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 FACIL:50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Ligh 05000261
 AUTH.NAME AUTHOR AFFILIATION
 UTLEY,E.E. Carolina Power & Light Co.
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: RO:800414,during process of shutdown for insp of seals on
 C reactor coolant pump,sample of steam generator water
 revealed primary to secondary leak in four tubes,Caused by
 degradation.Tubes plugged & checked.Insp results encl.

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NOTES: _____

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	OELD	1 0	STS GROUP LEADR	1 1
EXTERNAL:	03 LPDR	1 1	04 NSIC	1 1
	23 ACRS	16 16		



MAY 5 1980



8005020269

Carolina Power & Light Company

April 29, 1980

FILE: NG-3514(R)

SERIAL: NO-80-649

Mr. Darrell G. Eisenhut, Acting Director
Division of Operating Reactors
United States Nuclear Regulatory Commission
Washington, D. C. 20555

H. B. Robinson Steam Electric Plant, Unit No. 2
Docket No. 50-261
License No. DPR-23

Steam Generator Inspection and Safety Evaluation Report

Dear Mr. Eisenhut:

This report is provided as required by your staff and in accordance with the H. B. Robinson Plant Technical Specification Section 4.2.5.3.3.

At 1156 hours on April 14, 1980, while Unit No. 2 was in the process of shutting down to inspect the seals on "C" Reactor Coolant Pump, a sample test of steam generator water revealed a primary to secondary leak of an undetermined size. Further extensive testing and evaluation revealed by 2130 hours on April 14, 1980, that a primary to secondary leak of approximately 0.5 gpm existed in the "B" Steam Generator (S/G). This exceeded the maximum leakage per steam generator of 0.35 gpm allowed by Technical Specification Section 3.1.5.3. Cooldown operations, which had been suspended in order to verify the steam generator leak rate, were therefore immediately recommenced at 2130 hours on April 14, 1980. The unit was in cold shutdown at 1245 Hours on April 15, 1980.

The steam generator was subjected to a secondary to primary leak-test and four leaking tubes were identified. Action was initiated for the performance of an eddy current testing (ECT) inspection program in accordance with Plant Technical Specification Section 4.2.5 and that inspection program has been completed. The following summarizes the inspections performed and their results:

App'd
S. 1/1

I. Background

In March 1980, subsequent to the identification of primary to secondary leakage in A & C steam generators (the leakage was within limits allowed by Plant Technical Specifications) the unit was shutdown. A secondary to primary leak check resulted in the identification of leaking tubes in both generators in the peripheral regions. As a result, the plant performed eddy current tests in tubes in the peripheral regions of these generators. Initially, the tubes in the immediate vicinity of the leaking tubes were inspected. When additional defective tubes were identified, the inspection scope was expanded in a stepwise manner until the region of the generator suffering U-bend and/or support plate located degradation was bounded by at least two acceptable tubes. All defective tubes, as defined by Technical Specifications, were plugged and the unit returned to power operation.

In April 1980, subsequent to the identification of tube leakage in B S/G, as described earlier, an eddy current inspection of this generator was begun in accordance with Technical Specification Section 4.2.5.1.4(e). The leaking tubes identified were all in the central zone of the generator and an initial sample of approximately 1800 tubes was chosen upon notification by the ECT contractor that the results of this inspection were in the C-3 category as defined in Technical Specification Section 4.2.5.1.2(e). The NRC was notified in accordance with Technical Specification Section 6.9.2.a(3). The inspection scope was immediately expanded to include 100% of the tubes in B S/G. Also, discussions were begun with NRR regarding the necessity to expand the inspection into the previously inspected A and C steam generators as required by Technical Specification Table 4.2-2. In these discussions, the NRR staff indicated to CP&L that if sufficient justification could be provided and a Technical Specification change submitted, this requirement could be waived on a one-time basis. Following reviews and discussions within CP&L, the decision was made to inspect the portions in A and C steam generators not inspected in March 1980. This decision was made even though there appeared to be sufficient justification based on historical data not to perform these inspections.

II. Inspection-Scope

The inspections performed in March and April 1980 encompassed 100% of the inspectable tubes in each steam generator. The central region inspection of each S/G was limited to the length of tube between the inlet tubesheet and the second support plate as allowed by Technical Specification Section 4.2.5.1.2(f). All remaining tubes were inspected from the inlet tubesheet through the U-bend as a minimum. The scope of inspection is shown for each S/G in Attachment 1.

These inspections were performed using multifrequency eddy current test equipment. The inspection frequencies utilized were 100 KHz, 100 KHz absolute, 200 KHz, and 400 KHz. To aid in data analysis 100KHz-400KHz and 200 KHz-400KHz mixes were used. These inspections were the first inspections performed at H. B. Robinson with multifrequency ECT equipment. This has resulted in the establishment of a new set of baseline data.

III. Results

The results of the ECT inspections indicated that tube degradation has occurred in the following regions of each steam generator:

1. In the U-bends in the peripheral tubes.
2. At or just above the support plates in the peripheral tubes.
3. In the tubesheet crevice region in central region tubes.
4. At the top of the tubesheet in central region tubes.
5. From one to twelve inches above the top of the tubesheet in the central region tubes.

The degradation at and just above the support plates and at the top of the tubesheet appears to be the same phenomenon. However, the degradation at the support plates occurs only in the peripheral regions while the degradation of the top of the tubesheet occurs in the central region. This degradation is characteristic of the phosphate thinning previously experienced at H. B. Robinson.

The tube degradation from one to twelve inches above the tubesheet consists of new indications and previously unresolvable indications. Some of these indications are now resolvable using multifrequency ECT techniques. These indications are also limited primarily to the central regions of the steam generators.

The new indications are thought to be due to corrosive attack because of the relatively large volume of material removed. Most of the previously unresolvable indications show very little material removed and appear to be pits. The pitting is thought to be a result of either some form of chloride attack occurring in the copper to tube crevice or due to galvanic action at high temperatures between the inconel tube and the copper deposit.

The tube degradation in the U-bends has occurred both at locations along the tube which contact the antivibration bars and at locations which do not contact the antivibration bars. These indications have all been limited to the peripheral regions of the tube bundle. None of these indications have been observed in previous inspections and the cause of the degradation is not known at this time.

The degradation in the tubesheet crevice region was first observed in the April 1979 refueling outage inspection. A review of the ECT records for the 1978 inspection revealed that one tube in A S/G, which had failed and was plugged in September 1978, had suffered crevice region degradation. To the best of our knowledge, this instance was the first recorded occurrence of tube leakage due to this phenomenon. This degradation is believed to be the crevice cracking phenomenon which has been experienced at the Point Beach and Ginna Plants. The ECT data on tubes with crevice region degradation has been reviewed by Westinghouse Electric Corporation and they concur with this conclusion.

Data on reportable indications observed in March and April 1980 and historical data on previous inspections are provided in Attachment No. 4.

IV. Remedial Action

Based on the above results, remedial actions have been taken by CP&L which are adequate to ensure the continued safe operation of the Robinson unit until the next refueling. Calculations based on growth rate ensure that a minimum period of 142 days of operation is allowable before any tube reaches the minimum wall thickness required. This position is supported by the enclosed (see attachment # 2) safety evaluation report provided by Westinghouse Electric Corporation and concurred in by CP&L. The immediate remedial actions include:

1. Consistent with the criteria presented in the above SER and the Plant Technical Specifications, steam generator tubes exhibiting ECT test indications exceeding the following plugging limits have been explosively or mechanically plugged:

<u>S/G</u>	<u>Region</u>	<u>Plugging Limit</u>
A	U-Bend	36 %
B, C	U-Bend	39 %
A, B, C	All Other	47 %

Attachment # 3 details which tubes were plugged.

2. A secondary to primary leak check was performed on all three steam generators after plugging prior to close out.

In addition to the remedial actions above, the following measures will be taken as additional corrective action until the next scheduled refueling outage.

1. A secondary to primary leak check will be performed prior to start-up following any shutdown and inspection required as a result of S/G primary to secondary leakage. These leak checks will be performed on each generator inspected.

2. A U-bend section will be removed for analysis from a tube with degradation in the peripheral region during the next refueling outage.

Additionally, at the request of the NRR staff, one tube in the central region of "B" S/G with degradation in the crevice and at the top of the tubesheet has been mechanically plugged. This has been done in the event that it is considered absolutely necessary to pull a tube for analysis from this region at a later date. The selection of the tube for mechanical plugging was concurred with by a member of the the NRC Staff. This tube was plugged as described, even though it is the opinion of CP&L and the Westinghouse Electric Corporation that a tube pulled from this region will not provide additional useful information regarding the degradation in the vicinity of the tubesheet. As discussed with your staff, the resulting tubesheet repair, if the tube is pulled, will be extremely difficult and will result in unnecessary and excessive cost related specifically to personnel radiation exposure, manpower, equipment and time.

3. A S/G ECT inpection will be performed during the next refueling outage and will consist of 100% of the tubes in each S/G. The areas of inspection in the tubes will be no less than those inspected during the March/April inspections.

4. During plant operation between now and refueling, continued close surveillance of S/G chemistry will be maintained. Appropriate corrective actions will be taken if the verified primary to secondary leakage exceeds any one of the following during this period:

- a) A sudden step increase of 150 gpd primary to secondary leakage occurs in any one of the three steam generators.
- b) Primary to secondary leakage in any one steam generator exceeds 250 gpd.
- c) An uptrend in primary to secondary leakage in any one S/G in excess of 15 gpd per day if leakage in that S/G exceeds 150 gpd.

This trend will be established using at least four valid consecutive daily samples. For the purpose of these other leak rate determinations for the above, a "valid" sample will be considered one which was collected with the plant at equilibrium conditions such that the sample represents actual S/G conditions.

Mr. Darrell G. Eisenhut

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The above immediate and long term remedial actions will ensure that the steam generators remain in a safe operating condition for the planned period of operation until the next refueling outage.

If you have any questions regarding this information, please contact our staff.

Yours very truly,

A handwritten signature in cursive script, appearing to read "E. E. Utley".

E. E. Utley
Executive Vice President
Power Supply and Customer Services

Enclosures

cc: J. D. Neighbors (NRC)
J. P. O'Reilly (NRC-I&E)

ATTACHMENT #1

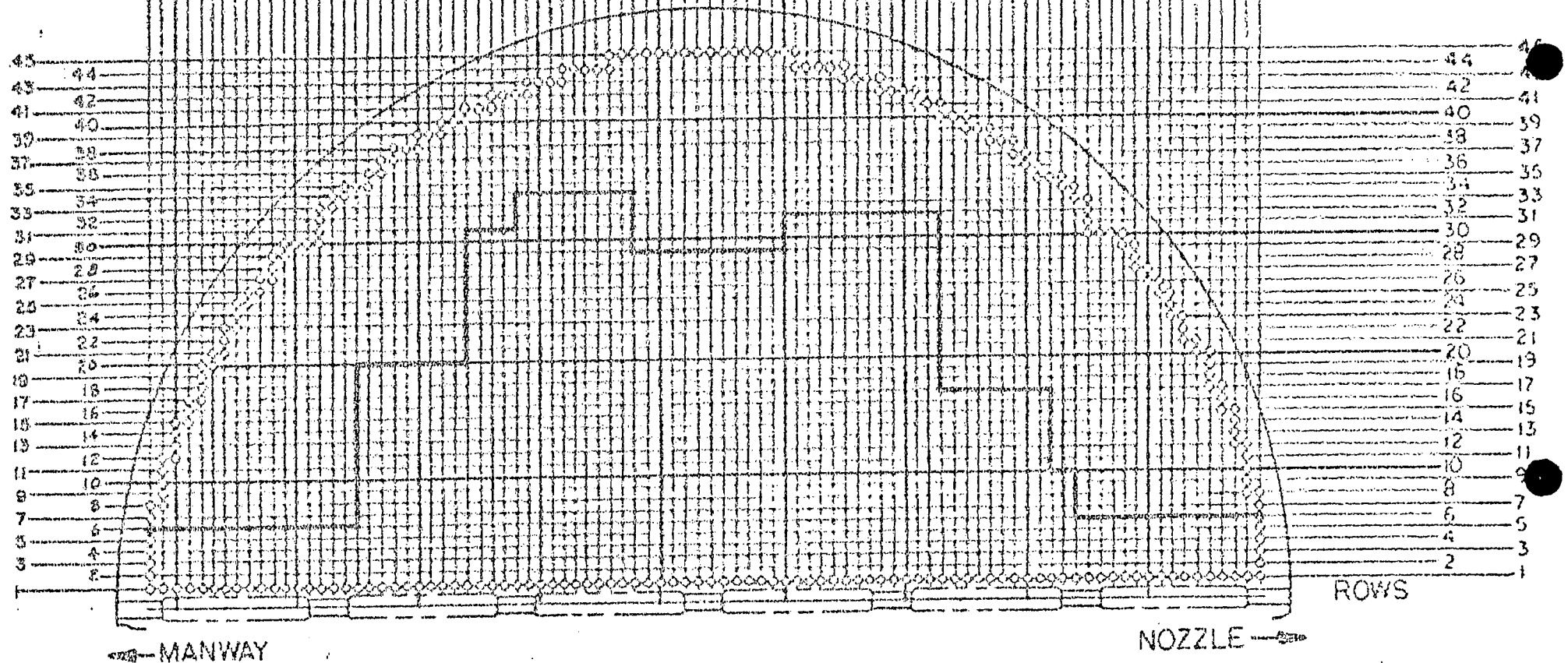
INSPECTION SCOPE

SERIES 44

91 848725 038 79777573 71 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 .

