

October 29, 1998

MEMORANDUM TO: PD IV-1 File

FROM: Tom Alexion ORIGINAL SIGNED BY

SUBJECT: STEAM GENERATOR INSPECTION RESULTS, OCTOBER 1998, SOUTH TEXAS PROJECT, UNIT 2

The NRC staff had a conference call with the licensee on October 15, 1998, to discuss the results of the steam generator inspections. The licensee provided the information in Attachment 1 to facilitate the October 15, 1998, conference call. On October 20, 1998, the licensee provided an update to the information provided on October 15, 1998. That information is Attachment 2. The purpose of this memorandum is to place the attachments in the Public Document Room.

Docket No. 50-499

Attachments: As stated

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Docket File (50-499)

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NRC PHONE DISCUSSION – 2RE06 STEAM GENERATOR TUBE INSPECTION RESULTS OCTOBER 1998

1. Primary to Secondary leakage prior to shutdown.

STP 2RE06 – Leak rate prior to shutdown was a fraction of a gallon per day.

2. Results of secondary side hydro.

STP 2RE06 – STP does not routinely perform secondary side hydros during steam generator inspections. Eddy current testing of tubes and visual inspection of previously installed plugs are employed to ensure primary-to-secondary integrity.

In this outage, one previously installed mechanical plug was found with an excessive amount of boron crystals, indicating a possible lack of pressure integrity. The tube had been plugged for a small DSI/SAI in 2RE05, so if the plug was leaking during the cycle, it would not have directly resulted in a primary-to-secondary leak. Installation records for this plug were reviewed, and no anomalies were noted. A welded plug was installed below this plug.

3. For each SG, provide a general description of areas examined, include expansion criteria and specify type of probe used in each area.

STP 2RE06 – This was the first STP Unit 2 inspection where the voltage-based repair criteria was applied. The Inspection Plan was the same for all SGs:

- 100% bobbin full length
- 100% H/L Top-of-tubesheet by RPC
- 100% Row 1 & 2 U-bend by +Point
- Minimum sample of 20% of Freespan dings by +Point – Expansion to 100% in voltage steps.

4. For analyzed EC results, describe bobbin indications (those not examined with RPC) and RPC/Plus Point/Cecco indications. Include the following information: location, number, degradation mode, disposition, and voltages/depths/lengths of the most significant indications.

STP 2RE06 – The only bobbin indications not examined with RPC are as follows:

- DSIs less than 1 volt (per voltage-based repair criteria)
- Unsampled dings under 5 volt & MBMs that are unchanged from the baseline
- AVB/Preheater wear indications

4. (STP 2RE06 Continued)

Inspection results are as follows:

PROBABLE DEGRADATION MODES FOR TUBES TO BE PLUGGED ^{NOTE 1}					
PROB. DEG MODE	SG 2A	SG 2B	SG 2C	SG 2D	TOTAL
TSP ODSCC ^{NOTE 2}	16	5	10	7	38
Free Span ODSCC	3	1	3	2	9
Loose Part Wear ^{NOTE 3}			2 ^{NOTE 3}		2
Miscellaneous ^{NOTE 4}		1 ^{NOTE 4}	1 ^{NOTE 4}		2
TOTAL:	19	7	16	9	51

NOTE 1 – Plugging lists have been issued for SGs 2C & 2D; data for SGs 2A & 2B is preliminary.

NOTE 2 – Confirmed DSIs greater than one volt (APC lower voltage repair limit).

NOTE 3 – Adjacent tubes with volumetric indications at top-of-tubesheet; no part present.

NOTE 4 – This was a U-bend indication (possible MBM) which has changed since the baseline.

- No circumferential cracks identified.
- No defects identified in Row 1 & 2 U-bend examination
- No indications identified in the +Point free span ding sample which were not identified by bobbin.

Some preliminary unchecked information relevant to voltage-based repair criteria application (all SGs):

- -1197 tube with DSI indications were left in service with bobbin voltage below the lower voltage repair limit (1.0 volt).
- No PWSCC @ TSPs, no circ cracks @ TSPs, no axial indications extending outside the TSP have been detected.
- Conditional Burst Probability & EONC Leakage calculations not completed yet (required prior to mode 4). No difficulties expected in meeting voltage-based repair criteria limits.

5. Describe repair/plugging plans.

STP 2RE06 – All defects are/will be plugged, no sleeving this outage. See Inspection Results Table above. Plugging is complete in SG 2C & SG 2D.

