Dominion Nuclear Connecticut, Inc.
Millstone Power Station
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APR 0 6 2012

Dominion

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

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Docket No. 50-423
License No. NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
END OF CYCLE 14 STEAM GENERATOR TUBE INSPECTION REPORT

In accordance with the Millstone Power Station Unit 3 Technical Specification (TS) Section 6.9.1.7, Dominion Nuclear Connecticut, Inc. hereby submits the End of Cycle 14 (EOC14) Steam Generator (SG) Tube Inspection report. The report is submitted within 180 days after initial entry into MODE 4 following completion of the fall 2011 (i.e., 3R14) steam generator inspections performed in accordance with TS 6.8.4.g, "Steam Generator (SG) Program."

Enclosure 1 contains the EOC14 SG Tube Inspection report. Enclosure 2 contains a list of acronyms.

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,
h. The effective plugging percentage for all plugging in each SG,
i. During Refueling Outage 14 and the subsequent operating cycle, 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,
j. During Refueling Outage 14 and the subsequent operating cycle, the calculated accident induced leakage rate from the portion of the tubes below 15.2 inches from the top of the tubesheet for the most limiting accident in the most limiting SG. In

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addition, if the calculated accident induced leakage rate from the most limiting accident is less than 2.49 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined; and

k. During Refueling Outage 14 and the subsequent operating cycle, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

If you have any questions or require additional information, please contact Mr. William D. Bartron at (860) 444-4301.

Sincerely,

S. E. Scace
Site Vice President – Millstone

Enclosures:

1) Millstone Power Station Unit 3, End of Cycle 14 Steam Generator Tube Inspection Report

2) Acronyms

Commitments made in this letter: None

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ENCLOSURE 1

Millstone Power Station Unit 3
End of Cycle 14 Steam Generator Tube Inspection Report

End of Cycle 14 Steam Generator Tube Inspection Report

In accordance with Millstone Power Station Unit 3 (MPS3) Technical Specification (TS) Section 6.9.1.7, Dominion Nuclear Connecticut, Inc. (DNC) hereby submits the End of Cycle 14 (EOC14) Steam Generator Tube Inspection Report. The report is submitted within 180 days after initial entry into MODE 4 following completion of the fall 2011 steam generator inspections performed in accordance with TS 6.8.4.g, Steam Generator (SG) Program. Initial entry into Mode 4 occurred on November 15, 2011; therefore, this report is required to be submitted by May 13, 2012.

The following section provides a brief summary of the primary side steam generator inspections performed during the EOC14 outage (also referred to as 3R14). The subsequent section provides specific responses to each of the TS 6.9.1.7 report requirements.

See Enclosure 2, "Acronyms," for an explanation of acronyms.

Introduction

MPS3 is a four loop Westinghouse pressurized water reactor with Westinghouse Model F SGs. Each SG contains 5626 U-bend thermally treated Inconel 600 tubes. The tubing is nominally 0.688 inches outside diameter with a 0.040 inch nominal wall thickness. During SG fabrication, the tubes were hydraulically expanded over the full depth of the 21.23 inch thick tubesheet. The tubesheet was drilled on a square pitch with 0.98 inch spacing. There are 59 rows and 122 columns in each SG. The radius of the row 1 U-bends is 2.20 inches. The U-bends in rows 1 through 10 were stress relieved after being formed. Secondary side tube support structures include a flow distribution baffle, seven plate supports with broached holes on the vertical section of the tubes, and six anti-vibration bars (AVBs) on the U-bend section of the tubes. See Figure 1, "Millstone Power Station Unit 3 Steam Generator Arrangement," for illustration of SG component locations.

The SGs have accrued 19.3 effective full power years (EFPYs) of operation as of EOC14 (fall 2011). MPS3, which is a 1296 megawatt electric unit, operates with a hot leg temperature of 620 degrees Fahrenheit.

EOC14 SG Tube Inspection Report

This section provides responses to each of the requirements specified by MPS3 TS 6.9.1.7. Bolded text represents TS verbiage. The required information is provided immediately following the restatement of each reporting requirement.

A report shall be submitted within 180 days after the initial entry into MODE 4 following completion of an inspection performed in accordance with TS 6.8.4.g, Steam Generator (SG) Program. The report shall include:

a. The scope of inspections performed on each SG,

One hundred percent of the operational tubes within SG A and SG C, a total of 11,192 tubes (approximately 50 percent of the total population of tubes), were inspected full length. The majority of the tubing lengths were examined with bobbin probes. The U-bend region of rows 1 and 2 tubes were examined by a motorized rotating pancake coil (MRPC) technique in addition to the bobbin probe examination of the straight legs of the tubes. An augmented sample of 7,143 tube locations was inspected with an array coil probe. An additional augmented sample of 1,387 tube locations was examined with a rotating coil probe. The augmented sample inspections were performed in areas of special interest including; hot leg expansion transitions, tube overexpansion locations within the hot leg tubesheet, low row U-bends, dents, as well as locations where the bobbin probe response was ambiguous. The sample also included bounding examinations for Possible Loose Part (PLP) indications and new volumetric flaw (fabrication or foreign object wear) detections.

Secondary side activities were performed in all SGs (except where noted) during 3R14 and included the following:

- High pressure sludge lancing and upper bundle flush (UBF) in each SG.
- Post-sludge lancing visual examination of top-of-tubesheet annulus and no-tube lane to assess as-left material condition and cleanliness, and to identify and remove any retrievable foreign objects.
- Visual investigation of accessible locations having eddy current indications potentially related to foreign objects, and if present, removal of those retrievable foreign objects.
- Secondary side examinations within SG D as follows:
    - Steam drum visual inspections to evaluate the material condition and cleanliness of key components such as moisture separators, drain systems, and interior surfaces.
    - Drop down examinations (through the primary separators) of the upper tube bundle and AVB supports.
    - Visual inspections of feedring internal interface for flow accelerated corrosion.
    - Visual inspections of upper tube support plate to assess material conditions and cleanliness.