COLUMNS

92 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2



Inspection Scope "A" Steam Generator

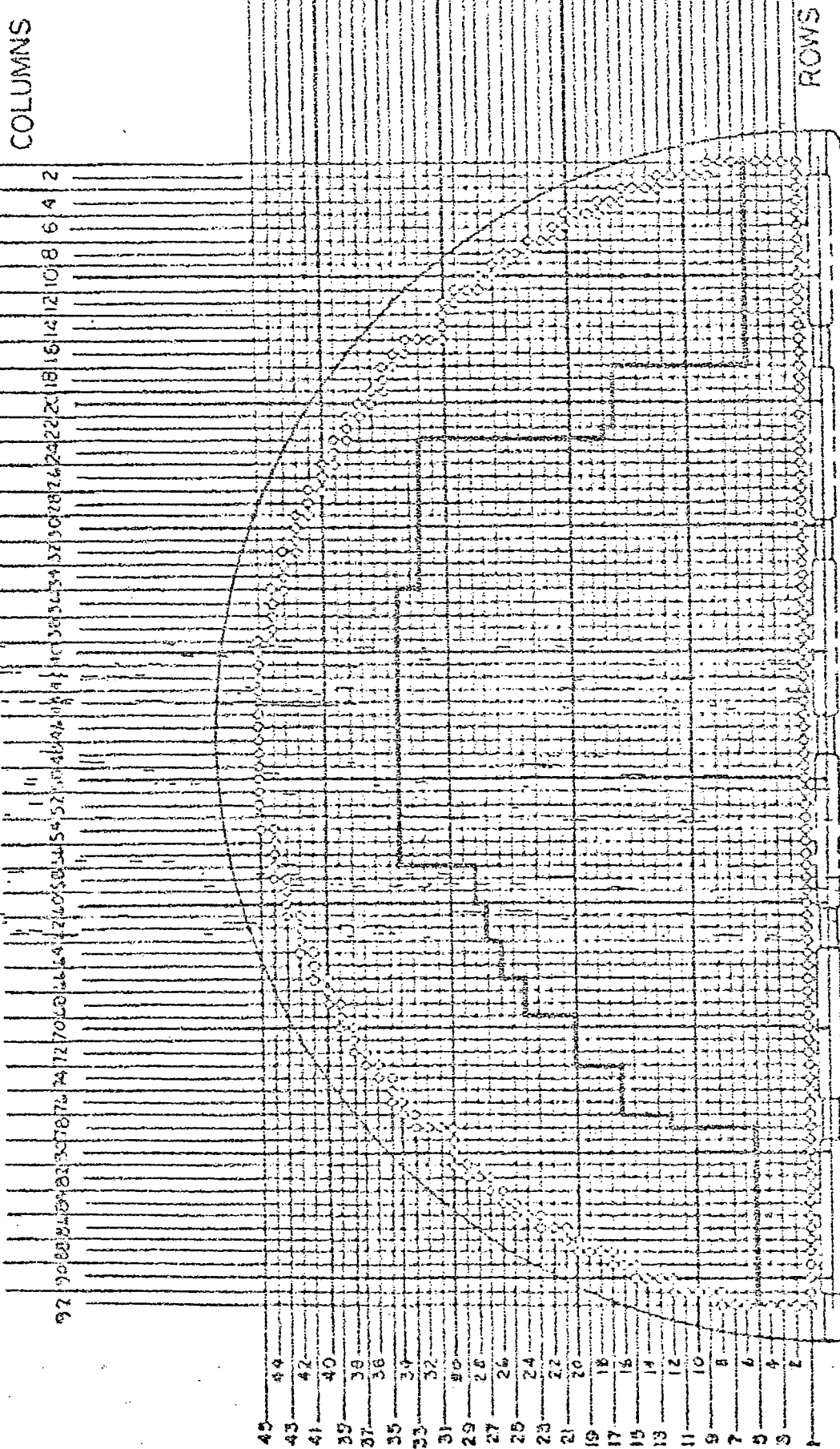
All tubes outside the dark line were inspected through the U-bend
All remaining tubes were inspected to the second support plate

SERIES 44

91 248120853 79717573 7129 33 4543 31 59 57 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

COLUMNS

92 9028120853 79717573 7129 33 4543 31 59 57 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



NOZZLE

MANWAY

Inspection Scope "B" Steam Generator

All tubes outside the dark line were inspected through the U-bend
All remaining tubes were inspected to the second support plate

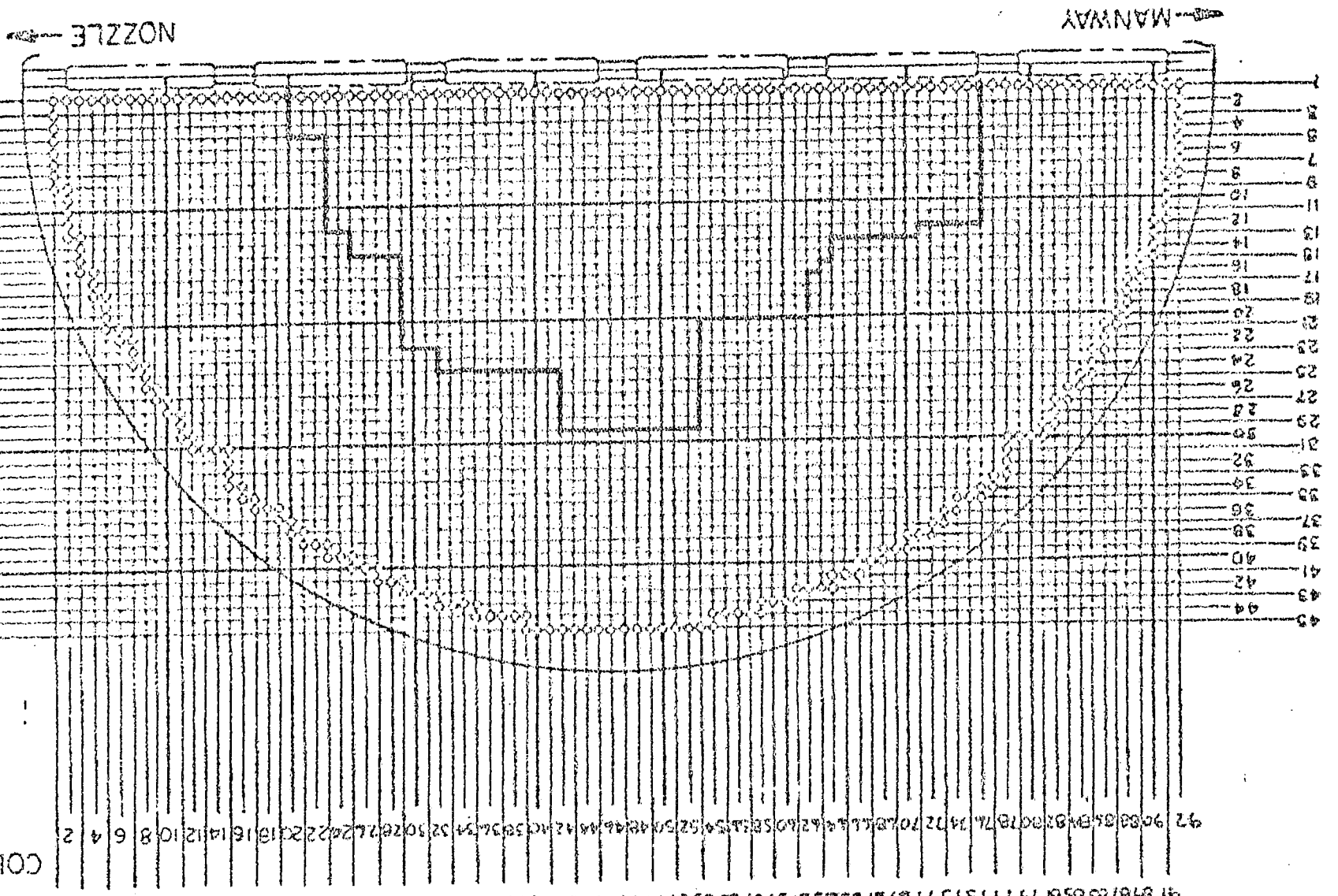
Note: Some tubes were inspected tubesheet to tubesheet from the outlet
to minimize inspection time

SERIES 44

91 090785 03W 79 71 75 73 71 67 67 65 63 61 59 57 53 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
 92 900805 05W 07 00 18 71 74 72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2

COLUMNS

ROWS



Inspection Scope "C" Steam Generator
 All tubes outside the dark line were inspected through the U-bend
 All remaining tubes were inspected to the second support plate
 Note: Some tubes were inspected tubeshet to tubeshet

SAFETY EVALUATION REPORT FOR

H. B. ROBINSON PLANT

H. B. Robinson Unit, during the recent steam generator inspection, discovered ECT indications in the tubesheet crevice, above the top of the tubesheet, at the tube support plates and in the "U" bends. The majority of these indications, compared with previous ECT inspections, have occurred since the last steam generator inspection. The discovery of the indications caused an expansion of the inspection sample to 100% in all generators. The ECT inspection was done in two patterns. The peripheral tubes were inspected through the "U" bend. The central region tubes were inspected to above the second tube support plate. This inspection resulted in 124 tubes requiring plugging based on the 47% ECT signal plugging criteria.

The integrity has been evaluated for the various load conditions imposed for these steam generators. The minimum tube wall that is required to maintain pressure boundary integrity under faulted condition loads is .013 inches of tube wall in the straight section of the tube and .021 inches of tube wall in the "U" bend region. This corresponds to 26% and 42% of the nominal .050 inch for the straight tube and the "U" bend, respectively.

The ECT data indicates that the degradation took place during the most recent operating period, therefore, a rate of degradation can be established. Each form and location of degradation establishes its own unique rate of degradation. This individual degradation rate is affected by the specific steam generator conditions and material characteristics at each location in the tube handle. This allows a degradation rate to be established for the tubes with indications that are still in service. The last operation period for steam generator A was 256 days. If a plugging

criteria of 36% in the "U" bends in applied, this means that the largest "U" bend indication still in service is a 35% indication. This allows a degradation rate to be established. A 35% indication occurring in 256 days yields a degradation rate of .14% per day. The difference between the 35% indication and the plugging criteria of 42% remaining wall is 23% wall available for the degradation to continue before the minimum wall in the "U" bend for faulted conditions is violated. An operating time of 164 days is calculated using the degradation rate of .14%/day and 23% available wall (NOTE: 19 days have already been used).

If the same criteria is applied to the straight section of tubing for steam generator A with a 47% plugging criteria and a 26% minimum wall, a degradation rate of .18%/day is established. This allows an operating period of 155 days.

The evaluation for steam generators B and C was based on an operating period of 275 days prior to this inspection. A plugging criteria of 29% for the B and C steam generators is applied to the "U" bend region. This will indicate a degradation rate of .14%/day. An operating period of 142 days is available before the minimum tube wall in the "U" bend is violated. This criteria for the straight section of tubing in steam generators B and C yields a degradation rate of .17%/day and an operating period of 164 days before the minimum tube wall is violated for the straight section.

This evaluation shows that the minimum operating time for any generator in either the straight or "U" bend section of the tubing is 142 days before the minimum tube wall for faulted conditions is violated. This is based on the plugging criteria of 36% in steam generator A "U" bends, 39% in steam generator B and C "U" bends, 47% in the straight sections for all three generators. The degradation rates are based on the previous operating periods of 256 days for steam generator A and 275 days for steam generators B and C.

ATTACHMENT #3

LIST OF PLUGGED TUBES

Tubes Plugged in "A" s/g

Row	Column	Date	Plugging Limit
9	24	4/80	47%
10	19	4/80	47%
13	18	4/80	47%
25	28	4/80	47%
10	28	4/80	47%
13	29	4/80	47%
10	31	4/80	47%
9	31	4/80	47%
5	32	4/80	47%
12	51	4/80	47%
10	39	4/80	47%
12	60	4/80	47%
6	74	4/80	47%
40	35	4/80	36%
27	73	4/80	36%
23	18	4/80	36%
23	16	4/80	36%
22	79	4/80	36%
23	86	4/80	36%
17	88	4/80	36%
17	85	4/80	36%
18	84	4/80	36%
19	84	4/80	36%
20	84	4/80	36%
15	78	4/80	36%
31	77	3/80	47%
33	77	3/80	47%
33	78	3/80	47%
34	76	3/80	47%
43	36	3/80	47%
43	37	3/80	47%
32	15	3/80	47%
30	12	3/80	47%
32	75	3/80	47%
32	74	3/80	47%
40	68	3/80	47%
28	17	3/80	47%
25	20	3/80	47%
26	10	3/80	47%
27	75	3/80	47%
27	74	3/80	47%

Row	Column	Date	Plugging Limit
32	71	3/80	47%
37	29	3/80	47%
22	13	3/80	47%
23	8	3/80	47%
23	7	3/80	47%
22	83	3/80	47%
23	83	3/80	47%
24	72	3/80	47%
21	7	3/80	47%
21	12	3/80	47%
19	8	3/80	47%
11	6	3/80	47%
14	85	3/80	47%
12	87	3/80	47%
11	88	3/80	47%
18	86	3/80	47%
18	9	3/80	47%
19	86	3/80	47%
*31	53	3/80	47%
*30	48	2/80	47%

Tubes Plugged "B" s/g

16	43	4/80	47%
24	44	4/80	47%
27	37	4/80	47%
28	25	4/80	47%
19	45	4/80	47%
19	28	4/80	47%
26	46	4/80	47%
22	38	4/80	47%
23	46	4/80	47%
23	41	4/80	47%
24	37	4/80	47%
23	45	4/80	47%
16	45	4/80	47%
13	39	4/80	47%
16	44	4/80	47%
16	39	4/80	47%
16	41	4/80	47%
14	44	4/80	47%
14	42	4/80	47%
14	41	4/80	47%
15	38	4/80	47%
16	46	4/80	47%
12	41	4/80	47%
12	43	4/80	47%

Row	Column	Date	Plugging Limit
14	39	4/80	47%
9	41	4/80	47%
9	38	4/80	47%
9	39	4/80	47%
10	27	4/80	47%
16	48	4/80	47%
23	48	4/80	47%
24	26	4/80	47%
10	48	4/80	47%
30	52	4/80	47%
30	51	4/80	47%
18	50	4/80	47%
5	48	4/80	47%
5	21	4/80	47%
3	20	4/80	47%
14	18	4/80	47%
29	23	4/80	47%
24	59	4/80	47%
31	56	4/80	47%
23	56	4/80	47%
27	62	4/80	47%
22	63	4/80	47%
4	27	4/80	47%
7	54	4/80	47%
3	71	4/80	47%
14	70	4/80	47%
14	4	4/80	47%
11	4	4/80	47%
14	78	4/80	47%
29	51	4/80	47%
40	48	4/80	47%
16	85	4/80	47%
9	83	4/80	47%
25	12	4/80	47%
2	26	4/80	47%
33	54	4/80	47%
23	20	4/80	47%
10	84	4/80	47%
21	83	4/80	47%
23	19	4/80	47%
31	78	4/80	47%
17	20	4/80	47%
29	19	4/80	47%
37	47	4/80	47%
30	79	4/80	47%
38	21	4/80	47%
41	60	4/80	47%
37	42	4/80	47%
36	42	4/80	47%
45	49	4/80	47%
38	53	4/80	47%
17	52	4/80	47%
35	55	4/80	47%
43	50	4/80	47%

