

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 10, 1997

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 97-085
NL&OS/GDM R0
Docket No. 50-280
50-281
License No. DPR-32
DPR-37

Gentlemen:

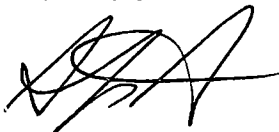
VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
ANNUAL STEAM GENERATOR INSERVICE INSPECTION SUMMARY REPORT

Pursuant to Technical Specification 4.19.F.b, Virginia Electric and Power Company is submitting the 1996 Steam Generator Inservice Inspection Summary Report for Surry Power Station Units 1 and 2.

During the May 1996 refueling outage for Surry Unit 2, the tubes in the "C" steam generator were examined. The information in Attachment 1 is a summary of the results of those examinations. These results include the number and extent of the tubes examined, location and characterization of each indication of an imperfection, and identification of tubes that were plugged. Attachment 2 is a tubesheet map that indicates the locations of the plugged tubes, and Attachment 3 provides a glossary of terms used in the report. Since Unit 1 did not have a refueling outage in 1996, no steam generator tube inservice inspections were performed on that Unit.

This letter does not establish any new commitments. Should you have any questions or require additional information, please contact us.

Very truly yours,



S. P. Sarver, Acting Manager
Nuclear Licensing and Operations Support

Attachments

AO471/

9702180383 970210
PDR ADOCK 05000280
G PDR
180099

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W. Suite 2900
Atlanta, Georgia 30323

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

Attachment 1

**Summary Report for the Steam Generator Tube Inservice Inspections Performed
During the 1996 Unit 2 Refueling Outage**

Attachment 1

**May 1996 Unit 2 Refueling Outage
S/G "C" Eddy Current Examination Summary**

In Steam Generator "C", all available tubes were inspected full length with bobbin probes. A 670 tube sample was tested with Rotating Pancake Coil (RPC) probes in the hot leg transition (TSH +/- 3") region. Supplemental examinations were also performed using RPC probes where additional confirmatory or other data was desired. The following eight tubes were plugged:

<u>Row</u>	<u>Column</u>
43	31
38	29
38	31
31	27
34	73
35	68
1	59
1	36

This steam generator contains a total of nine plugged tubes. See the attached list for details.

Attachment 1

Surry Unit 2, Steam Generator "C"
May 1996 Refueling Outage

<u>Row</u>	<u>Column</u>	<u>Indication</u>	<u>Location</u>	<u>Remarks</u>
1	1	16	TSC	
1	1	14	TSC	
12	6	18	6H	
12	7	14	6H	
4	10	16	7H	
16	13	10	7H	
25	13	26	TSC	
25	13	PIT	TSC	
20	14	17	6C	
25	14	12	6H	
27	14	19	7C	
30	14	14	BPC	
4	16	17	7C	
7	16	15	2H	
33	19	12	6H	
23	23	15	2H	
31	27	SAA	TSH	plugged*
38	28	14	AV3	
1	29	18	2C	
38	29	13	AV2	plugged**
38	29	37	AV3	plugged
38	29	32	AV4	plugged
38	29	PID	AV3	plugged

Attachment 1

**Surry Unit 2, Steam Generator "C"
May 1996 Refueling Outage**

<u>Row</u>	<u>Column</u>	<u>Indication</u>	<u>Location</u>	<u>Remarks</u>
17	30	10	4H	
37	30	20	AV2	
37	30	21	AV3	
37	30	PID	AV3	
10	31	16	TSC	
38	31	17	AV1	plugged**
38	31	18	AV2	plugged
38	31	29	AV3	plugged
38	31	PID	AV3	plugged
43	31	24	AV1	plugged
43	31	25	AV2	plugged
43	31	29	AV3	plugged
43	31	42	AV4	plugged
43	31	PID	AV4	plugged
10	32	18	TSC	
23	32	18	BPC	
40	32	16	6C	
23	33	19	4H	
23	33	10	4C	
40	33	16	AV2	
40	33	17	AV3	
20	34	13	6C	
24	34	18	4H	
38	34	12	AV1	
38	34	21	AV2	
38	34	24	AV3	