Table 1
MPS3 Eddy Current Testing Summary for 3R14

	SG A	SG B	SG C	SG D	Total
Number of Tubes Inservice at Start of 3R14	5,588	5,606	5,604	5,540	22,338
Number of Tubes Inspected F/L w/Bobbin Probe	4981	N/A	5006	N/A	9,987
Number of Tubes Inspected w/Bobbin Probe Cold Leg Straights and Hot Leg Candy Canes (Rows 3 through 5)	364	N/A	366	N/A	730
Number of Tubes Inspected w/Bobbin Probe Hot and Cold Leg Straights and MRPC U-Bends (Rows 1 and 2)	243	N/A	232	N/A	475
Previously Plugged Tubes	38	20	22	86	166
Number of Tubes Incomplete w/Bobbin Probe due to Obstruction	0	N/A	0	N/A	0
Number of Examinations w/MRPC (Total)‡	743	N/A	644	N/A	1387
•Rows 1 and 2 U-Bends	243	N/A	232	N/A	475
•Hot Leg Miscellaneous Special Interest - Diagnostic Exams and from Previous History	230	N/A	203	N/A	433
•Cold Leg Miscellaneous Special Interest - Diagnostic Exams and from Previous History	77	N/A	83	N/A	160
•U-bend Special Interest – Diagnostic Exams and from Previous History	58	N/A	85	N/A	143
•SI from Array and PLP / SVI Bounding Special Interest	135	N/A	41	N/A	176
Number of Examinations w/ARRAY (Total)	3594	N/A	3549	N/A	7143
•Hot Leg Tubesheet (01H to TSH - 3")*	2245	N/A	2660	N/A	4905
•Hot Leg Tubesheet (01H to TSH - ~15.2")*	568	N/A	153	N/A	721
•Cold Leg Tubesheet (01C to TSC - 3")*	575	N/A	596	N/A	1171
•Cold Leg Tubesheet (01C to TSC - ~15.2")*	157	N/A	136	N/A	293
•Foreign Object Wear Bounding	49	N/A	0	N/A	49
•ID Chatter Examination	0	N/A	4	N/A	4
Total Number of Hot Leg OXP/OVR Locations Examined	904	N/A	190	N/A	1094
Total Number of Cold Leg OXP/OVR Locations Examined	296	N/A	204	N/A	500
Tubes w/ Max AVB Wear ≥ 40 %	0	N/A	0	N/A	0
Tubes w/ Max AVB Wear ≥ 37 %	2	N/A	0	N/A	2
Tubes w/ Max AVB Wear ≥20% but <37%	53	N/A	11	N/A	64
Tubes w/ Max AVB Wear <20%	98	N/A	21	N/A	119
Tubes w/ Max TSP Wear <20%	2	N/A	0	N/A	2
Tubes w/ Max Non-Structure Volumetric Degradation ≥ 40 %	1	N/A	0	N/A	1
Tubes w/ Max Non-Structure Volumetric Degradation ≥20% but <40%	12	N/A	12	N/A	24
Tubes w/ Max Non-Structure Volumetric Degradation <20%	4	N/A	14	N/A	18
Total Tubes Plugged as a Result of this Inspection:	11	N/A	0	N/A	11
• Due to AVB Wear ≥37% (discretionary)	2	N/A	0	N/A	2
• Due to AVB Wear ≤37% (discretionary)	1	N/A	0	N/A	1
• Due to Non-Support Volumetric Degradation ≥ 40 %	1	N/A	0	N/A	1
• Due to Non-Support Volumetric Degradation < 40 % (discretionary)	0	N/A	0	N/A	0
• Due to BET lower than TTS -1"	7	N/A	0	N/A	7
• Due to ID Chatter (discretionary)	0	N/A	0	N/A	0
• Due to an Obstruction	0	N/A	0	N/A	0

‡ Values provided in the total and the sub-bullets correspond to the number of examinations performed.

* Within the cutout region, the upper extent of the array probe exam was the second support (i.e., 02H or 02C)

b. Active degradation mechanisms found,

The existing degradation mechanisms found during 3R14 included AVB wear, tube support plate (TSP) wear, volumetric indications from fabrication, and volumetric degradation from foreign object wear.

c. Nondestructive examination techniques utilized for each degradation mechanism,

Table 2 identifies the examination techniques used for each identified degradation mechanism.

Table 2
Identified Degradation Mechanisms and Inspection Techniques

Classification	Degradation Mechanism	Location	Probe Type
Existing	Tube Wear	Anti-Vibration Bars	Bobbin – Detection and Sizing
Existing	Tube Wear	Tube Support Plate	Bobbin – Detection +Point™ – Sizing
Existing	Tube Wear (foreign objects)	Freespan and TTS	Bobbin, Array and +Point™ – Detection +Point™ - Sizing
Existing	IGA/SCC	Tube Ends	N/A*
Existing	FAC	Feed Ring and JTube to Feed Ring Interface	Visual Inspection
Potential	ODSCC PWSCC	Hot Leg Top-of-Tubesheet And Sludge Region	Array - Detection +Point™ – Detection and Sizing
Potential	ODSCC PWSCC	Bulges, Dents, Manufacturing Anomalies, and Above-Tubesheet Overexpansions (OVR)	Array - Detection +Point™– Detection and Sizing
Potential	PWSCC	Tubesheet Overexpansions (OXP)	Array - Detection +Point™– Detection and Sizing
Potential	Tube Wear	Flow Distribution Baffle	Bobbin – Detection +Point™ – Sizing
Potential	ODSCC PWSCC	Row 1 and 2 U-Bends	+Point™ – Detection and Sizing
Potential	FAC	Moisture Separators	Visual Inspection
Potential	Plug Installation Problems	Plugs	Visual Inspection
Potential	Tube Slippage	Within Tubesheet	Bobbin Detection

* Inspection for this mechanism was not necessary under the "temporary" alternate repair criteria implemented during 3R14.

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

The following tables (Tables 3 through 8) identify the AVB wear, and non AVB wear volumetric indications reported during 3R14.

Table 3
Steam Generator A – Repeat AVB Wear Indications

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	22	78	AV5	0	0.1	16	14	-2	-0.74	%TW/EFPY
3R14	22	78	AV6	-0.02	-0.1	11	11	0	0.00	%TW/EFPY
3R14	24	116	AV6	0.25	0.34	13	14	1	0.37	%TW/EFPY
3R14	26	44	AV2	0.15	0.05	17	17	0	0.00	%TW/EFPY
3R14	26	44	AV5	0.02	0.02	21	19	-2	-0.74	%TW/EFPY
3R14	26	115	AV1	0	-0.1	27	28	1	0.37	%TW/EFPY
3R14	27	115	AV1	-0.34	-0.32	18	18	0	0.00	%TW/EFPY
3R14	28	36	AV5	-0.07	0.02	10	10	0	0.00	%TW/EFPY
3R14	28	113	AV5	0.1	0.19	12	10	-2	-0.74	%TW/EFPY
3R14	28	115	AV1	0	-0.12	32	32	0	0.00	%TW/EFPY
3R14	29	40	AV2	0	-0.05	14	11	-3	-1.11	%TW/EFPY
3R14	29	67	AV2	0.05	0.02	20	19	-1	-0.37	%TW/EFPY
3R14	29	67	AV5	0.07	0.02	13	14	1	0.37	%TW/EFPY
3R14	29	79	AV5	0.32	-0.05	11	13	2	0.74	%TW/EFPY
3R14	29	114	AV2	0	0	14	14	0	0.00	%TW/EFPY
3R14	29	114	AV5	0	0	14	11	-3	-1.11	%TW/EFPY
3R14	30	9	AV5	0.59	0.49	31	32	1	0.37	%TW/EFPY
3R14	30	10	AV5	-0.02	0	17	17	0	0.00	%TW/EFPY
3R14	30	11	AV5	0	0	11	11	0	0.00	%TW/EFPY
3R14	30	40	AV2	0	0.05	13	11	-2	-0.74	%TW/EFPY
3R14	30	113	AV5	0	0.02	27	25	-2	-0.74	%TW/EFPY
3R14	30	114	AV1	0.02	-0.39	15	10	-5	-1.86	%TW/EFPY
3R14	31	61	AV5	-0.15	-0.1	10	11	1	0.37	%TW/EFPY
3R14	31	109	AV2	-0.07	-0.05	14	12	-2	-0.74	%TW/EFPY
3R14	32	111	AV4	-0.15	-0.12	22	22	0	0.00	%TW/EFPY
3R14	32	111	AV5	0.12	0.12	23	18	-5	-1.86	%TW/EFPY
3R14	34	15	AV6	-0.15	-0.02	12	14	2	0.74	%TW/EFPY
3R14	34	41	AV3	0	0.12	18	18	0	0.00	%TW/EFPY
3R14	34	41	AV4	-0.1	0.02	12	12	0	0.00	%TW/EFPY
3R14	34	44	AV3	0.22	0.02	8	10	2	0.74	%TW/EFPY
3R14	34	46	AV3	0	0	16	17	1	0.37	%TW/EFPY
3R14	34	46	AV4	-0.12	-0.02	13	14	1	0.37	%TW/EFPY
3R14	34	46	AV5	0	0	31	30	-1	-0.37	%TW/EFPY
3R14	34	46	AV6	-0.15	0	33	33	0	0.00	%TW/EFPY
3R14	34	48	AV1	-0.12	-0.05	19	21	2	0.74	%TW/EFPY
3R14	34	48	AV2	-0.05	-0.02	21	20	-1	-0.37	%TW/EFPY
3R14	34	48	AV3	-0.2	-0.2	31	29	-2	-0.74	%TW/EFPY
3R14	34	73	AV4	0.34	0.22	27	33	6	2.23	%TW/EFPY
3R14	34	73	AV5	-0.15	-0.34	31	36	5	1.86	%TW/EFPY
3R14	34	85	AV5	0	-0.07	17	16	-1	-0.37	%TW/EFPY
3R14	34	91	AV2	0	0	13	11	-2	-0.74	%TW/EFPY
3R14	34	91	AV4	-0.15	-0.2	11	10	-1	-0.37	%TW/EFPY
3R14	34	97	AV3	0.02	0	16	14	-2	-0.74	%TW/EFPY
3R14	34	98	AV4	0.29	0.22	16	15	-1	-0.37	%TW/EFPY
3R14	34	107	AV4	0	0.02	13	11	-2	-0.74	%TW/EFPY
3R14	34	109	AV4	0	-0.05	27	26	-1	-0.37	%TW/EFPY
3R14	35	49	AV5	-0.02	0	18	17	-1	-0.37	%TW/EFPY
3R14	35	59	AV2	0.07	0	30	29	-1	-0.37	%TW/EFPY
3R14	35	59	AV3	-0.02	-0.05	14	13	-1	-0.37	%TW/EFPY
3R14	35	59	AV4	-0.1	0.05	11	14	3	1.11	%TW/EFPY