6. Discuss previous history; “look backs” performed.

STP 2RE06 – Look backs performed on all freespan DNIs (dings with possible flaw indications) & freespan NQIs (non-quantifiable indications), to confirm no change from the baseline.

7. Discuss new inspection findings.

STP 2RE06 – No new degradation mechanisms identified.

8. Describe in-situ pressure test plans and results, if available; include tube selection criteria.

STP 2RE06 – In-situ test plans were developed consistent with EPRI guidelines. No pressure tests performed.

9. Describe tube pull plans and preliminary results, if available; include tube selection criteria.

STP 2RE06 – Tube selection criteria is per Generic Letter 95-05. Two tubes are to be pulled from SG 2A. Tube sections removed will include all intersections up to the fourth tube support plate. The selected tubes include the largest dominant single axial crack found at tube-to-tube support plate intersections in this outage (4.03 volts bobbin) at the second tube support plate in SG 2A.

TUBE PULL SUMMARY

Tube	TTS	FDB	TSP 1	TSP 2	TSP3	TSP 4
R18C100	NDD	NDD	DSI (1.25 V)	DSI (4.03 V)	NDD	NDD
R19C83	NDD	NDD	DSI (2.76 V)	DSI (0.24 V)	NDD	NDD

- Tube R19C83 is from the high incidence area of Unit 1 top of tubesheet circ. cracking.
- All of the DSIs listed confirmed as dominant single axial cracks by RPC.
- Both of these tubes are very close to the locations of tubes pulled previously in Unit 1.

10. Assessment of tube integrity for previous operating cycle.

STP 2RE06 - As of this morning's analysis no tube defects have been found that challenge tube structural integrity.

11. Assessment of tube integrity for next operating cycle.

STP 2RE06 - No conditions are expected that would impede full cycle operation.

12. Provide schedule for steam generator-related activities during remainder of current outage.

STP 2RE06 – Data acquisition and analysis is complete at this time.

- Plugging lists will be complete by 10/15.
- Plugging will be complete by 10/16.
- Tube pulls will be complete by 10/16
- Manways will be installed 10/18 (@ midloop).
- Mode 4 projected on 10/20.

BACKGROUND INFORMATION ON STP UNIT 2:

Commercial Operation: 6/89

EFPY at 2RE06: 6.7 EFPY

Model: Westinghouse Model E

Tube Material: Alloy 600, mill annealed

Tube Support Plates: Stainless Steel, w/ drilled holes

Tubesheet expansion: hydraulic

T_{hot} - 2.93 EFPY at 623°F; 620°F since.

ID has been shot peened: hot leg after first cycle & cold leg after second cycle.

U bend heat treatment R1 & R2 prior to initial operation.

Previous plugging history:

602 tubes plugged in 2RE05 (voltage-based repair criteria NOT implemented)

Total tubes plugged per SG prior to 2RE06:

2A - 146

2B - 186

2C - 170

2D - 180

TOTAL: 682

South Texas Project Unit 2
2RE06 Eddy Current Daily Status Report

As of 0300 on 10/15/98

	SG-A	SG-B	SG-C	SG-D	TOTAL
COLD LEG BOBBIN PROGRAM					
1. PLANNED TESTS	4499	4678	4474	4464	18115
2. ACQUIRED TESTS	4499	4678	4474	4464	18115
3. RESOLVED TESTS	4499	4678	4474	4464	18115

HOT LEG BOBBIN PROGRAM					
1. PLANNED TESTS	459	239	459	457	1614
2. ACQUIRED TESTS	459	239	459	457	1614
3. RESOLVED TESTS	459	239	459	457	1614

HOT LEG TUBESHEET RPC PROGRAM					
1. PLANNED TESTS	4718	4678	4694	4684	18774
2. ACQUIRED TESTS	4718	4678	4694	4684	18774
3. RESOLVED TESTS	4718	4678	4694	4684	18774

U-BEND RPC PROGRAM					
1. PLANNED TESTS	240	239	239	237	955
2. ACQUIRED TESTS	240	239	239	237	955
3. RESOLVED TESTS	240	239	239	237	955

HOT LEG SPECIAL INTEREST RPC PROGRAM					
1. PLANNED TESTS	37	42	42	31	152
2. ACQUIRED TESTS	37	42	42	31	152
3. RESOLVED TESTS	37	42	42	31	152

