	DSI	BAH	-0.23	Bobbin Coil	
		WAR	26 BAH	-0.27	+Point Coil	
45	45	DSI	BAH	-0.09	Bobbin Coil	
		WAR	9 BAH	-0.16	+Point Coil	

Total Tubes : 4
Total Records: 8

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

Turkey Point Unit 3 (EOC-26)
SG 3B

03/14 – EOC26

+Point Volumetric (VOL) 1-100%
(Shown below are the original bobbin and corresponding +Point report entries)

ROW	COL	IND	%TW	LOCATION	
3	43	NDD			Bobbin Coil
		VOL*	31	TSH	+0.99 +Point Coil
		PLP*		TSH	+1.04 +Point Coil
5	65	DSI		02H	-0.75 Bobbin Coil
		VOL	25	02H	-0.84 +Point Coil
18	80	DSI		02H	-0.77 Bobbin Coil
		VOL	35	02H	-0.90 +Point Coil

Total Tubes : 3
Total Records: 7

*Tube R3 C43, TSH +0.99" was the location of a previous hard sludge collar that is no longer present.

Although the hard sludge collar is no longer present in R3 C43, there were some light secondary side deposits present at that location. A very low voltage volumetric wear indication was reported with the +Point coil at TSH +0.99" (the location of previous hard collar), and conservatively sized. The tube was reported as "VOL" (for the volumetric wear), and "PLP" (to indicate the presence of the remaining deposits). The tube was preventatively plugged.

The "VOL" indications reported in R5 C65 and R18 C80 were indicative of broached TSP wear located slightly below the lower edge of the broached support plate. These two tubes were preventatively plugged.

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3B

Turkey Point Unit 3 (EOC-26)
SG 3B

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+Point Permeability Variation (PVN)
(Shown below are the original bobbin and corresponding +Point report entries)

ROW	COL	IND	%TW	LOCATION
23	71	PVN*	01C	+31.67 Bobbin Coil
23	71	PVN*	02C	-20.90 +Point Coil

Total Tubes : 2
Total Records: 2

* Permeability variation (PVN) is not degradation, and does not inherently threaten the operability of the tube.
A PVN signal could potentially mask degradation, if it were to develop. There was no evidence of degradation in the tube and no evidence that the tube failed to meet its performance criteria. This tube was preventatively plugged.

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SG 3C

SG 3C Indication Listings	
Listing Description	Page No.
Tubes Plugged Listing (No tubes plugged)	2
Bobbin WEAR (WAR) at AVB locations 20-100%TWD	2
Bobbin WEAR (WAR) at AVB locations 1-19% TWD	3 & 4
+Point™ WEAR (WAR) 1-100% (Broached Support Plates)	5

Turkey Point Unit 3 (TP3-27)
Steam Generator Tube Inspection Report
SG 3C

**Turkey Point Unit 3 (EOC-26)
SG 3C Tubes Plugged Listing**

Note: No tubes required plugging as a result of these inspections in steam generator (SG) 3C

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Bobbin WAR at AVB's 20-100%TWD

ROW	COL	%TW	LOCATION	
====	====	===	=====	
23	45	21	AV3	+0.00
24	63	23	AV3	-0.30
25	62	23	AV3	+0.14
		20	AV2	+0.12
26	58	22	AV1	-0.56
		28	AV2	-0.16
28	48	31	AV2	+0.18
30	31	24	AV3	+0.00
		24	AV2	+0.00
		22	AV1	+0.00
30	61	25	AV2	+0.09
33	31	22	AV3	+0.00
33	32	23	AV3	+0.23
33	43	30	AV3	+0.00
		27	AV2	+0.09
34	31	34	AV3	+0.00
		27	AV2	+0.00
34	41	30	AV4	+0.00
		31	AV3	+0.00
		29	AV2	-0.07
		28	AV1	+0.25
34	44	21	AV4	+0.00
		25	AV3	+0.00
35	35	21	AV3	+0.14
35	36	22	AV3	+0.00
		21	AV2	+0.00
35	49	29	AV4	+0.00
		22	AV3	+0.00
35	51	20	AV2	+0.07
35	54	21	AV2	-0.14
37	28	23	AV4	-0.05
38	65	23	AV4	+0.00
		24	AV2	+0.09
38	71	27	AV3	+0.07
39	54	21	AV3	+0.09
40	25	32	AV3	+0.00
		27	AV2	+0.00
40	44	22	AV4	+0.00
40	55	24	AV3	+0.00
42	31	21	AV3	+0.00

Total Tubes : 26
Total Records: 40

Turkey Point Unit 3 (TP3-27)
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SG 3C

Turkey Point Unit 3 (EOC-26)
SG 3C
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Bobbin WAR at AVB's 1-19%TWD