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	35	59	AV6	0.12	0	18	19	1	0.37	%TW/EFPY
3R14	35	60	AV4	0.25	-0.07	27	25	-2	-0.74	%TW/EFPY
3R14	35	60	AV5	0.02	-0.07	20	17	-3	-1.11	%TW/EFPY
3R14	35	60	AV6	-0.07	0.05	11	11	0	0.00	%TW/EFPY
3R14	35	61	AV2	-0.02	-0.15	16	16	0	0.00	%TW/EFPY
3R14	35	61	AV4	0.05	0	14	15	1	0.37	%TW/EFPY
3R14	35	65	AV2	0.12	0.1	16	15	-1	-0.37	%TW/EFPY
3R14	35	65	AV3	0.02	0	16	15	-1	-0.37	%TW/EFPY
3R14	35	65	AV4	0.12	0.07	18	16	-2	-0.74	%TW/EFPY
3R14	35	65	AV5	0.32	0.1	19	18	-1	-0.37	%TW/EFPY
3R14	35	71	AV3	-0.12	-0.24	11	10	-1	-0.37	%TW/EFPY
3R14	35	71	AV4	-0.12	-0.15	25	24	-1	-0.37	%TW/EFPY
3R14	35	71	AV5	-0.17	-0.17	13	14	1	0.37	%TW/EFPY
3R14	35	77	AV2	0.07	0.1	12	12	0	0.00	%TW/EFPY
3R14	35	77	AV3	-0.15	-0.2	20	19	-1	-0.37	%TW/EFPY
3R14	35	77	AV4	0.07	-0.1	16	14	-2	-0.74	%TW/EFPY
3R14	35	80	AV3	-0.05	0	10	11	1	0.37	%TW/EFPY
3R14	35	100	AV3	-0.07	0	11	10	-1	-0.37	%TW/EFPY
3R14	35	108	AV2	0	0	12	10	-2	-0.74	%TW/EFPY
3R14	35	108	AV3	-0.07	-0.1	13	12	-1	-0.37	%TW/EFPY
3R14	37	45	AV2	0.02	0.02	33	34	1	0.37	%TW/EFPY
3R14	37	45	AV3	0.1	0	21	23	2	0.74	%TW/EFPY
3R14	37	45	AV4	0.02	0.02	14	14	0	0.00	%TW/EFPY
3R14	37	45	AV5	-0.12	-0.12	17	20	3	1.11	%TW/EFPY
3R14	37	56	AV3	0.05	0	14	16	2	0.74	%TW/EFPY
3R14	37	56	AV4	0.15	0.05	18	20	2	0.74	%TW/EFPY
3R14	37	69	AV5	0.22	-0.12	18	20	2	0.74	%TW/EFPY
3R14	37	69	AV6	-0.1	-0.22	17	20	3	1.11	%TW/EFPY
3R14	37	89	AV3	0.22	0.27	10	10	0	0.00	%TW/EFPY
3R14	37	90	AV3	0.05	0.02	25	24	-1	-0.37	%TW/EFPY
3R14	37	90	AV4	0	0	16	15	-1	-0.37	%TW/EFPY
3R14	37	90	AV5	0.02	0	17	14	-3	-1.11	%TW/EFPY
3R14	37	91	AV3	-0.17	0	21	22	1	0.37	%TW/EFPY
3R14	37	91	AV4	-0.1	0	19	17	-2	-0.74	%TW/EFPY
3R14	37	91	AV5	-0.1	0	30	29	-1	-0.37	%TW/EFPY
3R14	37	91	AV6	-0.12	0	23	21	-2	-0.74	%TW/EFPY
3R14	37	92	AV5	-0.07	0	16	15	-1	-0.37	%TW/EFPY
3R14	37	99	AV3	0	-0.1	16	13	-3	-1.11	%TW/EFPY
3R14	37	100	AV3	-0.2	-0.17	18	15	-3	-1.11	%TW/EFPY
3R14	37	100	AV4	0	-0.2	16	13	-3	-1.11	%TW/EFPY
3R14	37	100	AV5	0	-0.02	20	16	-4	-1.485	%TW/EFPY
3R14	37	106	AV4	-0.1	0	20	20	0	0	%TW/EFPY
3R14	37	106	AV5	-0.02	0.05	17	13	-4	-1.485	%TW/EFPY
3R14	38	52	AV2	0.22	0.05	20	16	-4	-1.485	%TW/EFPY
3R14	38	79	AV6	-0.1	-0.07	11	10	-1	-0.37	%TW/EFPY
3R14	38	86	AV5	0	-0.1	12	11	-1	-0.37	%TW/EFPY
3R14	38	106	AV3	-0.02	-0.12	25	23	-2	-0.74	%TW/EFPY
3R14	38	106	AV4	-0.1	-0.15	20	18	-2	-0.74	%TW/EFPY
3R14	38	106	AV5	-0.05	-0.07	21	20	-1	-0.37	%TW/EFPY
3R14	39	51	AV3	0.02	0.02	15	15	0	0.00	%TW/EFPY