COLD LEG SPECIAL INTEREST RPC PROGRAM					
1. PLANNED TESTS	13	36	29	24	102
2. ACQUIRED TESTS	13	36	29	24	102
3. RESOLVED TESTS	13	36	29	24	102

HOT LEG DING PROGRAM					
1. PLANNED TESTS	31	34	28	37	130
2. ACQUIRED TESTS	31	34	28	37	130
3. RESOLVED TESTS	31	34	28	37	130

COLD LEG DING PROGRAM					
1. PLANNED TESTS	38	26	29	33	126
2. ACQUIRED TESTS	38	26	29	33	126
3. RESOLVED TESTS	38	26	29	33	126

South Texas Project Unit 2
2RE06 Eddy Current Daily Status Report

AS OF 0600 ON 10/15/98

	SG-A	SG-B	SG-C	SG-D	TOTAL
HOT LEG U-BEND DING PROGRAM					
1. PLANNED TESTS	18	10	10	10	48
2. ACQUIRED TESTS	18	10	10	10	48
3. RESOLVED TESTS	18	10	10	10	48

COLD LEG U-BEND DING PROGRAM

1. PLANNED TESTS	7	4	10	10	31
2. ACQUIRED TESTS	7	4	10	10	31
3. RESOLVED TESTS	7	4	10	10	31

BOBBIN PROGRAM - BOTH LEGS

1. TUBES W/INDS 1-19% TW	10	13	11	17	51
2. TUBES W/INDS 20-39% TW	2	5	4	2	13
3. TUBES W/INDS \geq 40% TW	0	0	0	0	0
4. TUBES W/DSI \leq 1.0 VOLTS	152	400	359	286	1197
5. TUBES W/DSI 1.0 - 3.30 VOLTS	21	3	10	7	41
6. TUBES W/DSI $>$ 3.30 VOLTS	1	0	0	0	1
7. TUBES W/OTHER I-CODE INDS	21	45	33	18	117

HOT LEG TUBESHEET RPC

1. TUBES W/AXIAL INDS	0	0	0	0	0
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	1	2	0	3

HOT LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	16	5	10	8	39
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	0	0	0

COLD LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	3	1	3	0	7
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	1	2	3

Distribution:

Chet McIntyre, STPNOC
Kevin Miller, Westinghouse
Copy to Data Management files

Tom Alexion/Ian Barnes

Attached is an update of the handout which was faxed for the phone call on 10/15/98. Below is a summary of the changes, which are marked with change bars. Please distribute to the others that were in the call. If you have any further questions, let me know and we'll arrange another call. Thank you.

Chet 10-20-98
Chet McIntyre

Summary of Changes:

Question 1 Response – Added information on calculated leak rate during preceding cycle, as requested. Included attachment

Question 4 Response, Probable Degradation Modes Table – Changed classification of one tube from Miscellaneous to Loose Part Wear. Previously, Note 4 was incorrectly applied to this tube. Note 5 was added to explain the new classification. Also added the cold leg indication discussed in the 10/16 phone call, with corresponding Note 6.

Question 4 Response, NOTE 1 – Updated to reflect completion of final plugging list.

Question 4 Response, NOTE 3 – Added clarification that the two adjacent tubes are peripheral tubes. This was mentioned in the phone call.

Question 4 Response, bullets following the Notes – Added statement that no DSIs were found at Flow Distribution Baffles (FDBs) & statement that no DSIs were found on the cold leg. This was discussed in the phone call.

Question 4 Response, bullets following the Notes – Deleted the note about preliminary, unchecked information; Added statement to the effect that final DSI counts would be included in the 90 day report. They are not expected to vary significantly from the number given here.

Question 5 Response – Updated to reflect completion of plugging.

Question 9 Response – Amended the Tube Pull Summary Table and the preceding paragraph to correct a misstatement. The fourth tube support plate intersection is NOT included.

Question 9 Response – Amended the second bullet following the Tube Pull Summary Table to correct a misstatement. Only three of the four DSIs @ pulled intersections actually confirmed, not all four as previously stated.

Question 10 Response – Updated to reflect current outage status.

Question 12 Response – Updated to reflect current outage status.

Updated the attached "2RE06 Eddy Current Daily Status Report" to the FINAL version (dated 10/17/98).

