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August 21, 2018
L-18-198

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Davis-Besse Nuclear Power Station, Unit No. 1
Docket No. 50-346, License No. NPF-3
Technical Specification 5.6.6 Steam Generator Tube Inspection 180-Day Report

The FirstEnergy Nuclear Operating Company (FENOC), in accordance with the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) Technical Specification (TS) 5.6.6, "Steam Generator Tube Inspection Report," hereby submits a report of the steam generator tube inspections performed pursuant to TS 5.5.8, "Steam Generator (SG) Program." The attached report summarizes the steam generator tube inspections performed during the DBNPS spring 2018 outage.

There are no regulatory commitments contained in this submittal. If there are any questions, or if additional information is required, please contact Mr. Phil H. Lashley, Acting Manager, FENOC Nuclear Licensing & Regulatory Affairs, at (330) 315-6808.

Sincerely,

Mark B. Bezilla

Attachment
Davis-Besse Nuclear Power Station Steam Generator Tube Inspection Report

cc: NRC Region III Administrator
NRC Resident Inspector
NRR Project Manager
Utility Radiological Safety Board

Davis-Besse Nuclear Power Station Steam Generator Tube Inspection Report

Following completion of a steam generator inspection performed in accordance with the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) Technical Specification (TS) 5.5.8, "Steam Generator (SG) Program," TS 5.6.6, "Steam Generator Tube Inspection Report," requires a report of the inspection to be submitted to the Nuclear Regulatory Commission within 180 days after the initial entry into MODE 4.
This report summarizes the steam generator tube inspection performed during the DBNPS spring 2018 Twentieth Refueling Outage (1R20).

The organization of the report is as follows:

Section 1 Scope of Inspections Performed on Each SG (TS 5.6.6.a)

Section 2 Degradation Mechanisms Found (TS 5.6.6.b)

Section 3 Nondestructive Examination Techniques Utilized for Each Degradation Mechanism (TS 5.6.6.c)

Section 4 Location, Orientation (if Linear), and Measured Sizes (if Available) of Service Induced Indications (TS 5.6.6.d)

Section 5 Number of Tubes Plugged During the Inspection Outage for Each Degradation Mechanism (TS 5.6.6.e)

Section 6 The Number and Percentage of Tubes Plugged to Date, and the Effective Plugging Percentage in Each SG (TS 5.6.6.f)

Section 7 The Results of Condition Monitoring, Including the Results of Tube Pulls and In-Situ Testing (TS 5.6.6.g)

The following is a listing of the more common acronyms and abbreviations that are used throughout this report.

1R20	Davis-Besse Unit 1 Refueling Outage 20 Spring 2018
%TW	Percent Through-Wall
CMOA	Condition Monitoring and Operational Assessment
DBNPS	Davis-Besse Nuclear Power Station
EPRI	Electric Power Research Institute
ETSS	Examination Technique Specification Sheets
FO	Foreign Object
INCH	Location of indication, in inches, relative to TSP reference
PDA	Percent Degraded Area
Rev.	Revision
SG	Steam Generator
TS	Technical Specifications
TSP	Tube Support Plate
xxS	Tube Support Plate Number

Section 1

Scope of Inspections Performed on Each SG (TS 5.6.6.a)

EXAM SCOPE	SG 2A	SG 1B
Eddy Current		
Full length, bobbin probe [in-service tubes]	15,596	15,607
Special interest, array probe [inspections]	86	39
Special interest, rotating-coil probe [inspections]	43	18
Visual		
Previously installed plugs	22	0
Channel head, general	2	2

Section 2

Degradation Mechanisms Found (TS 5.6.6.b)

Degradation Mechanism	SG 2A	SG 1B
Wear, broached TSP [indications]	1337	194
Wear, drilled TSP [indication(s)]	1	3
Wear, foreign object [indication]	1	0

Section 3

Nondestructive Examination Techniques Utilized for Each Degradation Mechanism (TS 5.6.6.c)

The eddy current examinations were performed utilizing various eddy current probes. All examination techniques utilized were qualified for detection of the relevant degradation mechanisms. This qualification is in accordance with the EPRI SG Examination Guidelines, Revision 8. The applicable Examination Technique Specification Sheets (ETSS) are listed for reference only. Site-specific examination technique sheets are developed prior to each steam generator inspection in accordance with Appendix H or I (as applicable) of the EPRI SG Examination Guidelines, Revision 8.

Degradation Mechanism	Applicability	Probe Type	Industry Qualification
Wear	TSP	Bobbin	96004.1 Rev. 13
Wear	Drilled TSP	Bobbin	I-96042.1 Rev. 4
Wear	Broached TSP single contact, multiple contact, and tapered	Bobbin	I-96043.1 Rev. 2
Wear	Broached TSP	Array	11956.3 Rev. 2 11956.4 Rev. 2
Wear	Broached and Drilled TSP	Rotating-coil	96910.1 Rev. 11
Wear	FO Wear	Bobbin	27091.1 Rev. 2
Wear	FO and Drilled TSP Wear	Rotating-coil	27901.1 Rev. 1 27902.1 Rev. 2 27903.1 Rev. 1 27904.1 Rev. 2 27905.1 Rev. 2 27906.1 Rev. 1 27907.1 Rev. 2
Wear	FO and Drilled TSP Wear	Array	17901.1 Rev. 0 17902.1 Rev. 0 17903.1 Rev. 0 17904.1 Rev. 0 17905.1 Rev. 0 17906.1 Rev. 0

Section 4

Location, Orientation (if Linear), and Measured Sizes (if Available) of Service Induced Indications (TS 5.6.6.d)

Wear at Broached TSPs

SG	Row	Tube	TSP	INCH	%TW
2A	150	5	14S	-0.38	45
2A	95	128	16S	-0.38	42
2A	137	1	16S	-0.42	41
2A	151	1	14S	-0.31	40
2A	142	1	16S	-0.43	39
2A	76	131	16S	-0.46	36
2A	84	129	16S	-0.39	36
2A	68	131	16S	-0.39	35
2A	71	130	16S	-0.42	35
2A	99	126	16S	-0.44	35
2A	119	108	16S	-0.2	34
2A	130	1	16S	-0.4	34
2A	13	1	16S	-0.34	33
2A	87	127	16S	-0.28	33
2A	120	107	16S	-0.05	33
2A	124	101	16S	-0.37	33
2A	150	5	16S	-0.34	33
2A	52	125	16S	-0.36	32
2A	97	126	16S	-0.47	32
2A	7	1	16S	-0.33	31
2A	9	1	16S	-0.36	31
2A	45	120	16S	-0.33	31
2A	66	1	16S	-0.26	31
2A	77	129	16S	-0.39	31
2A	125	100	16S	-0.34	31
2A	127	1	16S	-0.34	31
2A	72	129	16S	-0.39	30
2A	90	129	16S	-0.36	30
2A	98	124	16S	-0.36	30
2A	101	124	16S	-0.31	30
2A	105	122	16S	-0.36	30
2A	144	1	16S	-0.48	30
2A	149	1	14S	-0.31	30
2A	2	16	16S	-0.31	29
2A	19	86	16S	-0.39	29
2A	69	130	16S	-0.41	29
2A	74	131	16S	0	29
2A	76	130	16S	-0.41	29
2A	79	1	16S	-0.34	29

SG	Row	Tube	TSP	INCH	%TW
2A	106	121	16S	-0.34	29
2A	11	1	16S	-0.34	28
2A	70	129	16S	-0.44	28
2A	71	1	16S	-0.34	28
2A	76	129	16S	-0.82	28
2A	96	127	16S	-0.33	28
2A	18	1	16S	-0.21	27
2A	27	100	16S	-0.33	27
2A	84	1	16S	-0.39	27
2A	87	130	16S	-0.28	27
2A	89	126	16S	-0.31	27
2A	108	119	16S	-0.36	27
2A	145	2	14S	-0.75	27
2A	6	1	16S	-0.23	26
2A	12	1	16S	-0.31	26
2A	70	131	16S	-0.38	26
2A	73	1	16S	-0.32	26
2A	78	129	16S	-0.31	26
2A	83	1	14S	-0.23	26
2A	91	129	16S	-0.31	26
2A	92	129	16S	-0.28	26
2A	99	124	16S	-0.87	26
2A	129	94	16S	-0.34	26
2A	130	1	14S	-0.72	26
2A	150	4	16S	-0.28	26
2A	22	1	16S	-0.36	25
2A	31	106	16S	-0.33	25
2A	41	113	16S	-0.31	25
2A	78	1	14S	-0.8	25
2A	80	131	16S	-0.56	25
2A	86	123	16S	-0.31	25
2A	89	127	16S	-0.33	25
2A	96	125	16S	-0.84	25
2A	107	120	16S	-0.33	25
2A	137	77	16S	-0.49	25
2A	151	2	14S	-0.26	25
2A	2	2	16S	-0.29	24
2A	16	1	16S	-0.34	24
2A	48	123	16S	-0.31	24
2A	54	126	16S	-0.33	24
2A	67	129	16S	-0.26	24
2A	72	131	16S	-0.28	24
2A	73	3	15S	-0.88	24
2A	81	1	16S	-0.28	24
2A	86	127	16S	-0.26	24