Row	Column	Date	Plugging Limit
26	73	4/80	47%
16	4	4/80	47%
16	87	4/80	47%
23	8	4/80	36%
40	51	4/80	36%
43	59	4/80	36%
43	60	4/80	36%

Tubes Plugged "C" s/g

3	24	4/80	47%
4	25	4/80	47%
5	25	4/80	47%
4	27	4/80	47%
5	30	4/80	47%
5	51	4/80	47%
17	30	4/80	47%
4	33	4/80	47%
15	34	4/80	47%
10	38	4/80	47%
13	38	4/80	47%
16	38	4/80	47%
16	40	4/80	47%
3	43	4/80	47%
10	46	4/80	47%
21	46	4/80	47%
12	50	4/80	47%
19	88	4/80	47%
3	63	4/80	47%
2	67	4/80	47%
3	68	4/80	47%
19	71	4/80	47%
14	68	4/80	47%
15	80	4/80	47%
15	83	4/80	47%
24	31	4/80	47%
14	6	4/80	47%
19	54	4/80	47%
7	74	4/80	47%
24	83	4/80	39%
21	83	4/80	39%
25	81	4/80	39%
24	81	4/80	39%
27	79	4/80	39%
25	22	4/80	39%
27	15	4/80	39%
34	44	3/80	47%
39	47	3/80	47%
39	49	3/80	47%

Row	Column	Date	Plugging Limit
38	44	3/80	47%
37	48	3/80	47%
36	48	3/80	47%
38	49	3/80	47%
34	77	3/80	47%
35	56	3/80	47%
33	77	3/80	47%
43	35	3/80	47%
43	34	3/80	47%
*26	44	3/80	47%
*17	22	3/80	47%
*15	21	3/80	47%
*16	22	3/80	47%

* Indicated >47% defect in 1979 when plugging limit was 50%. These tubes were plugged either on the basis of the 1979 inspection or were E/C tested in 3/80 and plugged on the basis of that inspection.

ATTACHMENT #4

REPORTABLE INDICATIONS AND HISTORICAL DATA

Steam Generator A Reportable Indications

Row	Column	Through Wall	Location	Insp. Date
31	27	67	6th I sup. to 1st AUB	3/80
33	27	56	3rd I sup. + 1"	3/80
33	28	100	5th I sup. + 1"	3/80
34	26	47	6th I sup. to 1st AUB	3/80
43	36	100	4th I sup + 1"	3/80
43	37	47, 53	5th I sup + 1", 4th I sup + 1"	3/80
32	15	50	4th AUB	3/80
30	12	65	2nd AUB	3/80
32	25	88	6th I sup. to 1st AUB	3/80
32	24	64	6th I sup. to 1st AUB	3/80
40	68	88	6th I sup. + 22"	3/80
28	17	55	6th I sup. + 7"	3/80
25	20	63	6th I sup. + 5"	3/80
26	10	59	6th I sup. + 19"	3/80
27	25	58	6th I sup. + 22"	3/80
27	24	22	6th I sup. + 30"	3/80
32	21	21, 21	6 I sup. + 24" & + 30"	3/80
37	29	20	Top of ITS	3/80
22	13	56	6th I sup. + 16"	3/80
23	8	60	6th I sup + 19"	3/80
23	7	47	6th I sup + 57"	3/80
22	83	21	6th I sup. + 22"	3/80
23	83	20	6th I sup. + 18"	3/80
24	72	83	6th I sup + 20"	3/80
21	7	25	6th I sup + 16"	3/80
21	12	53	6th I sup + 11"	3/80
19	8	48	6th I sup + 14"	3/80

Steam Generator A

Row	Column	Through Wall	Location	Insp. Date
11	6	67	6th I sup. + 6"	3/80
14	85	55	6th I sup + 2"	3/80
17	87	55	6th I sup + 4"	3/80
11	88	65	6th I sup + 4"	3/80
18	86	61	6th I sup + 10"	3/80
18	7	52	6th I sup + 19"	3/80
19	86	57	6th I sup + 14"	3/80
21	53	48	Top of ITS	3/80
30	48	53	Top of ITS	3/80
32	54	38	Top of ITS	3/80
16	66	46	Top of ITS	3/80
40	35	43	6th I sup + 8"	3/80
27	23	40	6th I sup. + 5	3/80
23	18	45	6th I sup + 8"	3/80
23	16	45	6th I sup + 8"	3/80
22	12	44	6th I sup + 22"	3/80
23	10	32	6th I sup + 19"	3/80
22	79	42	6th I sup + 11"	3/80
23	86	45	6th I sup + 13"	3/80
24	74	35	6th I sup + 13"	3/80
32	68	30	Top of ITS	3/80
15	81	30	6th I sup + 8"	3/80
17	82	38	6th I sup + 15"	3/80
17	85	39	6th I sup. + 12"	3/80
18	84	37	6th I sup + 12"	3/80
19	84	37	6th I sup. + 15"	3/80
20	84	37	6th I sup. + 8"	3/80

Steam Generator A

Row	Column	Through Wall	Location	Insp. Date
15	28	45	6th I sup + 2"	3/80
12	88	30	6th I sup + 6"	3/80
12	8	25	6th I sup + 8"	3/80
9	24	90	ITS-14	4/80
10	19	86	ITS-16	4/80
13	18	92	ITS-16	4/80
25	28	80	ITS + 3	4/80
10	28	89	ITS-14	4/80
13	29	66	ITS-8	4/80
10	31	84	ITS-14	4/80
9	31	89	ITS-8	4/80
5	32	80	ITS-14	4/80
5	33	88	ITS-11	4/80
12	51	87	ITS-5	4/80
10	39	95	ITS-8	4/80
12	60	80	ITS-10	4/80
6	74	85	ITS-10	4/80
8	15	33	Top ITS	4/80
7	15	20	Top ITS	4/80
7	16	35	Top ITS	4/80
8	16	28	Top ITS	4/80
9	16	35	Top ITS	4/80
	20	20	Top ITS	4/80
3	20	35	Top ITS	4/80
3	21	40	Top ITS	4/80
11	22	38	Top ITS	4/80
12	23	36	Top ITS	4/80

Steam Generator A

Row	Column	Through Wall	Location	Insp. Date
1 5	2 5	2 3	Top ITS	4/80
1 4	2 5	2 2	Top ITS	4/80
1 2	3 6	2 7	Top ITS	4/80
1 3	2 6	3 2	Top ITS	4/80
1 7	2 6	2 5	Top ITS	4/80
1 4	2 7	2 7	Top ITS	4/80
1 2	2 7	2 2	Top ITS	4/80
9	2 7	2 0	Top ITS	4/80
1 2	2 8	2 7	Top ITS	4/80
1 3	2 8	2 1	Top ITS	4/80
1 4	2 8	2 5	Top ITS	4/80
1 5	2 8	2 5	Top ITS	4/80
1 4	2 9	2 5	Top ITS	4/80
1 2	2 9	2 6	Top ITS	4/80
1 2	3 0	3 0	Top ITS	4/80
1 3	3 0	3 0	Top ITS	4/80
1 4	3 0	2 0	Top ITS	4/80
1 5	3 1	2 6	Top ITS	4/80
1 4	3 1	2 9	Top ITS	4/80
1 3	3 1	2 6	Top ITS	4/80
1 2	3 3	3 2	Top ITS	4/80
1 2	3 4	3 0	Top ITS	4/80
1 8	3 4	3 2	Top ITS	4/80
6	3 5	4 3	Top ITS	4/80
6	3 7	2 0	Top ITS	4/80
2 3	3 9	4 1	Top ITS	4/80
2 5	5 3	2 5	Top ITS	4/80

Steam Generator A

Row	Column	Through Wall	Location	Insp. Date
3 2	5 4	4 1	Top ITS	4/80
1 8	5 4	2 0	Top ITS	4/80
1 8	5 7	2 5	Top ITS	4/80
1 9	5 7	2 5	Top ITS	4/80
2 0	5 7	2 0	Top ITS	4/80
1 8	5 8	2 7	Top ITS	4/80
1 6	5 8	2 7	Top ITS	4/80
1 1	5 8	3 0	Top ITS	4/80
8	5 8	3 0	Top ITS	4/80
1 6	5 9	4 5	Top ITS	4/80
2 0	5 9	2 1	Top ITS	4/80
2 4	5 9	3 6	Top ITS	4/80
2 4	6 0	2 4	Top ITS	4/80
2 1	6 0	3 2	Top ITS	4/80
1 3	6 0	2 5	Top ITS	4/80
1 2	6 1	2 5	Top ITS	4/80
1 4	6 1	3 6	Top ITS	4/80
1 5	6 1	2 5	TS+3	4/80
1 6	6 1	2 9	Top ITS	4/80
1 7	6 1	2 0	Top ITS	4/80
2 0	6 1	3 8	Top ITS	4/80
2 1	6 1	4 6	Top ITS	4/80
2 4	6 2	2 4	Top ITS	4/80
1 8	6 2	2 2	Top ITS	4/80
1 5	6 2	2 0	Top ITS	4/80
1 4	6 2	3 7	TS+2	4/80
5	6 2	3 8	Top ITS	4/80

Steam Generator A

Row	Column	Through Wall	Location	Insp. Date
14	63	34	Top ITS	4/80
17	64	20	Top ITS	4/80
12	65	30	Top ITS	4/80
13	65	20	Top ITS	4/80
16	65	31	Top ITS	4/80
17	65	30	Top ITS	4/80
18	66	20	Top ITS	4/80
17	66	20	Top ITS	4/80
16	66	41	Top ITS	4/80
14	66	24	Top ITS	4/80
12	66	38	Top ITS	4/80
11	66	25	Top ITS	4/80
10	67	20	Top ITS	4/80
11	67	28	Top ITS	4/80
12	67	35	Top ITS	4/80
13	67	22	Top ITS	4/80
14	67	22	Top ITS	4/80
15	67	38	Top ITS	4/80
16	67	27	Top ITS	4/80
17	67	24	Top ITS	4/80
18	67	30	Top ITS	4/80
18	68	31	Top ITS	4/80
17	68	30	Top ITS	4/80
16	68	44	Top ITS	4/80
15	68	39	Top ITS	4/80
13	68	22	Top ITS	4/80
13	69	21	Top ITS	4/80

Steam Generator A

[illegible]


NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION
EDDY CURRENT EXAMINATION REPORT

 DATA SET _____ OF _____
 SHEET 1 OF 12
PLANT: H B ROBINSONUNIT: 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____

GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
<u>13</u>	<u>I</u>	<u>15</u>	<u>38</u>						<u>TS-14</u>	<u>100</u>					<u>—</u>
		<u>28</u>	<u>39</u>			<u>!</u>	<u>TS</u>	<u>28</u>							
		<u>28</u>	<u>38</u>				<u>TS</u>	<u>44</u>							
		<u>28</u>	<u>25</u>								<u>TS+04</u>	<u>55</u>			<u>—</u>
		<u>27</u>	<u>37</u>				<u>TS</u>	<u>73</u>							<u>—</u>
		<u>26</u>	<u>46</u>						<u>TS-14</u>	<u>67</u>					<u>—</u>
		<u>26</u>	<u>37</u>				<u>TS</u>	<u>37</u>							
		<u>26</u>	<u>30</u>				<u>TS</u>	<u>37</u>							
		<u>26</u>	<u>29</u>				<u>TS</u>	<u>35</u>							
		<u>25</u>	<u>28</u>				<u>TS</u>	<u>28</u>							
		<u>25</u>	<u>29</u>				<u>TS</u>	<u>28</u>							
		<u>25</u>	<u>30</u>				<u>TS</u>	<u>42</u>							
		<u>25</u>	<u>35</u>				<u>TS</u>	<u>27</u>							
		<u>25</u>	<u>36</u>				<u>TS</u>	<u>25</u>							
		<u>25</u>	<u>44</u>				<u>TS</u>	<u>46</u>							
		<u>24</u>	<u>44</u>				<u>TS</u>	<u>54</u>							<u>—</u>
		<u>24</u>	<u>43</u>				<u>TS</u>	<u>35</u>							
		<u>24</u>	<u>37</u>				<u>TS</u>		<u>TS-16</u>	<u>81</u>					<u>—</u>
		<u>24</u>	<u>29</u>				<u>TS</u>	<u>26</u>							
		<u>23</u>	<u>26</u>				<u>TS</u>	<u>41</u>							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

We hereby certify the tubes listed have been examined with the procedure noted. This report represents Conam Inspection's interpretation of the results obtained from the examination and is not to be construed as a guaranty or warranty of the condition of the materials tested. Conam Inspection shall not be held liable for misinterpretation of conditions, loss, damage, injury or death arising from or attributable to delay preceding a test or subsequent to performance of a test.