**NRC PHONE DISCUSSION – 2RE06
STEAM GENERATOR TUBE INSPECTION RESULTS
OCTOBER 1998**

1. Primary to Secondary leakage prior to shutdown.

STP 2RE06 – Leak rate prior to shutdown was a fraction of a gallon per day. Calculated leak rate with with stable tritium concentration in the primary was ~0.25 gpd, but never exceeded ~0.8 gpd during the cycle. See attached graph.

2. Results of secondary side hydro.

STP 2RE06 – STP does not routinely perform secondary side hydros during steam generator inspections. Eddy current testing of tubes and visual inspection of previously installed plugs are employed to ensure primary-to-secondary integrity.

In this outage, one previously installed mechanical plug was found with an excessive amount of boron crystals, indicating a possible lack of pressure integrity. The tube had been plugged for a small DSI/SAI in 2RE05, so if the plug was leaking during the cycle, it would not have directly resulted in a primary-to-secondary leak. Installation records for this plug were reviewed, and no anomalies were noted. A welded plug was installed below this plug.

3. For each SG, provide a general description of areas examined, include expansion criteria and specify type of probe used in each area.

STP 2RE06 – This was the first STP Unit 2 inspection where the voltage-based repair criteria was applied. The Inspection Plan was the same for all SGs:

- 100% bobbin full length
- 100% H/L Top-of-tubesheet by RPC
- 100% Row 1 & 2 U-bend by +Point
- Minimum sample of 20% of Freespan dings by +Point – Expansion to 100% in voltage steps.

4. For analyzed EC results, describe bobbin indications (those not examined with RPC) and RPC/Plus Point/Cecco indications. Include the following information: location, number, degradation mode, disposition, and voltages/depths/lengths of the most significant indications.

STP 2RE06 – The only bobbin indications not examined with RPC are as follows:

- DSIs less than 1 volt (per voltage-based repair criteria)
- Unsampled dings under 5 volt & MBMs that are unchanged from the baseline
- AVB/Preheater wear indications

4. (STP 2RE06 Continued)

Inspection results are as follows:

PROBABLE DEGRADATION MODES FOR TUBES TO BE PLUGGED ^{NOTE 1}					
PROB. DEG MODE	SG 2A	SG 2B	SG 2C	SG 2D	TOTAL
TSP ODSCC ^{NOTE 2}	16	5	10	7	38
Free Span ODSCC	3	1	4 ^{NOTE 6}	2	10
Loose Part Wear		1 ^{NOTE 5}	2 ^{NOTE 3}		3
Miscellaneous			1 ^{NOTE 4}		1
TOTAL:	19	7	17	9	52

NOTE 1 – Plugging lists have been issued for all SGs.

NOTE 2 – Confirmed DSIs greater than one volt (APC lower voltage repair limit).

NOTE 3 – Adjacent peripheral tubes with volumetric indications at top-of-tubesheet; no part present.

NOTE 4 – This was a U-bend indication (possible MBM) which has changed since the baseline.

NOTE 5 – Peripheral tube with shallow wear near tubesheet

NOTE 6 – One of these defects is at 22C Support Plate (Preheater), but is believed to have originated in freespan above and below the plate – discussed with NRC (call coordinated by Tom Alexion) on 10/16/98.

- No circumferential cracks identified.
- No defects identified in Row 1 & 2 U-bend examination
- No indications identified in the +Point free span ding sample which were not identified by bobbin.
- No DSIs at flow distribution baffle (FDB) intersections.
- No DSIs on cold leg intersections (seen Note 6 above).
- ~1197 tubes with DSI indications were left in service with bobbin voltage below the lower voltage repair limit (1.0 volt). Final data to be provided in 90 day report.
- No PWSCC @ TSPs, no circ cracks @ TSPs, no axial indications extending outside the TSP have been detected.
- Conditional Burst Probability & EONC Leakage calculations not completed yet (required prior to mode 4). No difficulties expected in meeting voltage-based repair criteria limits.

5. Describe repair/plugging plans.

STP 2RE06 – All defects are/will be plugged, no sleeving this outage. See Inspection Results Table above. Plugging is complete in all SGs.

6. Discuss previous history; “look backs” performed.

STP 2RE06 – Look backs performed on all freespan DNIs (dings with possible flaw indications) & freespan NQIs (non-quantifiable indications), to confirm no change from the baseline.

7. Discuss new inspection findings.

STP 2RE06 – No new degradation mechanisms identified.

8. Describe in-situ pressure test plans and results, if available; include tube selection criteria.

STP 2RE06 – In-situ test plans were developed consistent with EPRI guidelines. No pressure tests performed.