SG	Row	Tube	TSP	INCH	%TW
2A	86	129	16S	-0.78	24
2A	91	128	16S	-0.77	24
2A	92	128	16S	-0.87	24
2A	115	114	16S	-0.29	24
2A	139	66	16S	-0.21	24
2A	140	70	16S	-0.31	24
2A	144	1	14S	-0.26	24
2A	146	2	16S	-0.34	24
2A	148	1	14S	-0.67	24
2A	148	3	14S	-0.76	24
2A	151	16	16S	-0.89	24
2A	3	20	16S	-0.34	23
2A	51	124	16S	-0.85	23
2A	58	1	16S	-0.86	23
2A	64	1	16S	-0.36	23
2A	75	128	16S	-0.31	23
2A	78	131	16S	-0.88	23
2A	83	6	14S	0.42	23
2A	90	128	16S	-0.87	23
2A	91	122	16S	-0.33	23
2A	113	41	16S	-0.74	23
2A	116	112	16S	-0.41	23
2A	136	1	14S	-0.72	23
2A	142	1	14S	-0.26	23
2A	147	1	14S	-0.72	23
2A	148	5	16S	-0.65	23
2A	149	9	16S	-0.75	23
2A	150	6	14S	-0.26	23
2A	150	11	16S	-0.72	23
2A	151	7	16S	-0.38	23
2A	151	8	16S	-0.33	23
2A	5	1	16S	-0.28	22
2A	15	1	16S	-0.34	22
2A	30	105	16S	-0.36	22
2A	32	107	16S	-0.31	22
2A	33	105	16S	-0.33	22
2A	55	126	16S	-0.56	22
2A	60	112	15S	-0.72	22
2A	69	1	16S	-0.33	22
2A	72	128	16S	-0.41	22
2A	78	127	16S	-0.41	22
2A	82	129	16S	-0.33	22
2A	83	131	16S	-0.78	22
2A	86	122	16S	-0.36	22
2A	87	129	16S	-0.77	22

SG	Row	Tube	TSP	INCH	%TW
2A	89	130	16S	-0.75	22
2A	95	1	16S	-0.29	22
2A	141	1	16S	-0.34	22
2A	146	2	14S	-0.7	22
2A	146	15	16S	-0.72	22
2A	147	2	16S	-0.32	22
2A	147	2	14S	-0.7	22
2A	148	12	16S	-0.72	22
2A	149	3	16S	-0.23	22
2A	149	5	16S	-0.67	22
2A	150	12	16S	-0.33	22
2A	151	2	16S	-0.73	22
2A	2	15	16S	0.03	21
2A	47	121	16S	-0.38	21
2A	54	1	16S	-0.16	21
2A	57	128	16S	-0.44	21
2A	68	131	13S	-0.05	21
2A	69	131	16S	-0.34	21
2A	73	129	16S	-0.39	21
2A	81	131	16S	-0.72	21
2A	89	129	16S	-0.77	21
2A	94	127	16S	-0.85	21
2A	94	128	16S	-0.82	21
2A	99	125	16S	-0.46	21
2A	104	121	16S	-0.23	21
2A	104	123	16S	-0.86	21
2A	106	120	16S	-0.44	21
2A	112	1	14S	-0.29	21
2A	113	114	16S	-0.91	21
2A	120	43	16S	-0.74	21
2A	121	43	16S	-0.76	21
2A	123	1	16S	-0.34	21
2A	123	5	14S	-0.73	21
2A	133	1	16S	-0.34	21
2A	137	15	15S	-0.38	21
2A	150	3	16S	-0.36	21
2A	150	10	16S	-0.28	21
2A	150	13	16S	-0.33	21
2A	2	1	16S	-0.73	20
2A	24	95	16S	-0.41	20
2A	43	4	15S	-0.28	20
2A	44	119	16S	-0.33	20
2A	48	20	15S	-0.79	20
2A	55	125	16S	-0.46	20
2A	63	2	16S	-0.65	20

SG	Row	Tube	TSP	INCH	%TW
2A	66	130	11S	0.36	20
2A	70	130	16S	-0.47	20
2A	71	1	14S	-0.23	20
2A	74	130	16S	-0.59	20
2A	75	131	11S	0.36	20
2A	79	1	14S	-0.26	20
2A	82	6	14S	-0.21	20
2A	83	132	13S	-0.37	20
2A	84	127	16S	-0.41	20
2A	88	127	16S	-0.79	20
2A	95	127	16S	-0.85	20
2A	111	41	16S	-0.64	20
2A	134	50	15S	0.18	20
2A	135	69	16S	-0.1	20
2A	136	59	15S	-0.23	20
2A	137	1	14S	-0.67	20
2A	137	69	16S	0.13	20
2A	137	76	16S	-0.37	20
2A	144	5	16S	-0.77	20
2A	144	46	16S	-0.23	20
2A	145	1	14S	-0.69	20
2A	145	5	16S	-0.77	20
2A	146	24	15S	-0.34	20
2A	147	10	16S	-0.67	20
2A	148	13	16S	-0.72	20
2A	149	2	16S	-0.31	20
2A	150	2	14S	-0.72	20
2A	150	17	16S	-0.21	20
2A	2	27	16S	-0.2	19
2A	25	83	16S	-0.39	19
2A	26	99	16S	-0.33	19
2A	33	99	16S	-0.28	19
2A	35	11	15S	-0.72	19
2A	39	1	16S	-0.34	19
2A	39	112	16S	-0.31	19
2A	45	117	16S	-0.33	19
2A	46	103	15S	-0.69	19
2A	53	1	16S	-0.72	19
2A	53	121	16S	-0.36	19
2A	57	126	16S	-0.31	19
2A	60	111	15S	-0.23	19
2A	61	1	16S	-0.44	19
2A	63	125	16S	-0.38	19
2A	65	11	15S	-0.73	19
2A	66	130	16S	-0.33	19

SG	Row	Tube	TSP	INCH	%TW
2A	85	128	16S	-0.88	19
2A	87	120	16S	-0.8	19
2A	100	125	16S	-0.28	19
2A	108	118	16S	-0.31	19
2A	111	115	16S	-0.83	19
2A	128	95	16S	-0.34	19
2A	140	32	16S	-0.7	19
2A	141	29	16S	-0.65	19
2A	142	14	15S	0.16	19
2A	145	13	16S	-0.67	19
2A	145	17	16S	-0.65	19
2A	146	25	16S	-0.72	19
2A	147	8	16S	-0.26	19
2A	147	9	16S	-0.62	19
2A	150	1	14S	-0.77	19
2A	14	13	16S	-0.34	18
2A	20	1	16S	-0.8	18
2A	31	6	15S	-0.21	18
2A	31	19	15S	-0.21	18
2A	33	95	15S	-0.31	18
2A	44	5	15S	-0.82	18
2A	47	122	16S	-0.39	18
2A	58	5	15S	-0.87	18
2A	60	12	15S	-0.15	18
2A	61	129	16S	-0.36	18
2A	63	129	16S	-0.44	18
2A	63	130	16S	-0.36	18
2A	64	128	16S	-0.36	18
2A	70	3	15S	-0.26	18
2A	71	2	16S	-0.28	18
2A	72	130	16S	-0.83	18
2A	75	130	16S	-0.33	18
2A	76	124	16S	-0.85	18
2A	77	130	16S	-0.89	18
2A	79	122	16S	-0.36	18
2A	82	128	16S	-0.87	18
2A	82	131	16S	-0.8	18
2A	88	127	16S	0.21	18
2A	88	129	16S	-0.8	18
2A	91	2	14S	-0.78	18
2A	95	127	16S	0.26	18
2A	98	125	16S	-0.85	18
2A	112	114	16S	-0.94	18
2A	116	48	16S	-0.79	18
2A	118	46	16S	-0.84	18

SG	Row	Tube	TSP	INCH	%TW
2A	120	107	13S	0.36	18
2A	135	77	16S	-0.26	18
2A	136	17	16S	-0.71	18
2A	136	71	16S	-0.28	18
2A	141	16	16S	-0.74	18
2A	142	19	15S	0.24	18
2A	142	29	16S	-0.64	18
2A	143	13	16S	-0.69	18
2A	144	12	15S	-0.85	18
2A	145	1	16S	-0.39	18
2A	145	18	15S	0.29	18
2A	146	1	14S	-0.69	18
2A	147	7	16S	-0.67	18
2A	148	8	16S	-0.67	18
2A	151	4	14S	-0.64	18
2A	4	20	16S	-0.69	17
2A	7	13	15S	-0.28	17
2A	7	23	16S	-0.16	17
2A	10	16	15S	-0.1	17
2A	16	12	16S	-0.23	17
2A	17	23	15S	-0.75	17
2A	20	11	15S	-0.7	17
2A	47	95	15S	0.2	17
2A	51	5	15S	-0.92	17
2A	53	125	16S	-0.31	17
2A	63	8	16S	-0.71	17
2A	65	129	16S	-0.88	17
2A	68	5	15S	0	17
2A	69	1	14S	-0.23	17
2A	72	48	16S	-0.79	17
2A	74	129	16S	-0.79	17
2A	75	3	15S	-0.28	17
2A	77	2	14S	-0.78	17
2A	80	129	16S	-0.82	17
2A	86	121	16S	-0.23	17
2A	90	127	16S	-0.79	17
2A	92	1	16S	-0.34	17
2A	93	1	14S	-0.77	17
2A	95	126	16S	-0.77	17
2A	96	118	16S	-0.33	17
2A	98	28	16S	-0.51	17
2A	101	123	16S	-0.8	17
2A	107	118	16S	-0.88	17
2A	109	58	16S	-0.84	17
2A	112	50	16S	-0.64	17