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 2 OF 12

PLANT: HB ROBINSON

UNIT 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	I	23	27				TS	40							
		23	41	✓					TS-06	87					—
		23	45	✓					TS-14	85					—
		23	46	✓					TS-14	73					—
		22	38	✓					TS-08	80					—
		22	26				TS	47							
		21	26				TS	40							
		19	28	✓					TS-16	83					—
		19	45	✓					TS-14	65					—
		18	31				TS	25							
		16	46	✓			TS	76							—
		16	45	✓			TS	77	TS-16	90					—
		16	44	✓					TS-16	83					—
		16	43	✓			I		TS-16	83					—
		16	41	✓					TS-16	65					—
		16	39	✓					TS-16	79					—
		14	44	✓					TS-16	81					—
		14	42	✓					TS-16	87					—
		14	41	✓					TS-16	83					—
		14	39	✓					TS-14	86					—

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 3 OF 12

PLANT: HB ROBINSON

UNIT 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____

GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
15	I	13	39	x					TS-16	100					—
		12	43	x					TS-14	74					—
		12	41						TS-16	87					—
		11	36				TS	44							
		10	38	x			TS	34							
		10	27	x					TS-07	97					—
		9	38	x					TS-16	84					—
		9	39	x					TS-16	86					—
		9	41	x					TS-14	84					—
		9	43				TS	38							
		9	44	x			TS	24							
		8	44				TS	43							
		5	45				TS	44							
		5	46				TS	36							
		1	3	x							TS+08	39			
		14	18	x							TS+03	56			—
		11	20				TS	25							
		9	20				TS	41							
		3	20				1		TS-16	82					—
		5	21	x					TS-14	84					—

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 4 OF 12

PLANT: H B ROBINSON
TYPE TEST: _____
TEST FREQUENCY: _____

UNIT: 2
TEST PROCEDURE NO. _____
MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD. X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
13	1	13	21				TS	41							
		11	22	✓			TS	32							
		4	22				TS	24							
		11	23				TS	35							
		29	23	✓			TS	74							—
		5	24	✓			TS	27							
		2	26	✓					TS		TS +2	67			—
		4	27	✓					TS-16	85					—
		4	46				TS	43							
		29	26	✓					TS-14	90					—
		29	27	✓							TS +0.5	33			
		29	28				TS	28							
		34	38	✓			TS	39							
		29	38				TS	25							
		29	39	✓			TS	40							
		30	40	✓			TS	25							
		26	48	✓			TS	37							
		23	48	✓					TS-11	87					—
		21	48				TS	45							
		16	48	✓							TS +10	60			—

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____
DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____
DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 5 OF 12

PLANT: H B ROBINSON

UNIT 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
<u>B</u>	<u>I</u>	<u>10</u>	<u>48</u>	<u>X</u>					<u>TS-07</u>	<u>95</u>					<u>—</u>
		<u>6</u>	<u>48</u>				<u>TS</u>	<u>41</u>							
		<u>5</u>	<u>48</u>				<u>TS</u>	<u>52</u>							<u>—</u>
		<u>6</u>	<u>49</u>				<u>TS</u>	<u>42</u>							
		<u>9</u>	<u>49</u>				<u>TS</u>	<u>30</u>							
		<u>26</u>	<u>49</u>				<u>TS</u>	<u>30</u>							
		<u>28</u>	<u>50</u>				<u>TS</u>	<u>25</u>							
		<u>27</u>	<u>50</u>				<u>TS</u>	<u>25</u>							
		<u>26</u>	<u>50</u>				<u>TS</u>	<u>25</u>							
		<u>9</u>	<u>50</u>				<u>TS</u>	<u>38</u>							
		<u>9</u>	<u>51</u>				<u>TS</u>	<u>30</u>							
		<u>26</u>	<u>51</u>				<u>TS</u>	<u>46</u>							
		<u>27</u>	<u>51</u>				<u>TS</u>	<u>30</u>							
		<u>28</u>	<u>51</u>				<u>TS</u>	<u>40</u>							
		<u>29</u>	<u>51</u>				<u>TS</u>	<u>48</u>							<u>—</u>
		<u>30</u>	<u>51</u>						<u>TS-20</u>	<u>95</u>					<u>—</u>
		<u>30</u>	<u>52</u>						<u>TS-14</u>	<u>93</u>					<u>—</u>
		<u>9</u>	<u>53</u>				<u>TS</u>	<u>43</u>							
		<u>10</u>	<u>53</u>				<u>TS</u>	<u>40</u>							
		<u>30</u>	<u>53</u>				<u>TS</u>	<u>33</u>							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 6 OF 12

PLANT: H B ROBINSON

UNIT 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____

GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	1	33	54	x							TS+09	82			—
		26	54				TS	34							
		23	54				TS	43							
		11	54				TS	46							
		10	54				TS	45							
		7	54	x							TS+12	79			—
		7	55	x			TS	33							
		9	55				TS	42							
		10	55				TS	32							
		11	55				TS	41							
		20	55				TS	24							
		26	55								TS+01	30			
		25	55				TS	44							
		31	56								TS+10	80			—
		24	56				TS	43							
		23	56						TS-14	84					—
		12	56	x			TS	20							
		11	56				TS	43							
		13	59				TS	43							
		15	59				TS	43							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 7 OF 12

PLANT: H B ROBINSON

UNIT: 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
13	I	16	59				TS	29							
		18	59	✓			TS	24							
		24	59								TS+01	49			—
		24	60	X			TS	30							
		23	60				TS	38							
		11	60	X			TS	28							
		16	60	X			TS	31							
		12	60				TS	37							
		6	61	X			TS	25							
		21	61				TS	46							
		22	61				TS	44							
		23	61				TS	44							
		24	61				TS	42							
		27	62	X							TS+06	86			—
		23	62	X			TS	28							
		21	62				TS	35							
		19	62	X			TS	21							
		16	62				TS	34							
		14	62	X			TS	30							
		14	63				TS	32							

ET OPERATOR/LEVEL: _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 8 OF 12

PLANT: 11B PUGMASON

UNIT 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD. X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
15	I	16	63				TS	27							
		21	63	X			TS	38							
		22	63				TS	50							
		26	63	X							TS+06	34			
		19	64				TS	36							
		18	64				TS	29							
		14	64				TS	36							
		13	64	X			TS	21							
		6	65	X							TS+01	24			
		14	65				TS	31							
		18	65				TS	34							
		19	65				TS	41							
		20	65				TS	35							
		19	66	X			TS	20							
		18	66				TS	30							
		12	66	X			TS	22							
		6	67	X							TS+01	32			
		8	67	X							TS+01	31			
		17	67				TS	21							
		14	69				TS	23							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 9 OF 13

PLANT: H B ROBINSON

UNIT: 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	I	17	69				TS	45							
		14	70								TS+01	48			-
		9	70				TS	22							
		8	70				TS	25							
		3	71	y							TS+06	80			-
		7	71				TS	27							
		8	71				TS	27							
		9	71				TS	21							
		6	74	x							TS+01	27			
		9	75								TS+01	31			
		43	32	x							1+01	42			
		43	35	x							2+01	41			
		43	36	x							2+01	41			
		43	39	x							2+01	41			
		37	42	x			TS	74							-
		36	42	x			TS	67						60+41 57	-
		37	47	x										60+91 57	-
		40	48	x										60+39 65	-
		32	76	x							10+01	23			
		32	77	x							47+03	43			

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 10 OF 12

PLANT: HB ROBINSON

UNIT: 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	I	34	77								10	24			
		33	78								10 +01	29			
		32	78								10 +01	21			
		31	78								4I+03	63			—
		29	79								20 +01	37			
		30	79						5I+02	34	4I+02	49			—
		30	80						5I+02		3I+01	25			
		29	80								20 +01	32			
		29	81						10 +01	35	20 +01	31			
		30	81								10 +01	20			
		20	5						TS+17	36	TS+17				
		20	6										6I+12	29	—
		23	8										60+00	42	—
		43	35										6I+137	38	
		10	2								5I+01	40			
		9	2								3I+01	31			
		11	3								4I+01	22			
		14	4										6I+09	64	—
		12	4								4I+01	46			
		11	4								4I+01	49			—

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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ALL TUBES WITH REPORTABLE INDICATIONS



NUCLEAR ENERGY SERVICES, INC. CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

 DATA SET _____ OF _____
 SHEET 11 OF 12
PLANT: H.B. ROBINSONUNIT: 2

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD. X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	I	25	12								6I+42	49	6I+59	39	—
		16	85										6I+03	54	—
		10	84										6I+33	79	—
		25	83										60+30	27	
		21	83										6I+11	49	—
		9	83										6I+16	73	—
		19	81										6I+35	31	
		17	81										6I+36	23	
		33	17								10+01	31			
		32	17								10+01	31			
		29	19										6I+06	77	—
		23	19								60+59	66	60+42	44	—
		19	19						015+01	23	60+39	66	60+42	44	—
		18	19				F		OTS	35	OTS+01	35			
		17	19				TS	42	OTS	32	OTS	35			
		17	20				TS	42	TS	55	OTS	35			—
		18	20								OTS	35			
		19	20												
		23	20										6I+08	54	—
		38	21								20	81			—

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 12 OF 12

PLANT: H B Robinson

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
B	I	21	21				OTS	20							
		20	21				OTS	25							
		19	21				OTS	30							
		18	21				OTS	30							
		19	22				OTS	40							
		20	22				OTS	35							
		21	22				OTS	33							
		45	49								2I+01	35			
		40	51								60+39	40			
		38	53				TS+03	71							
		35	55								6I+08	54			
		43	59								6I+75	45			
		43	60								6I+75	45			
		41	60								6I+76	57			
		26	73								6I+06	62			
		43	50						TS+01	54					
		18	50										TS-14	90	
		14	78										TS-14	86	
		16	50						TS+10	25					
		20	7						TS		6I+12	29			

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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SHEET _____ OF _____

UNIT _____

TEST PROCEDURE NO. _____

MATERIAL _____ OD _____

OD _____ GAUGE _____

AN AUTOMATION INDUSTRIES, INC., COMPANY

H. B. Robinson
Unit 2
"C" Steam Generator
Reportable Indications

Tubes Plugged During Steam Generator Outage, March 1980

Row	Column	Defect Depth %	Location
39	44	63	between 2nd AUB & 3rd AUB
39	47	55, 53	between 2nd AUB & 3rd AUB
39	49	62	between 2nd AUB & 3rd AUB
38	44	61	between 2nd AUB & 3rd AUB
37	48	100	between 1st AUB & 2nd AUB
36	48	86	between 1st AUB & 2nd AUB
38	49	52	between 2nd AUB & 3rd AUB
34	22	70	5th inlet support + 1" ✓
35	56	49	between 6th inlet support & 1st AUB ✓
33	77	53	1st outlet support ✓
43	35	71, 67	1st outlet support, 2nd inlet support ✓
43	34	71	1st outlet support ✓
26	44	50 (47% in '79 Insp.)	above outlet tubesheet
17	22	57 (48% in '79 Insp.)	above outlet tubesheet
15	21	—	(50% in '79 inspection)
16	22	—	(50% in '79 inspection)
38	47	—	Plugging Error



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 1 OF _____

PLANT: HB ROBINSON

UNIT 2

TYPE TEST: 11400001/11400002

TEST PROCEDURE NO. _____

TEST FREQUENCY: 400 kHz

MATERIAL 304 SS OD 7.5 GAUGE 10

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	10	22	X			TS	45							
		12	23				TS	20							
		11	23	X			TS	20							
		10	23				TS	39							
		9	23	X			TS	30							
		8	23	X			TS	28							
		7	23	X			TS	23							
		6	23	X			TS	23							
		5	23	X			TS	23							
		5	23	X			TS	40							
		3	24	X					TS-14	95			TS-14		
		4	24	X			TS	25							
		5	24	X			TS	23							
		6	24	X			TS	27							
		7	24	X			TS	25							
		8	24	X			TS	25							
		9	24	X			TS	28							
		10	24	X			TS	20							
		11	24				TS	32							
		12	24	X			TS	34							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 2 OF _____

PLANT: _____

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL: _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	13	24	X			TS	25							
		15	24	X			TS	25							
		15	25	X			TS	25							
		14	25				TS	25							
		10	25	X			TS	26							
		5	25				TS	29							
		4	25				TS	50							
		4	26	X			TS	20							
		5	26	✓			TS	27							
		7	26	✓			TS	20							
		8	26	✓			TS	23							
		9	26	X			TS	27							
		10	26	✓			TS	22							
		11	26	✓			TS	25							
		12	26	✓			TS	29							
		12	27	✓			TS	29							
		10	27	✓			TS	28							
		9	27	✓			TS	31							
		8	27	✓			TS	25							
		4	27				TS	40	TS-14	51					

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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TUBES WITH REPORTABLE INDICATIONS


NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION
EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____

SHEET 3 OF _____PLANT: H/B ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____

OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	22	29				TS	25							
		20	29	X			TS	35							
		19	29				TS	27							
		17	29				TS	34							
		16	29	✓			TS	25							
		15	29	✓			TS	25							
		13	29	✓			TS	28							
		5	30	X			#		TS-14	93					
		13	30				TS	30							
		14	30				TS	30							
		16	30				TS	25							
		17	30				TS	55							
		18	30				TS	35							
		22	31				TS	25							
		20	31				TS	31							
		18	31				TS	34							
		17	31				TS	35							
		14	31				TS	32							
		13	31				TS	21							
		6	32				TS	31							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 4 OF _____

PLANT: HB ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	12	32	x			TS	27							
		13	32				TS	23							
		18	32				TS	34							
		20	32				TS	40							
		23	32				TS	28							
		24	32				TS	38							
		22	33				TS	34							
		18	33				TS	30							
		15	33				TS	35							
		14	33				TS	35							
		6	33	y			TS	31							
		4	33	y					TS-14	83					—
		6	33	x			TS	40							
		15	34	x					TS-05	95	TS-14	95			—
		17	34				TS	35							
		23	35				TS	23							
		22	35				TS	35							
		6	35				TS	35							
		5	35	x			TS	29							
		5	36	x			TS	23							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 5 OF _____

PLANT: H B ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	6	36	x			TS	27							
		14	36				TS	25							
		15	36				TS	38							
		15	37				TS	41							
		10	37				TS	34							
		10	38	x					TS-08	92					7
		11	38				TS	25							
		13	38	x					TS-08	94					—
		15	38				TS	32							
		16	38	x			TS	30	TS-06	87					—
		24	39				TS	25							
		15	39				TS	31							
		11	39				TS	35							
		9	39				TS	32							
		15	40				TS	25							
		16	40	x			TS	80							—
		17	41				TS	25							
		15	41				TS	28							
		7	42				TS	30							
		8	42				TS	32							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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TUBES WITH REPORTABLE INDICATIONS



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____

SHEET 6 OF _____PLANT: HB ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL: _____

OD: _____ GAUGE: _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	15	42				TS	28							
		20	42	x			TS	22							
		27	42				TS	35							
		6	43	x			1		TS-14	85					—
		5	43						TS-14	80					—
		3	43				TS	48							—
		6	44	x			TS	30							
		9	44				TS	29							
		7	45				TS	45							
		6	45				TS	34							
		6	46				TS	35							
		7	46				TS	43							
		16	46				TS	49							
		16	46	x			TS		TS-14	80					—
		21	46	x							TS+04	79			—
		8	47				TS	40							
		6	48	x			TS	30							
		8	48				TS	34							
		11	44				TS	31							
		9	44				TS	36							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 7 OF _____

