



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PRC

AUG 3 1984

Docket Nos.: 50-445
and 50-446

MEMORANDUM FOR: The Atomic Safety and Licensing Board
for Comanche Peak, Units 1 and 2
(P. Bloch, W. Jordan, K. McCollom)

FROM: Darrell G. Eisenhut, Director
Division of Licensing

SUBJECT: BOARD NOTIFICATION: ALLEGATIONS RELATING TO IMPROPER
CONSTRUCTION PRACTICES ON COMANCHE PEAK -IN CONDENSERS
(BOARD NOTIFICATION NO. 84-124)

This Notification is provided in accordance with NRC procedures regarding Board Notifications.

The enclosed letter to Texas Utilities Electric Company dated June 19, 1984, transmitted a portion of a transcribed interview with the alleged and requested an assessment of the extent that the Texas Utilities' quality control program was implemented during condenser unit fabrication and installation, a summary of the test results that will reflect existing leak rates, and an evaluation of the impact of any expected condenser tube leakage on the ability to maintain satisfactory steam generator secondary side water chemistry.

Texas Utilities responded to the above request in a letter dated July 9, 1984, also enclosed. The staff is currently evaluating that response. The ASLB will be kept advised.

The parties to the proceeding are being informed by copy of this memorandum.

Darrell G. Eisenhut
Darrell G. Eisenhut, Director
Division of Licensing

Enclosures: As stated

cc: ACRS (10)
Parties to the Proceeding
See next page

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Comanche Peak Units 1&2
Docket Nos. 50-445/446

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6-19-84

In Reply Refer To:
Dockets: 50-445
50-446

Texas Utilities Electric Company
ATTN: M. D. Spence, President, TUGCO
Skyway Tower
400 North Olive Street
Lock Box 81
Dallas, Texas 75201

Gentlemen:

The attached enclosures are matters relating to alleged improper construction practices involving the Comanche Peak Steam Electric Station main condensers (Units 1 and 2) expressed by an alleger during an interview conducted on August 24, 1983 by members of the NRC Office of Investigation Field Office, Region IV. Although the condenser units are components within the BOP classification, the allegations expressed raise concern as to the quality of workmanship that could impact on reactor safety.

You are requested to provide this office in writing within 20 days, your assessment of the extent that your quality control program was previously implemented during condenser unit fabrication and installation; a summary of test results that will reflect existing leak rates; and an evaluation of the impact of any expected condenser tube leakage on your ability to maintain satisfactory steam generator secondary side water chemistry.

The response directed by this letter is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

Original Signed
Richard L. Bangart
R. L. Bangart, Director
Region IV Comanche Peak Task Force

Enclosures:

- Alleger's Recorded Statements:
1. Pages 22 through 28
 2. Pages 38 through 51, including Exhibits 1, 2, 3, 4, 5A, 5B, and 6

cc:
See page 2

~~8407090148~~ PDR

Texas Utilities Electric Company

-2-

June 19, 1984

CC:

Texas Utilities Electric Company
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President, Nuclear
Skyway Tower
400 North Olive Street
Lock Box 81
Dallas, Texas 75201

Texas Utilities Electric Company
ATTN: H. C. Schmidt, Manager
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Skyway Tower
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bcc to DMB (IE01)

bcc distrib. by RIV:

RPB1

RPB2

RRI-OPS

RRI-CONST.

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RIV File

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T. Appolito

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[REDACTED] Oh Lord, let's see. I don't know how far you want to get into this, you know, as a fine line. Are you talking about extremely bad. Like the condensers, for instance, we took air hammers and sledge hammers and beat tubes. That is a no-no. Anybody would know that. You take a copper-nickle tube about as thick as your wedding band and you take a 16 pound sledge hammer and drive them. We put ice on to shrink them and put them in the condenser. That is a no-no. You are supposed to ease them in with our hand so they can expand.

MR. GRIFFIN: Was that particular instance in your testimony or in your affidavit?

[REDACTED]: No.

MR. GRIFFIN: That is new?

[REDACTED] No, it is all new. We split tubes, belling the tubes and flaring them. We split tube sheets. I reported a tube sheet split to Westinghouse. They said oh, my God, you know, yeah, yeah, yeah, and all this stuff. The next day we had a meeting and we all went there and there must have been 45 or 50 people.

MR. GRIFFIN: When was this?

[REDACTED] This was a couple of years ago.

MR. GRIFFIN: Where are these tube sheets?

[REDACTED] They are in the condensers.

1 But anyway, we had a problem. So we got there with
2 Westinghouse, and they go that is not a Westinghouse
3 problem. What problem? See, the day before they had a
4 problem that a tube sheet was cracked. Then all at once
5 they don't have no more problem because they called their
6 home office and they probably said you idiots, don't tell
7 them. So they said the only problem we have is the tubes
8 are not rolled up tight enough. I said, we are cracking
9 the tube sheets already and they are rolled at a minimum
10 and not a maximum. I said we would be in trouble if we had
11 to roll them to the max, or if we had to roll them over
12 the max, superroll them.

