Tennessee Valley Authority Post Office Box 2000, Soddy-Daisy Tennessee 37379

July 7, 2000

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

Gentlemen:

In the Matter of) Docket No. 50-327
Tennessee Valley Authority)

SEQUOYAH NUCLEAR PLANT (SQN) - STEAM GENERATOR (SG) 120-DAY REPORT FOR DENTED TUBE SUPPORT PLATE AXIAL PRIMARY WATER STRESS CORROSION CRACKING -ALTERNATE REPAIR CRITERIA (ARC) - RESULTS OF CONDITION MONITORING AND OPERATIONAL ASSESSEMENTS

Reference: NRC Letter to TVA dated March 8, 2000, Sequoyah Nuclear Plant, Units 1 and 2 - Issuance of License Amendments Regarding Steam Generator Tube Alternate Repair Criteria (TAC NOS. MA6856 and MA6857)(TS 99-12)

In accordance with SQN Technical Specification (TS) 4.4.5.5.e, TVA is providing the 120-Day SG Report following the Unit 1 Cycle 10 refueling outage.

SQN implemented an alternate repair criteria for axial primary water stress corrosion cracking (PWSCC) at dented tube support plate (TSP) intersections in accordance with the reference letter. The enclosed report provides tabulations of indications found in the inspection, tabulations of tubes repaired and left in service under the ARC, and growth rate distributions for indications found in the inspection as well as the growth distributions used to establish the tube repair limits. The operational assessment found that all single indications met operational assessment limits with the lowest calculated predicted burst pressure equal to 4,791 pounds per square inch, as such, the condition monitoring burst pressure requirements are satisfied and no further analyses are required.

D030

Please direct questions concerning this issue to me at (423) 843-7170 or J. D. Smith at (423) 843-6672.

Sincerely,

Pedro Salas
Licensing and Industry Affairs Manager

Enclosure
cc (Enclosure):

Mr. R. W. Hernan, Project Manager
Nuclear Regulatory Commission
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

NRC Resident Inspector
Sequoyah Nuclear Plant
2600 Igou Ferry Road
Soddy-Daisy, Tennessee 37379-3624

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303-3415

ENCLOSURE

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT (SQN)
UNIT 1

UNIT 1 CYCLE 10
STEAM GENERATOR (SG)
120-DAY REPORT
DENTED TUBE SUPPORT PLATE
AXIAL PRIMARY WATER STRESS CORROSION CRACKING
ALTERNATE REPAIR CRITERIA (ARC)

PWSCC Condition Monitoring/Operational Assessment Report

TVA SQN implemented a Steam Generator alternate repair criteria for axial primary water stress corrosion cracking (PWSCC) at dented tube support plate (TSP) intersections during the spring Unit 1 Cycle 10 refueling outage. This report documents the condition monitoring and operational assessment required 120 days after restart of SQN Unit 1.

The plus point coil was used to inspect 3,509 greater than or equal to 5 volt dented intersections and 4,851 dented greater than or equal to 2 volts and less than 5 volts. A 100 percent full length inspection was performed using the bobbin coil probe. Analysts were trained in detecting indications in less than 2 volt dented intersections using SQN-specific data. When a potential crack-like indication is identified, the analyst calls the indication "DSI", which indicates that this indication needs further evaluation using a plus point coil. A total of 1,647 intersections with less than 2 volt dents were inspected using plus point and a total of 48 axial PWSCC indications were confirmed. This represents a 2.9 percent confirmation rate, which is consistent with the high overcalls during the performance demonstration. A total of 160 axial PWSCC indications were identified. The indications are in tabular form on Attachment 1.

An operational assessment was performed on a single indication basis using the methodology documented in WCAP 15128, Revision 2. Each indication was sized using the plus point probe at 0.1 inches per second. Analysts specifically trained in sizing cracks developed a line-by-line profile of each indication. These profiles were adjusted per WCAP 15128, Revision 2 criteria and further adjusted for uncertainties and growth. The growth rates used were the SQN-specific growth rates from WCAP 15128, Revision 2. During the inspection, growth was evaluated to ensure that Cycle 10 growth rates were bound by the WCAP growth rates. The cumulative distribution curves for the WCAP growth rates, the SQN Cycle 10 growth rates, and the combined WCAP and Sequoyah Cycle 10 growth rates are depicted graphically on Attachment 2.