PLANT: HB ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	8	49	y			TS	25							
		7	49	y			TS	30							
		11	50	x			TS	24							
		12	50				TS	49							
		5	51	x			E				TS+06	79			
		12	52				TS	40							
		13	52				TS	30							
		25	52				TS	30							
		26	52				TS	44							
		25	53				TS	30							
		11	53				TS	35							
		10	53				TS	20							
		9	53	x			TS	20							
		17	54				TS	30							
		19	54				TS	49							
		14	56				TS	33							
		15	56	x			TS	25							
		20	56	x			TS	30							
		8	58				TS	20							
		20	59				TS	42							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 8 OF _____

PLANT: HB ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	19	59				TS	33							
		16	59				TS	41							
		14	59				TS	27							
		9	59				TS	45							
		14	60				TS	44							
		15	60				TS	23							
		17	60				TS	24							
		16	61				TS	31							
		15	61				TS	20							
		14	61				TS	29							
		13	62				TS	32							
		15	62				TS	29							
		16	63				TS	32							
		15	63				TS	25							
		14	63				TS	31							
		13	63				TS	38							
		3	63	X							TS #6	73			—
		13	64				TS	36							
		15	64				TS	30							
		13	65				TS	25							

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATORS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 9 OF _____

PLANT: HB ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	1	2	67						#		TS+08	55			—
		3	68	x							TS+06	89			—
		13	69				TS	30							
		9	70				TS	34							
		12	70				TS	32							
		13	70				TS	32							
		6	72				TS	22							
		11	73				TS	23							
		8	73				TS	36							
		6	73				TS	29							
		7	74				TS	49							—
		8	74				TS	20							
		11	74	x			TS	30							
		9	75				TS	37							
		12	76				TS	33							
		19	88	x									6I+36	78	—
		21	84	x									6I+42	25	
		24	84	x									6I+47	33	
		26	83	x							6I+46	23	6I+28	32	
		25	83	x							6I+50	23	6I+67	23	

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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TUBES WITH REPORTABLE INDICATIONS



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 10 OF _____

PLANT: H.B. ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	24	83	x							6I+81	40	6I+64	30	
		23	83	✓							6I+28	25	6I		
		22	83	✓							6I+56	25	6I+42	25	
		21	83	✓									6I+42	43	
		16	83	✓									6I+56	33	
		14	83	✓									6I+45	23	
		13	83	✓			TS	56							—
		14	82	✓									6I+42	30	
		19	82	✓							6I+37	20	6I+50	20	
		24	82	✓									6I+59	20	
		27	82	✓									6I+67	20	
		25	81	✓					6I+84	46	6I+73	20	6I+45	33	
		24	81	x					6I+78	33	6I+60	32	6I+45	43	
		23	81	✓					6I		6I+56	32	6I+42	35	
		15	80	x					TS+01	50					—
		27	79	✓									6I+70	43	
		24	79	✓							6I+42	20	6I+59	20	
		19	79	✓							6I+34	23	6I+45	24	
		18	79	✓							6I+56	23	6I+51	23	
		24	76	x							6I+36	25	6I+50	25	

ET OPERATOR/LEVEL _____

DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____

DATE: _____ REMARKS: _____

DATA CONTROLLER: _____

DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

TUBES WITH REPORTABLE INDICATIONS

EDDY CURRENT EXAMINATION REPORT

DATA SET _____ OF _____
SHEET 11 OF _____

PLANT: 1-B ROBINSON

UNIT: _____

TYPE TEST: _____

TEST PROCEDURE NO. _____

TEST FREQUENCY: _____

MATERIAL _____ OD _____ GAUGE _____

1-2 COMP I.D. NO.	4-5 SIDE	7-9 ROW	11-13 TUBE/ COLUMN	VERIFY REQD X X COMP.	TESTED	16-20 REEL NO. AND SIDE	23-27 INDICATION LOCATION	29-31 PERCENT DEPTH/ TYPE	34-38 INDICATION LOCATION	40-42 PERCENT DEPTH/ TYPE	45-49 INDICATION LOCATION	51-53 PERCENT DEPTH/ TYPE	56-60 INDICATION LOCATION	62-64 PERCENT DEPTH/ TYPE	68-71 TAPE INDEX
C	I	19	71										6I+36	73	—
		15	69	x			TS	25							
		14	68				TS	50			TS+01	51			—
		17	66	x			TS	30							
		26	66	x			TS	32							
		19	65				TS	21							
		18	65	x			TS	31							
		17	65	x			TS	23							
		17	64	x			TS	25							
		18	64	x			TS	30							
		20	63				TS	36							
		17	63				TS	27							
		21	61	x					TS		TS+03	23			
		23	57	x							TS+05	32			
		23	56	x							TS+06	21			
		23	54	x							TS+01	31			
		29	52	x			TS	37			#				
		24	31	x					TS-14	85					—
		26	27	x							6I+24	23	6I+42	23	
		25	25	x									6I+40	23	

ET OPERATOR/LEVEL _____ DATE: _____ PROGRAMMER: _____ DATE: _____

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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DATA SET _____ OF _____

SHEET _____ OF _____

UNIT _____

TEST PROCEDURE NO. _____

MATERIAL _____ OD _____ GAUGE _____

[illegible]

DATA ANALYST/LEVEL: _____ DATE: _____ REMARKS: _____

DATA CONTROLLER: _____ DATE: _____

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NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B
EDDY CURRENT EXAMINATION
HISTORICAL DATA



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

SUMMARY OF EDDY CURRENT
EXAMINATION HISTORICAL DATA

"A" INLET
APPENDIX B-3

"A" OUTLET
APPENDIX B-4

"B" INLET
APPENDIX B-5

"B" OUTLET
APPENDIX B-6

"C" INLET
APPENDIX B-7

"C" OUTLET
APPENDIX B-8

NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B-3

"A" INLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
7	15	OD	Top of Tube Sheet	20%	20	-	-	-	-
8	15	OD	Top of Tube Sheet	34	34	-	-	-	-
7	16	OD	Top of Tube Sheet	35	20	-	-	-	-
2	20	OD	Top of Tube Sheet	34	-	-	-	-	-
2	21	OD	Top of Tube Sheet	51	-	-	-	-	-
12	21	OD	Top of Tube Sheet	36	-	-	-	-	-
7	22	OD	Top of Tube Sheet	59	46	39	42	41	40
11	22	OD	Top of Tube Sheet	29	35	24	30	-	-
12	23	OD	Top of Tube Sheet	35	32	-	-	-	-
7	24	OD	Top of Tube Sheet	20	24	22	< 20	20	20
15	25	OD	Top of Tube Sheet	25	32	24	29	26	26
12	26	OD	Top of Tube Sheet	26	36	28	26	< 20	< 20
13	26	OD	Top of Tube Sheet	26	33	31	27	< 20	< 20
17	26	OD	Top of Tube Sheet	36	36	-	-	-	-
9	27	OD	Top of Tube Sheet	-	24	24	< 20	< 20	< 20
12	27	OD	Top of Tube Sheet	21	33	26	< 20	< 20	< 20
14	27	OD	Top of Tube Sheet	34	-	-	-	-	-
15	27	OD	Top of Tube Sheet	-	27	-	-	-	-
11	28	OD	Top of Tube Sheet	< 20	-	-	-	-	-
12	28	OD	Top of Tube Sheet	< 20	30	20	23	< 20	< 20
13	28	OD	Top of Tube Sheet	25	27	-	-	-	-
14	28	OD	Top of Tube Sheet	30	29	-	-	-	-
15	28	OD	Top of Tube Sheet	30	34	34	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
12	29	OD	Top of Tube Sheet	28%	34	-	-	-	-
13	29	OD	Top of Tube Sheet	29	35	26	< 20	-	-
14	29	OD	Top of Tube Sheet	29	38	-	-	-	-
15	29	OD	Top of Tube Sheet	25	-	-	-	-	-
19	29	OD	Top of Tube Sheet	-	29	-	-	-	-
6	30	OD	Top of Tube Sheet	-	28	-	-	-	-
12	30	OD	Top of Tube Sheet	-	40	-	-	-	-
13	30	OD	Top of Tube Sheet	38	38	-	-	-	-
14	30	OD	Top of Tube Sheet	35	22	26	26	23	23
15	30	OD	Top of Tube Sheet	20	-	-	-	-	-
12	31	OD	Top of Tube Sheet	29	36	34	26	24	24
13	31	OD	Top of Tube Sheet	40	27	32	32	27	27
15	31	OD	Top of Tube Sheet	20	30	24	< 20	24	24
12	32	OD	Top of Tube Sheet	-	36	31	26	24	24
13	32	OD	Top of Tube Sheet	28	33	23	< 20	23	23
15	32	OD	Top of Tube Sheet	20	20	-	-	-	-
10	33	OD	Top of Tube Sheet	28	28	-	-	-	-
12	33	OD	Top of Tube Sheet	36	29	26	23	20	20
14	33	OD	Top of Tube Sheet	25	29	-	-	-	-
15	33	OD	Top of Tube Sheet	32	-	-	-	-	-
12	34	OD	Top of Tube Sheet	30	24	-	-	-	-
13	34	OD	Top of Tube Sheet	25	24	30	< 20	-	-
18	34	OD	Top of Tube Sheet	32	34	25	26	-	-
4	35	OD	Top of Tube Sheet	plug	85	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
6	35	OD	Top of Tube Sheet	39 %	34	26	27	34	26
8	35	OD	Top of Tube Sheet	20	23	-	-	-	-
12	35	OD	Top of Tube Sheet	20	-	-	-	-	-
13	35	OD	Top of Tube Sheet	36	36	34	27	25	25
22	35	OD	Top of Tube Sheet	-	20	20	27	28	28
5	36	OD	Top of Tube Sheet	25	23	-	-	-	-
12	36	OD	Top of Tube Sheet	20	-	-	-	-	-
13	36	OD	Top of Tube Sheet	29	30	24	<20	24	26
15	36	OD	Top of Tube Sheet	20	33	22	<20	25	20
16	36	OD	Top of Tube Sheet	20	23	-	-	-	-
23	36	OD	Top of Tube Sheet	-	23	22	<20	<20	25
26	36	OD	Top of Tube Sheet	-	24	20	-	-	-
6	37	OD	Top of Tube Sheet	20	25	22	<20	<20	< 20
9	37	OD	Top of Tube Sheet	25	-	-	-	-	-
13	37	OD	Top of Tube Sheet	20	28	-	-	-	-
15	37	OD	Top of Tube Sheet	20	28	24	24	25	25
16	37	OD	Top of Tube Sheet	20	24	-	-	-	-
19	37	OD	Top of Tube Sheet	24	34	27	26	<20	< 20
8	38	OD	Top of Tube Sheet	-	27	-	-	-	-
15	39	OD	Top of Tube Sheet	20	25	-	-	-	-
23	39	OD	Top of Tube Sheet	38	43	30	22	31	-
27	39	OD	Top of Tube Sheet	38	41	37	-	-	-
15	40	OD	Top of Tube Sheet	25	25	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
25	40	OD	Top of Tube Sheet	< 20 %	< 20	20	23	-	-
4	41	OD	Top of Tube Sheet	51	-	-	-	-	-
24	41	OD	Top of Tube Sheet	30	29	24	< 20	28	26
6	42	OD	Top of Tube Sheet	-	48	20	20	< 20	< 20
7	42	OD	Top of Tube Sheet	28	32	37	27	38	< 20
9	42	OD	Top of Tube Sheet	32	29	30	29	< 20	< 20
12	42	OD	Top of Tube Sheet	24	29	-	-	-	-
23	42	OD	Top of Tube Sheet	29	33	25	27	31	20
24	42	OD	Top of Tube Sheet	20	20	23	22	24	< 20
8	43	OD	Top of Tube Sheet	39	35	22	30	33	40
9	43	OD	Top of Tube Sheet	51	48	45	43	48	42
12	43	OD	Top of Tube Sheet	36	35	29	26	27	24
15	43	OD	Top of Tube Sheet	-	32	-	-	-	-
23	43	OD	Top of Tube Sheet	27	21	24	27	32	20
24	43	OD	Top of Tube Sheet	24	< 20	24	23	24	< 20
4	44	OD	Top of Tube Sheet	plug	71	-	-	-	-
10	44	OD	Top of Tube Sheet	-	30	-	-	-	-
11	44	OD	Top of Tube Sheet	-	29	-	-	-	-
12	44	OD	Top of Tube Sheet	51	49	37	35	40	26
23	44	OD	Top of Tube Sheet	24	25	30	31	30	< 20
12	45	OD	Top of Tube Sheet	-	23	-	-	-	-
21	46	OD	Top of Tube Sheet	23	33	34	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
28	46	OD	Top of Tube Sheet	plug	60	54	42	49	46
22	47	OD	Top of Tube Sheet	<20%	< 20	20	-	-	-
29	48	OD	Top of Tube Sheet	29	32	29	30	20	20
30	48	OD	Top of Tube Sheet	47	49	41	41	41	35
6	49	OD	Top of Tube Sheet	<20	23	-	-	-	-
7	49	OD	Top of Tube Sheet	<20	23	-	-	-	-
20	50	OD	Top of Tube Sheet	plug	93	90	-	-	-
12	51	OD	Top of Tube Sheet	20	23	23	-	-	-
24	51	OD	Top of Tube Sheet	27	-	-	-	-	-
25	51	OD	Top of Tube Sheet	30	23	23	<20	-	-
31	51	OD	Top of Tube Sheet	25	20	-	-	-	-
32	51	OD	Top of Tube Sheet	52	38	32	27	33	22
18	52	OD	Top of Tube Sheet	39	23	-	-	-	-
22	52	OD	Top of Tube Sheet	20	23	-	-	-	-
24	52	OD	Top of Tube Sheet	20	23	20	-	-	-
25	52	OD	Top of Tube Sheet	33	20	20	26	-	-
31	52	OD	Top of Tube Sheet	36	29	24	27	32	26
32	52	OD	Top of Tube Sheet	-	-	22	24	22	22
14	53	OD	Top of Tube Sheet	29	27	23	-	-	-
16	53	OD	Top of Tube Sheet	plug	94	91	-	-	-
18	53	OD	Top of Tube Sheet	25	25	23	-	-	-
24	53	OD	Top of Tube Sheet	29	29	31	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
25	53	OD	Top of Tube Sheet	29%	30	30	< 20	< 20	< 20
27	53	OD	Top of Tube Sheet	53	46	39	42	40	35
31	53	OD	Top of Tube Sheet	49	41	35	36	33	33
18	54	OD	Top of Tube Sheet	30	32	20	-	-	-
24	54	OD	Top of Tube Sheet	36	32	23	-	-	-
25	54	OD	Top of Tube Sheet	30	24	-	-	-	-
26	54	OD	Top of Tube Sheet	40	23	24	23	< 20	< 20
32	54	OD	Top of Tube Sheet	49	30	31	30	29	< 20
17	55	OD	Top of Tube Sheet	D.T.	32	20	-	-	-
18	55	OD	Top of Tube Sheet	plug	94	93	-	-	-
23	56	OD	Top of Tube Sheet	20	20	26	-	-	-
13	57	OD	Top of Tube Sheet	28	28	-	-	-	-
18	57	OD	Top of Tube Sheet	28	25	24	-	-	-
19	57	OD	Top of Tube Sheet	25	-	-	-	-	-
20	57	OD	Top of Tube Sheet	20	20	20	-	-	-
17	58	OD	Top of Tube Sheet	23	23	-	-	-	-
18	58	OD	Top of Tube Sheet	< 20	28	24	< 20	< 20	< 20
22	58	OD	Top of Tube Sheet	< 20	23	-	-	-	-
11	59	OD	Top of Tube Sheet	plug	81	76	< 20	< 20	< 20
13	59	OD	Top of Tube Sheet	< 20	23	26	< 20	< 20	< 20
16	59	OD	Top of Tube Sheet	43	43	39	30	24	-
20	59	OD	Top of Tube Sheet	29	29	-	-	-	-
22	59	OD	Top of Tube Sheet	30	30	34	< 20	< 20	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
16	66	OD	Top of Tube Sheet	47%	46	37	30	32	32
17	66	OD	Top of Tube Sheet	34	29	23	20	<20	26
10	67	OD	Top of Tube Sheet	23	27	-	-	-	-
11	67	OD	Top of Tube Sheet	22	25	24	<20	20	20
12	67	OD	Top of Tube Sheet	34	34	31	29	28	34
14	67	OD	Top of Tube Sheet	24	24	25	20	<20	<20
15	67	OD	Top of Tube Sheet	27	27	30	26	<20	26
16	67	OD	Top of Tube Sheet	27	27	31	<20	-	-
17	67	OD	Top of Tube Sheet	32	36	32	32	<20	25
18	67	OD	Top of Tube Sheet	30	32	27	30	23	23
8	68	OD	Top of Tube Sheet	plug	71	64	-	-	-
10	68	OD	Top of Tube Sheet	33	33	-	-	-	-
11	68	OD	Top of Tube Sheet	34	34	35	32	32	37
15	68	OD	Top of Tube Sheet	36	36	30	29	30	32
16	68	OD	Top of Tube Sheet	39	47	36	35	35	39
17	68	OD	Top of Tube Sheet	33	33	23	<20	20	<20
11	69	OD	Top of Tube Sheet	25	25	-	-	-	-
12	69	OD	Top of Tube Sheet	33	35	20	<20	20	20
13	69	OD	Top of Tube Sheet	36	27	20	20	20	20
14	69	OD	Top of Tube Sheet	33	29	24	<20	<20	<20
11	70	OD	Top of Tube Sheet	23	25	23	<20	<20	<20
13	70	OD	Top of Tube Sheet	-	-	24	<20	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
24	59	OD	Top of Tube Sheet	38%	38	27	24	25	25
15	60	OD	Top of Tube Sheet	20	< 20	22	< 20	< 20	< 20
21	60	OD	Top of Tube Sheet	38	38	30	30	35	24
22	60	OD	Top of Tube Sheet	24	24	24	< 20	< 20	-
24	60	OD	Top of Tube Sheet	20	< 20	20	< 20	< 20	< 20
14	61	OD	Top of Tube Sheet	29	33	27	< 20	< 20	< 20
15	61	OD	Top of Tube Sheet	32	32	27	24	29	< 20
16	61	OD	Top of Tube Sheet	29	29	24	< 20	-	-
20	61	OD	Top of Tube Sheet	30	30	26	30	< 20	< 20
21	61	OD	Top of Tube Sheet	47	47	45	30	37	37
14	62	OD	Top of Tube Sheet	33	35	-	-	-	-
21	62	OD	Top of Tube Sheet	plug	51	40	31	41	28
13	63	OD	Top of Tube Sheet	24	24	32	32	31	< 20
14	63	OD	Top of Tube Sheet	32	< 20	36	37	20	20
12	64	OD	Top of Tube Sheet	< 20	< 20	40	< 20	< 20	< 20
15	64	OD	Top of Tube Sheet	< 20	< 20	26	< 20	< 20	< 20
17	64	OD	Top of Tube Sheet	< 20	< 20	25	< 20	< 20	20
24	64	OD	Top of Tube Sheet	24	27	30	37	28	28
12	65	OD	Top of Tube Sheet	24	22	35	< 20	< 20	< 20
13	65	OD	Top of Tube Sheet	22	22	20	< 20	< 20	< 20
17	65	OD	Top of Tube Sheet	24	30	26	22	< 20	< 20
12	66	OD	Top of Tube Sheet	33	43	32	24	28	28
13	66	OD	Top of Tube Sheet	< 20	< 20	20	< 20	< 20	< 20
14	66	OD	Top of Tube Sheet	30	30	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
15	70	OD	Top of Tube Sheet	< 20%	< 20	22	< 20	-	-
13	72	OD	Top of Tube Sheet	-	-	24	-	-	-
10	74	OD	Top of Tube Sheet	plug	65	59	-	-	-