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	39	51	AV4	0	0	15	13	-2	-0.74	%TW/EFPY
3R14	39	57	AV1	-0.15	-0.1	12	14	2	0.74	%TW/EFPY
3R14	39	57	AV2	-0.43	-0.22	27	31	4	1.48	%TW/EFPY
3R14	39	57	AV3	-0.3	-0.1	15	18	3	1.11	%TW/EFPY
3R14	39	57	AV4	-0.38	-0.07	17	19	2	0.74	%TW/EFPY
3R14	39	60	AV4	0	-0.02	25	25	0	0.00	%TW/EFPY
3R14	39	62	AV5	0	0	14	12	-2	-0.74	%TW/EFPY
3R14	39	62	AV6	-0.1	-0.1	15	14	-1	-0.37	%TW/EFPY
3R14	39	70	AV2	0.07	0.02	10	10	0	0.00	%TW/EFPY
3R14	39	70	AV3	0.02	-0.1	16	19	3	1.11	%TW/EFPY
3R14	39	71	AV4	-0.07	-0.17	20	20	0	0.00	%TW/EFPY
3R14	39	71	AV5	-0.2	-0.32	21	21	0	0.00	%TW/EFPY
3R14	39	75	AV3	-0.05	-0.24	13	11	-2	-0.74	%TW/EFPY
3R14	39	75	AV5	-0.12	-0.22	15	14	-1	-0.37	%TW/EFPY
3R14	39	75	AV6	0	-0.07	15	14	-1	-0.37	%TW/EFPY
3R14	39	78	AV3	-0.02	-0.07	12	12	0	0.00	%TW/EFPY
3R14	40	45	AV3	0.12	0.12	13	13	0	0.00	%TW/EFPY
3R14	40	45	AV4	0.02	0	30	30	0	0.00	%TW/EFPY
3R14	40	45	AV5	0	0.05	14	14	0	0.00	%TW/EFPY
3R14	40	51	AV4	-0.07	-0.17	19	21	2	0.74	%TW/EFPY
3R14	40	51	AV5	0.07	0.02	31	30	-1	-0.37	%TW/EFPY
3R14	40	58	AV2	-0.18	-0.24	18	15	-3	-1.11	%TW/EFPY
3R14	40	58	AV3	-0.38	-0.37	23	16	-7	-2.60	%TW/EFPY
3R14	40	58	AV5	-0.15	-0.27	15	13	-2	-0.74	%TW/EFPY
3R14	40	67	AV3	-0.17	-0.12	11	14	3	1.11	%TW/EFPY
3R14	40	71	AV2	0.07	-0.02	20	20	0	0.00	%TW/EFPY
3R14	40	71	AV3	-0.22	-0.22	21	23	2	0.74	%TW/EFPY
3R14	40	71	AV4	-0.17	-0.34	29	29	0	0.00	%TW/EFPY
3R14	40	94	AV5	0.22	-0.15	23	20	-3	-1.11	%TW/EFPY
3R14	40	100	AV3	-0.05	-0.07	14	14	0	0.00	%TW/EFPY
3R14	41	61	AV3	-0.22	-0.24	20	20	0	0.00	%TW/EFPY
3R14	41	61	AV4	-0.05	-0.05	26	25	-1	-0.37	%TW/EFPY
3R14	41	87	AV4	-0.05	-0.12	17	17	0	0.00	%TW/EFPY
3R14	41	101	AV4	0.1	-0.02	15	13	-2	-0.74	%TW/EFPY
3R14	41	102	AV4	0	-0.1	30	27	-3	-1.11	%TW/EFPY
3R14	41	102	AV5	0	-0.07	16	16	0	0.00	%TW/EFPY
3R14	42	33	AV3	0	-0.02	23	22	-1	-0.37	%TW/EFPY
3R14	42	33	AV4	-0.1	-0.22	16	15	-1	-0.37	%TW/EFPY
3R14	42	37	AV2	0	-0.17	14	14	0	0.00	%TW/EFPY
3R14	42	43	AV2	-0.15	-0.02	19	19	0	0.00	%TW/EFPY
3R14	42	43	AV3	0.02	0	16	17	1	0.37	%TW/EFPY
3R14	42	53	AV3	-0.17	0	14	14	0	0.00	%TW/EFPY
3R14	42	53	AV4	0	0.02	22	24	2	0.74	%TW/EFPY
3R14	42	53	AV5	0	0.02	16	20	4	1.48	%TW/EFPY
3R14	42	63	AV3	0.17	-0.07	18	20	2	0.74	%TW/EFPY
3R14	42	63	AV4	0.02	-0.02	11	13	2	0.74	%TW/EFPY
3R14	42	63	AV5	0.02	-0.02	10	12	2	0.74	%TW/EFPY
3R14	42	77	AV2	-0.1	-0.02	10	12	2	0.74	%TW/EFPY
3R14	42	77	AV3	0.07	0.07	15	16	1	0.37	%TW/EFPY
3R14	42	77	AV4	-0.2	-0.1	26	26	0	0.00	%TW/EFPY

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	42	85	AV4	-0.02	0.07	15	16	1	0.37	%TW/EFPY
3R14	42	86	AV3	0.07	0.05	13	13	0	0.00	%TW/EFPY
3R14	42	86	AV4	0.05	0	14	14	0	0.00	%TW/EFPY
3R14	42	93	AV3	-0.05	-0.12	15	15	0	0.00	%TW/EFPY
3R14	42	93	AV4	-0.05	-0.07	22	22	0	0.00	%TW/EFPY
3R14	42	93	AV5	0	-0.07	26	26	0	0.00	%TW/EFPY
3R14	42	98	AV1	-0.02	-0.19	11	10	-1	-0.37	%TW/EFPY
3R14	42	98	AV3	0	-0.05	32	29	-3	-1.11	%TW/EFPY
3R14	42	98	AV4	0	-0.07	31	31	0	0.00	%TW/EFPY
3R14	42	101	AV2	-0.02	-0.1	20	21	1	0.37	%TW/EFPY
3R14	42	101	AV3	-0.02	-0.05	16	14	-2	-0.74	%TW/EFPY
3R14	42	101	AV4	0.07	-0.1	26	25	-1	-0.37	%TW/EFPY
3R14	42	101	AV5	0.02	0	27	28	1	0.37	%TW/EFPY
3R14	42	102	AV3	-0.12	-0.12	22	22	0	0.00	%TW/EFPY
3R14	42	102	AV4	-0.1	-0.1	34	34	0	0.00	%TW/EFPY
3R14	42	102	AV5	0.02	-0.15	28	29	1	0.37	%TW/EFPY
3R14	42	103	AV3	-0.15	-0.22	12	11	-1	-0.37	%TW/EFPY
3R14	42	103	AV4	-0.2	-0.07	13	11	-2	-0.74	%TW/EFPY
3R14	43	20	AV6	-0.17	-0.17	10	10	0	0.00	%TW/EFPY
3R14	43	49	AV2	0.02	0	11	11	0	0.00	%TW/EFPY
3R14	43	49	AV3	0	0.17	12	12	0	0.00	%TW/EFPY
3R14	43	64	AV3	-0.17	-0.22	13	13	0	0.00	%TW/EFPY
3R14	43	64	AV4	-0.3	-0.17	12	11	-1	-0.37	%TW/EFPY
3R14	43	64	AV5	-0.07	-0.1	19	17	-2	-0.74	%TW/EFPY
3R14	43	80	AV3	0	-0.12	20	19	-1	-0.37	%TW/EFPY
3R14	43	80	AV4	-0.05	-0.1	21	21	0	0.00	%TW/EFPY
3R14	43	80	AV5	-0.1	-0.12	12	12	0	0.00	%TW/EFPY
3R14	43	80	AV6	0	-0.1	17	16	-1	-0.37	%TW/EFPY
3R14	43	87	AV2	0.12	0.02	21	20	-1	-0.37	%TW/EFPY
3R14	43	87	AV4	-0.02	-0.1	22	21	-1	-0.37	%TW/EFPY
3R14	43	87	AV5	-0.07	-0.15	23	22	-1	-0.37	%TW/EFPY
3R14	43	98	AV4	0.05	0	18	17	-1	-0.37	%TW/EFPY
3R14	43	98	AV5	-0.02	-0.12	15	14	-1	-0.37	%TW/EFPY
3R14	43	99	AV4	-0.02	-0.1	20	19	-1	-0.37	%TW/EFPY
3R14	43	101	AV3	-0.02	-0.05	13	11	-2	-0.74	%TW/EFPY
3R14	43	101	AV4	-0.15	-0.05	22	21	-1	-0.37	%TW/EFPY
3R14	43	101	AV5	0	-0.07	21	20	-1	-0.37	%TW/EFPY
3R14	43	102	AV4	0	-0.1	21	22	1	0.37	%TW/EFPY
3R14	43	102	AV5	0	-0.1	20	18	-2	-0.74	%TW/EFPY
3R14	44	64	AV2	0.02	0.02	30	31	1	0.37	%TW/EFPY
3R14	44	64	AV3	-0.1	-0.29	19	21	2	0.74	%TW/EFPY
3R14	44	74	AV4	-0.1	-0.07	16	16	0	0.00	%TW/EFPY
3R14	44	74	AV5	0.25	0.02	24	24	0	0.00	%TW/EFPY
3R14	44	74	AV6	0.05	0.07	21	21	0	0.00	%TW/EFPY
3R14	44	75	AV3	0.05	0	15	14	-1	-0.37	%TW/EFPY
3R14	44	96	AV2	0	-0.07	16	15	-1	-0.37	%TW/EFPY
3R14	44	96	AV4	0	-0.07	17	18	1	0.37	%TW/EFPY
3R14	44	96	AV5	0	0.05	13	13	0	0.00	%TW/EFPY
3R14	44	98	AV1	-0.07	-0.1	13	13	0	0.00	%TW/EFPY
3R14	44	98	AV2	-0.05	-0.07	24	24	0	0.00	%TW/EFPY