Attachment 1 includes:

- Each axial PWSCC indication
- The support plate where the indication is located
- The length, maximum depth, average depth, and voltage
- The from and to position of the crack relative to the centerline of the support plate
- The flow stress used in the evaluation (SQN-specific data where available)
- The operational assessment results (calculated burst pressures and leakage)
- The repair status

All single indications met operational assessment limits, lowest calculated predicted burst pressure 4791 psi; therefore, no condition monitoring calculations were performed.

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
1	11	36	01H	1	0.22	51.0	33.3	0.66	-0.13	0.09	77.833	6100	0.000	5980	0.000								
1	12	55	01H	1	0.18	29.0	16.2	0.56	-0.07	0.11	79.167	6100	0.000	5980	0.000								
1	12	55	01H	2	0.20	38.0	20.8	0.72	0.19	0.39	79.167	6100	0.000	5980	0.000								
1	20	66	02H	1	0.41	47.0	35.9	0.83	0.08	0.49	81.000	6100	0.000	5980	0.000	X							
1	25	56	01H	1	0.23	42.0	27.8	0.60	0.21	0.44	83.333	6100	0.000	5980	0.000								
1	26	58	01H	1	0.44	41.0	28.1	0.69	-0.21	0.23	78.000	6100	0.000	5980	0.000								
2	8	24	02H	1	0.16	43.0	28.7	0.59	-0.07	0.09	77.333	6100	0.000	5980	0.000								
2	14	35	02H	1	0.08	33.0	18.6	0.36	-0.40	-0.32	75.000	6100	0.000	5980	0.000								
2	15	30	02H	1	0.22	56.0	40.4	0.38	-0.12	0.10	78.167	6100	0.000	5980	0.000							X	
2	23	31	01H	1	0.17	44.0	30.9	0.44	-0.09	0.08	81.333	6100	0.000	5980	0.000						X		
2	23	39	02H	1	0.22	44.0	24.4	0.57	0.14	0.36	77.667	6100	0.000	5980	0.000						X		
3	1	10	02H	1	0.17	47.0	32.0	0.98	-0.10	0.07	83.333	6100	0.000	5980	0.000								
3	1	81	01H	1	0.17	24.0	13.4	0.94	0.07	0.24	80.000	6100	0.000	5980	0.000								
3	2	78	02H	1	0.44	66.0	47.1	1.03	-0.30	0.14	78.000	6100	0.000	4791	0.000								
3	2	78	02H	2	0.19	47.0	37.3	1.32	0.19	0.38	78.000	6100	0.000	5980	0.000								
3	3	62	01H	1	0.19	42.5	32.3	0.69	-0.26	-0.07	78.500	6100	0.000	5980	0.000								
3	3	63	02H	1	0.13	62.0	44.5	1.22	0.37	0.50	83.333	6100	0.000	5980	0.000	X							
3	3	64	02H	1	0.48	32.0	21.8	0.92	-0.36	0.12	81.000	6100	0.000	5980	0.000								
3	3	88	02H	1	0.22	39.0	28.0	0.75	-0.07	0.15	80.167	6100	0.000	5980	0.000								
3	3	88	04H	1	0.17	30.0	17.2	0.42	-0.03	0.14	80.167	6100	0.000	5980	0.000								
3	3	89	02H	1	0.42	49.0	36.8	1.02	-0.17	0.25	81.167	6100	0.000	5735	0.000								
3	3	90	03H	1	0.11	27.0	18.1	0.40	0.02	0.13	82.333	6100	0.000	5980	0.000								
3	4	56	04H	1	0.21	47.0	29.8	1.02	0.37	0.57	81.167	6100	0.000	5980	0.000	X							
3	4	67	01H	1	0.22	52.0	41.6	0.64	0.34	0.56	79.000	6100	0.000	5980	0.000	X							