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B-4

"A" OUTLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "A" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
24	40	OD	Top of Tube Sheet	28%	28	34	< 20	-	-
21	64	OD	Tube Sheet + 8"	27	-	-	-	-	-

NOTE: No defect indications noted in the "U" Bend Examination of "A" Steam Generator.

APPENDIX B-5

"B" INLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
3	20	OD	Top of Tube Sheet	22%	-	-	-	-	-
9	20	OD	Top of Tube Sheet	45	27	-	-	-	-
11	20	OD	Top of Tube Sheet	25	-	-	-	-	-
3	21	OD	Tube Sheet - 10"	91	-	-	-	-	-
11	21	OD	Top of Tube Sheet	33	-	-	-	-	-
13	21	OD	Top of Tube Sheet	43	36	-	-	-	-
4	22	OD	Top of Tube Sheet	24	-	-	-	-	-
11	22	OD	Top of Tube Sheet	32	-	-	-	-	-
11	23	OD	Top of Tube Sheet	30	25	20	<20	24	<20
12	23	OD	Top of Tube Sheet	32	38	22	<20	36	25
14	25	OD	Top of Tube Sheet	52	42	37	39	33	25
12	26	OD	Top of Tube Sheet	43	42	29	<20	<20	<20
14	26	OD	Top of Tube Sheet	38	23	26	29	<20	<20
19	26	OD	Top of Tube Sheet	29	-	-	-	-	-
20	26	OD	Top of Tube Sheet	33	-	-	-	-	-
21	26	OD	Top of Tube Sheet	41	25	-	-	-	-
22	26	OD	Top of Tube Sheet	49	39	43	29	30	25
23	26	OD	Top of Tube Sheet	48	42	37	26	37	44
24	26	OD	Top of Tube Sheet	29	29	30	29	29	-
11	27	OD	Top of Tube Sheet	24	25	-	-	-	-
12	27	OD	Top of Tube Sheet	28	28	22	-	<20	<20
23	27	OD	Top of Tube Sheet	35	30	34	29	30	32
20	28	OD	Top of Tube Sheet	36	45	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
17	29	OD	Top of Tube Sheet	24 %	34	-	-	-	-
24	29	OD	Top of Tube Sheet	39	30	-	-	-	-
25	29	OD	Top of Tube Sheet	27	27	-	-	-	-
26	29	OD	Top of Tube Sheet	32	39	-	-	-	-
25	30	OD	Top of Tube Sheet	41	23	39	31	31	-
26	30	OD	Top of Tube Sheet	34	< 20	30	30	25	25
18	31	OD	Top of Tube Sheet	20	20	23	-	-	< 20
19	33	OD	Top of Tube Sheet	25	28	25	-	-	< 20
19	34	OD	Top of Tube Sheet	23	23	-	-	-	-
43	34	OD	6th support + 1"	56	-	-	-	-	-
17	35	OD	Top of Tube Sheet	-	25	-	-	-	-
11	36	OD	Top of Tube Sheet	39	32	30	26	33	25
26	36	OD	Top of Tube Sheet	-	-	31	-	< 20	< 20
44	36	OD	6th support + 1"	71	-	-	-	-	-
16	37	OD	Top of Tube Sheet	33	-	-	-	-	-
17	37	OD	Top of Tube Sheet	33	-	-	-	-	-
10	38	OD	Top of Tube Sheet	34	33	35	35	26	-
11	38	OD	Top of Tube Sheet	52	47	47	37	40	25
12	38	OD	Top of Tube Sheet	plug	plug	52	42	37	20
16	38	OD	Top of Tube Sheet	28	< 20	20	-	-	< 20
17	38	OD	Top of Tube Sheet	-	< 20	< 20	-	-	< 20
28	38	OD	Top of Tube Sheet	47	39	31	36	37	20
29	38	OD	Top of Tube Sheet	39	-	-	-	-	-
28	39	OD	Top of Tube Sheet	34	35	22	23	25	< 20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
29	39	OD	Top of Tube Sheet	49%	49	32	34	29	29
9	40	OD	Tube Sheet - 13"	96	-	-	-	-	-
12	40	OD	Top of Tube Sheet	20	20	39	43	<20	<20
13	40	OD	Top of Tube Sheet	-	20	-	-	-	-
15	40	OD	Top of Tube Sheet	-	20	-	-	-	-
17	40	OD	Tube Sheet - 13"	99	-	-	-	-	-
30	40	OD	Top of Tube Sheet	26	-	-	-	-	-
12	41	OD	Top of Tube Sheet	35	34	39	36	37	36
12	42	OD	Top of Tube Sheet	-	25	24	<20	<20	<20
17	42	OD	Tube Sheet - 10"	99	-	-	-	-	-
24	42	OD	Top of Tube Sheet	52	41	40	40	32	32
9	43	OD	Top of Tube Sheet	42	28	45	40	41	24
11	43	OD	Top of Tube Sheet	43	46	32	37	41	<20
8	44	OD	Top of Tube Sheet	34	39	39	24	31	<20
24	44	OD	Top of Tube Sheet	43	38	43	34	<20	<20
25	44	OD	Top of Tube Sheet	34	-	-	-	-	-
4	45	OD	Top of Tube Sheet	61	-	45	41	-	26
5	45	OD	Top of Tube Sheet	41	32	32	34	32	34
4	46	OD	Top of Tube Sheet	34	-	32	20	-	20
5	46	OD	Top of Tube Sheet	39	20	30	<20	37	<20
18	47	OD	Tube Sheet - 8"	99	-	-	-	-	-
5	48	OD	Top of Tube Sheet	48	42	48	45	47	48
6	48	OD	Top of Tube Sheet	39	30	42	34	31	36

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
18	48	OD	Tube Sheet - 13"	99%	-	-	-	-	-
21	48	OD	Top of Tube Sheet	25	24	30	27	36	36
6	49	OD	Top of Tube Sheet	40	38	36	39	46	44
10	49	OD	Top of Tube Sheet	plug	plug	54	49	47	45
11	49	OD	Top of Tube Sheet	20	23	31	37	37	31
20	49	OD	Top of Tube Sheet	-	25	-	-	-	-
23	49	OD	Tube Sheet - 10"	94	-	-	-	-	-
6	50	OD	Top of Tube Sheet	plug	plug	52	42	40	32
9	50	OD	Top of Tube Sheet	36	25	24	20	30	30
10	50	OD	Top of Tube Sheet	51	41	42	36	41	40
26	50	OD	Top of Tube Sheet	34	-	-	-	-	-
9	51	OD	Top of Tube Sheet	22	25	45	49	<20	<20
20	51	OD	Top of Tube Sheet	-	<20	30	32	28	28
26	51	OD	Top of Tube Sheet	43	29	36	42	34	28
28	51	OD	Top of Tube Sheet	39	29	32	23	40	34
29	51	OD	Top of Tube Sheet	43	28	37	; 45	42	38
18	52	OD	Tube Sheet - 13"	99	-	-	-	-	-
30	52	OD	Top of Tube Sheet	33	20	32	-	-	20
9	53	OD	Top of Tube Sheet	45	38	40	43	48	49
10	53	OD	Top of Tube Sheet	48	34	33	36	42	38
11	53	OD	Top of Tube Sheet	57	34	45	42	41	43
18	53	OD	Tube Sheet - 16"	98	-	-	-	-	-
30	53	OD	Top of Tube Sheet	35	33	38	-	43	42
2	54	OD	Top of Tube Sheet	24	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
10	54	OD	Top of Tube Sheet	46%	30	43	35	34	40
11	54	OD	Top of Tube Sheet	47	38	48	42	41	34
25	54	OD	Top of Tube Sheet	45	38	37	40	38	38
26	54	OD	Top of Tube Sheet	35	28	32	34	40	31
9	55	OD	Top of Tube Sheet	49	33	47	47	20	24
10	55	OD	Top of Tube Sheet	-	<20	29	< 20	26	34
11	55	OD	Top of Tube Sheet	33	<20	27	29	<20	24
25	55	OD	Top of Tube Sheet	32	25	27	23	30	24
26	55	OD	Top of Tube Sheet	29	32	45	47	38	38
11	56	OD	Top of Tube Sheet	32	33	30	31	35	32
17	56	OD	Tube Sheet - 16"	90	-	-	-	-	-
24	56	OD	Top of Tube Sheet	28	20	-	-	-	-
13	59	OD	Top of Tube Sheet	39	33	42	35	32	32
15	59	OD	Top of Tube Sheet	23	29	29	30	32	32
16	59	OD	Top of Tube Sheet	20	20	24	22	33	32
24	59	OD	Top of Tube Sheet	30	30	-	-	-	-
12	60	OD	Top of Tube Sheet	30	< 20	22	-	<20	<20
23	60	OD	Top of Tube Sheet	29	< 20	27	45	25	25
21	61	OD	Top of Tube Sheet	38	36	-	-	-	-
22	61	OD	Top of Tube Sheet	29	25	-	-	-	-
23	61	OD	Top of Tube Sheet	33	27	35	27	31	30
24	61	OD	Top of Tube Sheet	41	26	30	35	30	24
16	62	OD	Top of Tube Sheet	-	< 20	29	< 20	<20	< 20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
21	62	OD	Top of Tube Sheet	25%	20	-	-	-	-
14	63	OD	Top of Tube Sheet	27	29	30	44	43	41
16	63	OD	Top of Tube Sheet	25	< 20	22	30	24	26
22	63	OD	Top of Tube Sheet	46	34	37	32	37	25
14	64	OD	Top of Tube Sheet	42	33	37	27	38	20
19	64	OD	Top of Tube Sheet	35	< 20	26	26	24	22
14	65	OD	Top of Tube Sheet	28	23	26	< 20	< 20	< 20
18	65	OD	Top of Tube Sheet	33	-	-	-	-	-
19	65	OD	Top of Tube Sheet	38	< 20	23	< 20	< 20	< 20
20	65	OD	Top of Tube Sheet	42	< 20	27	< 20	22	26
10	66	OD	Top of Tube Sheet	plug	plug	66	-	-	-
18	66	OD	Top of Tube Sheet	32	-	-	-	-	-
17	67	OD	Top of Tube Sheet	-	-	20	-	25	25
14	69	OD	Top of Tube Sheet	39	23	29	24	31	31
15	69	OD	Top of Tube Sheet	51	25	31	37	37	36
16	69	OD	Top of Tube Sheet	plug	plug	53	; 43	40	46
17	69	OD	Top of Tube Sheet	49	25	35	< 20	23	29
8	70	OD	Top of Tube Sheet	28	-	-	-	-	-
9	70	OD	Top of Tube Sheet	27	-	-	-	-	-
14	70	OD	Top of Tube Sheet	47	27	30	37	43	30
15	70	OD	Top of Tube Sheet	51	29	29	35	46	46
7	71	OD	Top of Tube Sheet	32	22	26	-	< 20	< 20
8	71	OD	Top of Tube Sheet	27	-	22	-	< 20	< 20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
9	71	OD	Top of Tube Sheet	29%	-	23	-	24	24
10	73	OD	Top of Tube Sheet	-	-	30	-	-	-
13	74	OD	Top of Tube Sheet	56	34	39	-	-	32
9	75	OD	Top of Tube Sheet	-	-	23	-	-	-