ROW	COL	%TW	LOCATION	
====	====	====	=====	
13	39	10	AV3	-0.02
18	26	8	AV2	+0.00
20	37	14	AV3	+0.00
		11	AV2	+0.00
21	38	15	AV3	+0.00
		19	AV2	+0.19
21	62	13	AV2	+0.00
		10	AV1	+0.09
23	49	10	AV3	+0.00
24	11	13	AV4	-0.16
24	12	11	AV1	+0.05
24	43	16	AV2	+0.00
24	57	15	AV2	+0.00
24	59	13	AV3	+0.00
		18	AV1	+0.12
		13	AV2	+0.14
		13	AV4	+0.26
24	63	14	AV2	+0.23
26	49	11	AV3	+0.00
26	58	18	AV3	-0.09
26	82	10	AV3	+0.00
27	83	10	AV2	+0.16
28	12	11	AV1	+0.12
28	48	17	AV3	+0.00
		13	AV1	+0.05
28	60	12	AV2	+0.00
29	14	10	AV3	+0.00
		9	AV2	+0.00
30	18	9	AV3	+0.00
		16	AV1	-0.08
30	30	18	AV4	+0.00
		13	AV3	+0.00
		13	AV2	+0.00
		14	AV1	+0.00
30	43	14	AV1	+0.00
		10	AV2	+0.00
30	51	15	AV2	-0.02
30	60	9	AV2	+0.09
30	61	8	AV4	-0.19
31	15	17	AV1	+0.16
31	80	10	AV3	-0.32
33	24	11	AV4	+0.00
		12	AV3	-0.16
33	28	13	AV3	+0.09
33	31	10	AV4	-0.12
		11	AV2	+0.09
33	32	13	AV4	+0.00
		19	AV2	+0.30
33	38	13	AV3	+0.00
33	45	12	AV2	+0.05
33	46	14	AV3	+0.00
33	54	11	AV3	+0.14
33	55	17	AV3	-0.12
		12	AV4	+0.00
33	74	10	AV4	-0.09
34	32	13	AV3	-0.14
34	38	14	AV4	+0.00
		10	AV3	+0.00
34	45	11	AV2	+0.00

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SG 3C

Turkey Point Unit 3 (EOC-26)
SG 3C

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Bobbin WAR at AVB's 1-19%TWD (cont.)

ROW	COL	%TW	LOCATION	
====	====	====	=====	=====
34	52	10	AV4	+0.00
		16	AV3	+0.00
34	56	13	AV3	+0.00
35	35	12	AV4	+0.14
35	52	19	AV3	-0.07
35	54	14	AV1	-0.93
35	57	13	AV2	+0.12
36	54	10	AV2	-0.07
36	56	11	AV3	+0.09
36	73	12	AV3	+0.05
37	26	12	AV4	+0.00
37	27	12	AV3	+0.00
37	28	15	AV3	+0.00
37	29	16	AV4	-0.16
38	25	14	AV3	+0.00
38	50	11	AV2	+0.00
38	59	9	AV2	+0.14
38	61	17	AV2	+0.14
38	63	15	AV2	+0.30
38	65	15	AV3	+0.00
38	66	14	AV3	+0.07
		12	AV4	-0.05
39	24	13	AV3	+0.00
39	28	10	AV4	+0.00
39	54	18	AV4	-0.07
39	55	18	AV2	-0.19
39	68	11	AV2	+0.00
40	28	12	AV4	+0.00
		11	AV3	+0.00
40	44	17	AV3	+0.00
40	46	12	AV4	+0.00
40	55	17	AV4	+0.00
40	57	10	AV3	+0.00
		10	AV4	-0.28
40	59	10	AV3	+0.05
42	35	10	AV3	+0.00
42	43	16	AV1	+0.00
43	33	17	AV3	+0.00
43	34	11	AV3	+0.00
43	35	14	AV3	+0.09
44	36	14	AV3	+0.00
44	37	14	AV3	+0.18
45	52	15	AV4	+0.00

Total Tubes : 80
Total Records: 102

Turkey Point Unit 3 (TP3-27)
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SG 3C

Turkey Point Unit 3 (EOC-26)
SG 3C

03/14 – EOC26

+Point Wear (WAR) At Broached Supports 1-100%TWD
(Shown below are the original bobbin "DSI" and corresponding +Point "WAR" report entries)

ROW	COL	IND	%TW	LOCATION		
15	82	DSI	03H	-0.78	Bobbin Coil	
		WAR	15 03H	-0.66	+Point Coil	
18	84	DSI	05H	-0.42	Bobbin Coil	
		WAR	7 05H	-0.42	+Point Coil	
20	61	DSI	04H	-0.60	Bobbin Coil	
		WAR	7 04H	-0.60	+Point Coil	
23	71	DSI	06H	-0.43	Bobbin Coil	
		WAR	9 06H	-0.45	+Point Coil	
24	70	DSI	03H	-0.74	Bobbin Coil	
		WAR	14 03H	-0.67	+Point Coil	
27	21	DSI	02H	-0.81	Bobbin Coil	
		WAR	11 02H	-0.83	+Point Coil	
29	71	DSI	03H	-0.79	Bobbin Coil	
		WAR	6 03H	-0.69	+Point Coil	
29	73	DSI	02H	-0.74	Bobbin Coil	
		WAR	12 02H	-0.81	+Point Coil	
32	19	DSI	03H	-0.53	Bobbin Coil	
		WAR	5 03H	-0.52	+Point Coil	
35	68	DSI	03H	-0.58	Bobbin Coil	
		WAR	6 03H	-0.70	+Point Coil	
36	68	DSI	03H	-0.58	Bobbin Coil	
		WAR	9 03H	-0.70	+Point Coil	

Total Tubes : 11
Total Records: 22