SG	Row	Tube	TSP	INCH	%TW
2A	112	54	16S	-0.76	17
2A	112	116	16S	-0.85	17
2A	121	32	13S	-0.69	17
2A	123	1	14S	-0.65	17
2A	125	74	15S	-0.23	17
2A	125	78	15S	-0.3	17
2A	126	1	16S	-0.32	17
2A	127	64	15S	-0.31	17
2A	129	1	16S	-0.34	17
2A	129	1	14S	-0.7	17
2A	133	86	16S	-0.31	17
2A	138	26	16S	-0.63	17
2A	140	21	16S	-0.65	17
2A	140	31	16S	-0.67	17
2A	141	12	16S	-0.32	17
2A	141	30	16S	-0.7	17
2A	142	13	16S	-0.72	17
2A	142	14	16S	-0.74	17
2A	143	6	16S	-0.35	17
2A	143	12	16S	-0.66	17
2A	145	10	16S	-0.65	17
2A	145	14	15S	0.35	17
2A	145	16	16S	-0.65	17
2A	145	19	16S	-0.27	17
2A	149	3	14S	-0.67	17
2A	149	17	16S	-0.7	17
2A	151	6	16S	-0.34	17
2A	2	11	16S	0.05	16
2A	7	16	15S	-0.23	16
2A	13	23	15S	-0.69	16
2A	14	6	16S	-0.29	16
2A	17	7	15S	-0.79	16
2A	17	8	15S	-0.28	16
2A	19	8	15S	-0.31	16
2A	21	90	16S	-0.39	16
2A	29	65	15S	-0.18	16
2A	29	92	15S	-0.26	16
2A	30	7	15S	-0.77	16
2A	31	93	15S	-0.26	16
2A	33	8	15S	-0.79	16
2A	33	106	16S	-0.23	16
2A	37	1	16S	-0.23	16
2A	45	115	15S	-0.28	16
2A	52	10	15S	-0.28	16
2A	53	10	15S	-0.77	16

SG	Row	Tube	TSP	INCH	%TW
2A	54	12	15S	-0.74	16
2A	55	95	15S	-0.72	16
2A	58	122	16S	-0.41	16
2A	58	127	16S	-0.38	16
2A	60	129	16S	-0.36	16
2A	63	8	15S	-0.84	16
2A	64	13	15S	-0.77	16
2A	64	129	16S	-0.38	16
2A	64	130	16S	-0.33	16
2A	65	4	16S	0.28	16
2A	66	11	15S	0.26	16
2A	67	8	15S	-0.8	16
2A	72	24	15S	-0.79	16
2A	73	131	16S	-0.74	16
2A	75	131	16S	-0.82	16
2A	76	127	16S	-0.51	16
2A	78	1	13S	-0.26	16
2A	78	1	14S	0.39	16
2A	79	131	16S	-0.8	16
2A	81	129	16S	-0.82	16
2A	83	132	11S	-0.72	16
2A	84	45	16S	-0.6	16
2A	84	126	16S	0.26	16
2A	84	131	16S	-0.75	16
2A	87	122	16S	-0.33	16
2A	87	124	16S	-0.31	16
2A	87	126	16S	-0.79	16
2A	91	115	16S	-0.85	16
2A	91	123	16S	-0.77	16
2A	102	56	16S	-0.68	16
2A	103	44	16S	-0.33	16
2A	103	119	16S	-0.34	16
2A	104	46	16S	-0.23	16
2A	110	20	16S	-0.59	16
2A	110	117	16S	-0.28	16
2A	118	35	16S	-0.8	16
2A	118	45	16S	-0.76	16
2A	119	31	16S	-0.7	16
2A	119	106	16S	-0.31	16
2A	121	41	16S	-0.8	16
2A	123	42	16S	-0.89	16
2A	124	40	16S	-0.71	16
2A	127	71	15S	-0.81	16
2A	132	65	15S	-0.36	16
2A	133	1	14S	-0.72	16

SG	Row	Tube	TSP	INCH	%TW
2A	133	2	14S	-0.72	16
2A	134	1	14S	-0.69	16
2A	135	82	16S	-0.34	16
2A	137	22	16S	-0.7	16
2A	138	2	14S	-0.67	16
2A	138	10	16S	-0.88	16
2A	139	6	16S	-0.37	16
2A	140	30	16S	-0.62	16
2A	141	1	14S	-0.67	16
2A	141	10	16S	-0.51	16
2A	141	14	16S	-0.74	16
2A	143	2	16S	-0.29	16
2A	143	9	16S	-0.77	16
2A	144	9	16S	-0.77	16
2A	145	3	14S	-0.7	16
2A	146	4	16S	-0.74	16
2A	146	12	16S	-0.72	16
2A	146	28	15S	-0.73	16
2A	147	14	16S	-0.62	16
2A	149	4	14S	-0.75	16
2A	149	8	16S	-0.67	16
2A	149	14	16S	-0.28	16
2A	7	25	15S	-0.66	15
2A	10	55	16S	-0.15	15
2A	17	50	15S	-0.18	15
2A	18	9	15S	-0.72	15
2A	21	89	16S	-0.31	15
2A	23	8	15S	-0.28	15
2A	27	8	15S	-0.72	15
2A	31	9	15S	-0.26	15
2A	32	20	16S	-0.18	15
2A	33	63	15S	-0.21	15
2A	41	96	15S	-0.21	15
2A	41	105	15S	-0.23	15
2A	42	99	15S	-0.2	15
2A	43	31	16S	-0.34	15
2A	46	6	15S	-0.1	15
2A	48	5	15S	-0.31	15
2A	49	109	15S	0.21	15
2A	53	5	15S	-0.95	15
2A	56	5	15S	-0.15	15
2A	56	25	15S	-0.74	15
2A	62	12	15S	-0.72	15
2A	62	116	15S	-0.75	15
2A	63	4	15S	-0.85	15

SG	Row	Tube	TSP	INCH	%TW
2A	65	130	16S	-0.31	15
2A	66	129	16S	-0.39	15
2A	66	131	13S	-0.72	15
2A	68	1	14S	0	15
2A	68	130	16S	-0.34	15
2A	69	2	14S	-0.31	15
2A	70	23	16S	-0.77	15
2A	71	24	16S	-0.79	15
2A	73	1	14S	-0.74	15
2A	74	8	15S	-0.67	15
2A	75	4	15S	-0.26	15
2A	77	131	16S	-0.87	15
2A	79	2	14S	-0.83	15
2A	84	1	14S	-0.8	15
2A	85	129	16S	-0.79	15
2A	86	126	16S	-0.8	15
2A	86	130	16S	-0.75	15
2A	91	3	14S	-0.8	15
2A	91	113	15S	-0.18	15
2A	92	122	16S	0.23	15
2A	97	49	16S	-0.65	15
2A	98	1	14S	-0.78	15
2A	102	122	16S	-0.85	15
2A	103	2	14S	-0.78	15
2A	105	60	16S	-0.64	15
2A	105	119	16S	-0.96	15
2A	105	121	16S	-0.85	15
2A	109	117	16S	-0.88	15
2A	110	116	16S	-0.88	15
2A	112	115	16S	-0.91	15
2A	113	40	16S	-0.59	15
2A	113	44	16S	-0.65	15
2A	114	38	16S	-0.67	15
2A	115	29	16S	-0.58	15
2A	116	32	16S	-0.35	15
2A	116	37	16S	-0.81	15
2A	116	110	16S	-0.79	15
2A	117	36	16S	-0.71	15
2A	120	19	16S	-0.69	15
2A	123	52	16S	-0.74	15
2A	124	52	15S	-0.26	15
2A	126	37	16S	-0.71	15
2A	127	1	14S	-0.73	15
2A	131	1	14S	-0.72	15
2A	132	1	14S	-0.67	15