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	44	98	AV4	0	-0.05	19	15	-4	-1.48	%TW/EFPY
3R14	45	45	AV3	-0.1	-0.27	10	11	1	0.37	%TW/EFPY
3R14	45	71	AV2	0.07	0.12	13	14	1	0.37	%TW/EFPY
3R14	45	98	AV4	0.05	0	24	23	-1	-0.37	%TW/EFPY
3R14	45	98	AV6	-0.07	0	15	14	-1	-0.37	%TW/EFPY
3R14	45	99	AV4	-0.12	-0.07	17	17	0	0.00	%TW/EFPY
3R14	45	99	AV5	0	-0.05	13	12	-1	-0.37	%TW/EFPY
3R14	46	99	AV2	0.05	0	13	13	0	0.00	%TW/EFPY
3R14	46	99	AV4	-0.07	-0.12	14	13	-1	-0.37	%TW/EFPY
3R14	46	99	AV5	0.02	-0.15	22	20	-2	-0.74	%TW/EFPY
3R14	47	98	AV3	0	-0.12	14	15	1	0.37	%TW/EFPY
3R14	47	99	AV6	0	-0.17	15	15	0	0.00	%TW/EFPY
3R14	48	25	AV3	-0.07	-0.2	11	10	-1	-0.37	%TW/EFPY
3R14	48	26	AV2	0.07	-0.1	11	10	-1	-0.37	%TW/EFPY
3R14	48	26	AV6	0	-0.12	12	12	0	0.00	%TW/EFPY
3R14	49	95	AV4	-0.05	-0.15	13	11	-2	-0.74	%TW/EFPY
3R14	50	29	AV5	-0.1	-0.05	14	13	-1	-0.37	%TW/EFPY
3R14	50	44	AV4	-0.1	-0.1	15	15	0	0.00	%TW/EFPY
3R14	50	44	AV5	-0.02	-0.07	31	32	1	0.37	%TW/EFPY
3R14	50	50	AV4	-0.22	-0.05	18	20	2	0.74	%TW/EFPY
3R14	50	76	AV2	-0.12	0	23	22	-1	-0.37	%TW/EFPY
3R14	50	76	AV3	-0.05	-0.24	18	18	0	0.00	%TW/EFPY
3R14	50	82	AV2	0.07	0	18	20	2	0.74	%TW/EFPY
3R14	50	82	AV3	-0.15	-0.1	22	24	2	0.74	%TW/EFPY
3R14	50	82	AV4	-0.12	-0.2	20	21	1	0.37	%TW/EFPY
3R14	50	86	AV2	-0.07	0	14	14	0	0.00	%TW/EFPY
3R14	50	87	AV2	0.02	-0.05	26	28	2	0.74	%TW/EFPY
3R14	50	87	AV3	-0.07	-0.1	14	15	1	0.37	%TW/EFPY
3R14	50	87	AV5	0	0	13	12	-1	-0.37	%TW/EFPY
3R14	50	90	AV2	0.02	0	36	38	2	0.74	%TW/EFPY
3R14	50	90	AV3	-0.05	-0.17	35	36	1	0.37	%TW/EFPY
3R14	50	90	AV4	-0.07	-0.17	19	16	-3	-1.11	%TW/EFPY
3R14	50	90	AV5	0.05	0	16	15	-1	-0.37	%TW/EFPY
3R14	50	91	AV2	0.02	-0.07	35	37	2	0.74	%TW/EFPY
3R14	50	91	AV3	-0.2	-0.24	31	33	2	0.74	%TW/EFPY
3R14	50	91	AV4	-0.02	-0.15	16	16	0	0.00	%TW/EFPY
3R14	50	91	AV5	0.6	0	13	13	0	0.00	%TW/EFPY
3R14	51	64	AV3	0.07	-0.1	14	17	3	1.11	%TW/EFPY
3R14	51	65	AV5	0	-0.29	16	15	-1	-0.37	%TW/EFPY
3R14	51	66	AV2	0.07	-0.02	13	12	-1	-0.37	%TW/EFPY
3R14	51	66	AV3	0.05	-0.12	13	12	-1	-0.37	%TW/EFPY
3R14	52	66	AV4	0.6	-0.05	28	28	0	0.00	%TW/EFPY
3R14	52	90	AV3	-0.05	-0.17	13	12	-1	-0.37	%TW/EFPY
3R14	52	90	AV4	-0.07	-0.1	15	13	-2	-0.74	%TW/EFPY
3R14	53	81	AV1	0	-0.05	14	15	1	0.37	%TW/EFPY
3R14	53	81	AV3	0	-0.02	30	30	0	0.00	%TW/EFPY
3R14	54	35	AV5	-0.07	-0.07	20	22	2	0.74	%TW/EFPY
3R14	54	49	AV2	-0.12	0.07	15	15	0	0.00	%TW/EFPY
3R14	54	49	AV3	0.15	0.17	12	13	1	0.37	%TW/EFPY
3R14	59	64	AV6	0.49	0.52	10	10	0	0.00	%TW/EFPY

