

ATTACHMENT 1

Steam Generator
Tube Examination Program

1980/1981 Refueling
and Maintenance Outage

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
Facility Operating License No. DPR-26
November, 1980

8012090 282

PROPOSED GENERATOR EXAMINATIONS & CLEAN-UP 1980-81 REFUELING OUTAGE

I. PRIMARY SIDE

1. Eddy-current examine approximately 400 tubes in each of the four steam generators. Examination should include both dent and defect evaluation. The tubes selected for examination are essentially the same as previously examined, and are listed in the attached table.
2. A standard 700 mil probe should be used for eddy current testing. If a tube does not permit passage of the 700 mil probe, a 610 mil probe should be used.
3. If a tube does not permit passage of the 610 mil probe, examine the tube plus those immediately adjacent to it by profilometry. An evaluation will be performed to determine whether or not the tubes should be plugged.
4. Examine approximately 1000 tubes in steam generator 24 by profilometry. The tubes selected for examination are shown in the attached diagram. Four to Six days will required for this examination.

SECONDARY SIDE

1. Sludge lance each steam generator and analyze sludge from each.
2. After sludge lancing photograph the support plate flow slots to the extent possible, and the contact between support plate and shell.
3. After photography is complete, fill, soak and drain each steam generator twice, following the procedure previously used. Analyze drained water each time. Fill the steam generator with demineralized water and soak without draining. Then add 25 ppm hydrazine for layup.
4. Photograph flow slots in top support plates in steam generators 22 and 23, via the Hillside Port and a Borescope. Note that efforts are under way to obtain approval for a mechanical closure instead of the welded cap.

PROPOSED EDDY CURRENT EXAMINATION, 1980
STEAM GENERATOR NO. 21

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
2	11-20, 27-35, 56-66, 73-82	40
3	11-20, 27-35, 56-66, 73-82	40
6	51	1
7	1-5, 88, 90, 91, 92	9
8	1-5, 88-92	10
9	2-5, 51, 88-91	9
10,11	2-5, 88-91	16
12	2-5, 51, 88-91	9
13,14	3-5, 88-90	12
15	3-5, 51, 88-89	6
16,17	4, 5	4
18	5, 6, 51	3
21	6, 7, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51	15
27	10, 11, 51	3
28,29	11-17, 76-82	28
30	12-17, 51, 76-81	13
31	15-17, 76-78	6
32	15-17, 39-54, 76-78	22
33	15-17, 39-54, 76, 77	21
34	16, 17, 18, 39, 40, 53, 54, 76	8
35	18, 39, 40, 53, 54, 76	6
36	19,20,39,40,53,54	6
37	20,21,39,40,53,54	6
38	21,22,39,40,53,54	6
39	23,24,39,40,53,54	6
40	25-27,39,40,53	6
41	27,39,40,53,54,62-66	10

Steam Generator No. 21 (cont'd)

<u>Row</u>	<u>Column</u>	<u>No. of Tubes</u>
42	29-40, 53 - 64	24
43	32-42, 53-61	20
44	35-40, 42-58	23
45	39-54	16

Total # of tubes

404

PROPOSED EDDY CURRENT EXAMINATION, 1980
STEAM GENERATOR NO. 22

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
2	12-16, 18, 21, 28-30, 34-41, 57-67, 74, 76-83	38
3	12-21, 28-37, 57-67, 74-83	41
6	51	1
8	2-5, 88-92	9
9	3-5, 51, 88-91	8
10,11	3-5, 88-91	14
12	3-5, 51, 88-91	8
13,14	4-6, 88-90	12
15	4, 5, 51, 88-90	6
16,17	5	2
18	6, 51	2
19,20	6	2
21	7, 13, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51	15
22,23	8	2
24,	9, 51	2
25	9	1
26	10	1
27	11, 51, 81-83	5
28	12-18, 77-81	12
29	12-17, 77-82	12
30	13-17, 51, 78-81	10
31	16, 17, 77, 78	4
32	16-19, 39-54, 77, 78	22
33	16, 17, 19, 39-54, 77, 78	21
34	18, 19, 39, 40, 53, 54, 77	7
35	17, 18, 39, 40, 53, 54	6

