Southern California Edison Company
SAN ONOFRE NUCLEAR GENERATING STATION
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June 5, 1986

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596-5368

Attention: Mr. J. B. Martin, Regional Administrator

Dear Sir:

Subject: Docket No. 50-362
Special Report - Inservice Inspection of Steam Generator Tubes
San Onofre Nuclear Generating Station, Unit 3

Reference: Letter from M. O. Medford (Southern California Edison) to G. W. Knighton (Branch Chief, Licensing Branch No. 3, U.S. Nuclear Regulatory Commission) dated April 5, 1985 with the following enclosures:

(1) Metallurgical Defects in Steam Generator Tubes, San Onofre Unit 2, April 3, 1985

(2) Steam Generator Tubing Wear, San Onofre Unit 2, April 3, 1985

Pursuant to Section 6.9.2 of Appendix A, Technical Specifications to Facility Operating License NPF-15, this report is being submitted as required by Surveillance Requirement 4.4.4.5(b) associated with Limiting Condition for Operation (LCO) 3.4.4. This Surveillance Requirement requires that a Special Report be prepared and submitted to the Commission within 12 months following the completion of each inservice inspection of steam generator tubes.

During the Cycle 2 refueling outage, an inservice inspection of 100% of the full length of unplugged tubes in both steam generators was conducted and completed on October 27, 1985. A total of 6 tubes in Steam Generator E-088 and 20 tubes in Steam Generator E-089 were plugged.

IE-01

As required by Surveillance Requirement 4.4.4.5(b), complete results of the recently completed inservice inspection for Steam Generators E-088 and E-089 tubes are provided in the enclosures. Enclosure 1 provides the steam generator internal location reference guide. The eddy current defect/indication locations listed in the remaining enclosures are based upon this guide. Enclosures 2 and 4 provide a list of eddy current testing indications including tube identification, indication depth, and the axial location of the indication in the tube. Enclosures 3 and 5 provide a list of tubes plugged after the completion of the inservice inspection. Tubes plugged as a result of wall loss have the depth and axial location of the eddy current indication provided. Preventive tube plugging for Unit 3 was done in a manner similar to Unit 2 as described in the reference. The reason for preventive plugging is appropriately annotated in enclosures 3 and 5.

If you require any additional information, please so advise.

Sincerely,

H E Morgan

Enclosures:
1. Combustion Engineering Model 3410 Steam Generator E-088 and E-089 Support Designation Guide and Illustrative Diagram
2. List of Eddy Current Indications, Steam Generator E-088
3. List of Tubes Plugged, Steam Generator E-088
4. List of Eddy Current Indications, Steam Generator E-089
5. List of Tubes Plugged, Steam Generator E-089

cc: F. R. Huey (USNRC Senior Resident Inspector, Units 1, 2 and 3)
H. Rood (Project Manager, SONGS 2/3, USNRC, NRR)