SG	Row	Tube	TSP	INCH	%TW
2A	133	36	16S	-0.68	15
2A	133	61	15S	-0.28	15
2A	135	19	14S	-0.69	15
2A	136	9	15S	0.21	15
2A	138	8	16S	-0.29	15
2A	138	13	16S	-0.81	15
2A	143	14	16S	-0.59	15
2A	143	17	16S	-0.64	15
2A	144	18	16S	-0.67	15
2A	145	15	15S	0.29	15
2A	145	38	16S	-0.31	15
2A	146	7	16S	-0.32	15
2A	146	20	16S	-0.7	15
2A	147	5	16S	-0.66	15
2A	147	16	16S	-0.26	15
2A	150	14	16S	-0.67	15
2A	151	11	16S	-0.31	15
2A	1	4	14S	-0.72	14
2A	5	18	15S	-0.75	14
2A	6	16	15S	-0.82	14
2A	7	18	15S	-0.62	14
2A	8	14	15S	-0.77	14
2A	8	35	15S	0.18	14
2A	9	27	16S	0.3	14
2A	11	13	16S	-0.1	14
2A	12	10	15S	-0.05	14
2A	15	63	15S	-0.18	14
2A	16	8	15S	-0.26	14
2A	16	8	16S	-0.21	14
2A	19	61	15S	-0.15	14
2A	22	9	15S	-0.72	14
2A	25	26	15S	-0.31	14
2A	25	66	15S	-0.23	14
2A	26	72	15S	-0.15	14
2A	29	1	16S	0.2	14
2A	32	94	16S	-0.2	14
2A	33	77	15S	-0.23	14
2A	35	86	15S	-0.26	14
2A	38	93	15S	-0.72	14
2A	39	59	15S	-0.13	14
2A	44	4	15S	-0.89	14
2A	46	26	16S	-0.28	14
2A	46	105	16S	-0.85	14
2A	47	6	15S	-0.23	14
2A	47	6	14S	-0.65	14

SG	Row	Tube	TSP	INCH	%TW
2A	48	120	16S	-0.8	14
2A	49	7	16S	-0.26	14
2A	49	8	15S	-0.75	14
2A	50	4	15S	0	14
2A	50	118	16S	-0.82	14
2A	52	7	15S	-0.18	14
2A	55	4	15S	-0.83	14
2A	57	7	15S	-0.75	14
2A	58	5	16S	-0.77	14
2A	58	111	15S	-0.26	14
2A	58	120	15S	-0.46	14
2A	60	5	15S	-0.26	14
2A	60	10	15S	-0.13	14
2A	62	119	15S	0.23	14
2A	63	1	16S	0	14
2A	63	119	15S	-0.18	14
2A	68	23	16S	-0.76	14
2A	68	46	16S	-0.8	14
2A	69	2	16S	-0.39	14
2A	69	12	16S	-0.77	14
2A	70	35	16S	-0.69	14
2A	73	3	16S	-0.87	14
2A	75	1	16S	-0.33	14
2A	75	7	15S	-0.26	14
2A	77	111	15S	0.26	14
2A	79	130	16S	-0.84	14
2A	85	7	16S	-0.87	14
2A	86	125	16S	-0.72	14
2A	86	131	16S	-0.75	14
2A	88	2	14S	-0.83	14
2A	90	19	16S	-0.66	14
2A	90	125	16S	-0.82	14
2A	91	124	16S	-0.36	14
2A	91	127	16S	-0.74	14
2A	92	44	13S	-0.69	14
2A	96	124	16S	-0.31	14
2A	101	62	16S	-0.8	14
2A	103	1	14S	-0.23	14
2A	103	123	16S	-0.33	14
2A	104	56	16S	-0.69	14
2A	105	120	16S	-0.99	14
2A	106	43	16S	-0.26	14
2A	107	95	15S	0.2	14
2A	108	46	16S	-0.59	14
2A	108	53	16S	-0.59	14

SG	Row	Tube	TSP	INCH	%TW
2A	108	59	16S	-0.87	14
2A	108	99	15S	-0.77	14
2A	109	4	14S	-0.75	14
2A	109	40	16S	-0.59	14
2A	110	43	16S	-0.64	14
2A	110	54	16S	-0.77	14
2A	111	39	16S	-0.64	14
2A	111	43	16S	-0.62	14
2A	111	93	15S	0.21	14
2A	112	112	15S	0.18	14
2A	113	83	15S	-0.28	14
2A	115	44	16S	-0.31	14
2A	116	88	15S	0.21	14
2A	117	109	16S	-0.36	14
2A	118	41	16S	-0.74	14
2A	120	31	16S	-0.66	14
2A	121	45	16S	-0.87	14
2A	121	58	15S	0.21	14
2A	122	45	16S	-0.86	14
2A	122	105	16S	-0.39	14
2A	123	45	16S	-0.83	14
2A	126	38	16S	-0.76	14
2A	127	31	16S	-0.85	14
2A	127	45	16S	-0.25	14
2A	128	5	14S	-0.75	14
2A	128	63	15S	0.23	14
2A	129	92	16S	-0.32	14
2A	131	11	14S	-0.76	14
2A	131	60	15S	0.13	14
2A	133	22	13S	0.29	14
2A	138	22	16S	-0.82	14
2A	138	48	15S	-0.74	14
2A	139	10	16S	-0.84	14
2A	139	11	16S	-0.84	14
2A	140	38	16S	-0.24	14
2A	140	38	15S	-0.68	14
2A	141	5	14S	-0.61	14
2A	141	13	15S	-0.74	14
2A	142	18	16S	-0.67	14
2A	144	19	16S	-0.75	14
2A	144	44	16S	-0.69	14
2A	145	7	16S	-0.32	14
2A	145	20	16S	-0.21	14
2A	147	3	14S	-0.73	14
2A	147	15	16S	-0.6	14

SG	Row	Tube	TSP	INCH	%TW
2A	148	5	14S	-0.59	14
2A	148	15	16S	-0.75	14
2A	149	12	16S	-0.26	14
2A	149	13	16S	-0.23	14
2A	149	15	16S	-0.26	14
2A	149	16	16S	-0.23	14
2A	150	8	16S	-0.23	14
2A	151	4	16S	-0.33	14
2A	1	5	14S	0.15	13
2A	2	1	14S	-0.67	13
2A	3	17	16S	0	13
2A	5	20	16S	0.08	13
2A	6	19	15S	0.24	13
2A	6	20	15S	0.39	13
2A	8	23	15S	0.18	13
2A	18	9	16S	-0.77	13
2A	19	65	15S	0.33	13
2A	21	13	15S	0.26	13
2A	25	50	15S	0.23	13
2A	25	50	15S	-0.78	13
2A	27	12	15S	0.21	13
2A	27	63	15S	0.25	13
2A	27	66	15S	-0.21	13
2A	29	88	15S	0.26	13
2A	31	77	15S	-0.18	13
2A	32	39	15S	-0.31	13
2A	33	7	15S	-0.81	13
2A	34	7	16S	-0.69	13
2A	35	75	15S	-0.7	13
2A	35	79	16S	-0.64	13
2A	36	73	15S	-0.18	13
2A	37	78	15S	-0.21	13
2A	38	10	15S	-0.15	13
2A	38	92	15S	-0.83	13
2A	38	105	16S	-0.82	13
2A	39	87	15S	0.23	13
2A	39	100	15S	-0.23	13
2A	43	118	11S	0.36	13
2A	44	5	16S	-0.66	13
2A	44	119	11S	0.36	13
2A	46	99	15S	-0.26	13
2A	48	107	16S	-0.85	13
2A	48	122	16S	-0.31	13
2A	50	6	15S	-0.84	13
2A	54	10	15S	-0.75	13

SG	Row	Tube	TSP	INCH	%TW
2A	56	4	15S	-0.91	13
2A	57	4	15S	-0.83	13
2A	57	12	15S	-0.28	13
2A	57	127	16S	-0.85	13
2A	61	121	15S	-0.77	13
2A	64	2	16S	0	13
2A	67	22	16S	-0.76	13
2A	67	109	16S	-0.72	13
2A	67	119	15S	-0.8	13
2A	67	123	16S	-0.23	13
2A	67	128	16S	-0.39	13
2A	68	109	15S	0.28	13
2A	69	5	15S	-0.21	13
2A	69	23	16S	-0.84	13
2A	69	41	16S	-0.67	13
2A	69	117	15S	-0.28	13
2A	69	132	13S	-0.72	13
2A	72	114	15S	-0.31	13
2A	73	1	13S	-0.21	13
2A	73	2	14S	-0.8	13
2A	73	41	16S	-0.64	13
2A	73	46	16S	-0.83	13
2A	73	102	15S	-0.33	13
2A	73	120	15S	-0.23	13
2A	74	48	16S	-0.65	13
2A	74	128	16S	-0.88	13
2A	75	1	14S	-0.73	13
2A	78	1	16S	0.26	13
2A	78	6	15S	-0.86	13
2A	78	121	15S	-0.21	13
2A	86	2	14S	0.31	13
2A	88	41	13S	-0.7	13
2A	88	121	16S	-0.13	13
2A	88	130	16S	-0.72	13
2A	89	119	15S	-0.73	13
2A	92	106	15S	-0.77	13
2A	93	102	16S	-0.85	13
2A	93	126	16S	-0.79	13
2A	94	43	16S	-0.65	13
2A	94	123	16S	-0.39	13
2A	95	1	14S	-0.76	13
2A	95	19	16S	-0.59	13
2A	100	13	14S	-0.13	13
2A	100	100	15S	-0.74	13
2A	102	115	16S	-0.44	13