Attachment 1

**Surry Unit 2, Steam Generator "C"
May 1996 Refueling Outage**

<u>Row</u>	<u>Column</u>	<u>Indication</u>	<u>Location</u>	<u>Remarks</u>
38	34	18	AV4	
38	34	PID	AV3	
1	36	RST	TEH	plugged***
12	40	19	6H	
37	40	12	AV3	
43	40	22	AV2	
43	40	PID	AV2	
27	41	17	6C	
42	41	15	2C	
39	42	27	6C	
23	43	16	TSC	
42	45	15	1H	
9	49	12	TSC	
28	49	19	AV4	
5	51	19	TSC	
16	54	18	5C	
35	54	14	AV2	
40	54	23	AV3	
40	54	11	AV4	
40	54	PID	AV3	
34	55	15	6H	
39	55	14	AV3	
39	55	10	AV4	

Attachment 1

**Surry Unit 2, Steam Generator "C"
May 1996 Refueling Outage**

<u>Row</u>	<u>Column</u>	<u>Indication</u>	<u>Location</u>	<u>Remarks</u>
40	57	16	AV1	
5	58	16	4C	
32	58	18	TSC	
32	58	13	TSC	
1	59	RST	TEC	plugged***
26	60	18	6H	
21	61	13	4C	
44	61	12	4C	
5	62	16	2C	
12	63	10	2C	
40	63	14	AV3	
40	63	13	AV4	
22	64	15	4C	
1	65	18	TSC	
10	66	16	1C	
12	66	18	6H	
35	68	MAA	TSH	plugged*
35	68	DRI	TSH	
19	71	14	6C	
37	71	13	2C	
34	73	SAA	TSH	plugged*

Attachment 1

Surry Unit 2, Steam Generator "C"
May 1996 Refueling Outage

<u>Row</u>	<u>Column</u>	<u>Indication</u>	<u>Location</u>	<u>Remarks</u>
28	75	19	TSC	
31	75	11	AV3	
31	75	11	AV4	
24	79	10	4C	
8	83	10	BPC	
8	83	12	TSC	
8	83	10	TSC	
8	83	15	TSC	
8	83	14	TSC	
21	84	14	6C	
3	88	13	BPC	
12	92	15	TSC	
12	92	16	TSC	
13	92	13	TSC	
2	94	16	2C	
2	94	10	2C	

- * - Anomalous indication, preventively plugged
- ** - Anti-Vibration Bar wear, preventively plugged
- *** - Restricted