9. Describe tube pull plans and preliminary results, if available; include tube selection criteria.

STP 2RE06 – Tube selection criteria is per Generic Letter 90-05. Two tubes are to be pulled from SG 2A. Tube sections removed will include all intersections up to the fourth tube support plate. The selected tubes include the largest dominant single axial crack found at tube-to-tube support plate intersections in this outage (4.03 volts bobbin) at the second tube support plate in SG 2A.

TUBE PULL SUMMARY

Tube	TTS	FDB	TSP 1	TSP 2	TSP3	TSP 4
R18C100	NDD	NDD	DSI (1.25 V)	DSI (4.03 V)	NDD	NDD
R19C83	NDD	NDD	DSI (2.76 V)	DSI (0.24 V)	NDD	NDD

- Tube R19C83 is from the high incidence area of Unit 1 top of tubesheet circ. cracking.
- All of the DSIs listed confirmed as dominant single axial cracks by RPC.
- Both of these tubes are very close to the locations of tubes pulled previously in Unit 1.

10. Assessment of tube integrity for previous operating cycle.

STP 2RE06 - As of this morning's analysis no tube defects have been found that challenge tube structural integrity.

11. Assessment of tube integrity for next operating cycle.

STP 2RE06 - No conditions are expected that would impede full cycle operation.

12. Provide schedule for steam generator-related activities during remainder of current outage.

STP 2RE06 – Data acquisition and analysis is complete at this time.

- Plugging lists will be complete by 10/15.
- Plugging will be complete by 10/16.
- Tube pulls will be complete by 10/16
- Manways will be installed 10/18 (@ midloop).
- Mode 4 projected on 10/20.

BACKGROUND INFORMATION ON STP UNIT 2:

Commercial Operation: 6/89

EFPY at 2RE06: 6.7 EFPY

Model: Westinghouse Model E

Tube Material: Alloy 600, mill annealed

Tube Support Plates: Stainless Steel, w/ drilled holes

Tubesheet expansion: hydraulic

T_{hot} - 2.93 EFPY at 623°F; 620°F since.

ID has been shot peened: hot leg after first cycle & cold leg after second cycle.

U bend heat treatment R1 & R2 prior to initial operation.

Previous plugging history:

602 tubes plugged in 2RE05 (voltage-based repair criteria NOT implemented)

Total tubes plugged per SG prior to 2RE06:

2A - 146

2B - 186

2C - 170

2D - 180

TOTAL: 682

South Texas Project Unit 2
2RE06 Eddy Current Daily Status Report

As of 0300 on 10/15/98

	SG-A	SG-B	SG-C	SG-D	TOTAL
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1. PLANNED TESTS	37	42	42	31	152
2. ACQUIRED TESTS	37	42	42	31	152
3. RESOLVED TESTS	37	42	42	31	152

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1. PLANNED TESTS	13	36	29	24	102
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3. RESOLVED TESTS	13	36	29	24	102

HOT LEG DING PROGRAM					
1. PLANNED TESTS	31	34	28	37	130
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South Texas Project Unit 2
2RE06 Eddy Current Daily Status Report

AS OF 0300 ON 10/13/88

	SG-A	SG-B	SG-C	SG-D	TOTAL
HOT LEG U-BEND DING PROGRAM					
1. PLANNED TESTS	18	10	10	10	48
2. ACQUIRED TESTS	18	10	10	10	48
3. RESOLVED TESTS	18	10	10	10	48

COLD LEG U-BEND DING PROGRAM

1. PLANNED TESTS	7	4	10	10	31
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BOBBIN PROGRAM - BOTH LEGS

1. TUBES W/INDS 1-19% TW	10	13	11	17	51
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7. TUBES W/OTHER I-CODE INDS	21	45	33	18	117

HOT LEG TUBESHEET RPC

1. TUBES W/AXIAL INDS	0	0	0	0	0
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	1	2	0	3

HOT LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	16	5	10	8	39
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	0	0	0

COLD LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	3	1	3	0	7
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	1	2	3

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- 100% H/L Top-of-tubesheet by RPC
- 100% Row 1 & 2 U-bend by +Point
- Minimum sample of 20% of Freespan dings by +Point – Expansion to 100% in voltage steps.

4. For analyzed EC results, describe bobbin indications (those not examined with RPC) and RPC/Plus Point/Cecco indications. Include the following information: location, number, degradation mode, disposition, and voltages/depths/lengths of the most significant indications.