13 (At this point in the proceedings [REDACTED]

14 [REDACTED] is referring to [REDACTED] Exhibit 1.)

15 Here is your water boxes right here and your
16 condensers. All right, in condenser A on the inlet end on
17 the west box and it is in three sections. You have got
18 some cracked tube sheets in here. Back there you have got
19 some cracked tube sheets. You have got overrolled tubes or
20 barely overrolled. They are supposed to be rolled 669
21 thousand is a perfect roll inside reading. They allow us
22 to go to 671 thousand. We went up 90-some thousands.

23 I had one hand come tell me and say my
24 expander run out. Manually he rolled it so tight the
25 expander and motor jumped off. They just pop them just

1 like popcorn.

2 It is the wrong type of condenser for the
3 wrong type steam generator to start off with. It was a \$10
4 million goof-up. Westinghouse said wait a minute, I think
5 we can straighten this problem out since it is air
6 condensers, which they went bankrupt and are no more in
7 the condenser business. They decided they had to
8 intergroove a tube sheet. They took an inch and a quarter
9 tube sheet and they cut it in half. They should have used
10 two tube sheets if they were going to do that and made it
11 twice as strong and not half.

12 MR. GRIFFIN: Are these things still there?

13 [REDACTED]: They are still there, yes. All
14 you got to do is go in there. It is really terrible. What
15 I would suggest doing is on the big ones like 90-some
16 thousand is cutting the tube out and look at your sheet.
17 There is a spider web crack. I showed the people the
18 crack, and that is when I first started getting the
19 pressure, this is about three years ago, after I reported
20 this stuff. I kept on insisting on this crack, and then
21 everybody would go oop, and [REDACTED], he would go, you
22 know, [REDACTED], I am not for sure they are cracked. I would
23 go I am not. You know, you can throw a cat through it, and
24 he goes no, no, no.

25 Well, undoubtedly TUGCO told him to back off.

1 They were talking about several years of rework and
2 millions of dollars. So they are talking about time and
3 they don't want nothing to stop this plant.

4 These tubes are titanium tubes and there
5 should be twice as many support sheets in there and all
6 that stuff. So they intergrooved the tube sheet and they
7 still have got leaks over there on this section here and
8 we are not supposed to have no leaks at all.

9 MR. HERR: She can't see "right there" --
10 (Indicating the reporter). So when you say section one,
11 identify what you are pointing to.

12 [REDACTED] Okay. Condenser B, Unit 1,
13 west discharge water box and you have got a cracked tube
14 sheet. Also, the tubes are overrolled severely.

15 On the east water box, condenser B, discharge
16 end, you are heavily overrolled and you undoubtedly have
17 got quite a few cracks in it. I can swear to that. I know
18 you do because it swelled up so big.

19 Overroll on the west box, condenser A, Unit 1,
20 discharge end.


21 East water box, discharge end, condenser A,
22 you are still leaking, and overrolled.

23 The more you roll, the more they leak. They
24 more they leak, the more you roll, and the more your roll,
25 the more damage you are doing. They just went nuts with

1 it.

2 Condenser A, Unit 1, intake box, the west box,
3 you have got cracked tube sheets.

4 It is very simple to check because I put
5 little plugs in there. You can just take a wrench and just
6 screw your two nuts loose and pull the plug out and look
7 at it and put it right back in. It wouldn't take five
8 minutes to look.