Table 4
Steam Generator A – Newly Reported AVB Wear Indications

SG	New Outage	Row	Col	Elev	New Offset	New %TW
A	3R14	5	48	08H	11.93	11
A	3R14	5	48	08H	11.4	5
A	3R14	12	121	AV6	-0.04	10
A	3R14	22	78	AV1	-0.03	13
A	3R14	29	12	AV2	-0.1	14
A	3R14	29	67	AV1	-0.02	11
A	3R14	33	111	AV6	-0.1	10
A	3R14	34	73	AV3	-0.22	12
A	3R14	34	73	AV6	0.07	10
A	3R14	35	49	AV2	0.2	12
A	3R14	35	49	AV6	-0.05	11
A	3R14	35	71	AV6	-0.1	12
A	3R14	35	77	AV5	-0.12	12
A	3R14	35	90	AV2	0.02	10
A	3R14	37	72	AV3	-0.1	11
A	3R14	37	102	AV4	0	10
A	3R14	38	52	AV3	-0.12	10
A	3R14	39	57	AV5	0.15	12
A	3R14	39	70	AV4	-0.22	10
A	3R14	39	71	AV2	-0.1	12
A	3R14	39	71	AV6	-0.22	17
A	3R14	39	75	AV4	-0.2	11
A	3R14	40	64	AV4	-0.12	18
A	3R14	40	67	AV2	0.02	11
A	3R14	40	86	AV2	-0.1	12
A	3R14	40	102	AV4	0.02	11
A	3R14	41	74	AV5	0	11
A	3R14	41	100	AV3	-0.17	12
A	3R14	41	101	AV5	-0.15	12
A	3R14	42	20	AV6	0	11
A	3R14	42	37	AV3	0	11
A	3R14	42	37	AV6	-0.25	14
A	3R14	42	63	AV2	-0.12	10
A	3R14	42	85	AV2	0.15	13
A	3R14	43	76	AV4	-0.15	10
A	3R14	43	96	AV5	0	11
A	3R14	43	103	AV5	0	13
A	3R14	45	98	AV5	0	12
A	3R14	46	97	AV5	-0.05	11
A	3R14	46	98	AV5	-0.15	10
A	3R14	48	96	AV6	0.02	13
A	3R14	50	29	AV4	-0.12	11
A	3R14	50	44	AV3	-0.1	11
A	3R14	50	44	AV6	-0.15	12
A	3R14	51	65	AV3	-0.24	11
A	3R14	51	65	AV4	-0.17	12
A	3R14	51	79	AV3	0.05	11
A	3R14	54	35	AV4	0	17
A	3R14	56	41	AV2	0	11
A	3R14	58	54	AV1	0.2	12

Table 5
Steam Generator C– Repeat AVB Wear Indications

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	15	66	AV1	-0.32	-0.06	11	10	-1	-0.37	%TW/EFPY
3R14	25	8	AV2	-0.17	0.31	10	10	0	0.00	%TW/EFPY
3R14	25	116	AV6	0.19	0.37	19	18	-1	-0.37	%TW/EFPY
3R14	34	14	AV2	-0.17	0.05	8	10	2	0.74	%TW/EFPY
3R14	34	14	AV5	0.02	-0.07	11	12	1	0.37	%TW/EFPY
3R14	36	15	AV5	0	0.02	16	12	-4	-1.48	%TW/EFPY
3R14	36	15	AV6	0.2	0	15	13	-2	-0.74	%TW/EFPY
3R14	37	15	AV2	-0.1	-0.17	24	20	-4	-1.48	%TW/EFPY
3R14	37	15	AV3	-0.05	0	11	11	0	0.00	%TW/EFPY
3R14	37	15	AV4	0	-0.05	9	10	1	0.37	%TW/EFPY
3R14	37	15	AV5	0.07	0.02	27	27	0	0.00	%TW/EFPY
3R14	37	15	AV6	0.15	0.09	12	14	2	0.74	%TW/EFPY
3R14	37	88	AV3	-0.02	-0.1	11	11	0	0.00	%TW/EFPY
3R14	39	17	AV2	0.02	0	14	14	0	0.00	%TW/EFPY
3R14	39	17	AV3	-0.02	-0.09	11	11	0	0.00	%TW/EFPY
3R14	39	17	AV4	-0.02	-0.09	17	17	0	0.00	%TW/EFPY
3R14	39	17	AV5	0.05	0	20	19	-1	-0.37	%TW/EFPY
3R14	39	17	AV6	0.12	0	14	14	0	0.00	%TW/EFPY
3R14	39	79	AV3	-0.44	-0.54	17	17	0	0.00	%TW/EFPY
3R14	41	42	AV3	0.05	-0.05	21	20	-1	-0.37	%TW/EFPY
3R14	41	54	AV1	0.07	0.05	11	10	-1	-0.37	%TW/EFPY
3R14	41	54	AV3	0.02	-0.28	17	19	2	0.74	%TW/EFPY
3R14	41	54	AV4	-0.02	-0.07	15	16	1	0.37	%TW/EFPY
3R14	41	54	AV5	0.02	0	20	22	2	0.74	%TW/EFPY
3R14	41	62	AV2	-0.22	-0.31	22	25	3	1.11	%TW/EFPY
3R14	41	62	AV3	-0.44	-0.55	15	18	3	1.11	%TW/EFPY
3R14	41	62	AV3	0.24	0.34	22	26	4	1.48	%TW/EFPY
3R14	41	62	AV4	-0.24	-0.53	18	19	1	0.37	%TW/EFPY
3R14	41	62	AV4	0.44	0.22	22	27	5	1.86	%TW/EFPY
3R14	41	62	AV5	-0.24	-0.22	29	33	4	1.48	%TW/EFPY
3R14	41	62	AV6	0	-0.29	13	14	1	0.37	%TW/EFPY
3R14	41	65	AV4	0.34	0.34	15	19	4	1.48	%TW/EFPY
3R14	41	65	AV5	0	-0.07	18	22	4	1.48	%TW/EFPY
3R14	41	105	AV6	0.12	-0.07	13	11	-2	-0.74	%TW/EFPY
3R14	42	20	AV2	-0.1	-0.02	16	14	-2	-0.74	%TW/EFPY
3R14	42	20	AV3	-0.1	-0.09	24	21	-3	-1.11	%TW/EFPY
3R14	42	20	AV4	-0.12	-0.09	25	23	-2	-0.74	%TW/EFPY
3R14	42	20	AV5	-0.05	-0.07	25	23	-2	-0.74	%TW/EFPY
3R14	42	20	AV6	-0.05	-0.12	17	15	-2	-0.74	%TW/EFPY
3R14	42	23	AV3	0	0	23	19	-4	-1.48	%TW/EFPY
3R14	42	23	AV4	0	0	34	29	-5	-1.86	%TW/EFPY
3R14	42	23	AV5	0	0	31	28	-3	-1.11	%TW/EFPY
3R14	45	100	AV5	-0.2	-0.17	9	8	-1	-0.37	%TW/EFPY
3R14	45	100	AV6	0	0.07	11	10	-1	-0.37	%TW/EFPY
3R14	46	33	AV6	0.51	0.53	18	19	1	0.37	%TW/EFPY
3R14	47	99	AV6	-0.07	-0.02	17	13	-4	-1.48	%TW/EFPY
3R14	48	98	AV3	0	0	12	10	-2	-0.74	%TW/EFPY
3R14	48	98	AV4	0	0	12	9	-3	-1.11	%TW/EFPY
3R14	48	98	AV6	-0.15	0	10	10	0	0.00	%TW/EFPY
3R14	49	96	AV5	0	-0.17	20	19	-1	-0.37	%TW/EFPY

New Outage	Row	Col	Elev	Old Offset	New Offset	Old %TW	New %TW	Change	Growth Rate	
3R14	49	96	AV6	0	-0.17	26	23	-3	-1.11	%TW/EFPY
3R14	50	28	AV2	0.1	0.15	10	10	0	0.00	%TW/EFPY
3R14	50	28	AV5	0.05	-0.05	18	20	2	0.74	%TW/EFPY
3R14	50	93	AV5	-0.27	-0.22	12	11	-1	-0.37	%TW/EFPY
3R14	50	93	AV6	-0.12	0	26	24	-2	-0.74	%TW/EFPY
3R14	54	35	AV5	-0.12	0.02	14	14	0	0.00	%TW/EFPY
3R14	54	36	AV4	0	0	18	18	0	0.00	%TW/EFPY
3R14	54	36	AV5	0.05	-0.15	11	10	-1	-0.37	%TW/EFPY
3R14	54	86	AV1	0.12	-0.12	10	10	0	0.00	%TW/EFPY
3R14	56	41	AV2	0.05	0	12	10	-2	-0.74	%TW/EFPY
3R14	56	41	AV4	-0.12	-0.1	14	15	1	0.37	%TW/EFPY
3R14	56	41	AV5	0.02	0	23	23	0	0.00	%TW/EFPY
3R14	56	41	AV6	0	0	13	12	-1	-0.37	%TW/EFPY
3R14	56	44	AV4	0.02	0	7	7	0	0.00	%TW/EFPY