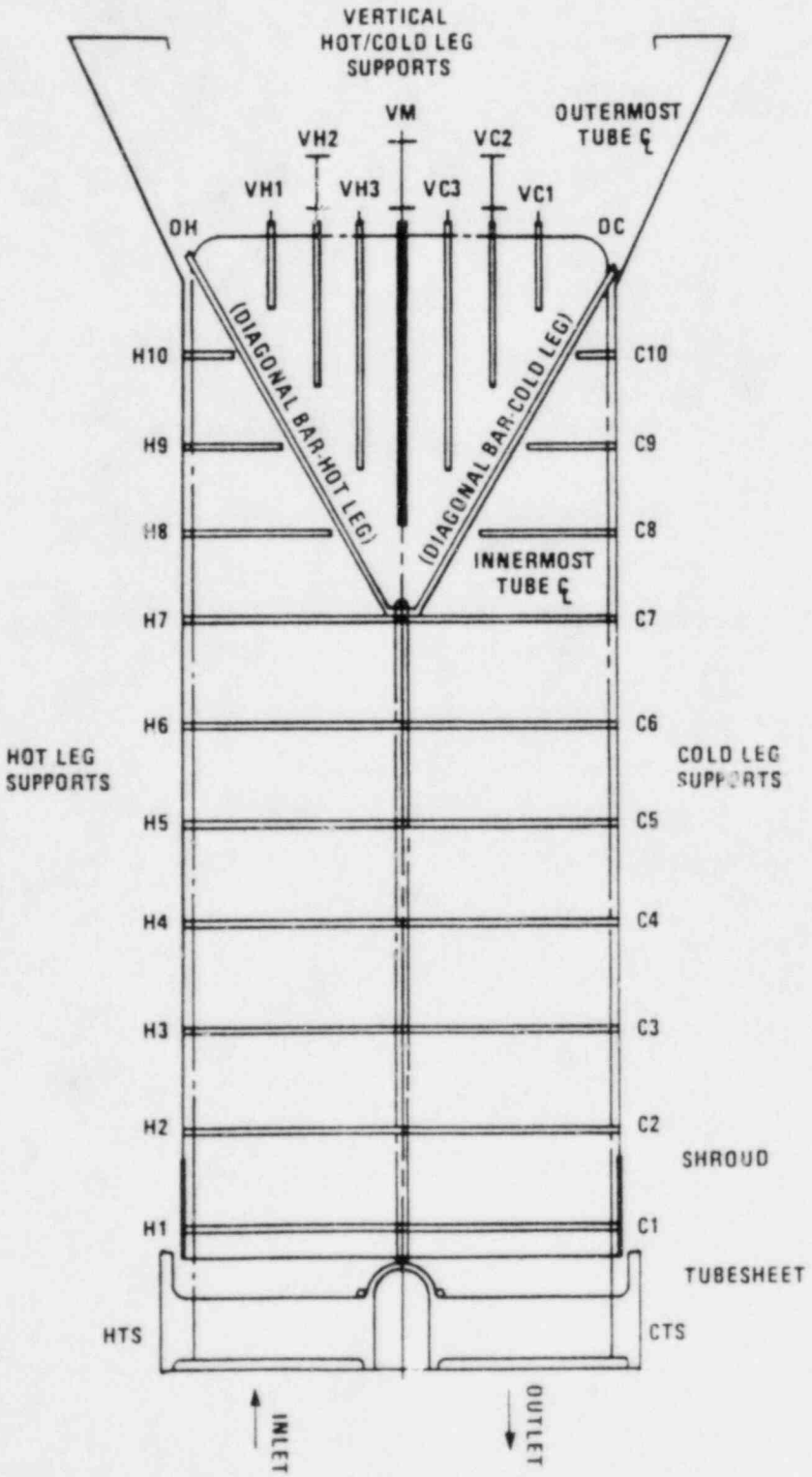
U. S. Nuclear Regulatory Commission
Document Control Desk

Institute of Nuclear Power Operations (INPO)

ENCLOSURE 1

COMBUSTION ENGINEERING MODEL 3410

STEAM GENERATOR ILLUSTRATIVE DIAGRAM



ENCLOSURE 1 (Continued)

CLARIFICATION OF TUBING/SUPPORT INTERFACES

ABOVE THE 7TH FULL EGGCRATE SUPPORT

ROWS	TUBING/SUPPORT INTERFACES
120-147	H8, H9, H10 DH, VH1, VH2, VH3, VM, VC3, VC2, VC1, DC, C10, C9, C8
115-119	H8, H9 DH, VH1, VH2, VH3, VM, VC3, VC2, VC1, DC C9, C8
84-114	H8, H9 DH VH2, VH3, VM, VC3, VC2 DC C9, C8
83	H8 DH VH2, VH3, VM, VC3, VC2 DC C8
51-82	H8 DH VH3, VM, VC3 DC C8
49-50	H8 DH VM DC C8
25-48	DH VM DC
1-24	DH DC