SG	Row	Tube	TSP	INCH	%TW
2A	103	62	16S	-0.9	13
2A	103	118	16S	-0.31	13
2A	103	120	16S	-0.44	13
2A	104	50	16S	-0.6	13
2A	107	43	16S	-0.59	13
2A	107	101	15S	-0.28	13
2A	108	85	15S	-0.1	13
2A	110	46	16S	-0.62	13
2A	111	45	16S	-0.18	13
2A	111	53	16S	-0.69	13
2A	111	114	16S	-0.26	13
2A	112	40	16S	-0.26	13
2A	113	115	16S	-0.88	13
2A	114	115	16S	-0.89	13
2A	116	31	16S	-0.71	13
2A	117	39	16S	-0.85	13
2A	117	50	16S	-0.72	13
2A	117	55	16S	-0.76	13
2A	117	84	15S	0.24	13
2A	118	1	14S	-0.72	13
2A	119	37	16S	-0.73	13
2A	119	49	16S	-0.7	13
2A	120	44	16S	-0.79	13
2A	120	74	15S	0.26	13
2A	121	51	16S	-0.76	13
2A	122	42	16S	-0.82	13
2A	122	47	16S	-0.28	13
2A	123	38	16S	-0.69	13
2A	126	92	16S	0.26	13
2A	127	49	16S	-0.72	13
2A	128	45	16S	-0.76	13
2A	129	7	16S	-0.74	13
2A	132	15	16S	-0.69	13
2A	132	48	15S	0.18	13
2A	133	6	16S	-0.35	13
2A	133	11	16S	-0.71	13
2A	135	8	16S	-0.72	13
2A	135	35	14S	-0.7	13
2A	139	2	14S	-0.67	13
2A	139	9	15S	0.18	13
2A	139	33	16S	-0.23	13
2A	139	70	16S	0.15	13
2A	141	9	16S	-0.8	13
2A	143	26	16S	-0.65	13
2A	143	31	16S	-0.71	13

SG	Row	Tube	TSP	INCH	%TW
2A	144	20	15S	0.27	13
2A	145	25	16S	-0.26	13
2A	146	13	16S	-0.69	13
2A	147	20	15S	-0.26	13
2A	148	20	16S	-0.16	13
2A	149	2	14S	-0.6	13
2A	149	11	16S	-0.74	13
2A	150	4	14S	-0.64	13
2A	151	6	14S	-0.66	13
2A	151	10	16S	-0.65	13
2A	2	2	14S	-0.7	12
2A	2	13	16S	0.31	12
2A	2	19	12S	-0.72	12
2A	11	1	14S	-0.72	12
2A	12	14	15S	-0.74	12
2A	12	23	15S	0.42	12
2A	15	25	15S	0.42	12
2A	16	10	15S	-0.62	12
2A	16	12	15S	-0.21	12
2A	18	1	14S	-0.75	12
2A	18	13	16S	-0.69	12
2A	19	7	15S	-0.88	12
2A	19	12	15S	-0.69	12
2A	21	8	15S	-0.82	12
2A	21	10	15S	-0.79	12
2A	22	56	15S	-0.18	12
2A	23	66	15S	-0.75	12
2A	26	89	15S	0.28	12
2A	27	6	15S	0.28	12
2A	27	11	15S	-0.26	12
2A	27	71	15S	-0.18	12
2A	27	73	15S	0.23	12
2A	27	74	15S	-0.2	12
2A	36	85	16S	-0.84	12
2A	37	106	16S	-0.81	12
2A	37	107	16S	-0.81	12
2A	38	3	16S	-0.75	12
2A	39	33	15S	0.29	12
2A	39	97	15S	-0.23	12
2A	40	61	15S	-0.57	12
2A	40	87	15S	-0.72	12
2A	41	10	15S	-0.26	12
2A	41	101	15S	0.28	12
2A	41	115	16S	-0.85	12
2A	42	4	16S	-0.8	12

SG	Row	Tube	TSP	INCH	%TW
2A	42	5	16S	-0.75	12
2A	42	100	15S	-0.23	12
2A	42	116	16S	-0.8	12
2A	44	7	15S	-0.8	12
2A	45	91	15S	-0.36	12
2A	46	22	16S	-0.71	12
2A	46	101	15S	-0.31	12
2A	46	105	15S	-0.23	12
2A	48	104	16S	-0.77	12
2A	51	6	15S	-0.23	12
2A	52	4	15S	-0.89	12
2A	52	6	15S	-0.86	12
2A	54	4	16S	-0.83	12
2A	54	127	16S	-0.75	12
2A	55	111	15S	-0.7	12
2A	55	118	15S	-0.72	12
2A	56	28	13S	-0.62	12
2A	56	120	16S	-0.41	12
2A	57	8	15S	0.23	12
2A	57	125	16S	-0.82	12
2A	59	108	15S	-0.72	12
2A	59	127	16S	-0.85	12
2A	61	110	15S	-0.21	12
2A	63	113	15S	-0.28	12
2A	63	120	16S	-0.85	12
2A	63	121	15S	-0.83	12
2A	64	13	16S	-0.03	12
2A	65	7	15S	-0.75	12
2A	65	10	15S	0.37	12
2A	65	45	16S	-0.6	12
2A	65	108	15S	-0.7	12
2A	65	113	15S	0.39	12
2A	65	115	16S	-0.82	12
2A	65	130	13S	-0.26	12
2A	66	4	15S	-0.23	12
2A	66	46	16S	-0.23	12
2A	68	4	16S	-0.08	12
2A	68	8	16S	-0.75	12
2A	68	10	16S	-0.41	12
2A	68	24	16S	-0.26	12
2A	68	106	15S	-0.74	12
2A	70	7	16S	0.18	12
2A	70	51	16S	-0.68	12
2A	71	2	14S	-0.75	12
2A	71	45	16S	-0.8	12

SG	Row	Tube	TSP	INCH	%TW
2A	72	8	16S	-0.32	12
2A	72	109	15S	0.36	12
2A	75	2	14S	-0.83	12
2A	75	5	16S	0.26	12
2A	75	9	15S	-0.82	12
2A	77	2	14S	0.26	12
2A	77	2	13S	-0.8	12
2A	77	4	16S	-0.29	12
2A	77	5	15S	0.29	12
2A	78	116	15S	-0.23	12
2A	79	3	16S	0.26	12
2A	81	46	16S	-0.8	12
2A	82	10	16S	-0.64	12
2A	82	115	16S	-0.73	12
2A	82	127	16S	-0.79	12
2A	83	1	13S	0.36	12
2A	83	121	15S	-0.86	12
2A	83	127	16S	-0.77	12
2A	83	128	16S	-0.79	12
2A	84	124	16S	-0.77	12
2A	86	6	14S	-0.67	12
2A	86	7	16S	-0.73	12
2A	86	43	16S	-0.64	12
2A	86	128	16S	-0.36	12
2A	87	30	14S	-0.67	12
2A	88	55	16S	-0.59	12
2A	89	21	16S	-0.56	12
2A	89	108	16S	-0.26	12
2A	90	70	16S	-0.82	12
2A	91	21	16S	-0.59	12
2A	91	91	16S	-0.7	12
2A	91	117	15S	0.26	12
2A	94	14	16S	-0.64	12
2A	94	105	15S	-0.72	12
2A	94	122	16S	-0.38	12
2A	95	2	14S	-0.72	12
2A	95	40	16S	-0.6	12
2A	96	18	16S	-0.62	12
2A	96	120	16S	-0.77	12
2A	98	112	15S	-0.81	12
2A	102	87	15S	-0.83	12
2A	103	5	15S	-0.81	12
2A	104	5	15S	-0.83	12
2A	104	45	16S	-0.59	12
2A	104	97	16S	-0.68	12

SG	Row	Tube	TSP	INCH	%TW
2A	106	46	16S	-0.62	12
2A	107	90	15S	-0.75	12
2A	107	94	15S	-0.74	12
2A	109	52	16S	-0.56	12
2A	110	31	16S	-0.69	12
2A	111	42	16S	-0.64	12
2A	112	84	15S	0.34	12
2A	113	92	15S	-0.79	12
2A	115	1	14S	-0.8	12
2A	116	38	16S	-0.76	12
2A	117	40	16S	-0.73	12
2A	118	43	16S	-0.79	12
2A	119	1	14S	-0.7	12
2A	119	35	16S	-0.77	12
2A	119	42	16S	-0.79	12
2A	120	30	16S	-0.79	12
2A	120	32	16S	-0.73	12
2A	120	106	16S	-0.87	12
2A	121	1	14S	-0.7	12
2A	122	43	16S	-0.71	12
2A	123	89	15S	-0.71	12
2A	123	92	15S	-0.28	12
2A	124	98	16S	-0.39	12
2A	126	39	16S	-0.87	12
2A	126	44	16S	-0.71	12
2A	128	40	16S	-0.72	12
2A	129	10	15S	0.21	12
2A	131	14	15S	-0.7	12
2A	131	67	15S	-0.77	12
2A	132	14	16S	-0.82	12
2A	133	35	16S	-0.74	12
2A	133	67	15S	0.24	12
2A	134	8	16S	-0.71	12
2A	136	3	14S	-0.67	12
2A	136	35	16S	-0.71	12
2A	139	4	16S	-0.71	12
2A	139	8	16S	-0.71	12
2A	139	13	16S	-0.77	12
2A	139	54	15S	0.26	12
2A	139	70	16S	-0.77	12
2A	140	2	14S	-0.7	12
2A	141	25	16S	-0.63	12
2A	141	36	15S	-0.85	12
2A	142	12	14S	-0.7	12
2A	144	4	14S	-0.73	12