STP 2RE06 – The only bobbin indications not examined with RPC are as follows:

- DSIs less than 1 volt (per voltage-based repair criteria)
- Unsampled dings under 5 volt & MBMs that are unchanged from the baseline
- AVB/Preheater wear indications

4. (STP 2RE06 Continued)

Inspection results are as follows:

PROBABLE DEGRADATION MODES FOR TUBES TO BE PLUGGED ^{NOTE 1}					
PROB. DEG MODE	SG 2A	SG 2B	SG 2C	SG 2D	TOTAL
TSP ODSCC ^{NOTE 2}	16	5	10	7	38
Free Span ODSCC	3	1	4 ^{NOTE 6}	2	10
Loose Part Wear		1 ^{NOTE 5}	2 ^{NOTE 3}		3
Miscellaneous			1 ^{NOTE 4}		1
TOTAL:	19	7	17	9	52

NOTE 1 – Plugging lists have been issued for all SGs.

NOTE 2 – Confirmed DSIs greater than one volt (APC lower voltage repair limit).

NOTE 3 – Adjacent peripheral tubes with volumetric indications at top-of-tubesheet; no part present.

NOTE 4 – This was a U-bend indication (possible MBM) which has changed since the baseline.

NOTE 5 – Peripheral tube with shallow wear near tubesheet

NOTE 6 – One of these defects is at 22C Support Plate (Preheater), but is believed to have originated in freespan above and below the plate – discussed with NRC (call coordinated by Tom Alexion) on 10/16/98.

- No circumferential cracks identified.
- No defects identified in Row 1 & 2 U-bend examination
- No indications identified in the +Point free span ding sample which were not identified by bobbin.
- No DSIs at flow distribution baffle (FDB) intersections.
- No DSIs on cold leg intersections (seen Note 6 above).
- ~1197 tubes with DSI indications were left in service with bobbin voltage below the lower voltage repair limit (1.0 volt). Final data to be provided in 90 day report.
- No PWSCC @ TSPs, no circ cracks @ TSPs, no axial indications extending outside the TSP have been detected.
- Conditional Burst Probability & EONC Leakage calculations not completed yet (required prior to mode 4). No difficulties expected in meeting voltage-based repair criteria limits.

5. Describe repair/plugging plans.

STP 2RE06 – All defects are/will be plugged, no sleeving this outage. See Inspection Results Table above. Plugging is complete in all SGs.

6. Discuss previous history; “look backs” performed.

STP 2RE06 – Look backs performed on all freespan DNIs (dings with possible flaw indications) & freespan NQIs (non-quantifiable indications), to confirm no change from the baseline.

7. Discuss new inspection findings.

STP 2RE06 – No new degradation mechanisms identified.

8. Describe in-situ pressure test plans and results, if available; include tube selection criteria.

STP 2RE06 – In-situ test plans were developed consistent with EPRI guidelines. No pressure tests performed.

9. Describe tube pull plans and preliminary results, if available; include tube selection criteria.

STP 2RE06 – Tube selection criteria is per Generic Letter 95-05. Two tubes are to be pulled from SG 2A. Tube sections removed will include all intersections up to and including the third tube support plate. The selected tubes include the largest dominant single axial crack found at tube-to-tube support plate intersections in this outage (4.03 volts bobbin) at the second tube support plate in SG 2A.

TUBE PULL SUMMARY

Tube	TTS	FDB	TSP 1	TSP 2	TSP3
R18C100	NDD	NDD	DSI (1.25 V)	DSI (4.03 V)	NDD
R19C83	NDD	NDD	DSI (2.76 V)	DSI (0.24 V)	NDD

- Tube R19C83 is from the high incidence area of Unit 1 top of tubesheet circ. cracking.
- All of the DSIs listed confirmed as dominant single axial cracks by RPC except the 0.24v DSI at TSP 2 in R19C83.
- Both of these tubes are very close to the locations of tubes pulled previously in Unit 1.

10. Assessment of tube integrity for previous operating cycle.

STP 2RE06 - No tube defects were found that challenged tube structural integrity.

11. Assessment of tube integrity for next operating cycle.

STP 2RE06 - No conditions are expected that would impede full cycle operation.

12. Provide schedule for steam generator-related activities during remainder of current outage.

STP 2RE06 – Data acquisition and analysis is complete at this time.