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B-6

"B" OUTLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "B" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
25	27	OD	Top of Tube Sheet	34%	-	-	-	-	-
25	28	OD	Top of Tube Sheet	20	-	-	-	-	-
26	31	OD	Top of Tube Sheet	20	-	-	-	-	-
6	34	OD	Top of Tube Sheet	-	-	26	-	-	-
28	41	OD	Top of Tube Sheet	31	-	-	-	-	-
14	54	OD	Top of Tube Sheet	-	-	20	-	-	-
16	58	OD	Top of Tube Sheet	-	-	31	-	-	-

Note: No defect indications noted in the "U" bend examination of "B" Steam Generator.



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B-7

"C" INLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
26	12	OD	Tube Sheet + 12"	77%	-	-	-	-	-
4	20	OD	Top of Tube Sheet	27	23	-	-	-	-
10	23	OD	Top of Tube Sheet	< 20	20	20	-	-	-
12	23	OD	Top of Tube Sheet	< 20	20	-	-	-	-
6	24	OD	Top of Tube Sheet	-	20	-	-	-	-
11	24	OD	Top of Tube Sheet	29	21	-	-	-	-
3	25	OD	Top of Tube Sheet	plug	67	-	-	-	-
4	25	OD	Top of Tube Sheet	23	21	-	-	-	-
5	25	OD	Top of Tube Sheet	25	-	-	-	-	-
14	25	OD	Top of Tube Sheet	20	23	23	-	-	< 20
3	26	OD	Top of Tube Sheet	plug	83	25	29	29	25
20	26	OD	Top of Tube Sheet	-	20	-	-	-	-
4	27	OD	Top of Tube Sheet	29	29	30	30	34	25
4	28	OD	Top of Tube Sheet	-	23	-	-	-	-
5	29	OD	Tube Sheet - 10"	99	-	-	-	-	-
17	29	OD	Top of Tube Sheet	< 20	< 20	20	24	< 20	< 20
19	29	OD	Top of Tube Sheet	< 20	21	-	-	-	-
22	29	OD	Top of Tube Sheet	22	23	24	26	24	24
13	30	OD	Top of Tube Sheet	27	35	27	31	25	35
14	30	OD	Top of Tube Sheet	< 20	28	20	26	31	26
16	30	OD	Top of Tube Sheet	< 20	27	29	20	32	32
17	30	OD	Top of Tube Sheet	46	43	40	48	45	44
18	30	OD	Top of Tube Sheet	34	32	34	37	31	34

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
21	30	OD	Top of Tube Sheet	-	20	-	-	-	-
22	30	OD	Top of Tube Sheet	-	<20	26	26	<20	<20
24	30	OD	Top of Tube Sheet	-	20	-	-	-	-
6	31	OD	Top of Tube Sheet	38%	32	32	42	34	30
12	31	OD	Top of Tube Sheet	<20	25	-	-	-	-
13	31	OD	Top of Tube Sheet	<20	21	-	-	-	-
14	31	OD	Top of Tube Sheet	<20	25	20	22	<20	22
17	31	OD	Top of Tube Sheet	49	43	42	48	45	42
18	31	OD	Top of Tube Sheet	36	36	34	42	33	34
20	31	OD	Top of Tube Sheet	24	27	-	-	-	-
22	31	OD	Top of Tube Sheet	22	23	24	-	<20	<20
6	32	OD	Top of Tube Sheet	20	20	-	-	-	-
13	32	OD	Top of Tube Sheet	23	27	27	27	<20	<20
14	32	OD	Top of Tube Sheet	20	20	23	24	<20	24
17	32	OD	Top of Tube Sheet	<20	21	-	-	-	-
18	32	OD	Top of Tube Sheet	<20	27	28	; 30	27	<20
20	32	OD	Top of Tube Sheet	30	33	35	45	32	38
21	32	OD	Top of Tube Sheet	-	21	-	-	-	-
22	32	OD	Top of Tube Sheet	20	-	-	-	-	-
23	32	OD	Top of Tube Sheet	20	23	-	-	-	-
24	32	OD	Top of Tube Sheet	35	33	36	43	-	-
14	33	OD	Top of Tube Sheet	42	35	32	41	35	40
15	33	OD	Top of Tube Sheet	46	33	29	30	<20	<20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
17	33	OD	Top of Tube Sheet	-	23	-	-	-	-
18	33	OD	Top of Tube Sheet	29%	23	26	23	24	< 20
20	33	OD	Top of Tube Sheet	-	36	35	-	-	-
22	33	OD	Top of Tube Sheet	29	29	27	35	20	20
17	34	OD	Top of Tube Sheet	-	25	20	-	26	25
6	35	OD	Top of Tube Sheet	36	29	27	-	< 20	< 20
13	35	OD	Top of Tube Sheet	-	21	-	-	-	-
15	35	OD	Top of Tube Sheet	-	< 20	24	20	< 20	< 20
18	35	OD	Top of Tube Sheet	24	23	32	< 20	< 20	< 20
22	35	OD	Top of Tube Sheet	40	40	31	44	31	34
23	35	OD	Top of Tube Sheet	22	30	-	-	-	-
8	36	OD	Top of Tube Sheet	-	21	-	-	-	-
14	36	OD	Top of Tube Sheet	35	25	20	24	< 20	< 20
15	36	OD	Top of Tube Sheet	30	32	30	29	< 20	< 20
16	36	OD	Top of Tube Sheet	24	23	20	22	-	< 20
18	36	OD	Top of Tube Sheet	-	23	-	-	-	-
20	36	OD	Top of Tube Sheet	46	41	41	42	< 20	< 20
24	36	OD	Top of Tube Sheet	40	34	32	35	-	-
25	36	OD	Top of Tube Sheet	-	30	34	35	-	-
10	37	OD	Top of Tube Sheet	23	< 20	20	20	20	20
14	37	OD	Top of Tube Sheet	25	23	-	-	-	-
15	37	OD	Top of Tube Sheet	-	43	32	40	36	20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
19	37	OD	Top of Tube Sheet	25%	28	-	-	-	-
20	37	OD	Top of Tube Sheet	-	21	-	-	-	-
23	37	OD	Top of Tube Sheet	-	20	-	-	-	-
11	38	OD	Top of Tube Sheet	20	21	20	22	<20	<20
15	38	OD	Top of Tube Sheet	27	27	24	27	20	20
17	38	OD	Top of Tube Sheet	-	23	-	-	-	-
19	38	OD	Top of Tube Sheet	20	29	-	-	-	-
9	39	OD	Top of Tube Sheet	-	21	-	-	-	-
11	39	OD	Top of Tube Sheet	42	35	25	35	28	28
13	39	OD	Top of Tube Sheet	-	29	-	-	-	-
14	39	OD	Top of Tube Sheet	-	20	-	-	-	-
15	39	OD	Top of Tube Sheet	-	28	32	30	<20	<20
17	39	OD	Top of Tube Sheet	24	24	22	27	<20	<20
18	39	OD	Top of Tube Sheet	-	23	-	-	-	-
23	39	OD	Top of Tube Sheet	-	24	30	-	43	<20
24	39	OD	Top of Tube Sheet	49	45	45	-	-	-
26	39	OD	Top of Tube Sheet	-	33	-	-	-	-
15	40	OD	Top of Tube Sheet	27	23	29	34	<20	<20
17	40	OD	Top of Tube Sheet	-	40	37	-	-	-
19	40	OD	Top of Tube Sheet	-	20	-	-	-	-
20	40	OD	Top of Tube Sheet	-	23	-	-	-	-
25	40	OD	Top of Tube Sheet	-	20	-	-	-	-
26	40	OD	Top of Tube Sheet	-	24	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
27	40	OD	Top of Tube Sheet	-	29	-	-	-	-
15	41	OD	Top of Tube Sheet	23 %	23	-	-	-	-
17	41	OD	Top of Tube Sheet	25	29	26	40	<20	<20
20	41	OD	Top of Tube Sheet	27	24	22	-	-	-
23	41	OD	Top of Tube Sheet	-	24	-	-	-	-
7	42	OD	Top of Tube Sheet	39	32	25	34	<20	30
8	42	OD	Top of Tube Sheet	39	28	30	40	27	25
15	42	OD	Top of Tube Sheet	25	25	20	27	<20	<20
18	42	OD	Top of Tube Sheet	-	23	20	26	-	-
19	42	OD	Top of Tube Sheet	-	21	-	-	-	-
27	42	OD	Top of Tube Sheet	27	23	27	-	-	-
3	43	OD	Top of Tube Sheet	42	33	-	-	-	-
5	43	OD	Top of Tube Sheet	-	24	22	-	<20	<20
10	43	OD	Top of Tube Sheet	-	23	22	-	-	<20
17	43	OD	Top of Tube Sheet	-	23	-	-	-	-
24	43	OD	Top of Tube Sheet	35	27	20	-	-	-
9	44	OD	Top of Tube Sheet	<20	21	23	23	-	<20
13	44	OD	Top of Tube Sheet	25	27	26	-	-	-
18	44	OD	Top of Tube Sheet	-	20	24	35	<20	<20
6	45	OD	Top of Tube Sheet	<20	21	20	39	<20	<20
7	45	OD	Top of Tube Sheet	23	24	26	31	-	26
8	45	OD	Top of Tube Sheet	-	23	-	-	-	-
15	45	OD	Top of Tube Sheet	-	24	23	-	-	27

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
20	50	OD	Top of Tube Sheet	-	27	30	30	-	-
25	50	OD	Top of Tube Sheet	-	20	-	-	-	-
26	50	OD	Top of Tube Sheet	<20%	24	24	31	25	25
10	51	OD	Top of Tube Sheet	-	20	-	-	-	-
17	51	OD	Top of Tube Sheet	-	<20	22	24	-	<20
22	51	OD	Top of Tube Sheet	-	20	-	-	-	-
26	51	OD	Top of Tube Sheet	20	23	22	30	22	22
28	51	OD	Top of Tube Sheet	-	24	-	-	-	-
12	52	OD	Top of Tube Sheet	39	39	35	44	38	28
13	52	OD	Top of Tube Sheet	20	24	24	27	22	22
15	52	OD	Top of Tube Sheet	-	21	-	-	-	-
17	52	OD	Top of Tube Sheet	-	32	32	-	-	-
18	52	OD	Top of Tube Sheet	-	21	-	-	-	-
22	52	OD	Top of Tube Sheet	-	21	20	23	-	-
23	52	OD	Top of Tube Sheet	-	23	26	27	<20	<20
24	52	OD	Top of Tube Sheet	-	29	-	-	-	-
25	52	OD	Top of Tube Sheet	20	20	-	-	-	-
26	52	OD	Top of Tube Sheet	39	39	-	-	-	-
10	53	OD	Top of Tube Sheet	20	25	20	24	-	<20
11	53	OD	Top of Tube Sheet	30	30	31	36	29	<20
16	53	OD	Top of Tube Sheet	-	25	-	-	-	-
19	53	OD	Top of Tube Sheet	22	30	27	34	<20	<20
21	53	OD	Top of Tube Sheet	-	21	24	31	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
23	53	OD	Top of Tube Sheet	-	25	24	29	-	-
25	53	OD	Top of Tube Sheet	20%	20	-	-	-	-
26	53	OD	Top of Tube Sheet	41	30	26	29	21	21
17	54	OD	Top of Tube Sheet	29	32	34	39	-	< 20
19	54	OD	Top of Tube Sheet	43	29	30	36	20	20
20	54	OD	Top of Tube Sheet	-	34	-	-	-	-
21	54	OD	Top of Tube Sheet	-	20	-	-	-	-
25	54	OD	Top of Tube Sheet	39	-	-	-	-	-
17	55	OD	Top of Tube Sheet	-	20	-	-	-	-
4	56	OD	Top of Tube Sheet	24	-	-	-	-	-
14	56	OD	Top of Tube Sheet	27	24	23	-	-	-
19	57	OD	Top of Tube Sheet	-	28	-	-	-	-
3	58	OD	Top of Tube Sheet	24	-	-	-	-	-
8	58	OD	Top of Tube Sheet	20	21	-	-	-	-
14	58	OD	Top of Tube Sheet	20	21	-	-	-	-
18	58	OD	Top of Tube Sheet	< 20	24	-	-	-	-
8	59	OD	Top of Tube Sheet	-	46	-	-	-	-
9	59	OD	Top of Tube Sheet	45	47	34	-	< 20	< 20
14	59	OD	Top of Tube Sheet	29	23	-	-	-	-
15	59	OD	Top of Tube Sheet	27	42	32	41	< 20	< 20
16	59	OD	Top of Tube Sheet	38	41	26	-	-	< 20
17	59	OD	Top of Tube Sheet	-	27	-	-	-	-
19	59	OD	Top of Tube Sheet	25	28	22	30	< 20	< 20