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
3	4	76	01H	1	0.22	27.0	17.4	0.60	-0.07	0.15	78.000	6100	0.000	5980	0.000								
3	5	53	01H	1	0.11	20.0	11.3	0.36	-0.08	0.03	80.333	6100	0.000	5980	0.000								
3	5	53	01H	2	0.17	35.0	17.0	0.63	0.10	0.27	80.333	6100	0.000	5980	0.000								
3	5	53	04H	1	0.19	29.0	19.0	0.48	-0.25	-0.06	80.333	6100	0.000	5980	0.000								
3	5	65	03H	1	0.39	47.0	36.5	1.12	-0.05	0.34	80.167	6100	0.000	5980	0.000								
3	6	38	02H	1	0.23	49.0	28.0	0.33	-0.13	0.10	82.500	6100	0.000	5980	0.000								
3	7	34	01H	1	0.48	46.0	30.8	0.84	-0.57	-0.09	81.167	6100	0.000	5980	0.000	X							
3	7	42	03H	1	0.25	46.0	29.3	1.03	-0.05	0.20	corr	6100	0.000	5980	0.000								
3	7	66	01H	1	0.16	37.0	26.9	0.52	-0.11	0.05	80.000	6100	0.000	5980	0.000								
3	7	68	03H	1	0.20	53.0	40.4	0.69	-0.15	0.05	80.000	6100	0.000	5980	0.000								
3	8	72	01H	1	0.37	64.0	47.1	1.05	-0.21	0.16	80.333	6100	0.000	5314	0.000								X
3	8	72	04H	1	0.07	38.0	23.4	0.58	0.41	0.48	80.333	6100	0.000	5980	0.000								X
3	8	76	01H	1	0.11	22.0	15.7	0.56	-0.06	0.05	78.500	6100	0.000	5980	0.000							X	
3	9	11	01H	1	0.17	44.0	32.5	0.51	0.00	0.17	72.333	6100	0.000	5980	0.000								
3	9	92	01H	1	0.06	22.0	12.7	0.37	0.06	0.12	79.500	6100	0.000	5980	0.000								
3	10	24	03H	1	0.31	52.0	34.9	1.32	-0.18	0.13	78.667	6100	0.000	5980	0.000								
3	10	37	03H	1	0.18	31.0	19.0	0.72	-0.23	-0.05	78.333	6100	0.000	5980	0.000								X
3	10	40	01H	1	0.60	52.0	40.1	1.35	-0.15	0.45	78.500	6100	0.000	5124	0.000	X							
3	10	55	01H	1	0.29	42.0	31.5	0.83	-0.11	0.18	79.000	6100	0.000	5980	0.000								
3	10	88	02H	1	0.23	33.0	19.1	0.78	-0.12	0.11	80.667	6100	0.000	5980	0.000							X	
3	11	46	04H	1	0.16	39.0	23.2	0.41	0.43	0.58	80.000	6100	0.000	5980	0.000								
3	11	63	01H	1	0.24	20.0	9.4	0.66	0.09	0.33	79.833	6100	0.000	5980	0.000								
3	11	65	01H	1	0.08	47.0	34.5	0.56	-0.23	-0.15	81.833	6100	0.000	5980	0.000								
3	11	65	01H	2	0.30	54.0	35.8	1.13	-0.12	0.18	81.833	6100	0.000	5980	0.000								
3	11	72	02H	1	0.20	27.0	14.6	0.52	-0.26	-0.06	77.333	6100	0.000	5980	0.000								X
3	12	3	02H	1	0.19	57.0	42.2	0.80	-0.05	0.14	83.000	6100	0.000	5980	0.000								

