



**DUKE POWER COMPANY**

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May 5, 1989

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

Subject: Oconee Nuclear Station, Unit 1  
Docket No. 50-269  
OTSG Tube Plugging and Repair

Gentlemen:

Pursuant to Oconee Nuclear Station Technical Specification 4.17.6(a), Duke Power Company is providing the following information concerning the Oconee Unit 1 steam generator inservice inspection. The inservice inspection and tube plugging/repair operation for the Unit 1 End of Cycle 11 refueling outage was completed on February 5, 1989.

There were approximately 15154 tubes inspected full length in the Unit 1 OTSG "A". For the Unit 1 OTSG "B", there were approximately 14877 tubes inspected full length.

Very truly yours,



Hal B. Tucker

RRE/lcs

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OS-801.01

**TABLE 1**  
**Oconee Nuclear Station Unit 1**  
**Steam Generators**  
**1/89 Inspection Reports**

	<u>"A" OTSG</u>		<u>"B" OTSG</u>	
	# of tubes	Attachment # for additional information	# of tubes	Attachment # for additional information
1. Tubes Inspected:				
Full Length:	15154	NA	14877	NA
Partial Length:	285	NA	278	NA
2. Indications of Imperfections:				
Degraded tubes (>20% TWD)	55	1	200	3
3. Tubes Repaired:	17	2	46	4
Plugged Tubes:	17	2	46	4
Sleeved Tubes:	0	2	0	4