SG	Row	Tube	TSP	INCH	%TW
2A	144	20	16S	-0.66	12
2A	144	56	16S	0.23	12
2A	145	4	14S	-0.75	12
2A	146	3	14S	-0.69	12
2A	146	9	14S	-0.7	12
2A	146	15	14S	-0.67	12
2A	148	11	16S	-0.67	12
2A	149	5	14S	-0.67	12
2A	149	8	14S	-0.64	12
2A	151	3	16S	-0.71	12
2A	151	5	14S	-0.69	12
2A	151	14	16S	-0.6	12
2A	4	18	16S	0.1	11
2A	5	19	15S	-0.69	11
2A	5	23	15S	-0.67	11
2A	7	27	15S	0.39	11
2A	13	47	15S	0.23	11
2A	14	8	15S	0.36	11
2A	15	1	14S	-0.73	11
2A	15	53	14S	-0.65	11
2A	16	1	14S	-0.7	11
2A	16	14	16S	0.2	11
2A	17	32	13S	-0.7	11
2A	17	52	15S	-0.75	11
2A	18	54	15S	-0.21	11
2A	20	61	15S	-0.13	11
2A	20	65	15S	-0.72	11
2A	23	69	15S	-0.23	11
2A	27	67	15S	-0.13	11
2A	30	53	15S	-0.69	11
2A	32	39	14S	-0.72	11
2A	32	91	15S	0.36	11
2A	33	10	15S	-0.21	11
2A	34	6	15S	0.28	11
2A	35	57	15S	0.35	11
2A	35	103	16S	-0.77	11
2A	40	5	15S	-0.1	11
2A	40	8	15S	0.26	11
2A	41	99	15S	-0.18	11
2A	42	4	14S	-0.21	11
2A	43	27	16S	-0.69	11
2A	44	94	16S	-0.76	11
2A	44	99	15S	0.26	11
2A	45	7	15S	-0.39	11
2A	45	119	16S	-0.83	11

SG	Row	Tube	TSP	INCH	%TW
2A	46	8	15S	-0.31	11
2A	46	111	15S	-0.18	11
2A	47	5	15S	-0.85	11
2A	48	107	15S	-0.23	11
2A	50	5	15S	-0.87	11
2A	51	5	16S	-0.72	11
2A	52	4	15S	0.32	11
2A	53	12	16S	-0.87	11
2A	53	110	15S	-0.75	11
2A	53	123	16S	-0.77	11
2A	55	63	16S	-0.89	11
2A	58	13	15S	-0.8	11
2A	59	102	16S	-0.77	11
2A	59	114	15S	-0.78	11
2A	59	126	16S	-0.79	11
2A	61	106	16S	-0.87	11
2A	62	3	15S	-0.8	11
2A	63	4	16S	-0.72	11
2A	63	120	15S	-0.75	11
2A	63	122	16S	0.25	11
2A	64	4	15S	-0.85	11
2A	64	114	15S	0.34	11
2A	65	4	16S	-0.82	11
2A	65	8	16S	-0.24	11
2A	65	13	16S	-0.25	11
2A	65	107	15S	-0.28	11
2A	65	114	15S	-0.67	11
2A	66	112	15S	0.23	11
2A	67	8	16S	-0.63	11
2A	68	4	15S	-0.26	11
2A	68	45	16S	0.18	11
2A	69	6	15S	0	11
2A	69	129	16S	-0.91	11
2A	70	3	16S	0.26	11
2A	70	113	15S	-0.8	11
2A	71	4	15S	-0.28	11
2A	71	5	15S	-0.9	11
2A	71	14	16S	-0.69	11
2A	71	14	15S	-0.8	11
2A	71	97	15S	-0.82	11
2A	72	41	13S	-0.72	11
2A	73	3	16S	0.18	11
2A	73	24	16S	-0.69	11
2A	73	26	16S	-0.67	11
2A	74	12	15S	-0.77	11

SG	Row	Tube	TSP	INCH	%TW
2A	74	102	15S	-0.77	11
2A	75	45	16S	0.19	11
2A	75	104	15S	-0.79	11
2A	75	124	16S	-0.78	11
2A	76	126	16S	-0.78	11
2A	77	1	16S	0.16	11
2A	78	28	16S	-0.66	11
2A	79	13	14S	-0.7	11
2A	79	129	16S	-0.8	11
2A	84	1	14S	0.31	11
2A	84	32	16S	-0.59	11
2A	84	103	15S	-0.77	11
2A	84	106	15S	-0.69	11
2A	84	130	16S	-0.7	11
2A	85	130	16S	-0.7	11
2A	88	49	16S	-0.21	11
2A	88	113	15S	-0.65	11
2A	88	116	15S	-0.78	11
2A	89	4	15S	-0.81	11
2A	89	121	16S	-0.23	11
2A	89	123	16S	-0.8	11
2A	90	109	15S	-0.23	11
2A	91	116	16S	-0.72	11
2A	93	37	13S	-0.49	11
2A	93	120	16S	-0.87	11
2A	94	20	16S	-0.57	11
2A	94	26	16S	-0.64	11
2A	96	103	15S	0.33	11
2A	97	28	16S	-0.67	11
2A	97	112	15S	-0.34	11
2A	97	124	16S	-0.85	11
2A	98	15	16S	-0.64	11
2A	98	24	16S	-0.64	11
2A	98	40	16S	-0.64	11
2A	99	93	16S	-0.68	11
2A	99	112	16S	-0.88	11
2A	99	115	15S	-0.7	11
2A	99	120	16S	-0.85	11
2A	99	123	16S	-0.79	11
2A	100	34	16S	-0.66	11
2A	100	39	16S	-0.65	11
2A	101	88	15S	0.28	11
2A	102	119	16S	-0.44	11
2A	104	1	14S	-0.75	11
2A	104	2	14S	-0.78	11

SG	Row	Tube	TSP	INCH	%TW
2A	104	85	15S	-0.77	11
2A	104	122	16S	-0.85	11
2A	105	52	16S	-0.67	11
2A	107	37	16S	-0.66	11
2A	107	48	16S	-0.59	11
2A	108	86	15S	0.34	11
2A	109	42	16S	-0.67	11
2A	109	89	15S	-0.72	11
2A	111	29	16S	-0.74	11
2A	111	57	16S	-0.81	11
2A	112	51	16S	-0.64	11
2A	112	82	15S	-0.83	11
2A	112	113	16S	0.18	11
2A	113	8	14S	-0.75	11
2A	113	55	16S	-0.85	11
2A	114	44	16S	-0.65	11
2A	115	32	16S	-0.62	11
2A	115	40	16S	-0.61	11
2A	115	42	16S	-0.62	11
2A	115	49	16S	-0.61	11
2A	115	81	15S	-0.85	11
2A	116	1	14S	-0.73	11
2A	116	43	16S	-0.79	11
2A	116	63	15S	-0.71	11
2A	117	47	16S	-0.81	11
2A	117	51	16S	-0.81	11
2A	117	89	15S	-0.83	11
2A	118	91	15S	0.31	11
2A	119	87	15S	-0.75	11
2A	120	42	16S	-0.76	11
2A	120	45	16S	-0.89	11
2A	121	78	15S	0.26	11
2A	122	82	15S	0.21	11
2A	123	42	14S	-0.7	11
2A	123	51	16S	-0.74	11
2A	124	43	16S	-0.89	11
2A	125	41	16S	-0.84	11
2A	125	42	16S	-0.84	11
2A	125	61	15S	-0.78	11
2A	125	99	16S	-0.37	11
2A	126	48	16S	-0.76	11
2A	126	81	16S	-0.88	11
2A	128	1	14S	-0.73	11
2A	129	43	15S	0.21	11
2A	131	23	16S	-0.69	11