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Enclosure 2

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-088

Row	Column	Indication (% through-wall)	Location
69	43	44	VM + 7.6
94	54	38	VH2 + 5.6
123	69	38	H2 + 12.0
85	145	38	C5 + 6.5
104	80	34	H7 + 30.0
138	90	28	C1 + 12.8
125	91	28	H3 + 3.30
98	152	27	C2 + 22.9
27	45	26	H2 + 24.5
48	90	22	DH
147	81	21	DC
5	13	<20	C4 + 8.2
14	16	<20	C2 + 10.3
83	17	<20	C7 + 40.8
55	37	<20	H2 + 23.7
2	38	<20	C3 + 3.4
38	40	<20	H1 + 34.8
27	41	<20	H1 + 2.4
56	42	<20	CTS + 16.6
88	42	<20	H2 + 3.1
86	46	<20	H7 + 3.0
2	48	<20	H3 + 15.7
46	52	<20	H7 + 3.0
88	52	<20	H6 + 30.7

Enclosure 2 (Continued)

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-088

Row	Column	Indication (% through-wall)	Location
4	54	<20	C3 + 13.7
116	56	<20	H5 + 30.5
76	62	<20	H5 + 31.4
36	70	<20	C1 + 4.2
102	70	<20	H2 + 11.7
70	72	<20	C3 + 15.0
63	75	<20	H1 + 7.5
107	89	<20	H2 + 5.2
125	91	<20	H3 + 2.5
140	92	<20	C2 + 12.5
79	93	<20	VM + 1.6
108	96	<20	H4 + 15.0
128	96	<20	H1 + 31.1
81	97	<20	H2 + 23.7
55	99	<20	C5 + 2.4
38	102	<20	VM
59	103	<20	VM + 4.4
75	123	<20	DH + 19.8
3	129	<20	C3 + 21.9
127	129	<20	CTS + 7.5
100	134	<20	H1 + 16.7
110	134	<20	H3 + 13.1
66	138	<20	C7 + 8.2

Enclosure 2 (Continued)

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-088

Row	Column	Indication (% through-wall)	Location
100	142	<20	C6 + 20
100	142	<20	H1 + 17.6
29	155	<20	C4 + 5.4
5	157	<20	HTS + 8.5
5	159	<20	H3 + 10.3
21	159	<20	C4 + 3.5

Enclosure 3

LIST OF TUBES PLUGGED

San Onofre Unit 3 Steam Generator E-088

Row	Column	Reason
69	43	44% at VM + 7.6
26	152	Potential Metallurgical Defect (Preventive Maintenance)
66	136	Potential Metallurgical Defect (Preventive Maintenance)
96	40	Potential Metallurgical Defect (Preventive Maintenance)
109	67	Potential Metallurgical Defect (Preventive Maintenance)
111	103	Potential Metallurgical Defect (Preventive Maintenance)

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Enclosure 4

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-089

Row	Column	Indication (% through-wall)	Location
129	59	78	DH + 13.3
111	81	43	H7 + 25.9
123	77	39	C3 + 24.3
50	82	39	DH + .4
140	96	39	C2 + 34
133	97	39	C6 + 14.2
123	111	38	H9 + 26.4
46	138	38	C5 + 12.3
19	139	38	H1 + 15.3
30	4	37	C3 + 34.4
118	38	37	H8 + 9.9
129	59	37	C8 + 22.3
111	81	37	VH3 + .4
120	54	35	H9 + 8.5
115	103	35	H9 + 18.0
101	35	33	H3 + 12.0
135	57	33	H9 + 11.7
129	59	33	C8 + 9.2
122	132	33	C4 + 25.4
129	105	31	H2 + 13.3
136	120	31	C1 + 29.4
113	83	29	C4 + 4.7
47	95	29	DC
104	36	28	C4 + 15.2

Enclosure 4 (Continued)