9  Exhibit 1 just referred to
10 follows.)

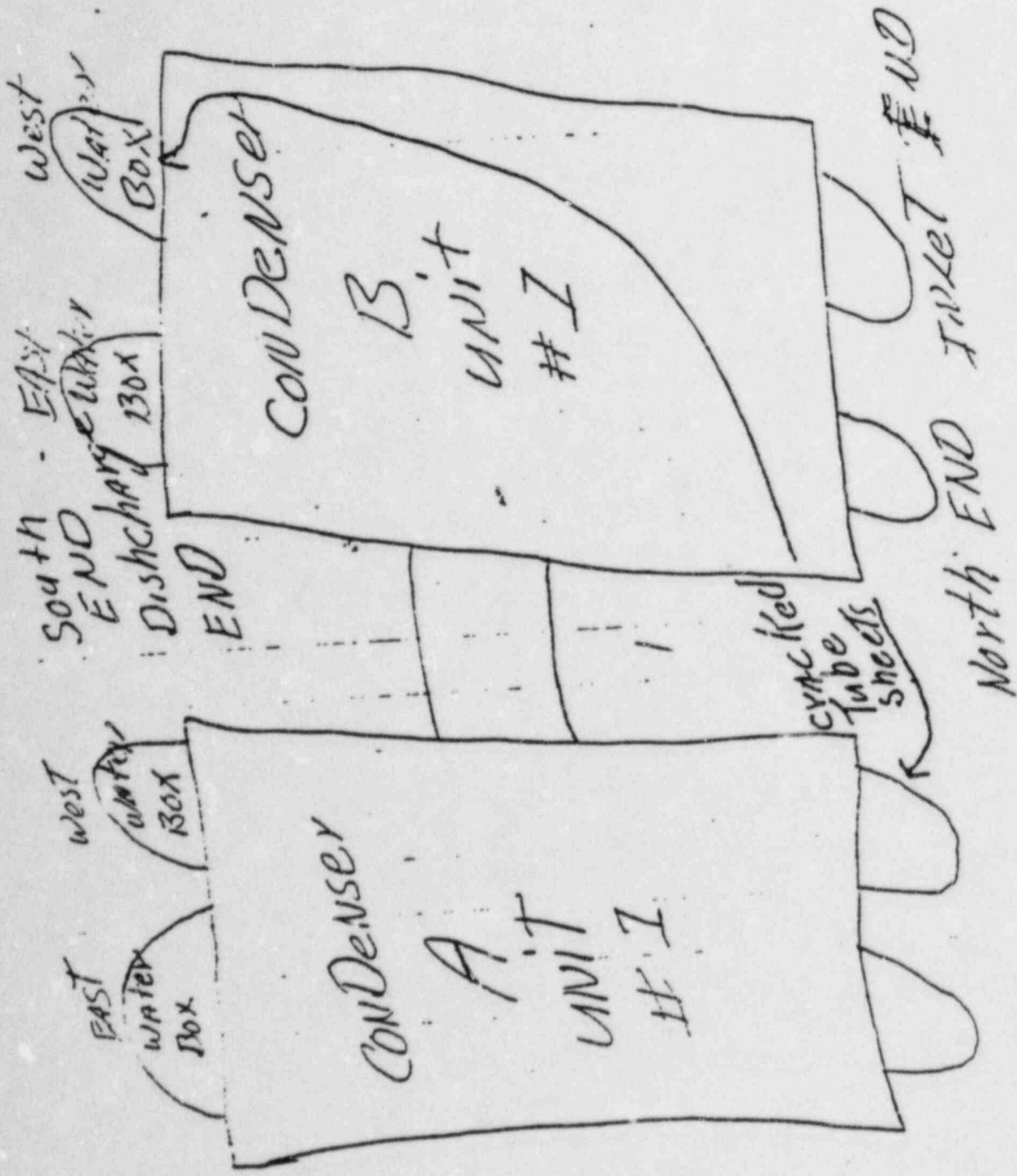
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1 MR. GRIFFIN: [REDACTED], did anybody intimidate you
2 into overrolling those things?

3 [REDACTED]: We had an engineer there from
4 TUGCO saying get it a little more, get it a little more to
5 my people. I went and told [REDACTED]. I said they are killing
6 that water box. Nobody had ever did the tube work before
7 and nobody knew. They are experimenting with an item.

8 In the first place, the condenser wasn't a
9 very good designed condenser, in my opinion. I have worked
10 on them since I was 15 years old. These was I would say
11 between 1 and 10 about a 6, you know, a so-so condenser.
12 When they intergrooved their sheet, they made the sheet
13 real, real thin.

14 MR. GRIFFIN: But did anybody tell you or
15 instruct you to do that?

16 [REDACTED]: I was instructed not to stop
17 leaks, for instance. I was rolling tubes and I was
18 stopping the water box from leaking. I have got a water
19 box over here leaking and it is still leaking. I go tell
20 [REDACTED], and [REDACTED] says how does that box look, and I said
21 it looks good but the other one started leaking again, and
22 I have got to get it. He goes goddamn, [REDACTED], I can go
23 there any day and make things better than they are. I
24 don't want you to do that. I go I am just trying to stop
25 the leaks, you know. You ain't supposed to have leaks.

1 Your river water leaks into, you know, that type steam
2 generator and you can't allow no river water inside, lake
3 water. So it is still leaking. My problem was I of course
4 couldn't do a good job.

5 MR. GRIFFIN: You are saying it is still
6 leaking today or it was still leaking when you left?

7 [REDACTED]: It was still leaking when I
8 left and it is still leaking today because they didn't
9 rework it.

10 MR. HERR: Who was the engineer?

11 [REDACTED]: [REDACTED]

12 MR. HERR: Let me get one thing straight.
13 Excuse me for a second. [REDACTED] and [REDACTED], were
14 they your supervisors?

15 [REDACTED]: [REDACTED] was my
16 supervisor.

17 MR. HERR: What was his title?

18 [REDACTED]: He was the [REDACTED]

19 [REDACTED].

20 MR. HERR: Who was the other guy, [REDACTED]? What
21 was his job title?

22 [REDACTED]: He was a three striper. I
23 don't know where he come from. He don't know anything. He
24 is supposed to be a [REDACTED] three striper.