ATTACHMENT 2

**SURRY UNIT 2, STEAM GENERATOR "C"
1996 REFUELING OUTAGE**

TUBESHEET MAP

SG - C TUBES PLUGGED

X: 8 TUBES PLUGGED

□: 1 TUBE PLUGGED PREVIOUSLY

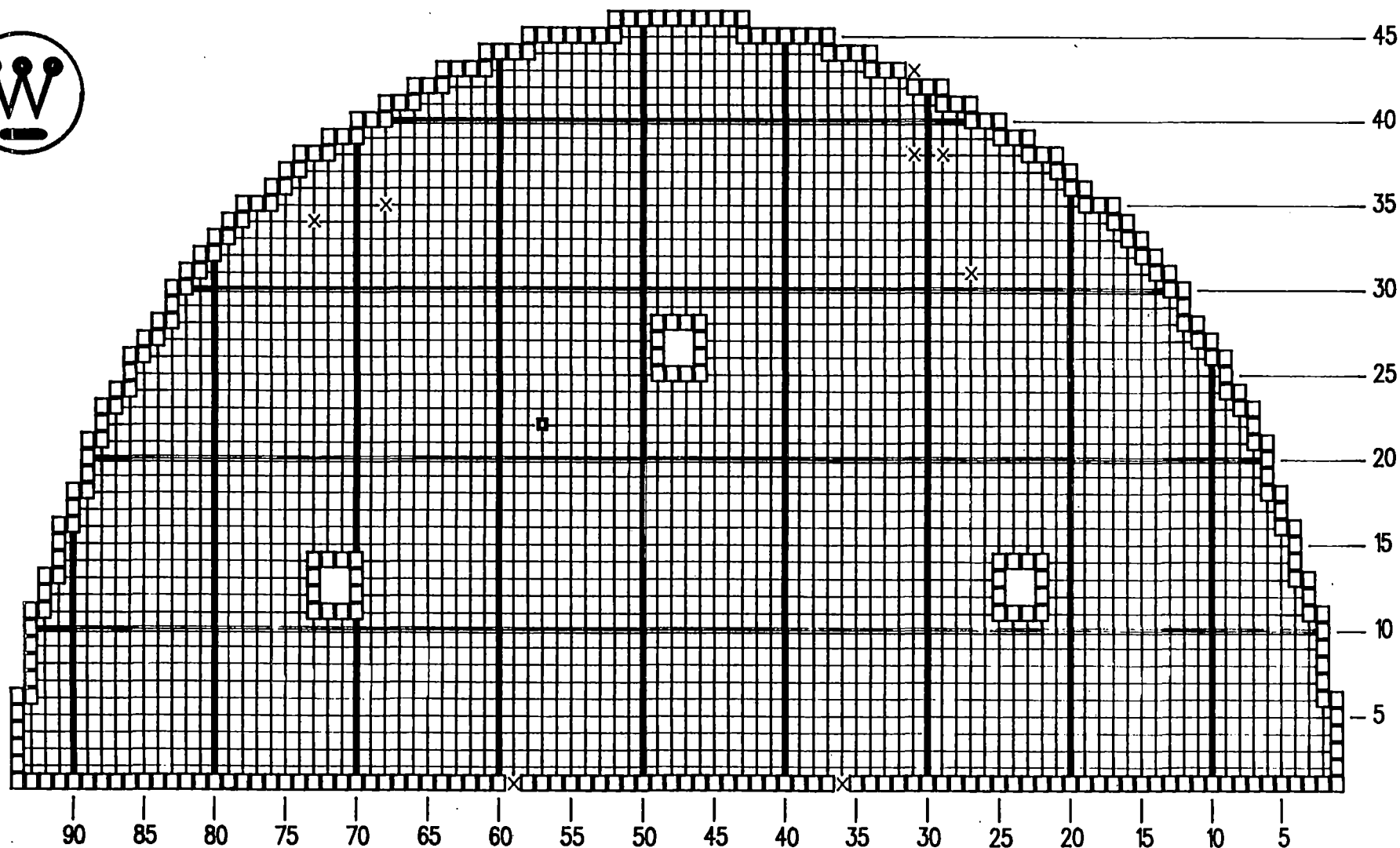
Surry Unit 2

VIR-C SERIES 51F

05-22-1996

03:31 HRS.

SUPERTUBIN



Attachment 3

Glossary of Terms

Attachment 3
Glossary of Terms

1. ROW, COL - COLUMN - Tube identifier numbers - an X-Y coordinate system.
2. IND - INDICATION - Character codes and numerics that represent the analysis results of the data for that tube, e.g., SAA, 25%, etc.
3. LOCN - LOCATION - The location in the tube of the INDICATION called.
4. PID - POSITIVE I.D. utilized to verify the tube/ID of an indication from a tube containing an indication that was tested previously during the same inspection.
5. MAA - MULTIPLE AXIAL ANOMALY - Describes multiple axially oriented anomalies that are called from Rotating Pancake Coil probe data to allow future monitoring.
6. DRI - DISTORTED ROLL TRANSITION INDICATION - A possible tube wall loss condition that is unquantifiable with a numeric percent call due to the signal characteristics and is located at the roll transition - often retested with RPC probe.
7. PIT - A small volumetric RPC indication that has been detected at Surry above the top of the tubesheet on the cold leg that is not cracklike and has essentially the same axial and circumferential extent.
8. RST - RESTRICTED - Indicates that the probe listed in the record would not physically pass the location specified.
9. 55 - A number in the indication column that shows the % through wall depth of the indication.
10. TSH - Top of Tubesheet Hot Leg.
11. TSC - Top of Tubesheet Cold Leg.
12. #C, #H - (# = number) of Support Plate Hot or Cold Leg, e.g., 3H, 6H, 7C.
13. AV1, AV2, AV3, AV4 - Anti-Vibration Bars 1 through 4.
14. BPH, BPC - BAFFLE PLATE HOT AND COLD
15. TEH - Tube End Hot Leg

Attachment 3

Glossary of Terms

16. TEC - Tube End Cold Leg
17. SAA - SINGLE AXIAL ANOMALY - Describes a single axially oriented anomaly that is called from Rotating Pancake Coil probe data to allow future monitoring.

Note: Where no comment appears in the remarks column the tube is still in service.