OTSG = Once Through Steam Generator

TWD = Through Wall Depth

UPTF = Upper Tube Sheet Primary Face

TSP = Tube Support Plate

Plant: Oconee Unit 1  
 Outage: 1/89 RFO

Steam Generator: A

QUERY: ATTACHMENT 1 INDICATIONS OF IMPERFECTIONS

TEST	ROW	COL	IND	%TW	VOLTS	CHN	DEG	LOCATION	EXTENT
FINAL DATA	2	14	ODI	67	0.61	M 1	76	10TH TSP+	0.00
1ST E360			ODI	61	5.43	1	122	10TH TSP+	0.00
FINAL DATA	3	28	ODI	52	0.98	M 1	87	14TH TSP+	0.00
1ST E360			ODI	53	4.22	1	36	14TH TSP+	0.00
FINAL DATA	5	16	ODI	42	2.71	3	94	14TH TSP+	0.50
1ST E360			ODI	47	3.33	1	100	14TH TSP+	0.30
FINAL DATA	6	13	ODI	34	1.22	M1	77	14TH TSP+	0.00
FINAL DATA	7	14	ODI	24	0.66	M 1	101	6TH TSP +	0.30
FINAL DATA	16	52	ODI	79	0.73	3	61	12TH TSP+	18.20
FINAL DATA	19	80	ODI	31	1.16	M 1	97	10TH TSP+	0.00
1ST E360	21	16	ODI	21	3.00	1	139	14TH TSP+	5.90
FINAL DATA	31	73	ODI	20	0.89	M 1	93	14TH TSP+	0.00
FINAL DATA	31	74	ODI	43	0.84	M 1	83	14TH TSP+	0.00
1ST E360			ODI	47	3.31	1	70	14TH TSP+	0.00
FINAL DATA	33	65	ODI	46	0.89	3	91	12TH TSP+	15.00
1ST E360			ODI	37	2.15	1	68	12TH TSP+	17.00
1ST E360	35	98	ODI	25	3.75	1	147	15TH TSP-	9.40
FINAL DATA	53	116	IDI	50	2.06	3	20	4TH TSP +	10.80
FINAL DATA			IDI	47	1.56	3	19	4TH TSP +	14.10
FINAL DATA	56	5	ODI	46	2.64	M 1	97	14TH TSP-	0.10
1ST E360			ODI	63	5.66	1	139	14TH TSP+	0.00
FINAL DATA	60	2	ODI	39	4.04	M 1	104	14TH TSP+	0.00
FINAL DATA	66	3	ODI	34	0.56	M 1	96	14TH TSP+	0.00
FINAL DATA			ODI	38	1.38	M 1	94	12TH TSP+	0.00
FINAL DATA	68	3	ODI	59	1.07	M 1	76	13TH TSP+	0.00
** FINAL DATA	75	20	ODI	37	1.20	M 1	88	15TH TSP-	0.30
1ST E360			ODI	65	6.12	1	141	15TH TSP-	0.20
** FINAL DATA	75	21	ODI	45	1.23	M 1	84	15TH TSP-	0.20
1ST E360			ODI	64	5.78	1	111	15TH TSP-	0.50
** FINAL DATA	75	22	ODI	43	1.04	M 1	85	15TH TSP-	0.30
1ST E360			ODI	55	4.07	1	89	15TH TSP-	0.30
** FINAL DATA	75	24	ODI	55	1.05	M 1	78	15TH TSP-	0.20
1ST E360			ODI	58	4.42	1	132	15TH TSP-	0.50
** FINAL DATA	75	26	ODI	39	1.29	M 1	87	15TH TSP-	0.20
1ST E360			ODI	47	2.99	1	151	15TH TSP-	0.20
** FINAL DATA	75	27	ODI	37	1.18	M 1	88	15TH TSP-	0.20
1ST E360			ODI	56	4.18	1	90	15TH TSP-	0.30
** FINAL DATA	75	29	ODI	27	0.88	M 1	93	15TH TSP-	0.20
1ST E360			ODI	45	2.69	1	141	15TH TSP-	0.30
** FINAL DATA	75	31	ODI	37	1.04	M 1	88	15TH TSP-	0.20
1ST E360			ODI	53	3.76	1	113	15TH TSP-	0.30
** FINAL DATA	77	22	ODI	24	3.44	1	133	15TH TSP-	0.70
1ST E360			ODI	45	0.98	M 1	84	15TH TSP-	0.40
** FINAL DATA	77	26	ODI	50	3.34	1	72	15TH TSP-	0.40
1ST E360			ODI	29	0.78	M 1	92	15TH TSP-	0.40
** FINAL DATA	77	27	ODI	40	2.09	1	150	15TH TSP-	0.40
1ST E360			ODI	29	0.95	M 1	92	15TH TSP-	0.20
** FINAL DATA	77	30	ODI	61	4.94	1	148	15TH TSP-	0.20
1ST E360			ODI	29	0.80	M 1	92	15TH TSP-	0.30
** FINAL DATA	78	23	ODI	49	3.34	1	163	15TH TSP-	0.30
1ST E360			ODI	27	0.84	M 1	93	15TH TSP-	0.20
** FINAL DATA	78	24	ODI	51	3.50	1	151	15TH TSP-	0.10
1ST E360			ODI	39	0.75	M 1	87	15TH TSP-	0.10
** FINAL DATA	78	25	ODI	40	2.15	1	28	15TH TSP-	0.20
1ST E360			ODI	42	1.13	M 1	91	10TH TSP-	0.30
FINAL DATA	79	7	AXI	27	1.42	3	11	1ST TSP +	17.10
FINAL DATA	82	125	ODI	37	1.29	M 1	97	9TH TSP +	0.00
FINAL DATA	82	127	ODI	37	1.24	M 1	97	9TH TSP +	0.00
FINAL DATA	86	131	ODI	30	0.90	M 1	101	10TH TSP+	0.00
FINAL DATA	87	5	ODI	50	1.42	M 1	90	14TH TSP+	0.10
1ST E360			ODI	49	3.47	1	96	14TH TSP+	0.00
FINAL DATA	94	129	ODI	28	0.87	M 1	98	8TH TSP +	0.00
FINAL DATA	99	123	ODI	53	0.82	3	89	15TH TSP+	35.80
1ST E360			ODI	35	1.93	1	81	UTSF -	10.00
FINAL DATA	103	123	ODI	51	1.24	M 1	85	10TH TSP-	0.10
1ST E360			ODI	54	4.27	1	128	10TH TSP-	0.20
FINAL DATA	111	104	ODI	42	0.90	M 1	95	9TH TSP +	0.00
1ST E360			ODI	47	3.34	1	141	9TH TSP -	1.40
FINAL DATA	112	6	WAR	62	1.44	M 1	79	12TH TSP-	0.80
** FINAL DATA	113	5	WAR	74	0.93	M 1	75	13TH TSP-	0.80