- Plugging lists are complete.
- Plugging is complete.
- Tube pulls are complete.
- Manways have been installed.
- Mode 4 projected on 10/21.

BACKGROUND INFORMATION ON STP UNIT 2:

Commercial Operation: 6/89

EFPY at 2RE06: 6.7 EFPY

Model: Westinghouse Model E

Tube Material: Alloy 600, mill annealed

Tube Support Plates: Stainless Steel, w/ drilled holes

Tubesheet expansion: hydraulic

T_{hot} - 2.93 EFPY at 623°F; 620°F since.

ID has been shot peened: hot leg after first cycle & cold leg after second cycle.

U bend heat treatment R1 & R2 prior to initial operation.

Previous plugging history:

602 tubes plugged in 2RE05 (voltage-based repair criteria NOT implemented)

Total tubes plugged per SG prior to 2RE06:

2A - 146

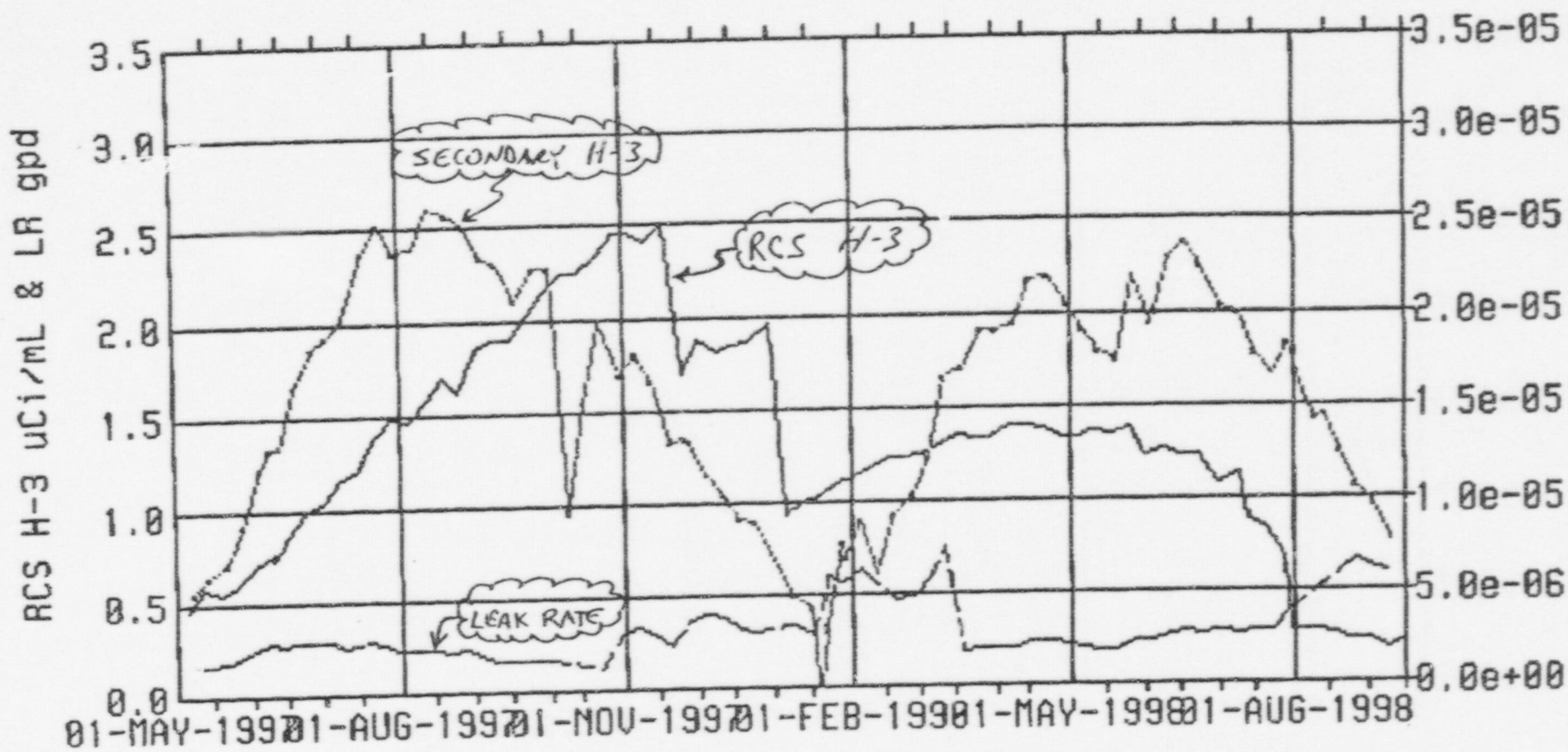
2B - 186

2C - 170

2D - 180

TOTAL: 682

Unit Two Primary and Secondary Tritium and Leak Rate



— RCS H-3
 ··· SEC H-3
 - - - LK RATE

South Texas Project Unit 2
 2RE06 Eddy Current Daily Status Report
 FINAL

As of 1435 on 10/17/98

SG-A SG-B SG-C SG-D TOTAL

COLD LEG BOBBIN PROGRAM

1. PLANNED TESTS	4499	4678	4474	4464	18115
2. ACQUIRED TESTS	4499	4678	4474	4464	18115
3. RESOLVED TESTS	4499	4678	4474	4464	18115

HOT LEG BOBBIN PROGRAM

1. PLANNED TESTS	459	239	459	457	1614
2. ACQUIRED TESTS	459	239	459	457	1614
3. RESOLVED TESTS	459	239	459	457	1614

HOT LEG TUBESHEET RPC PROGRAM

1. PLANNED TESTS	4718	4678	4694	4684	18774
2. ACQUIRED TESTS	4718	4678	4694	4684	18774
3. RESOLVED TESTS	4718	4678	4694	4684	18774

U-BEND RPC PROGRAM

1. PLANNED TESTS	240	239	239	237	955
2. ACQUIRED TESTS	240	239	239	237	955
3. RESOLVED TESTS	240	239	239	237	955

HOT LEG SPECIAL INTEREST RPC PROGRAM