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
3	12	69	01H	1	0.24	36.0	21.2	0.82	-0.27	-0.03	74.500	6100	0.000	5980	0.000								
3	13	75	01H	1	0.42	27.0	15.6	0.61	-0.13	0.29	80.500	6100	0.000	5980	0.000								
3	13	75	02H	1	0.23	30.0	20.9	0.70	-0.17	0.06	80.500	6100	0.000	5980	0.000								
3	13	85	01H	1	0.13	24.0	14.0	0.48	0.02	0.15	80.833	6100	0.000	5980	0.000								
3	14	37	01H	1	0.24	33.0	17.1	0.41	-0.22	0.02	79.667	6100	0.000	5980	0.000								
3	15	79	04H	1	0.15	56.0	41.6	0.69	-0.17	-0.02	80.000	6100	0.000	5980	0.000								
3	16	50	01H	1	0.53	49.0	31.9	1.50	-0.28	0.25	83.500	6100	0.000	5980	0.000						X		
3	16	64	01H	1	0.22	52.0	37.3	1.15	-0.57	-0.35	85.667	6100	0.000	5980	0.000	X							
3	18	59	01H	1	0.17	34.0	21.9	0.63	-0.09	0.08	82.167	6100	0.000	5980	0.000								
3	18	68	02H	1	0.16	33.0	21.5	0.55	-0.07	0.09	82.167	6100	0.000	5980	0.000								
3	18	88	01H	1	0.41	41.0	34.2	0.96	-0.15	0.26	corr	6100	0.000	5358	0.000								
3	19	36	01H	1	0.31	27.0	16.1	0.53	0.01	0.32	77.833	6100	0.000	5980	0.000							X	
3	20	31	01H	1	0.25	42.0	28.7	0.66	0.00	0.25	81.167	6100	0.000	5980	0.000								
3	20	69	01H	1	0.22	22.0	14.5	0.36	-0.13	0.09	79.000	6100	0.000	5980	0.000								
3	21	45	01H	1	0.24	30.0	21.7	0.38	0.05	0.29	79.833	6100	0.000	5980	0.000								
3	21	55	01H	1	0.23	30.0	18.5	0.45	0.01	0.24	82.500	6100	0.000	5980	0.000								
3	23	71	01H	1	0.24	22.0	12.8	0.46	-0.16	0.08	74.500	6100	0.000	5980	0.000								
3	23	74	01H	1	0.26	30.0	18.7	0.73	-0.21	0.05	76.000	6100	0.000	5980	0.000							X	
3	23	85	01H	1	0.20	46.0	31.0	0.59	-0.19	0.01	79.167	6100	0.000	5980	0.000								X
3	23	85	01H	2	0.18	55.0	39.0	0.75	0.39	0.57	79.167	6100	0.000	5980	0.000	X							
3	24	62	01H	1	0.29	46.0	22.7	0.55	-0.09	0.20	82.333	6100	0.000	5980	0.000								
3	24	71	01H	1	0.26	24.0	14.0	0.71	0.15	0.41	79.833	6100	0.000	5980	0.000								X
3	24	71	01H	2	0.14	42.0	30.5	0.59	0.44	0.58	79.833	6100	0.000	5980	0.000	X							
3	24	73	01H	1	0.14	30.0	18.4	0.72	-0.08	0.06	78.833	6100	0.000	5980	0.000								
3	24	84	01H	1	0.17	36.0	26.5	0.47	-0.53	-0.36	82.333	6100	0.000	5980	0.000								X
3	24	84	01H	2	0.17	22.0	10.0	0.76	0.07	0.24	82.333	6100	0.000	5980	0.000								X