25 MR. HERR: What is a three striper?

b6
b7C

[REDACTED] No. Another good example was
 3 setting the condensers. The BOP inspector come down and
 4 checked the welds on it. he rejected all the welds. We had
 5 a rig hooked up. He even rejected the factor welds. [REDACTED]
 6 [REDACTED]. He said have you got a condenser in that hole
 7 yet? I go no, I said it don't look like we are going to do
 8 it either because a BOP inspector just turned down all the
 9 welds. Boy he started cussing. he said I want that son of
 10 a bitch's name and badge number.

11 So he started making calls. So I dropped back
 12 to the guy and he just bought it off sitting in his
 13 office. Well, as a matter of fact, it got to a point where
 14 they wouldn't even come and look at none of the welds.
 15 They would just buy them off.

16 "MR. GRIFFIN: Who is this guy again that bought
 17 it off?

18 [REDACTED]: I don't know his name. He is
 19 still out there. [REDACTED] I think it the last name.

20 MR. GRIFFIN: [REDACTED]?

21 [REDACTED]: Yes. He got run off of BOP and
 22 I think he ended up in QC. I think he name was [REDACTED]

23 MR. HERR: What year was that?

24 [REDACTED]: This was probably '79 or '80
 25 when we was setting Unit 2 condensers. Condenser A was

MR. GRIFFIN: I think our people will

2 understand it.

3 [REDACTED]: Somewhere down here they had a
4 nice thick tube sheet to start off.

5 ([REDACTED] is leafing through his
6 notebook.)

7 This is a real good example. These tube
8 support sheets came in. We laid them on top of each other
9 and we put dowel pins in them. Some of the holes was
10 three-eighths of an inch off; from the others, you know.

11 So I called [REDACTED] and I told him, I said we
12 are going to have a problem here. These holes are way off.
13 Well, he calls Westinghouse, and Westinghouse says oh,
14 there is nothing to it. [REDACTED] says, [REDACTED], they are just
15 three-eighths of an inch off. I said well, you have got
16 three foot from the center of one sheet to the other, and
17 when you start off with three-eighths of an inch off you
18 are off quite a ways when you get to the other end, you
19 know, the three foot.

20 If you go three-eighths of an inch off, over
21 here you might be an inch and a half off, and by the time
22 you turn it back in then automatically you are going to
23 need the other way. So you are binding every sheet. You
24 are cutting into the tubes.

25 These tube support sheets are made with a

1 certain amount of clearance so that tube can roll
2 without binding. They are cut in two here.

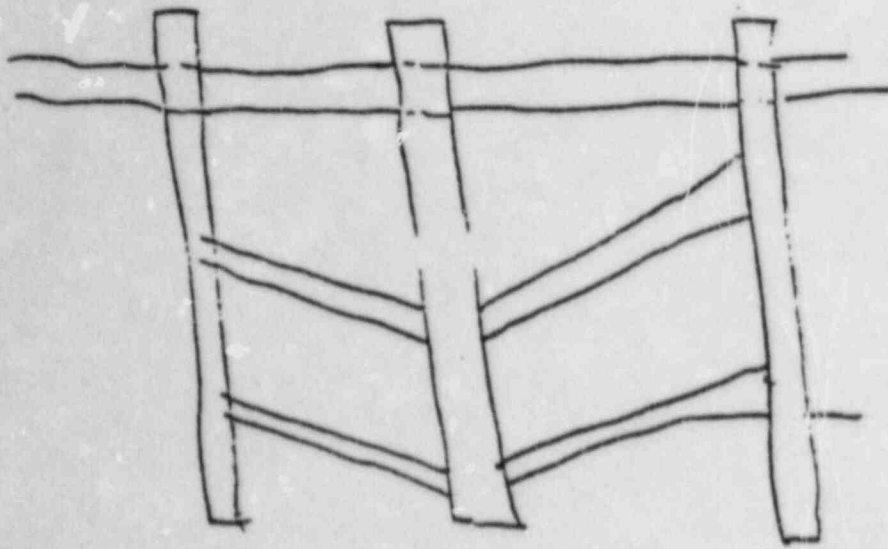
3 MR. GRIFFIN: Now what system is this?

4 [REDACTED]: This is Unit 1 and Unit 2 A
5 and B condensers, the main condensers. This is what I am
6 talking about. I am not talking nothing about the
7 Auxiliary condenser. Everything is the main condensers.
8 There is supposed to be something like 39 thousand
9 clearance in the tube support sheets so that your tubes
10 can expand in its track without binding. Now your main
11 tube sheet is 10 thousand before they roll these.