SG	Row	Tube	TSP	INCH	%TW
2A	131	23	14S	-0.78	11
2A	131	38	16S	-0.82	11
2A	132	36	16S	-0.75	11
2A	133	13	16S	-0.8	11
2A	134	7	16S	-0.65	11
2A	135	10	16S	-0.77	11
2A	136	22	16S	-0.86	11
2A	138	1	14S	-0.7	11
2A	139	37	16S	-0.66	11
2A	139	49	15S	-0.7	11
2A	140	10	14S	-0.72	11
2A	140	27	16S	-0.6	11
2A	141	22	16S	-0.64	11
2A	142	5	16S	-0.8	11
2A	143	14	15S	0.18	11
2A	144	2	14S	-0.64	11
2A	144	11	15S	0.21	11
2A	144	21	16S	-0.74	11
2A	144	22	16S	-0.72	11
2A	145	9	16S	-0.27	11
2A	145	22	16S	0.15	11
2A	145	26	16S	-0.65	11
2A	146	5	16S	-0.34	11
2A	147	5	14S	-0.67	11
2A	147	41	16S	-0.7	11
2A	148	6	16S	-0.77	11
2A	148	38	16S	-0.28	11
2A	150	9	16S	-0.74	11
2A	1	13	12S	-0.77	10
2A	3	13	16S	0.33	10
2A	6	15	15S	0.26	10
2A	8	24	15S	0.42	10
2A	10	49	15S	0.26	10
2A	11	11	15S	-0.72	10
2A	14	1	14S	-0.72	10
2A	14	75	16S	-0.85	10
2A	15	53	15S	-0.69	10
2A	19	59	15S	-0.67	10
2A	20	1	16S	0.2	10
2A	20	9	15S	-0.76	10
2A	20	10	15S	-0.71	10
2A	20	76	15S	-0.74	10
2A	20	76	14S	-0.77	10
2A	22	62	15S	-0.21	10
2A	23	64	15S	0.31	10

SG	Row	Tube	TSP	INCH	%TW
2A	26	35	16S	-0.66	10
2A	26	67	14S	-0.62	10
2A	28	58	15S	-0.67	10
2A	28	69	15S	-0.15	10
2A	31	58	15S	-0.23	10
2A	31	63	15S	-0.72	10
2A	31	64	15S	-0.72	10
2A	33	78	15S	-0.18	10
2A	33	89	15S	-0.18	10
2A	33	108	16S	0.31	10
2A	34	58	15S	-0.72	10
2A	34	61	15S	-0.7	10
2A	35	29	16S	-0.62	10
2A	35	106	16S	-0.84	10
2A	36	71	15S	0.28	10
2A	37	1	14S	-0.73	10
2A	37	93	15S	-0.7	10
2A	40	94	15S	-0.21	10
2A	41	24	16S	-0.64	10
2A	42	113	15S	-0.26	10
2A	43	113	16S	-0.79	10
2A	44	14	15S	-0.77	10
2A	44	85	15S	0.33	10
2A	45	105	15S	-0.23	10
2A	46	1	14S	-0.75	10
2A	46	85	15S	-0.26	10
2A	47	60	13S	-0.69	10
2A	47	89	15S	-0.74	10
2A	48	33	16S	0.21	10
2A	51	8	15S	0.4	10
2A	51	35	16S	0.21	10
2A	51	109	15S	-0.72	10
2A	52	10	16S	-0.71	10
2A	53	10	16S	-0.74	10
2A	53	112	15S	0.28	10
2A	54	81	15S	-0.36	10
2A	55	7	15S	0.32	10
2A	55	105	15S	-0.64	10
2A	58	7	15S	-0.52	10
2A	58	126	16S	-0.89	10
2A	61	114	15S	-0.87	10
2A	62	13	16S	-0.66	10
2A	62	100	15S	-0.23	10
2A	62	127	16S	-0.87	10
2A	66	114	15S	0.21	10

SG	Row	Tube	TSP	INCH	%TW
2A	66	124	16S	-0.23	10
2A	67	11	16S	-0.26	10
2A	67	37	16S	0.19	10
2A	67	44	16S	0.18	10
2A	68	128	16S	-0.81	10
2A	69	12	16S	0.28	10
2A	69	14	16S	-0.69	10
2A	69	128	16S	-0.8	10
2A	70	47	16S	0.16	10
2A	70	128	16S	-0.83	10
2A	71	47	16S	0.26	10
2A	72	13	16S	-0.76	10
2A	72	108	15S	-0.36	10
2A	74	1	14S	-0.75	10
2A	74	32	13S	-0.67	10
2A	74	112	15S	0.26	10
2A	75	48	16S	0.29	10
2A	75	119	15S	-0.73	10
2A	76	3	15S	-0.88	10
2A	76	40	14S	-0.69	10
2A	78	130	16S	-0.77	10
2A	79	2	14S	0.28	10
2A	79	108	15S	0.31	10
2A	81	112	15S	-0.75	10
2A	81	116	16S	-0.23	10
2A	81	130	16S	-0.69	10
2A	82	114	15S	-0.72	10
2A	82	120	16S	-0.75	10
2A	83	122	16S	-0.82	10
2A	84	118	15S	-0.76	10
2A	85	33	16S	-0.69	10
2A	86	29	16S	-0.67	10
2A	87	128	16S	-0.78	10
2A	88	2	14S	0.42	10
2A	89	42	16S	-0.64	10
2A	89	113	15S	-0.75	10
2A	90	26	16S	-0.71	10
2A	90	114	15S	-0.7	10
2A	90	121	16S	-0.88	10
2A	92	35	16S	-0.67	10
2A	92	93	14S	0.34	10
2A	94	93	16S	-0.74	10
2A	95	58	16S	-0.79	10
2A	96	20	16S	-0.64	10
2A	98	94	16S	0.2	10

SG	Row	Tube	TSP	INCH	%TW
2A	98	108	15S	-0.76	10
2A	98	126	16S	-0.82	10
2A	99	42	16S	-0.62	10
2A	100	27	16S	-0.53	10
2A	100	111	16S	-0.26	10
2A	101	7	15S	-0.81	10
2A	103	116	15S	0.33	10
2A	104	52	16S	-0.65	10
2A	104	96	15S	-0.72	10
2A	105	96	15S	0.23	10
2A	105	118	16S	0.24	10
2A	106	42	16S	-0.61	10
2A	106	55	16S	-0.68	10
2A	107	1	14S	-0.73	10
2A	108	56	16S	-0.87	10
2A	109	89	16S	-0.78	10
2A	110	51	16S	-0.65	10
2A	110	114	16S	-0.96	10
2A	111	113	16S	-0.96	10
2A	112	44	16S	-0.57	10
2A	113	58	16S	-0.84	10
2A	114	45	16S	-0.64	10
2A	114	79	15S	-0.72	10
2A	115	38	16S	-0.23	10
2A	115	91	15S	-0.72	10
2A	116	42	16S	-0.74	10
2A	117	28	16S	-0.71	10
2A	117	49	13S	-0.72	10
2A	117	56	15S	0.21	10
2A	119	73	15S	-0.25	10
2A	119	88	15S	0.32	10
2A	120	84	15S	-0.82	10
2A	122	49	16S	-0.74	10
2A	122	59	15S	0.23	10
2A	122	67	15S	-0.79	10
2A	122	71	15S	-0.74	10
2A	124	12	14S	-0.75	10
2A	124	79	15S	0.24	10
2A	127	9	16S	-0.77	10
2A	127	28	14S	-0.73	10
2A	127	42	16S	-0.76	10
2A	128	33	16S	-0.85	10
2A	130	42	16S	-0.69	10
2A	132	42	16S	-0.76	10
2A	133	22	16S	-0.77	10

SG	Row	Tube	TSP	INCH	%TW
2A	133	30	16S	-0.66	10
2A	134	22	15S	0.26	10
2A	134	25	16S	-0.86	10
2A	135	15	16S	-0.69	10
2A	135	41	16S	-0.77	10
2A	138	61	15S	-0.75	10
2A	139	17	16S	-0.74	10
2A	141	12	15S	0.24	10
2A	142	10	15S	0.24	10
2A	144	4	16S	-0.65	10
2A	144	20	14S	-0.73	10
2A	145	21	16S	-0.7	10
2A	21	56	15S	-0.72	9
2A	30	7	15S	0.23	9
2A	61	41	16S	-0.59	9
2A	72	121	16S	-0.74	9
2A	96	126	16S	-0.8	9
2A	107	87	15S	-0.7	9
2A	111	87	15S	-0.33	9
2A	114	6	15S	-0.77	9
2A	119	85	15S	0.21	9
2A	137	53	15S	-0.72	9
2A	137	61	15S	-0.85	9
2A	141	2	16S	0.15	9
2A	147	20	16S	-0.72	9
2A	63	43	16S	-0.68	8
2A	68	129	16S	-0.74	8
2A	75	127	16S	-0.78	8
2A	78	106	15S	-0.77	8
2A	124	63	16S	-0.75	8
2A	131	55	15S	0.18	8
2A	146	41	16S	-0.67	8
2A	148	36	16S	-0.7	8
2A	73	113	15S	-0.75	7
2A	74	131	13S	-0.75	7
2A	102	91	15S	-0.85	7
2A	106	85	15S	0.3	7
2A	68	113	15S	-0.77	6
1B	83	132	11S	-0.18	40
1B	69	132	16S	-0.41	37
1B	71	132	16S	-0.39	36
1B	73	132	16S	-0.37	29
1B	64	131	16S	-0.39	23
1B	68	131	13S	-0.1	23
1B	151	11	16S	-0.67	23