1. PLANNED TESTS	37	42	42	31	152
2. ACQUIRED TESTS	37	42	42	31	152
3. RESOLVED TESTS	37	42	42	31	152

COLD LEG SPECIAL INTEREST RPC PROGRAM

1. PLANNED TESTS	13	36	29	24	102
2. ACQUIRED TESTS	13	36	29	24	102
3. RESOLVED TESTS	13	36	29	24	102

HOT LEG DING PROGRAM

1. PLANNED TESTS	31	34	28	37	130
2. ACQUIRED TESTS	31	34	28	37	130
3. RESOLVED TESTS	31	34	28	37	130

COLD LEG DING PROGRAM

1. PLANNED TESTS	38	26	29	33	126
2. ACQUIRED TESTS	38	26	29	33	126
3. RESOLVED TESTS	38	26	29	33	126

South Texas Project Unit 2
2RE06 Eddy Current Daily Status Report
FINAL

As of 1435 on 10/17/98

SG-A SG-B SG-C SG-D TOTAL

HOT LEG U-BEND DING PROGRAM

	SG-A	SG-B	SG-C	SG-D	TOTAL
1. PLANNED TESTS	18	10	10	10	48
2. ACQUIRED TESTS	18	10	10	10	48
3. RESOLVED TESTS	18	10	10	10	48

COLD LEG U-BEND DING PROGRAM

1. PLANNED TESTS	7	4	10	10	31
2. ACQUIRED TESTS	7	4	10	10	31
3. RESOLVED TESTS	7	4	10	10	31

BOBBIN PROGRAM - BOTH LEGS

1. TUBES W/INDS 1-19% TW	9	11	11	17	48
2. TUBES W/INDS 20-39% TW	2	5	3	2	12
3. TUBES W/INDS > = 40% TW	0	0	0	0	0
4. TUBES W/DSI < = 1.0 VOLTS	152	401	359	286	1198
5. TUBES W/DSI 1.0 - 3.30 VOLTS	18	3	10	7	38
6. TUBES W/DSI > 3.30 VOLTS	1	0	0	0	1
7. TUBES W/OTHER I-CODE INDS	21	40	34	18	113

HOT LEG TUBESHEET RPC

1. TUBES W/AXIAL INDS	0	0	0	0	0
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	1	2	0	3

HOT LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	16	5	10	8	39
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	0	0	0

COLD LEG SPECIAL INTEREST RPC

1. TUBES W/AXIAL INDS	3	1	3	0	7
2. TUBES WITH CIRC & MMI INDS	0	0	0	0	0
3. TUBES WITH VOLUMETRIC INDS	0	0	1	2	3

Distribution:

Chet McIntyre, STPNOC

Kevin Miller, Westinghouse

Copy to Data Management files