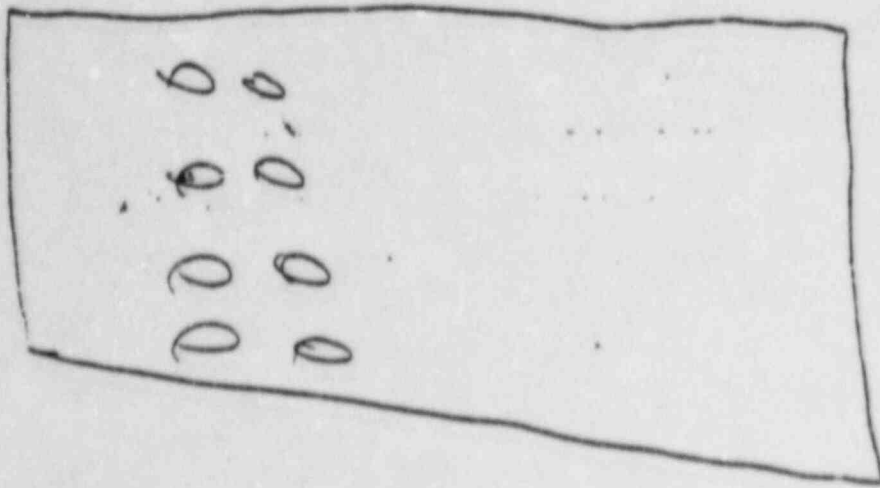
12 ([REDACTED] Exhibit 2, the document just
13 referred to, follows:)

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sheet



Tube Support

2 MR. GRIFIN: [REDACTED], you didn't discuss this
particular problem in your previous affidavits?

3 [REDACTED]: No, I didn't discuss it with
4 anybody because it seemed like when you bring up a problem
5 it is covered up. In my opinion, it is not corrected at
6 all. That is the reason I wanted to bring it out and I
7 would like to show people. They stuff here couldn't have
8 been covered up except by paperwork because you can go
9 down there any day of the week and read the inside
10 diameter of your tube and you know you are overrolled.

11 Everything that I could actually put my finger
12 on, like the letter, they automatically agree, just like
13 the light poles, you know. That is a 15 cent item I
14 brought up. Well, they jumped on that with both hands and
15 both feet and made a big deal out of it. They really
16 cleaned that up.

17 Well, you have got some spray pipes also down
18 in there. Well, it is going to be a bigger job to cut them
19 loose to do it. They haven't even mentioned that, see. I
20 think I mentioned that one in my affidavit. That goes in
21 the fuel pools. You have got four spray pipes that go down
22 in there. The holes of it was undersized and the pipe
23 department went in there and redrilled them and they used
24 cutting material, lube oil or some type of cutting oil and
25 they just pulled it off and there it was.

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MR. GRIFFIN: And you said they already
corrected that?

[REDACTED]: No, they haven't, and they
probably won't until you tell them about it.

MR. GRIFFIN: But you have already provided
that in your affidavit?

[REDACTED]: I think so.

[REDACTED]: About the light poles?

[REDACTED]: No, this is some more. The
light poles, they could take those out like so.

[REDACTED]: I think the light poles are all
that you talked about I believe. I don't recall the other.

[REDACTED]: See, one day I want to set
down and just make a whole book of it, you know. But I
have always been so busy and I don't have the education
and I can't do it, you know.

[REDACTED]: There was an investigation done by
the NRC Region IV Office about the things that were in
a newspaper article that were done.

MR. HERR: Excuse me, was that an investigation
or an inspection?

[REDACTED]: It was an inspection I believe. I
don't think it was done by the investigators.

MR. HERR: Thank you.

[REDACTED]: This is one of the things that

1 circulate it, and one of the things that concerns us about
2 any follow-up on this. We would much prefer that somebody
3 other than the Region IV inspectors go out and follow-up
4 on this.

5 ██████████: On your inlet tube sheets.
6 They are 1/32nd flush, the tubes, and they are flared. If
7 they are sticking out, you get a build-up between your
8 tubes. So when we flared these we busted a lot of tubes,
9 or quite a few of them as a matter of fact.

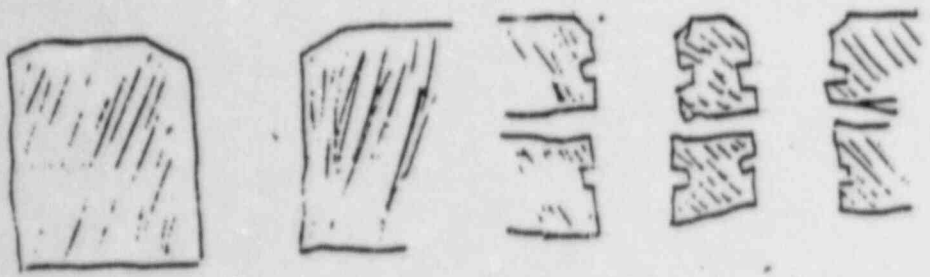
10 Now this chart, and it sticks out, but we cut
11 them down like a half inch so it would look half way
12 decent. But when we was flaring these tubes they was
13 busting pretty bad, and the reason they was busted so bad
14 in this one area is because the counterbore in your tube
15 sheet where, it, allows the flare to flare out was way
16 overboard. So in order for us to flare it tight enough we
17 busted a tube, and the ones that didn't bust we hadn't
18 flared it tight enough. When you don't flare them tight
19 enough you get a build-up between your sheet and your
20 tubes and it eats the tube off.