SG	Row	Tube	TSP	INCH	%TW
1B	151	14	16S	-0.49	23
1B	63	130	16S	-0.34	22
1B	73	131	11S	0.36	22
1B	83	132	16S	-0.89	22
1B	15	1	16S	-0.69	21
1B	18	1	16S	-0.39	21
1B	29	1	16S	-0.34	21
1B	8	57	16S	-0.67	20
1B	40	117	16S	-0.34	20
1B	68	131	16S	-0.31	20
1B	76	1	16S	0.03	20
1B	77	1	11S	-0.16	20
1B	79	1	11S	0.39	20
1B	150	24	16S	0.28	20
1B	68	1	16S	-0.85	19
1B	88	131	13S	-0.7	19
1B	94	1	16S	-0.32	19
1B	141	1	16S	-0.26	19
1B	9	1	16S	-0.34	18
1B	75	2	16S	-0.72	18
1B	77	132	13S	-0.23	18
1B	81	1	16S	-0.32	18
1B	150	23	16S	0.17	18
1B	22	1	16S	-0.31	17
1B	57	128	16S	-0.31	17
1B	64	131	13S	-0.73	17
1B	64	131	14S	-0.7	17
1B	68	131	14S	-0.28	17
1B	120	107	14S	-0.26	17
1B	123	104	16S	-0.38	17
1B	143	58	16S	-0.15	17
1B	1	16	16S	-0.34	16
1B	5	1	16S	-0.7	16
1B	12	1	16S	-0.72	16
1B	19	1	16S	-0.79	16
1B	34	1	16S	-0.42	16
1B	49	124	16S	-0.34	16
1B	74	1	16S	0	16
1B	76	1	11S	-0.7	16
1B	78	1	11S	0.36	16
1B	84	1	11S	0.31	16
1B	101	1	16S	-0.31	16
1B	126	99	16S	-0.78	16
1B	3	34	16S	-0.41	15
1B	4	41	16S	-0.36	15

SG	Row	Tube	TSP	INCH	%TW
1B	60	129	16S	-0.29	15
1B	62	1	16S	-0.66	15
1B	63	130	13S	-0.18	15
1B	66	131	14S	-0.18	15
1B	79	132	13S	-0.73	15
1B	83	132	13S	-0.62	15
1B	95	113	14S	0.21	15
1B	122	105	16S	-0.41	15
1B	134	1	16S	0.21	15
1B	134	68	16S	0.16	15
1B	140	59	16S	0.1	15
1B	148	39	16S	0.23	15
1B	151	13	16S	0.22	15
1B	1	13	14S	0.26	14
1B	7	1	16S	-0.35	14
1B	8	1	16S	-0.41	14
1B	39	116	16S	-0.31	14
1B	61	130	16S	-0.08	14
1B	65	130	16S	-0.03	14
1B	72	131	16S	-0.34	14
1B	75	130	13S	0.28	14
1B	76	130	16S	-0.72	14
1B	83	128	16S	-0.67	14
1B	132	89	16S	-0.64	14
1B	139	68	16S	-0.56	14
1B	145	32	16S	0.08	14
1B	145	44	16S	-0.75	14
1B	149	27	16S	-0.66	14
1B	149	32	11S	-0.65	14
1B	10	4	16S	-0.74	13
1B	56	122	15S	0.23	13
1B	58	129	16S	-0.84	13
1B	66	131	13S	-0.13	13
1B	69	132	14S	-0.8	13
1B	74	131	14S	-0.26	13
1B	75	132	14S	-0.73	13
1B	83	121	15S	-0.69	13
1B	84	1	16S	-0.24	13
1B	121	106	13S	-0.7	13
1B	131	77	16S	-0.72	13
1B	132	1	16S	-0.23	13
1B	143	49	16S	-0.21	13
1B	5	46	16S	-0.67	12
1B	6	1	16S	-0.8	12
1B	14	59	15S	-0.75	12

SG	Row	Tube	TSP	INCH	%TW
1B	15	59	15S	-0.73	12
1B	18	73	16S	-0.61	12
1B	40	112	15S	-0.86	12
1B	47	1	16S	-0.73	12
1B	57	125	15S	-0.77	12
1B	62	129	16S	0.2	12
1B	68	129	15S	0	12
1B	74	3	16S	-0.75	12
1B	74	131	16S	-0.33	12
1B	80	127	16S	-0.74	12
1B	83	1	11S	0.39	12
1B	96	124	16S	-0.85	12
1B	116	113	16S	-0.73	12
1B	121	106	14S	-0.7	12
1B	140	69	16S	-0.67	12
1B	144	35	16S	-0.86	12
1B	146	51	01S	-0.34	12
1B	148	28	16S	-0.75	12
1B	149	24	16S	-0.78	12
1B	151	12	16S	0	12
1B	2	24	01S	-0.36	11
1B	3	30	14S	-0.67	11
1B	6	35	15S	0.23	11
1B	11	1	16S	-0.72	11
1B	24	88	15S	0.2	11
1B	27	1	16S	-0.84	11
1B	27	91	15S	-0.82	11
1B	34	98	15S	-0.85	11
1B	48	123	16S	0.2	11
1B	58	1	11S	-0.6	11
1B	65	130	13S	-0.18	11
1B	66	6	16S	-0.74	11
1B	66	130	16S	-0.83	11
1B	74	131	13S	-0.29	11
1B	75	5	16S	-0.88	11
1B	75	130	16S	-0.69	11
1B	75	131	11S	0.31	11
1B	76	127	16S	-0.03	11
1B	77	132	14S	-0.64	11
1B	78	127	16S	-0.66	11
1B	82	1	11S	0.36	11
1B	83	2	11S	0.42	11
1B	83	132	14S	-0.21	11
1B	88	131	16S	-0.88	11
1B	92	129	14S	-0.26	11

SG	Row	Tube	TSP	INCH	%TW
1B	94	129	14S	0.23	11
1B	95	4	13S	-0.65	11
1B	95	101	15S	-0.75	11
1B	105	1	16S	-0.29	11
1B	118	108	14S	-0.67	11
1B	122	62	16S	-0.15	11
1B	123	91	16S	-0.68	11
1B	126	94	16S	-0.73	11
1B	127	87	16S	-0.78	11
1B	132	83	16S	-0.59	11
1B	135	75	16S	-0.64	11
1B	140	70	13S	-0.67	11
1B	143	51	16S	-0.67	11
1B	1	16	14S	0.33	10
1B	13	6	16S	-0.39	10
1B	16	52	15S	-0.86	10
1B	21	1	16S	-0.77	10
1B	21	52	15S	-0.31	10
1B	28	3	16S	-0.72	10
1B	66	128	16S	-0.72	10
1B	67	13	16S	-0.71	10
1B	69	131	13S	-0.26	10
1B	73	122	16S	-0.7	10
1B	74	2	16S	-0.72	10
1B	75	1	12S	-0.8	10
1B	75	130	14S	0.23	10
1B	75	131	14S	0.29	10
1B	75	131	16S	-0.72	10
1B	76	131	11S	0.28	10
1B	81	126	16S	-0.64	10
1B	81	132	16S	-0.65	10
1B	88	131	14S	-0.67	10
1B	109	95	15S	-0.69	10
1B	115	16	14S	-0.65	10
1B	118	74	16S	0.34	10
1B	123	80	16S	-0.66	10
1B	124	94	15S	-0.75	10
1B	129	76	16S	-0.16	10
1B	129	79	16S	-0.73	10
1B	130	64	16S	-0.56	10
1B	132	58	16S	-0.64	10
1B	135	76	16S	-0.54	10
1B	138	1	16S	0.05	10
1B	141	7	16S	0.31	10
1B	142	43	16S	-0.8	10

SG	Row	Tube	TSP	INCH	%TW
1B	143	37	16S	-0.8	10
1B	144	31	16S	-0.78	10
1B	145	40	16S	-0.69	10
1B	148	40	16S	0.23	10
1B	149	29	16S	-0.77	10
1B	151	13	01S	-0.34	10
1B	25	7	16S	-0.77	7

Wear at Drilled TSPs

SG	Row	Tube	TSP	Max Depth [%TW]	Axial Extent [in]	Circumferential Extent [°]	PDA [%]
2A	142	1	15S	22	0.21	110	6.7
1B	37	114	15S	24	0.16	156	10.4
1B	38	115	15S	26	0.17	136	9.8
1B	48	123	15S	31	0.18	146	12.6

Foreign Object Wear

SG	Row	Tube	TSP	INCH	Max Depth [%TW]	Axial Extent [in]	Circumferential Extent [°]	PDA [%]
2A	147	12	15S	-1.07	32	0.29	70	6.2

Section 5

Number of Tubes Plugged During the Inspection Outage for Each Degradation Mechanism (TS 5.6.6.e)

Degradation Mechanism	SG 2A	SG 1B
Wear at broached TSP	16	3

Section 6

The Number and Percentage of Tubes Plugged to Date, and the Effective Plugging Percentage in Each SG (TS 5.6.6.f)

	SG 2A	SG 1B	Total
Tubes Plugged	27	3	30
Percentage Plugged	0.173%	0.020%	0.097%

Section 7

The Results of Condition Monitoring, Including the Results of Tube Pulls and In-Situ Testing (TS 5.6.6.g)

No degradation was identified that failed to meet condition monitoring criteria. All steam generator performance criteria were met analytically during Cycle 20. As such, in-situ pressure testing was not required, and none was performed. No tube pulls were planned, and none were performed.