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
3	24	84	01H	3	0.29	42.0	33.9	0.56	0.36	0.65	82.333	6100	0.000	5980	0.000	X							
3	25	66	01H	1	0.11	20.0	11.8	0.36	-0.16	-0.05	78.833	6100	0.000	5980	0.000							X	
3	25	67	01H	1	0.19	39.0	28.4	0.76	-0.08	0.11	78.833	6100	0.000	5980	0.000								X
3	26	60	01H	1	0.16	34.0	24.1	0.56	-0.09	0.07	76.000	6100	0.000	5980	0.000								X
3	27	82	01H	1	0.17	38.0	24.1	0.43	-0.10	0.07	76.333	6100	0.000	5980	0.000								
3	29	60	01H	1	0.18	25.0	16.2	0.78	-0.13	0.05	80.000	6100	0.000	5980	0.000								
3	29	73	02H	1	0.25	47.0	34.7	0.83	-0.15	0.10	83.500	6100	0.000	5980	0.000							X	
3	31	68	01H	1	0.42	22.0	11.7	0.54	-0.16	0.26	79.833	6100	0.000	5980	0.000								
3	31	71	01H	1	0.12	35.0	24.1	0.76	-0.08	0.04	81.167	6100	0.000	5980	0.000								
3	32	78	02H	1	0.11	33.0	21.8	0.73	-0.03	0.08	80.833	6100	0.000	5980	0.000								
3	32	79	02H	1	0.15	44.0	31.6	0.63	-0.10	0.05	78.667	6100	0.000	5980	0.000								
3	33	66	02H	1	0.37	36.0	25.2	0.73	-0.20	0.17	78.333	6100	0.000	5980	0.000								
3	33	78	03H	1	0.34	50.0	37.5	1.34	-0.15	0.19	corr	6100	0.000	5234	0.000								
3	34	56	04H	1	0.42	35.0	25.1	0.74	-0.16	0.26	79.333	6100	0.000	5980	0.000								
3	35	70	01H	1	0.22	27.0	16.6	0.77	0.07	0.29	81.667	6100	0.000	5980	0.000								
3	35	75	01H	1	0.14	30.0	20.1	0.53	-0.17	-0.03	81.667	6100	0.000	5980	0.000								
3	36	63	01H	1	0.23	35.0	24.0	1.07	-0.15	0.08	80.333	6100	0.000	5980	0.000								X
3	37	56	01H	1	0.13	39.0	29.0	0.58	0.44	0.57	78.667	6100	0.000	5980	0.000								
3	38	44	01H	1	0.18	44.0	34.3	0.81	0.10	0.28	77.333	6100	0.000	5980	0.000								
3	42	46	01H	1	0.11	20.0	15.5	0.45	-0.15	-0.04	78.667	6100	0.000	5980	0.000								
3	42	47	02H	1	0.47	44.0	30.1	0.55	-0.20	0.27	79.500	6100	0.000	5980	0.000								
3	44	45	01H	1	0.11	36.0	21.1	0.17	0.13	0.24	76.500	6100	0.000	5980	0.000								
3	46	42	01H	1	0.43	27.0	18.6	0.48	-0.26	0.17	77.833	6100	0.000	5980	0.000							X	
4	1	37	03H	1	0.22	42.0	27.5	0.55	-0.21	0.01	81.000	6100	0.000	5980	0.000								
4	1	37	03H	2	0.18	20.0	11.2	0.39	-0.08	0.10	81.000	6100	0.000	5980	0.000								
4	2	25	01H	1	0.16	29.0	22.3	0.42	-0.23	-0.07	78.667	6100	0.000	5980	0.000								