21 Just like the job in North Carolina, we had
22 holes in all the tubes before we ever got the fuel in
23 there. The first two weeks it was eat up. So instead of us
24 repairing it, we had several months before the fuel came
25 in, they went ahead and poxed it in and used it as is and

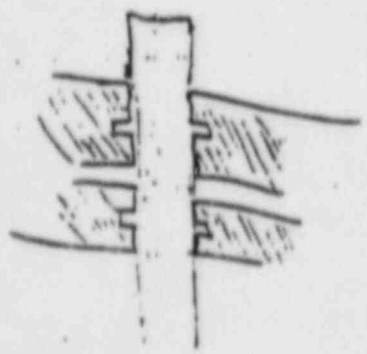
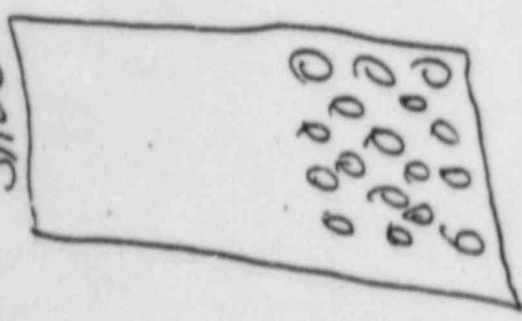
1 they leaked for 12 years. They are still leaking, and they
2 dumped truckloads of sawdust in the intakes in trying to
3 stop the tubes from leaking. Now the radiation level is so
4 high on the turbine deck that you have to be dressed out
5 just like you are going in the reactor. They should shut
6 it down and retube it.

7 ([REDACTED] Exhibit 3, the document just
8 referred to, follows:)

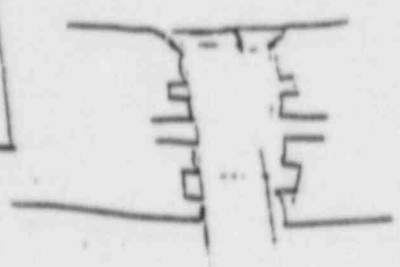
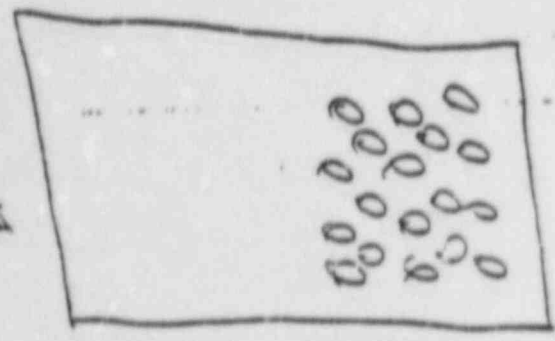
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Discharge
Tube
Sheet



Inlet
Tube
Sheet



1 MR. HERR: Where is this?

2 [REDACTED]: We have got cracks here on
3 these flares.

4 MR. HERR: What is the location of the plant?

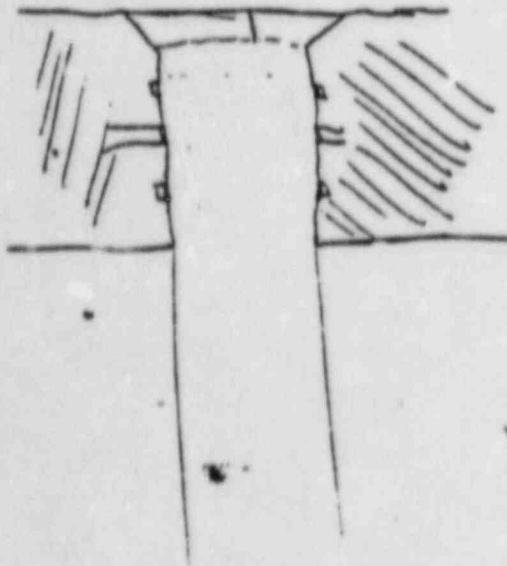
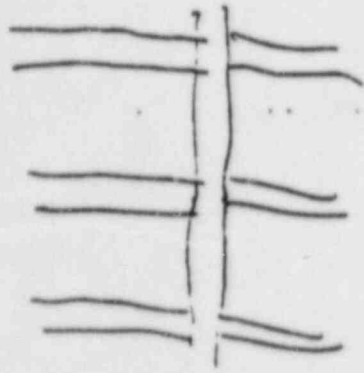
5 [REDACTED]: The flare is the intake end of
6 all condensers and your water boxes.