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-089

Row	Column	Indication (% through-wall)	Location
125	107	28	VH3 + 7.4
118	38	27	CTS + 20.2
103	65	27	H5 + 9.8
41	79	27	VM
117	131	27	H6 + 31.7
39	155	27	C6 + 36.2
139	85	26	H9 + 18.3
138	94	25	HTS + 18.5
104	28	23	DH + 29.0
129	59	23	DH + 3.9
108	80	23	H7 + 23.1
64	108	23	H3 + 12.4
120	110	23	H6 + 10.9
119	133	23	VC3 + 7.7
42	164	23	C2 + 26.1
103	65	23	H5 + 2.8
125	99	22	H4 + 26.5
131	101	22	H6 + 9.4
108	128	22	H5 + 20.2
135	101	21	C5 + 24.3
113	53	<20	C6 + 25.5
130	54	<20	C2 + 33.3
129	57	<20	H1 + 22.6

Enclosure 4 (Continued)

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-089

Row	Column	Indication (% through-wall)	Location
129	59	<20	C9 + 13.2
129	59	<20	H8 + 24.9
129	59	<20	VC2+ 5.4
106	60	<20	H9 + 5.7
108	62	<20	H7 + 11.8
129	65	<20	VC3 + 8.6
138	72	<20	C5 + 3.6
137	73	<20	C9 + 14.7
62	74	<20	H1 + 27.7
113	75	<20	H3 + 16.9
74	86	<20	H4 + 22.7
135	87	<20	VH2 + 2.7
119	89	<20	H8 + 24.9
106	94	<20	H8 + 12.2
138	96	<20	C5 + 9.9
133	97	<20	C8 + 9.9
133	97	<20	C7 + 7.0
40	98	<20	DH + 0.5
41	101	<20	VM + 1.9
127	101	<20	C7 + 1.6
129	103	<20	VC2 + 5.8
138	108	<20	C10 + 5.8
118	112	<20	C8 + 21.5

Enclosure 4 (Continued)

LIST OF EDDY CURRENT INDICATIONS

San Onofre Unit 3 Steam Generator E-089

Row	Column	Indication (% through-wall)	Location
136	114	<20	VC1 + 1.8
118	122	<20	HTS + 11.0
113	123	<20	HTS + 13.6
20	124	<20	C2 + 26.7
117	127	<20	C4 + 9.4
124	128	<20	H4 + 10.9
97	131	<20	C6 + 3.3
46	138	<20	C4
21	147	<20	C6 + 20.8
53	147	<20	C4 + 19.6
61	151	<20	HTS
20	156	<20	C6 + 1.3
20	156	<20	C4 + 3.9
20	156	<20	C4 + 2.8
4	158	<20	C6 + 3.0
69	159	<20	VH3 + 11.0
61	161	<20	H6 + 22.2

Enclosure 5

LIST OF TUBES PLUGGED

San Onofre Unit 3 Steam Generator E-089

Row	Column	Reason
129	59	78% at DH + 13.3
50	82	39% at DH + 0.4 (Preventive Maintenance)
40	98	<20% at DH + 0.5 (Preventive Maintenance)
61	151	Potential Metallurgical Defect (Preventive Maintenance)
18	132	Potential Metallurgical Defect (Preventive Maintenance)
42	72	Potential Metallurgical Defect (Preventive Maintenance)
47	95	29% at DC (Preventive Maintenance)
59	109	Potential Metallurgical Defect (Preventive Maintenance)
66	12	Potential Metallurgical Defect (Preventive Maintenance)
77	21	Potential Metallurgical Defect (Preventive Maintenance)
82	32	Potential Metallurgical Defect (Preventive Maintenance)
94	150	Potential Metallurgical Defect (Preventive Maintenance)
107	65	Potential Metallurgical Defect (Preventive Maintenance)
109	87	Potential Metallurgical Defect (Preventive Maintenance)
117	93	Potential Metallurgical Defect (Preventive Maintenance)
119	133	Potential Metallurgical Defect (Preventive Maintenance)
120	40	Potential Metallurgical Defect (Preventive Maintenance)
120	136	Potential Metallurgical Defect (Preventive Maintenance)
131	95	Potential Metallurgical Defect (Preventive Maintenance)
140	104	Potential Metallurgical Defect (Preventive Maintenance)

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