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
4	2	83	01H	1	0.15	31.5	18.6	0.28	-0.04	0.11	78.500	6100	0.000	5980	0.000								
4	2	83	01H	2	0.10	27.0	16.6	0.71	-0.05	0.05	78.500	6100	0.000	5980	0.000								
4	3	24	01H	1	0.11	22.0	13.6	0.46	-0.26	-0.15	79.833	6100	0.000	5980	0.000								X
4	3	27	02H	1	0.29	38.0	21.2	0.38	-0.01	0.28	81.000	6100	0.000	5980	0.000								
4	3	35	01H	1	0.44	33.0	21.5	0.71	-0.19	0.25	80.500	6100	0.000	5980	0.000								
4	3	47	03H	1	0.40	60.0	47.5	1.17	-0.06	0.34	82.333	6100	0.000	5272	0.000							X	
4	4	33	04H	1	0.19	44.0	27.6	0.56	-0.25	-0.06	82.000	6100	0.000	5980	0.000								
4	4	33	04H	2	0.23	30.0	19.7	0.44	-0.01	0.22	82.000	6100	0.000	5980	0.000								
4	4	39	02H	1	0.17	47.0	31.4	0.72	-0.04	0.13	81.333	6100	0.000	5980	0.000								
4	5	16	01H	1	0.55	44.0	32.4	0.81	0.10	0.65	80.833	6100	0.000	5980	0.000	X							
4	5	36	04H	1	0.20	52.0	36.6	0.58	-0.23	-0.03	78.667	6100	0.000	5980	0.000								
4	6	66	01H	1	0.09	34.0	24.9	0.42	-0.02	0.07	80.667	6100	0.000	5980	0.000								
4	8	10	01H	1	0.33	41.0	34.0	0.49	-0.25	0.08	78.667	6100	0.000	5980	0.000								
4	9	21	02H	1	0.13	48.0	38.0	0.58	0.41	0.54	76.500	6100	0.000	5980	0.000	X							
4	10	14	01H	1	0.09	39.0	27.5	0.27	0.49	0.58	79.000	6100	0.000	5980	0.000								
4	10	47	03H	1	0.20	48.0	34.8	0.81	-0.10	0.11	80.500	6100	0.000	5980	0.000						X		
4	10	64	01H	1	0.11	39.0	20.7	0.58	0.02	0.13	80.667	6100	0.000	5980	0.000								
4	11	55	01H	1	0.22	25.0	14.5	0.59	-0.16	0.06	75.167	6100	0.000	5980	0.000								
4	11	85	02H	1	0.08	28.5	16.0	0.48	-0.03	0.05	81.167	6100	0.000	5980	0.000								
4	12	39	02H	1	0.29	43.5	34.0	0.47	-0.14	0.15	81.833	6100	0.000	5980	0.000								
4	13	42	03H	1	0.36	42.0	31.5	0.56	-0.11	0.25	78.333	6100	0.000	5980	0.000								
4	14	58	03H	1	0.26	36.0	24.7	0.60	-0.23	0.03	85.500	6100	0.000	5980	0.000								
4	14	62	02H	1	0.20	47.0	26.1	0.59	-0.11	0.09	77.167	6100	0.000	5980	0.000								
4	15	25	02H	1	0.10	30.0	17.9	0.51	0.31	0.41	corr	6100	0.000	5980	0.000								
4	15	42	01H	1	0.26	63.0	41.8	1.58	0.30	0.56	corr	5621	0.000	5192	0.000	X							
4	15	42	01H	2	0.11	27.0	17.1	0.37	0.55	0.66	corr	6100	0.000	5980	0.000								X

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
4	15	42	02H	1	0.16	32.0	24.0	0.92	0.04	0.20	corr	6100	0.000	5980	0.000								X
4	15	44	02H	1	0.21	36.0	22.8	0.61	0.13	0.34	corr	6100	0.000	5980	0.000								X
4	15	44	03H	2	0.17	46.0	31.5	0.96	0.54	0.71	corr	6100	0.000	5980	0.000	X							
4	17	17	02H	1	0.41	39.0	32.1	1.12	-0.14	0.27	77.000	6100	0.000	5980	0.000								
4	18	6	02H	1	0.15	42.0	30.4	0.60	-0.11	0.04	81.833	6100	0.000	5980	0.000								
4	18	53	02H	1	0.17	37.0	26.2	0.58	0.19	0.36	72.333	6100	0.000	5980	0.000								
4	18	74	01H	1	0.14	43.0	33.5	0.42	0.00	0.14	77.667	6100	0.000	5980	0.000								
4	22	38	01H	1	0.12	48.0	38.1	0.56	-0.68	-0.56	79.333	6100	0.000	5980	0.000	X							
4	23	37	01H	1	0.32	32.0	20.9	0.64	-0.16	0.16	79.333	6100	0.000	5980	0.000								
4	24	31	01H	1	0.12	33.0	24.9	0.45	0.09	0.21	78.333	6100	0.000	5980	0.000								
4	24	55	03H	1	0.11	39.0	27.2	0.50	0.01	0.12	77.333	6100	0.000	5980	0.000								
4	26	18	01H	1	0.22	33.5	27.9	0.38	-0.02	0.20	79.833	6100	0.000	5980	0.000								
4	26	35	03H	1	0.17	45.0	30.3	0.56	0.37	0.54	80.500	6100	0.000	5980	0.000	X							
4	28	18	01H	1	0.55	44.0	29.3	0.58	-0.27	0.28	78.333	6100	0.000	5923	0.000								X
4	28	18	01H	2	0.09	41.0	27.7	0.39	0.57	0.66	78.333	6100	0.000	5980	0.000	X							
4	29	13	01H	1	0.41	42.0	23.0	0.58	-0.13	0.28	72.333	6100	0.000	5980	0.000								
4	30	17	01H	1	0.17	45.0	37.9	0.45	-0.18	-0.01	78.667	6100	0.000	5980	0.000								
4	30	17	01H	2	0.19	42.0	33.8	0.53	0.03	0.22	78.667	6100	0.000	5980	0.000								
4	32	24	01H	1	0.38	42.0	31.1	0.71	-0.28	0.10	corr	6100	0.000	5500	0.000							X	
4	34	29	01H	1	0.25	38.0	30.1	0.63	-0.14	0.11	80.667	6100	0.000	5980	0.000								
4	35	22	02H	1	0.22	53.0	35.0	0.63	-0.13	0.09	79.667	6100	0.000	5980	0.000								
4	35	23	03H	1	0.10	42.0	30.1	0.75	0.34	0.44	78.667	6100	0.000	5980	0.000								
4	35	41	01H	1	0.20	48.0	33.8	0.51	0.19	0.39	76.000	6100	0.000	5980	0.000								
4	35	51	01H	1	0.17	33.0	23.8	0.54	-0.07	0.10	78.667	6100	0.000	5980	0.000								
4	35	58	01H	1	0.20	29.0	14.4	0.33	-0.12	0.08	78.667	6100	0.000	5980	0.000								
4	35	58	01H	2	0.14	47.0	31.8	0.52	0.20	0.34	78.667	6100	0.000	5980	0.000								