7 MR. HERR: Is this in Glen Rose?

8 [REDACTED]: Yes, Glen Rose, Texas at
9 Comanche Peak. Most of them is in condenser A on the inlet
10 end east water box middle way of the sheet.

11 ([REDACTED] Exhibit 4 follows:)

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CONDENSER
Tubes

1 MR. GRIFFIN: [REDACTED], I think we have got enough
2 on that where our people can probably go out and look at
3 these.

4 [REDACTED]: Okay. We was welding the
5 condenser to the turbine. Again, I hate to bring up
6 experience, but when you are bringing this condenser up,
7 you set the condenser low, but when you set the turbine in
8 they can set it on the right elevation and not be in the
9 way of the condenser.

10 When you get your turbine perfect within so
11 many thousandths, you bring your condenser up to meet. You
12 don't make a contact with your turbine. You come up like a
13 quarter of an inch or an eighth of an inch with your
14 expansion joints. You have an expansion joint in between
15 it. Then you tie them together.

16 Well, the condenser was so neavy when you load
17 it with tubes and everything. It probably weighs 600 tons.
18 Well, we took all our jacks and put them on one end so we
19 had to rack it up. Of course, when you jack at one end it
20 throws it way in and then you pick the other side up and
21 it throws it way in.

22 So I told this general foreman, and I was just
23 foreman then, but I told the other foreman don't tie
24 anything to the turbine to the condenser. I said we are
25 going to go up and it is going to fall down, but when we

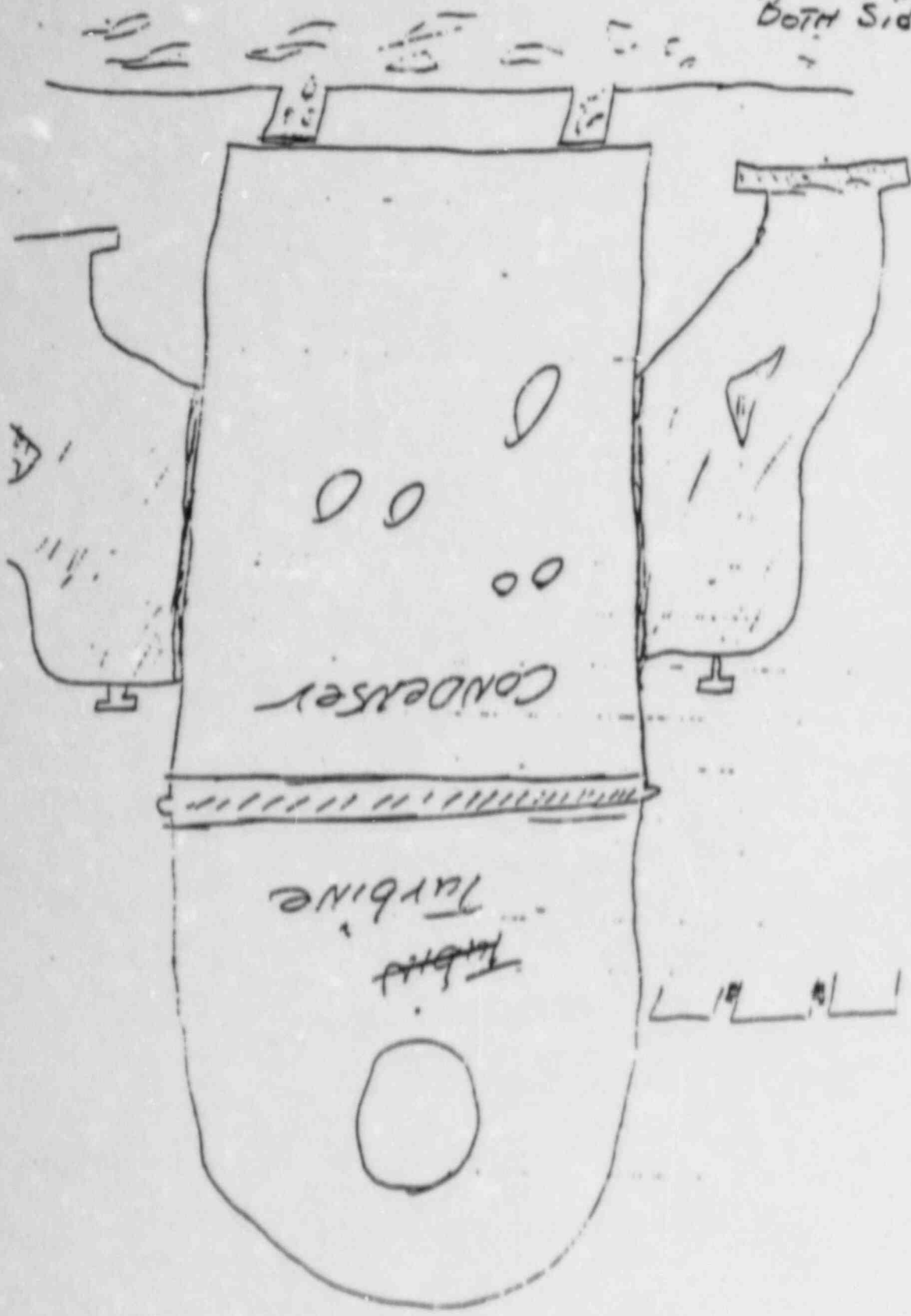
1 bring the other side up it will straighten back out and we
2 will keep working it until we bring it up.