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
36	19, 20, 39, 40, 53, 54	6
37	20, 21, 39, 40, 53, 54	6
38	21, 22, 39, 40, 53, 54	6
39	23, 24, 39, 40, 53, 54	6
40	25, 26, 27, 39, 40, 41, 53, 54	7
41	28-40, 54-66	26
42	30-41, 53-64	24
43	33-41, 52-61	19
44	36-39, 41-53	17
45	40-50	11

Total # of tubes

391

PROPOSED EDDY CURRENT EXAMINATION, 1980
STEAM GENERATOR #23

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
2	14-16, 18-37, 49-60, 73-84	47
3	1-4, 6-27, 29-37, 49-60, 73-84	59
4	1-14	14
8	1-4, 6, 88, 89, 91, 92	9
9	2-6, 46, 88-91	10
10,11	2-6, 88-91	18
12	2-6, 46, 88-91	10
13,14	3-6, 88-90	14
15	3-6, 46, 88-90	8
18	46	1
21	16,19,22,25,28,31,34,37,40,43,46	11
24,27	46	2
28	11-16, 77-82	12
29	11-13, 15-17, 77-82	12
30	12-17, 46, 77-81	12
31	15-17, 77,78	5
32	15-17, 39-54, 77,78	21
33	15-17, 39-54, 77,78	21
34	16,17,39,40,53,54,77	7
35	17,39,40,53,54	5
36,37	39,40,53,54	8
38	33-35,39,40,53,54	7
39	33,35,36,39,40,53,54	7
40	31-34, 36,37,40,53,54	9
41	27-31,33-35,37-40,53-66	26
42	29-36,38-40,53-64	23
43	32-37,39,40,53-61	17

Steam Generator #23 (cont'd)

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
44	35-51, 53-58	23
45	39-53	15
		<u>Total # of tubes</u>
		433

PROPOSED EDDY CURRENT EXAMINATION, 1980
Steam Generator #24

<u>Row</u>	<u>Column</u>	<u>No. of tubes</u>
2	2-20,26-31,53-56,58-66,73-83	49
3	10-20,26-31,56-64,66,73- 83	38
7	1-5	5
8	1,2,4,5,88-92	9
9,10,11	2-5,88-91	24
12	2-5,46,88-91	9
13,14	3-5,88-90	12
15	3-5,46,88-90	7
18	46	1
21	13,16,19,22,25,28,31,34,37,40,43,46	12
24	46	1
26	10	1
27	12-17,46	7
28	14-17,77-82	10
29	11-17,76-82	14
30	12,13,16,17,46,76-81	11
31	15-17,76-78	6
32	15-17,39-54,76-78	22
33	15-17,39-54,76-78	22
34	16,18,39,40,53,54,76,77	8
35	19,39,40,53,54,75,76	7
36	39,40,53,54	4
37,38,39	39,40,53,54	12
40	39,40	2
41	27-40,53,54,56-66	27
42	29-40,53-64	24
43	32-40,53-61	18