Plant: Oconee Unit 1  
 Outage: 1/89 RFO

Steam Generator: A

QUERY: ATTACHMENT 1 INDICATIONS OF IMPERFECTIONS

TEST	ROW	COL	IND	%TW	VOLTS	CHN	DEG	LOCATION	EXTENT	
FINAL DATA			WAR	66	1.35	M 1	82	12TH TSP-	0.80	FL
FINAL DATA			WAR	77	1.02	M 1	73	11TH TSP-	0.80	FL
* 1ST E360	114	5	WAR	20	3.18	M 1	26	11TH TSP-	1.50	11TH TSP
FINAL DATA			WAR	88	0.97	M 1	56	11TH TSP-	0.80	FL
* 1ST E360	114	7	WAR	21	3.40	M 1	46	13TH TSP-	1.50	13TH TSP
1ST E360			WAR	24	3.83	M 1	42	14TH TSP-	1.50	14TH TSP
FINAL DATA			WAR	86	0.85	M 1	59	14TH TSP-	0.70	FL
FINAL DATA			WAR	79	0.99	M 1	67	13TH TSP-	0.80	FL
FINAL DATA			WAR	90	1.15	M 1	54	11TH TSP-	0.70	FL
* FINAL DATA	114	11	WAR	40	0.62	M 1	94	12TH TSP-	0.70	FL
* 1ST E360	115	9	WAR	21	3.31	M 1	26	12TH TSP-	1.40	12TH TSP
FINAL DATA			WAR	77	0.79	M 1	69	12TH TSP-	0.70	FL
FINAL DATA			WAR	38	0.69	M 1	95	11TH TSP-	0.60	FL
* FINAL DATA	115	10	WAR	80	0.76	M 1	66	11TH TSP-	0.70	FL
FINAL DATA	116	113	ODI	29	3.12	M 1	95	14TH TSP+	0.00	FL
FINAL DATA	117	5	WAR	55	1.23	M 1	87	11TH TSP-	1.40	FL
* FINAL DATA	122	5	WAR	54	1.07	M 1	86	12TH TSP-	1.40	FL
1ST E360			WAR	25	3.99	M 1	116	12TH TSP-	1.50	12TH TSP
FINAL DATA	133	84	ODI	48	1.17	M 1	85	10TH TSP+	0.00	FL
1ST E360			ODI	44	3.16	M 1	154	10TH TSP+	0.10	10TH TSP
FINAL DATA	134	30	ODI	30	1.19	M 1	100	8TH TSP +	0.00	FL
FINAL DATA	137	70	WAR	35	0.66	M 1	99	9TH TSP -	1.50	FL

TOTAL TUBES FOUND = 55  
 TOTAL INDICATIONS FOUND = 92  
 TOTAL TUBES IN INPUT FILE = 15531

\* = Tubes not plugged based on E-360 results

\*\* = Tubes previously plugged, unplugged, ECT, and replugged

Plant: OCONEE UNIT 1

Steam Generator: A

Order: Sort by ROW, TUBE

Title: ATTACHMENT 2 TUBES REPAIRED

NO.	ROW	TUBE
1.	2-	14
2.	3-	28
3.	5-	16
4.	16-	52
5.	31-	74
6.	33-	65
7.	53-	116
8.	56-	5
9.	68-	3
10.	79-	7
11.	87-	5
12.	99-	123
13.	103-	123
14.	111-	104
15.	112-	6
16.	117-	5
17.	133-	84

TOTAL TUBES FOUND = 17











\*\*\* B&W EC FIELD SYSTEM (TM) (VER. 3.1) \*\*\* Thursday May 4, 1989

Plant: Oconee Unit 1  
Outage: 1/89 RFO

Steam Generator: B

QUERY OUTPUT

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TEST	ROW	COL	IND	RTW	VOLTS	CHN	DEC	LOCATION	EXTENT
FINAL DATA	139	19	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	139	19	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	140	27	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	140	27	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	142	9	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	142	20	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	142	20	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	143	52	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	143	53	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	143	14	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	143	56	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	146	50	ODI	4	2.71	M	100	13TH	LTSF
FINAL DATA	148	34	ODI	4	2.71	M	100	13TH	LTSF

TOTAL TUBES FOUND = 200  
 TOTAL INDICATIONS FOUND = 158  
 TOTAL TUBES IN INPUT FILE = 1531

\* = Tubes unplugged, ECT and replugged  
 \*\* = Tubes with wear that E 360 called < 40%

Plant: OCONEE UNIT 1

Steam Generator: B

Order: Sort by ROW, TUBE

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Title: ATTACHMENT 4 TUBES REPAIRED

NO.	ROW	TUBE
1.	6-	29
2.	12-	21
3.	13-	19
4.	13-	68
5.	17-	78
6.	20-	4
7.	21-	49
8.	23-	60
9.	24-	60
10.	26-	59
11.	32-	91
12.	33-	91
13.	36-	3
14.	36-	22
15.	38-	3
16.	38-	4
17.	40-	117
18.	42-	111
19.	42-	113
20.	43-	113
21.	43-	114
22.	45-	11
23.	46-	109
24.	51-	120
25.	53-	105
26.	54-	5
27.	54-	114
28.	58-	113
29.	60-	1
30.	61-	122
31.	62-	127
32.	63-	4
33.	75-	116
34.	78-	126
35.	90-	119
36.	94-	123
37.	98-	10
38.	100-	121
39.	102-	52
40.	106-	13
41.	113-	1
42.	119-	57
43.	126-	9
44.	140-	42
45.	142-	20
46.	15-	110
TOTAL TUBES FOUND =		46

U.S. Nuclear Regulatory Commission  
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