3 Well, this general foreman, he gets there and
4 he starts welding all kind of stuff to hold it to keep
5 from coming past it. Well, what we did was we jacked the
6 turbine over. We went ahead and got it up. Well, instead
7 of them making a final check to see whether they was in
8 line or not, they just assumed they were and they was
9 three-eighths of an inch off. So we welded it all
10 together.

11 They took a reading and they was three-eighths
12 of an inch off alignment. So they went up here and they
13 took jacks and they started jacking and, boy, jacked it
14 all the way over to where they want it and they release
15 it, that little old expansion joint, and pulled it back.
16 The little expansion joint was a one loop and it was an
17 eighth of an inch thick and it had one little fillet weld
18 on each side of it, real weak. They put several, several
19 tons on it. I will show you what it looked like.

20 ([REDACTED] Exhibit 5A and 5B follows:)

#54
BOTH Sides



1 MR. GRIFFIN: [REDACTED], where there engineers
2 involved in all this work?

3 [REDACTED]: No, a lot of it there weren't,
4 no.

5 MR. GRIFFIN: Your crew was down there putting
6 this turbine on top of this condenser?

7 [REDACTED]: Right.

8 MR. GRIFFIN: Is this a non-Q area also?

9 [REDACTED]: Right, it is non-Q. We are
10 down here throwing that turbine back. They started having
11 us jack it. We jacked it up and down putting all kind of
12 stress on it, and well sideways. You know, you can tear
13 that little expansion joint out.

14 So I finally told [REDACTED] and the general
15 foreman over the turbine that I weren't going to jack it
16 no more without them giving me written permission to do it
17 or telling me to do it in writing because I says I might
18 want to work another job somewheres, and I said I will
19 never work for Brown and Root again if we rip it out, but
20 I might want to work another construction job, you know.
21 So finally they quit jacking it then.

22 Also, as we jacked the condenser up, the pipe
23 department was tied in with our pipe. They was also
24 supposed to take a pipe up with us, which they didn't do,
25 and we put a lot of stress on the pipe.

1 This right here is just showing ID of the
2 hole, the OD of the tube and OD of the tube and what it is
3 supposed to be like after we get through rolling it to be
4 a perfect roll.

5 MR. GRIFFIN: The condenser tubes?

6 [REDACTED]: Right, on the condenser. This
7 is the minimum we are supposed to roll them, the ID
8 reading.

9 MR. GRIFFIN: Can we have this also so we can
10 give it to the inspectors?

11 [REDACTED]: Yes.

12 MR. GRIFFIN: We would appreciate that because
13 if these guys can go right to the stuff and look at it, it
14 will sure be helpful.

15 ([REDACTED] Exhibit 6 follows:)

Note I D	Tube O.D.	Tube I D	Tube I O	Tube AFTER ROLLED
○	○	○	○	THE ROLLED
1.125	1.125	1.033	1.069	WE WERE
				GOING FOR
				WHICH WAS
				THE HALF
				WAY POINT

WE WERE ALOND 3 TO 7 WALL REDUCTION

WE
MAX
MID.
1.068 TO 1.071

CONDENSERS
TUBES
A AND B
UNIT #1

1 (The reporter noticed a drawing on the back
2 side of Exhibit 5 and brought it to [REDACTED]
3 attention.)

4 [REDACTED]: (Referring to Exhibit 5B) Oh,
5 this is the expansion joint I was talking about with the
6 fillet welds. It is a real small stainless steel 1/8th
7 expansion joint and it has got two small, little fillet
8 welds there.

9 MR. GRIFFIN: Okay. I think we have got that
10 down in the testimony.

11 [REDACTED]: We put several, several, I
12 think two or three hundred tons against it.

13 Okay, stainless steel liners. This is like the
14 reactor building and the fuel building. We are supposed to
15 have a gap in here on our fit-ups. This is not in there.

16 MR. GRIFFIN: This is something new?

17 [REDACTED]: Yes.

18 MR. GRIFFIN: Okay.

19 [REDACTED]: We are supposed to have a gap
20 in here no less than 3/16ths and no more than 3/8ths.

21 MR. HERR: Where is it? For the record,
22 describe what it is.

23 [REDACTED]: This is a stainless steel
24 liner. This is an embed floor plate to angle on the bottom
25 and side plate to angle. I don't know exactly where, but