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
20	59	OD	Top of Tube Sheet	43%	38	26	34	< 20	28
14	60	OD	Top of Tube Sheet	47	47	37	45	43	34
15	60	OD	Top of Tube Sheet	39	35	23	31	< 20	< 20
17	60	OD	Top of Tube Sheet	-	23	-	-	-	-
18	60	OD	Top of Tube Sheet	-	29	24	-	-	-
20	60	OD	Top of Tube Sheet	51	42	35	45	-	24
13	61	OD	Top of Tube Sheet	-	23	-	-	-	-
14	61	OD	Top of Tube Sheet	33	30	22	23	20	< 20
15	61	OD	Top of Tube Sheet	22	25	23	34	< 20	< 20
16	61	OD	Top of Tube Sheet	33	28	20	36	-	< 20
12	62	OD	Top of Tube Sheet	-	24	-	-	-	-
13	62	OD	Top of Tube Sheet	24	33	24	26	< 20	< 20
14	62	OD	Top of Tube Sheet	27	28	27	26	< 20	-
15	62	OD	Top of Tube Sheet	33	33	24	26	23	< 20
17	62	OD	Top of Tube Sheet	< 20	38	23	-	-	-
20	62	OD	Top of Tube Sheet	20	24	-	-	-	-
13	63	OD	Top of Tube Sheet	24	30	20	29	< 20	< 20
14	63	OD	Top of Tube Sheet	27	21	-	-	-	-
15	63	OD	Top of Tube Sheet	27	30	24	31	-	-
16	63	OD	Top of Tube Sheet	33	32	25	31	-	< 20
20	63	OD	Top of Tube Sheet	-	20	-	-	-	-
22	63	OD	Top of Tube Sheet	-	20	-	-	-	-
3	64	OD	Top of Tube Sheet	plug	83	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Inlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
10	64	OD	Top of Tube Sheet	-	25	-	-	-	-
13	64	OD	Top of Tube Sheet	36%	33	26	31	24	24
15	64	OD	Top of Tube Sheet	24	21	-	-	-	-
13	65	OD	Top of Tube Sheet	-	24	-	-	-	-
19	65	OD	Top of Tube Sheet	-	20	-	-	-	-
2	67	OD	Top of Tube Sheet	-	43	-	-	-	-
3	67	OD	Top of Tube Sheet	plug	83 & 90	-	-	-	-
14	68	OD	Top of Tube Sheet	36	30	-	-	-	-
3	69	OD	Top of Tube Sheet	plug	83	-	-	-	-
13	69	OD	Top of Tube Sheet	33	34	29	20	28	28
9	70	OD	Top of Tube Sheet	29	34	29	36	30	30
12	70	OD	Top of Tube Sheet	34	29	26	30	32	32
13	70	OD	Top of Tube Sheet	29	24	22	29	26	26
11	71	OD	Top of Tube Sheet	-	20	-	-	-	-
6	72	OD	Top of Tube Sheet	20	21	-	-	-	-
13	72	OD	Top of Tube Sheet	-	21	-	-	-	-
6	73	OD	Top of Tube Sheet	24	22	-	-	-	-
8	73	OD	Top of Tube Sheet	20	25	24	31	< 20	< 20
11	73	OD	Top of Tube Sheet	20	30	-	-	-	-
7	74	OD	Top of Tube Sheet	32	32	-	-	-	-
8	74	OD	Top of Tube Sheet	20	-	-	-	-	-
14	74	OD	Top of Tube Sheet	-	20	-	-	-	-
9	75	OD	Top of Tube Sheet	27	-	-	-	-	-
12	76	OD	Top of Tube Sheet	40	34	27	-	-	-



NUCLEAR ENERGY SERVICES, INC.
CONAM INSPECTION DIVISION

APPENDIX B-8

"C" OUTLET

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
5	15	OD	Top of Tube Sheet	20%	-	-	-	-	-
9	15	OD	Top of Tube Sheet	20	-	-	-	-	-
8	16	OD	Top of Tube Sheet	20	-	-	-	-	-
9	16	OD	Top of Tube Sheet	20	-	-	-	-	-
10	16	OD	Top of Tube Sheet	20	-	-	-	-	-
11	16	OD	Top of Tube Sheet	30	-	-	-	-	-
9	17	OD	Top of Tube Sheet	20	-	-	-	-	-
10	17	OD	Top of Tube Sheet	20	-	-	-	-	-
11	17	OD	Top of Tube Sheet	<20	-	-	-	-	-
12	17	OD	Top of Tube Sheet	20	-	-	-	-	-
13	17	OD	Top of Tube Sheet	20	-	-	-	-	-
14	17	OD	Top of Tube Sheet	20	-	-	-	-	-
3	18	OD	Top of Tube Sheet	20	-	-	-	-	-
9	18	OD	Top of Tube Sheet	20	-	-	-	-	-
10	18	OD	Top of Tube Sheet	<20	-	-	-	-	-
11	18	OD	Top of Tube Sheet	20	-	-	-	-	-
12	18	OD	Top of Tube Sheet	29	-	-	-	-	-
13	18	OD	Top of Tube Sheet	29	-	-	-	-	-
14	18	OD	Top of Tube Sheet	38	-	-	-	-	-
15	18	OD	Top of Tube Sheet	20	-	-	-	-	-
16	18	OD	Top of Tube Sheet	20	-	-	-	-	-
3	19	OD	Top of Tube Sheet	20	-	-	-	-	-
5	19	OD	Top of Tube Sheet	< 20	-	-	-	-	-
7	19	OD	Top of Tube Sheet	< 20	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
9	19	OD	Top of Tube Sheet	29%	-	-	-	-	-
10	19	OD	Top of Tube Sheet	< 20	-	-	-	-	-
14	19	OD	Top of Tube Sheet	29	-	-	-	-	-
15	19	OD	Top of Tube Sheet	20	-	-	-	-	-
16	19	OD	Top of Tube Sheet	20	-	-	-	-	-
17	19	OD	Top of Tube Sheet	20	-	-	-	-	-
18	19	OD	Top of Tube Sheet	20	-	-	-	-	-
5	20	OD	Top of Tube Sheet	< 20	-	-	-	-	-
13	20	OD	Top of Tube Sheet	20	-	-	-	-	-
14	20	OD	Top of Tube Sheet	20	-	-	-	-	-
15	20	OD	Top of Tube Sheet	30	-	-	-	-	-
16	20	OD	Top of Tube Sheet	27	-	-	-	-	-
19	20	OD	Top of Tube Sheet	20	-	-	-	-	-
15	21	OD	Top of Tube Sheet	50	-	-	-	-	-
16	21	OD	Top of Tube Sheet	62	-	-	-	-	-
19	21	OD	Top of Tube Sheet	20	-	-	-	-	-
15	22	OD	Top of Tube Sheet	52	-	-	-	-	-
16	22	OD	Top of Tube Sheet	50	-	-	-	-	-
17	22	OD	Top of Tube Sheet	48	-	-	-	-	-
18	22	OD	Top of Tube Sheet	36	-	-	-	-	-
19	22	OD	Top of Tube Sheet	20	-	-	-	-	-
16	23	OD	Top of Tube Sheet	46	-	-	-	-	-
18	23	OD	Top of Tube Sheet	32	-	-	-	-	-
19	23	OD	Top of Tube Sheet	20	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
21	23	OD	Top of Tube Sheet	20%	-	-	-	-	-
18	24	OD	Top of Tube Sheet	36	-	-	-	-	-
21	24	OD	Top of Tube Sheet	20	-	-	-	-	-
22	24	OD	Top of Tube Sheet	20	-	-	-	-	-
22	25	OD	Top of Tube Sheet	20	-	-	-	-	-
25	28	OD	Top of Tube Sheet	33	-	-	-	-	-
26	28	OD	Top of Tube Sheet	20	-	-	-	-	-
26	29	OD	Top of Tube Sheet	35	-	-	-	-	-
25	30	OD	Top of Tube Sheet	20	-	-	-	-	-
26	30	OD	Top of Tube Sheet	20	-	-	-	-	-
25	31	OD	Top of Tube Sheet	30	-	-	-	-	-
26	31	OD	Top of Tube Sheet	23	-	-	-	-	-
27	31	OD	Top of Tube Sheet	20	-	-	-	-	-
25	32	OD	Top of Tube Sheet	20	-	-	-	-	-
26	32	OD	Top of Tube Sheet	20	-	-	-	-	-
28	32	OD	Top of Tube Sheet	20	-	-	†	-	-
27	33	OD	Top of Tube Sheet	20	-	-	-	-	-
26	34	OD	Top of Tube Sheet	20	-	-	-	-	-
25	38	OD	Top of Tube Sheet	20	-	-	-	-	-
26	38	OD	Top of Tube Sheet	20	-	-	-	-	-
25	39	OD	Top of Tube Sheet	20	-	-	-	-	-
26	39	OD	Top of Tube Sheet	20	-	-	-	-	-
25	40	OD	Top of Tube Sheet	20	-	-	-	-	-
26	40	OD	Top of Tube Sheet	59	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
29	40	OD	Top of Tube Sheet	20 %	-	-	-	-	-
25	41	OD	Top of Tube Sheet	20	-	-	-	-	-
26	41	OD	Top of Tube Sheet	63	-	-	-	-	-
26	42	OD	Top of Tube Sheet	67	-	-	-	-	-
27	42	OD	Top of Tube Sheet	20	-	-	-	-	-
26	43	OD	Top of Tube Sheet	43	-	-	-	-	-
27	43	OD	Top of Tube Sheet	20	-	-	-	-	-
26	44	OD	Top of Tube Sheet	47	-	-	-	-	-
27	44	OD	Top of Tube Sheet	20	-	-	-	-	-
28	44	OD	Top of Tube Sheet	20	-	-	-	-	-
26	45	OD	Top of Tube Sheet	52	-	-	-	-	-
27	45	OD	Top of Tube Sheet	28	-	-	-	-	-
28	45	OD	Top of Tube Sheet	38	-	-	-	-	-
26	48	OD	Top of Tube Sheet	20	-	-	-	-	-
26	50	OD	Top of Tube Sheet	20	-	-	-	-	-
27	54	OD	Top of Tube Sheet	34	-	-	-	-	-
2	55	OD	Top of Tube Sheet	20	-	-	-	-	-
27	55	OD	Top of Tube Sheet	30	-	-	-	-	-
2	56	OD	Top of Tube Sheet	29	-	-	-	-	-
26	56	OD	Top of Tube Sheet	29	-	-	-	-	-
27	56	OD	Top of Tube Sheet	20	-	-	-	-	-
28	56	OD	Top of Tube Sheet	20	-	-	-	-	-
2	57	OD	Top of Tube Sheet	20	-	-	-	-	-
25	57	OD	Top of Tube Sheet	20	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet

Frequency: 400 KHz

Site: H. B. Robinson

Percent Defect: Historical Data

Row	Col.	Origin	Location	May 1979	March 1978	Nov. 1976	Nov. 1975	Apr. 1975	June 1974
26	57	OD	Top of Tube Sheet	20 %	-	-	-	-	-
27	57	OD	Top of Tube Sheet	20	-	-	-	-	-
28	57	OD	Top of Tube Sheet	20	-	-	-	-	-
26	58	OD	Top of Tube Sheet	29	-	-	-	-	-
31	58	OD	Top of Tube Sheet	20	-	-	-	-	-
26	59	OD	Top of Tube Sheet	29	-	-	-	-	-
25	60	OD	Top of Tube Sheet	20	-	-	-	-	-
26	60	OD	Top of Tube Sheet	34	-	-	-	-	-
26	61	OD	Top of Tube Sheet	43	-	-	-	-	-
27	61	OD	Top of Tube Sheet	20	-	-	-	-	-
26	62	OD	Top of Tube Sheet	27	-	-	-	-	-
27	62	OD	Top of Tube Sheet	20	-	-	-	-	-
25	63	OD	Top of Tube Sheet	20	-	-	-	-	-
26	63	OD	Top of Tube Sheet	33	-	-	-	-	-
24	64	OD	Top of Tube Sheet	20	-	-	-	-	-
25	64	OD	Top of Tube Sheet	25	-	-	5	-	-
26	64	OD	Top of Tube Sheet	20	-	-	-	-	-
24	65	OD	Top of Tube Sheet	20	-	-	-	-	-
25	65	OD	Top of Tube Sheet	25	-	-	-	-	-
23	66	OD	Top of Tube Sheet	20	-	-	-	-	-
24	66	OD	Top of Tube Sheet	27	-	-	-	-	-
26	67	OD	Top of Tube Sheet	36	-	-	-	-	-
21	69	OD	Top of Tube Sheet	20	-	-	-	-	-
24	69	OD	Top of Tube Sheet	20	-	-	-	-	-

EDDY CURRENT EXAMINATION RESULTS

S.G.: "C" Outlet Frequency: 400 KHz Site: H. B. Robinson Percent Defect: Historical Data

<u>Row</u>	<u>Col.</u>	<u>Origin</u>	<u>Location</u>	<u>May 1979</u>	<u>March 1978</u>	<u>Nov. 1976</u>	<u>Nov. 1975</u>	<u>Apr. 1975</u>	<u>June 1974</u>
20	70	OD	Top of Tube Sheet	20%	-	-	-	-	-
21	70	OD	Top of Tube Sheet	20	-	-	-	-	-
19	71	OD	Top of Tube Sheet	29	-	-	-	-	-
20	71	OD	Top of Tube Sheet	20	-	-	-	-	-
19	72	OD	Top of Tube Sheet	20	-	-	-	-	-
3	75	OD	Top of Tube Sheet	20	-	-	-	-	-