Attachment 1
Sequoyah Nuclear Plant
Unit 1 Cycle10 SG Inspection
PWSCC Indications
Operational Assessment/Repair Status

							Adjusted NDE					Operational Assessment											
																Plugged Due to OA Limits Exceeded					Plugged for Other Reasons		
SG	Row	Col.	TSP	Crack No.	Length (in.)	Max. Depth (%)	Avg. Depth (%)	Max. Volts	From	To	Flow Stress (ksi)	FS Burst Pressure (psi)	FS Leakage (gpm)	Total Length Burst Press. (psi)	Total Length Leakage (gpm)	DOP	FSB	TLB	FSL	TLL	TSI	OD/ID	SPI
4	36	20	02H	1	0.93	62.0	37.0	1.13	-0.35	0.58	78.667	6100	0.000	4908	0.000	X							
4	36	22	02H	1	0.57	38.0	25.8	0.71	-0.21	0.36	80.167	6100	0.000	5980	0.000								
4	36	32	01H	1	0.13	45.0	33.1	0.49	0.32	0.45	corr	6100	0.000	5980	0.000	X							
4	43	52	01H	1	0.25	29.0	18.5	0.59	0.10	0.35	81.833	6100	0.000	5980	0.000								
4	43	52	01H	2	0.15	35.0	22.6	0.51	0.48	0.63	81.833	6100	0.000	5980	0.000								
4	45	50	02H	1	0.10	27.0	20.5	0.25	0.09	0.19	78.667	6100	0.000	5980	0.000								

6100 and 5980 are lower bound burst pressure values.

Abbreviations:

corr - In the Flow Stress column - mean and standard deviation of the Westinghouse flow stress correlation were used. No plant-specific flow stress data available for this tube

FS - Freespan

DOP - In the OA Limits Exceeded column - tube was plugged due to a PWSCC Indication >40% maximum depth outside the tube support plate

FSB - In the OA Limits Exceeded column - tube was plugged due to a PWSCC Indication having freespan burst pressure < 4110 psi

TLB - In the OA Limits Exceeded column - tube was plugged due to a PWSCC Indication having total length burst pressure < 4110 psi

FSL - In the OA Limits Exceeded column - tube was plugged due to a PWSCC Indication having freespan length predicted leakage > 1 gpm

TLL - In the OA Limits Exceeded column - tube was plugged due to a PWSCC Indication having total length predicted leakage > 8.0 gpm

TSI - In the Plugged for Other Reasons column - tube was plugged due to a tube sheet indication

OD/ID - In the Plugged for Other Reasons column - tube was plugged due to two indications in the same tube support plate, one OD the other ID

SPI - In the Plugged for Other Reasons column - tube was plugged due to another support plate indication