Table 6
Steam Generator C – Newly Reported AVB Wear Indications

SG	New Outage	Row	Col	Elev	New Offset	New %TW
C	3R14	42	103	AV3	-0.1	13
C	3R14	45	57	AV2	-0.05	11
C	3R14	51	92	AV6	0.34	12
C	3R14	58	49	AV5	-0.19	13

Table 7
SG A 3R14 Tube Degradation Summary (Non AVB Wear)

SG	Row	Col	Location	ETSS	Axial Length (in)	Circ. Length (in)	Maximum Depth 3R14	Depth Reported Prior Outage	Initially Reported	Signal History Comment	Cause	Foreign Object Remaining?	3R14 FOTS FK Number	Plugged & Stabilized?
A	2	17	05H-0.74	27901.1	0.24	0.38	24	na	3R14	Present in 2008 bobbin data	Foreign Object Wear	No	13	No
A	3	112	06C-0.92	27901.1	0.30	0.38	32	35%TW (3R12)	3R12		Foreign Object Wear	No	7	No
A	6	122	TSH+4.01	27901.1	0.32	0.33	15	15%TW (3R12)	3R08		Foreign Object Wear	No	na	No
A	7	3	TSC+0.03	27901.1	0.27	0.42	26	28%TW (3R12)	3R08		Foreign Object Wear	No	na	No
A	15	68	07C-0.86	27901.1	0.33	0.38	31	na	3R14	Present in 2008 bobbin data	Foreign Object Wear	No	16	No
A	18	94	03H-0.46	96910.1	0.32	0.44	11	na	3R14	Present in 2008 bobbin data	Tube Support Wear	na	15	No
A	20	97	08C-0.95	27901.1	0.27	0.36	22	na	3R14	No signal in history	Foreign Object Wear	No	19	No
A	23	76	03C+0.24	96910.1	0.30	0.29	11	na	3R14	Present in 1999 bobbin data	Tube Support Wear	na	20	No
A	24	11	TSH+0.09	27901.1	0.27	0.35	25	26%TW (3R12)	3R08		Foreign Object Wear	No	na	No
A	28	112	01H+0.44	27901.1	0.46	0.48	37	36%TW (3R12)	3R10		Foreign Object Wear	No	na	No
A	29	109	TSC+0.01	27901.1	0.30	0.33	23	21%TW (3R12)	3R08		Foreign Object Wear	No	1	No
A	29	110	TSC+0.04	27901.1	0.30	0.35	21	23%TW (3R12)	3R08		Foreign Object Wear	No	1	No
			01H+0.52	27902.1	0.59	0.40	14	na	3R14	Present in 2008 bobbin data	Foreign Object Wear	No	18	No
A	43	103	TSC+0.69	27901.1	0.27	0.31	17	18%TW (3R12)	3R08		Foreign Object Wear	No	na	No
A	46	83	06C-0.59	27903.1	0.33 SL=0.22	0.31	72 SD=61.4	na	3R14	No	Foreign Object Wear	Note 1	17	Yes
A	47	24	01C+0.96	27901.1	0.50	0.45	29	32%TW (3R12)	3R10		Foreign Object Wear	No	8	No
A	47	25	01C+1.09	27901.1	0.58	0.51	30	33%TW (3R12)	3R10		Foreign Object Wear	No	8	No
A	58	47	TSC+0.50	27901.1	0.32	0.36	18	21%TW (3R12)	3R12		Sled	na	10	No
A	58	76	TSC+0.46	27901.1	0.30	0.35	18	19%TW (3R12)	3R12		Sled	na	9	No
A	59	60	08H-1.73	27901.1	0.29	0.38	25	26%TW (3R12)	3R10		Foreign Object Wear	No	na	No

SL = Structurally Equivalent Length SD = Structurally Equivalent Depth

Note 1: Area is not accessible by SSI. Absence of a part in the region cannot be definitively confirmed by eddy current. Tube was conservatively stabilized and plugged since the absence of a foreign object cannot be confirmed by an SSI examination.

Table 8
SG C 3R14 Tube Degradation Summary (Non AVB Wear)

SG	Row	Col	Location	ETSS	Axial Length (in)	Circ. Length (in)	Maximum Depth 3R14	Depth Reported Prior Outage	Initially Reported	Signal History Comment	Cause	Foreign Object Remaining?	3R14 FOTS FK Number	Plugged & Stabilized?
C	1	5	TSC+3.22	27901.1	0.75	0.44	26	26%TW (3R12)	3R08		Known FO. Lodged, verified	Yes	1	No
C	1	73	TSC+19.32	27901.1	0.32	0.35	16	17%TW (3R12)	3R10		Foreign Object Wear	No	na	No
C	1	102	01C+4.70	27901.1	0.32	0.33	17	18%TW (3R12)	3R10		Foreign Object Wear	No	na	No
C	2	103	02C-6.80	27901.1	0.32	0.35	17	18%TW (3R12)	3R10		Foreign Object Wear	No	na	No
C	3	3	04C+16.57	21998.1	0.30	0.33	20	25%TW (3R12)	3R12		MBM	na	na	No
C	13	120	08C-0.73	27901.1	0.27	0.42	31	na	3R14	Present in 2008 bobbin data	Foreign Object Wear	No	19	No
C	20	72	02H+5.56	21998.1	0.30	0.33	14	20%TW (3R12)	3R12		Fabrication	na	13	No
C	36	13	TSC+0.52	27901.1	0.27	0.37	21	19%TW (3R12)	3R12		Sled	na	15	No
			TSC+0.50	27901.1	0.27	0.31	16	15%TW (3R12)	3R12		Sled	na		No
			TSC+0.47	27901.1	0.27	0.37	19	19%TW (3R12)	3R12		Sled	na		No
			TSC+0.33	27901.1	0.13	0.29	18	16%TW (3R12)	3R12		Sled	na		No
			Overall Dimensions		0.38	1.06	21							
C	36	75	08C-0.87	27901.1	0.35	0.39	26	26%TW (3R12)	3R10		Foreign Object Wear	No	na	No
C	38	15	TSC+0.49	27901.1	0.30	0.39	19	19%TW (3R12)	3R10		Sled	na	na	No
C	44	38	05H+13.72	21998.1	0.21	0.34	14	20%TW (3R12)	3R12		Fabrication	na	14	No
C	44	102	TSC+0.50	27901.1	0.19	0.29	18	17%TW (3R12)	3R12		Sled	na	16	No
C	47	34	TSH+0.38	27901.1	0.27	0.35	18	18%TW (3R12)	3R12		Foreign Object Wear	No	10	No
C	47	61	06C-0.70	27901.1	0.24	0.35	24	na	3R14	Present in 2008 bobbin data	Foreign Object Wear	No	20	No
C	54	64	TSH+0.15	27901.1	0.27	0.35	24	24%TW (3R12)	3R08		Foreign Object Wear	No	5	No
C	55	68	TSH+0.62	27901.1	0.29	0.33	21	21%TW (3R12)	3R08		Foreign Object Wear	No	na	No

Table 8 *(continued)*
SG C 3R14 Tube Degradation Summary (Non AVB Wear)