Row

Column

No. of tubes

44

35, 39-53, 57, 58

18

45

40-54

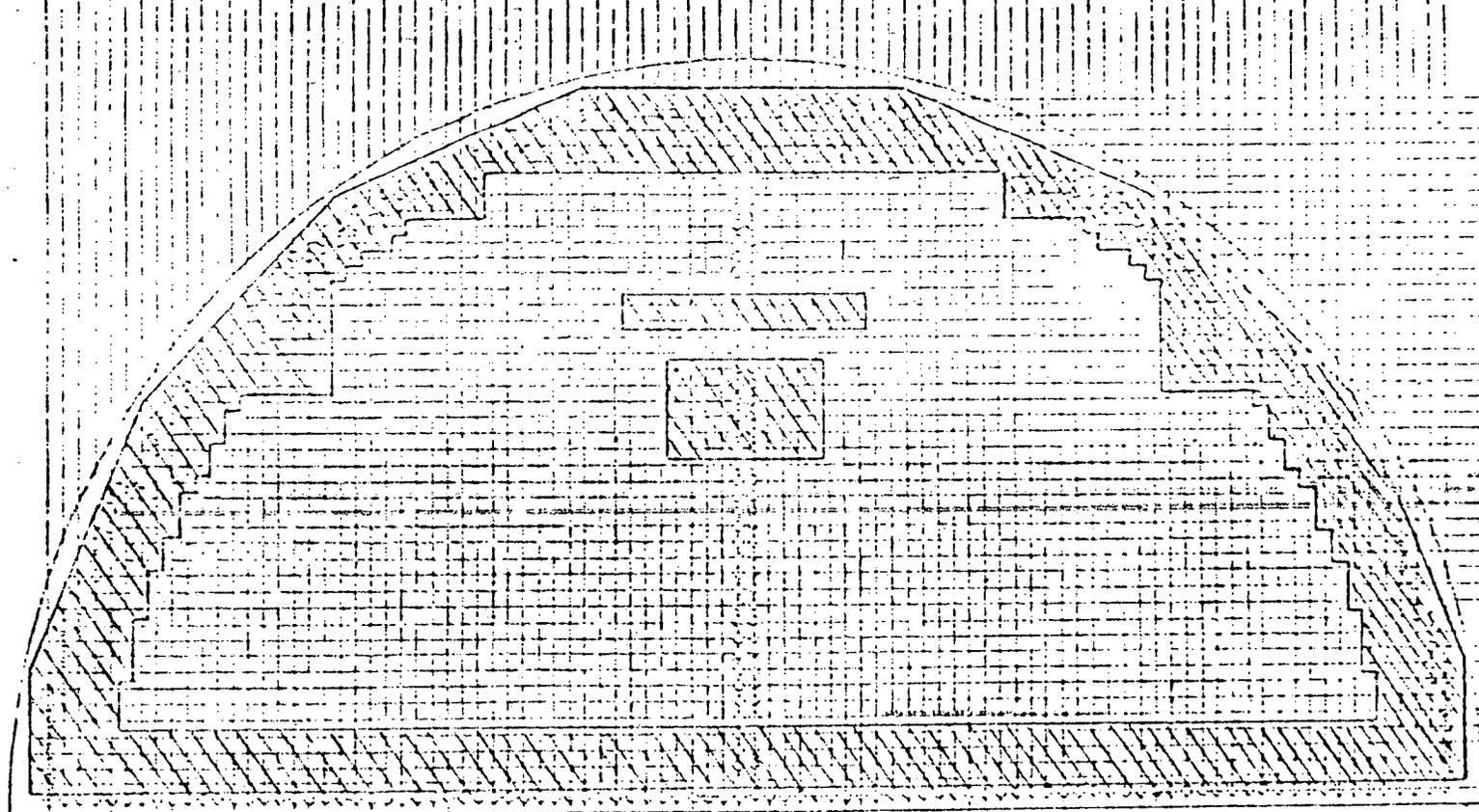
15

Total # of tubes

395

COLUMNS

92 90 88 85 84 82 80 78 75 74 72 70 68 66 64 62 60 58 55 54 52 50 48 45 44 42 40 38 35 34 32 30 28 25 24 22 20 19 16 14 12 10 8 6 4 2
 91 89 87 85 83 81 79 77 75 73 71 69 67 65 63 61 59 57 55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25 23 21 19 17 15 13 11 9 7 5 3 1



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TUBES WITHIN CROSS-HATCHED AREAS ARE PREPARED FOR INSPECTION BY PROFILOMETRY