SG	Row	Col	Location	ETSS	Axial Length (in)	Circ. Length (in)	Maximum Depth 3R14	Depth Reported Prior Outage	Initially Reported	Signal History Comment	Cause	Foreign Object Remaining?	3R14 FOTS FK Number	Plugged & Stabilized?
C	56	41	TSH+0.51	27901.1	0.38	0.81	19	na	3R14	Present in 2002 bobbin data	Foreign Object Wear	No	22	No
C	56	69	TSH+0.03	27901.1	0.29	0.44	29	29%TW (3R12)	3R10		Foreign Object Wear	No	na	No
C	56	82	TSC+0.51	27901.1	0.19	0.29	17	17%TW (3R12)	3R08		Sled	na	na	No
			TSC+0.48	27901.1	0.27	0.33	16	16%TW (3R12)			Sled	na	na	No
			Overall Dimensions		0.27	0.85	17							
C	57	44	TSH+0.48	27901.1	0.27	0.37	18	19%TW (3R12)	3R10		Sled	na	na	No
C	58	48	TSH+0.50	27901.1	0.29	0.37	17	18%TW (3R12)	3R10		Sled	na	na	No
			TSC+0.56	27901.1	0.35	0.37	21	21%TW (3R12)	3R10		Sled	na	na	No
C	58	49	TSH+0.52	27901.1	0.35	0.44	17	18%TW (3R12)	3R10		Sled	na	na	No
			TSC+0.56	27901.1	0.35	0.44	20	17%TW (3R12)	3R10		Sled	na	na	No
C	58	76	TSH+0.47	27901.1	0.27	0.33	21	20%TW (3R12)	3R10		Sled	na	na	No
			TSC+0.54	27901.1	0.30	0.33	16	19%TW (3R12)	3R12		Sled	na	18	No
C	59	55	TSC+0.58	27901.1	0.30	0.35	17	17%TW (3R12)	3R12		Sled	na	12	No
C	59	59	TSC+0.51	27901.1	0.32	0.35	17	na	3R14	Present in '02 bobbin data; PLP '02, '05 & '08	Foreign Object Wear	No	21	No
C	59	68	TSH+0.51	27901.1	0.32	0.37	18	18%TW (3R12)	3R10		Sled	na	na	No

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

Table 9 provides the quantity of tubes plugged by degradation mechanism. Eleven tubes were removed from service during 3R14; all were in SG A. Seven tubes were plugged due to a condition in which the bottom of the expansion transition (BET) was located more than one inch below the top of tubesheet (TTS). These tubes were plugged to fulfill a regulatory commitment related to the One-Time Alternate Repair Criteria (License Amendment 249, ADAMS Ascension No. ML100770358). One tube with AVB wear (sized at 37 %TW) and a second tube with AVB wear (sized at 38 %TW) were discretionarily removed from service. One tube with two shallow AVB wear indications (11 %TW and 5 %TW) at the apex of the tube near an AVB intersection point was removed from service discretionarily. One tube had an indication of foreign object wear with a maximum depth of 72 %TW as determined by Electric Power Research Institute, Examination Technique Specification Sheet 27903.1. The structural depth of the indication was 61.4 %TW and the structural length was 0.22 inches. The tube was stabilized with a u-bend stabilizer and plugged.

Table 9
Number of Tubes Plugged by Degradation Mechanism During 3R14

DEGRADATION	SG A	SG B	SG C	SG D
AVB Wear ≥37%TW (discretionary)	2	0	0	0
AVB Wear <37%TW (discretionary)	1	0	0	0
Non-Support Wear >40% TW	1	0	0	0
Expansion Transition Below TTS - 1"	7	0	0	0

f. Total number and percentage of tubes plugged to date,

Table 10 provides the total number of tubes plugged to date and the percentages.

Table 10
Number Tubes Plugged To Date

	SG A	SG B	SG C	SG D
Prior to 3R14	38	20	22	86
During 3R14	11	0	0	0
Total After 3R14	49	20	22	86
Percentage	0.871	0.355	0.391	1.529
Overall Percentage	0.787			

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

No tubes were pulled and no in-situ pressure tests were performed. The condition monitoring assessment concluded that the structural integrity, operational leakage and accident induced leakage performance criteria were not exceeded during the operating interval preceding 3R14.

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

Since no sleeving has been performed in the MPS3 steam generators, the effective plugging percentage is the same as the actual plugging percentage (see (f)).

i. During Refueling Outage 14 and the subsequent operating cycle, 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 SG leakage was reported during Cycle 14.

j. During Refueling Outage 14 and the subsequent operating cycle, the calculated accident induced leakage rate from the portion of the tubes below 15.2 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 2.49 times the maximum operational primary to secondary leakage rate, the report should describe how it was determined;

For the purposes of condition monitoring assessment, and in accordance with the Temporary Alternate Repair Criteria (License Amendment 252, ADAMS Ascension No. ML112580517), the accident leakage attributed to degradation within the tubesheet below the H* dimension must be estimated by applying a factor of 2.49 to the operational leakage. There was no recordable operational leakage during Cycle 14; hence, the leakage from this degradation during a limiting accident would have been zero (i.e., 2.49 x 0).

k. During Refueling Outage 14 and the subsequent operating cycle, the results of monitoring for tube axial displacement (slippage). If slippage is discovered, the implications of the discovery and corrective action shall be provided.

The tube slippage monitoring was performed on SG A and SG C using the bobbin coil data during 3R14. There was no detection of slippage during the 3R14 examination.

Figure 1
STEAM GENERATOR ARRANGEMENT

[REDACTED]

ENCLOSURE 2

Acronyms

Acronyms

AVB	Anti-Vibration Bar
BLG	Bulge
C	Column
CL	Cold Leg
DDH	Ding or Dent Signal - Reviewed in History
DDI	Distorted Dent or Ding Indication
DDS	Ding or Dent Signal - Non-Confirming w/RPC
DNG	Ding
DNT	Dent Indication
ECT	Eddy Current Test
EFPY	Effective Full Power Years
EPRI	Electric Power Research Institute
ETSS	Examination Technique Specification Sheet
F/L	Full Length
FAC	Flow Accelerated Corrosion
FDB	Flow Distribution Baffle
FO	Foreign Object
FOTS	Foreign Object Tracking System
HL	Hot Leg
IGA	Intergranular Attack
INF	Indication Not Found
INR	Indication Not Reportable
LPI	Loose Part Indication
LPR	Loose Part Removed
LPS	Loose Part Signal
MRPC	Motorized Rotating Pancake Coil
NDD	No Detectable Degradation
NDE	Nondestructive Examination
NDF	No Degradation Found
NEI	Nuclear Energy Institute
NQH	Non-quantifiable Indication - Reviewed in History
NQI	Non-quantifiable Indication
OA	Operational Assessment
ODSCC	Outer Diameter Stress Corrosion Cracking
OVR	Above Tubesheet Over Expansion
OXP	Over Expansion
PID	Positive Identification
PLG	Tube is plugged
PLP	Possible Loose Part
PTE	Partial Tubesheet Expansion
PWR	Pressurized Water Reactor
PWSCC	Primary Water Stress Corrosion Cracking
R	Row
RAD	Retest Analyst Discretion
RBD	Retest - Bad Data
RIC	Retest - Incomplete
RRT	Retest - Restricted Tube
S/N	Signal-to-Noise Ratio
SAI	Single Axial Indication
SCC	Stress Corrosion Cracking
SCI	Single Circumferential Indication
SG	Steam Generator
SLG	Sludge
SSI	Secondary Side Inspection
SVI	Single Volumetric Indication
TEC	Tube End Cold-leg
TEH	Tube End Hot-leg
TFH	Tangential Flaw-Like Signal - Reviewed in History
TFS	Tangential Flaw-Like Signal - Non-Confirming w/RPC
TSC	Top of Tubesheet Cold-leg
TSH	Top of Tubesheet Hot-leg
TTS	Top of Tubesheet
TWD	Through-Wall Depth
% TW	Percent Through-Wall
VOL	Volumetric Indication