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 by
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

CONCURRENCE:

TF	RPB1	EO	TL/TF
RCStewart:jc	EHJohnson	TFWesterman	DMHunnicutt
6/6/84	6/11/84	6/6/84	6/6/84

D/TF	D/TF	D/DRSP	NRR
WCSeidle	RLBangart	RPDenise	TIppolito
6/12/84	6/12/84	6/13/84	6/19/84

IE-31

8407090148 840619
PDR ADOCK 05000445
A PDR

cc:
Texas Utilities Electric Company
ATTN: B. R. Clements, Vice
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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bcc to DMB (IE01)

bcc distrib. by RIV:
RPB1
RPB2
RRI-OPS
RRI-CONST.
D.Hunnicutt
J.T. Collins, RA
R. P. Denise, DRSP
RIV File
R. L. Bangart, D/TF
S. Treby, ELD
T. Westerman, EO
Juanita Ellis, CASE
Renea Hicks, EP
Billie Pirner Garde, GAP
Texas State Dept. Health
R. Herr, OI
W. Brown, RC
T. Spaulding, NRR

[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.

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

(At this point in the proceedings [redacted] is referring to [redacted] Exhibit 1.)

Here is your water boxes right here and your condensers. All right, in condenser A on the inlet end on the west box and it is in three sections. You have got some cracked tube sheets in here. Back there you have got some cracked tube sheets. You have got overrolled tubes or barely overrolled. They are supposed to be rolled 069 thousand is a perfect roll inside reading. They allow us to go to 071 thousand. We went up 90-some thousands.

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

like popcorn.

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

MR. GRIFFIN: Are these things still there?

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

Well, undoubted TUGCO told him to back off.

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

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

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

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

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

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

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

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

it.

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

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

([redacted] Exhibit 1 just referred to follows.)


EAST
water
Box
West
water
Box
South
END
Discharge
END
EAST
water
Box
West
water
Box
CONDENSER
A
UNIT
I
CONDENSER
B
UNIT
I
cracked
Tube
sheets
North END
INLET END

MR. GRIFFIN: [redacted], did anybody intimidate you into overrolling these things?

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

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

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

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

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

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

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

MR. HERR: Who was the engineer?

[redacted]: [redacted]

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

[redacted]: [redacted] was my supervisor.

MR. HERR: What was his title?

[redacted]: He was the [redacted].

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

[redacted]: He was a three striper. I don't know where he come from. He don't know anything. He is supposd to be a [redacted] three striper.

MR. HERR: What is a three striper?

now?

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

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

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

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

MR. GRIFFIN: [redacted]?

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

MR. HERR: What year was that?

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

going in the hole, the bottom part.

MR. GRIFFIN: This is more non-Q work?

[redacted]: Non-Q, yes.

MR. GRIFFIN: [redacted], this is before he was a QC inspector?

[redacted]: Yes. He was a BOP inspector.

MR. HERR: BOP?

[redacted]: Right.

MR. GRIFFIN: What is BOP? I don't know what that is.

[redacted]: I don't know either.

[redacted]: Balance of plant. You said that the condensers here are non-Q, but they are Q at other plants?

[redacted] They are Q in South Texas. It is according if they want to make them Q or not. They are safety related because you can't operate the plant without the condenser. It is just that simple. For instance, that is the reason you have got the intergroove in the tube sheet because you cannot allow the water in the steam generator because they got problems, you know. I don't know how fast they can cool a reactor down if something did happen to the condensers, like if tube sheets bust out with water pressure or something.

I was going to show you how they weaken a tube sheet, but I don't guess that is necessary.

MR. GRIFFIN: I think our people will understand it.

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

([redacted] is leafing through his notebook.)

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

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

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

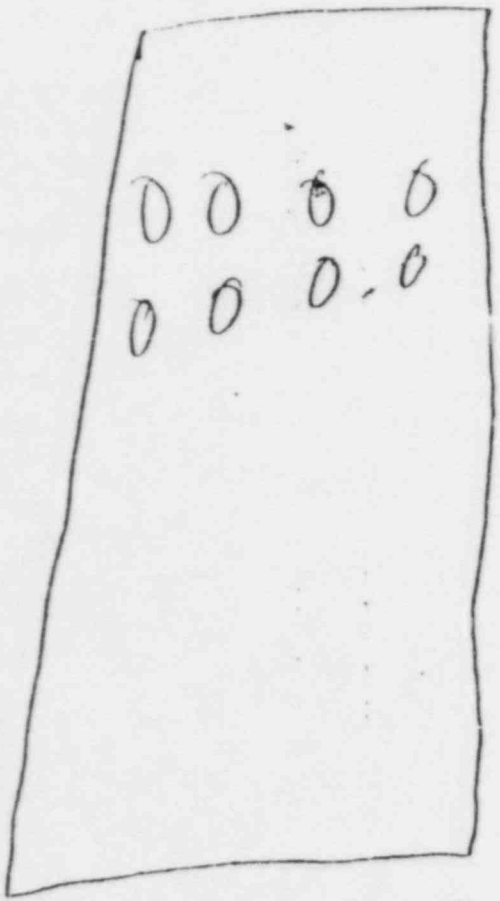
These tube support sheets are made with a

certain amount of clearance so that tube can [illegible]
without binding. They are cut in two here.

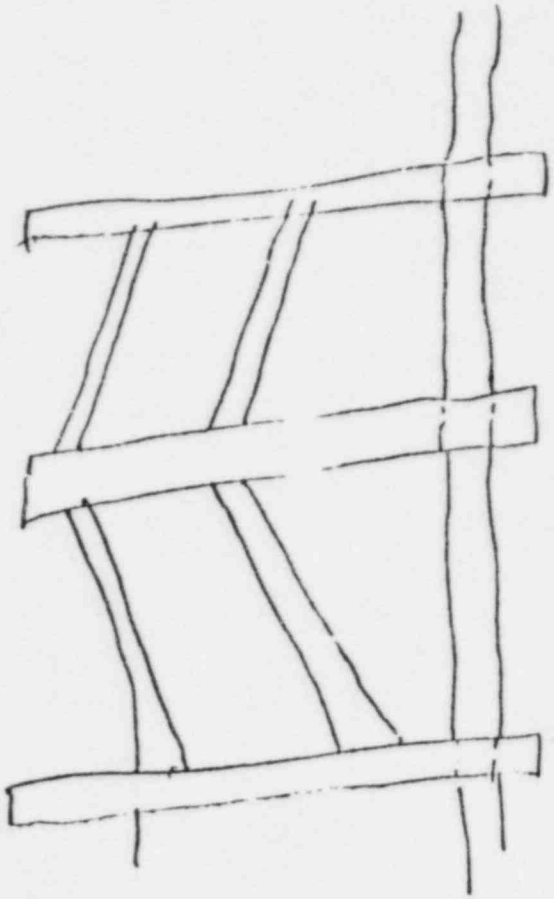
MR. GRIFFIN: Now what system is this?

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

([redacted] Exhibit 2, the document just referred to, follows:)



Tube Support sheet



MR. GRIFFIN: [redacted], you didn't discuss this particular problem in your previous affidavits?

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

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

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

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

difficult at, and one of the things that disturbs us about any follow-up on this. We would much prefer that somebody other than the Region IV inspectors go out and follow-up on this.

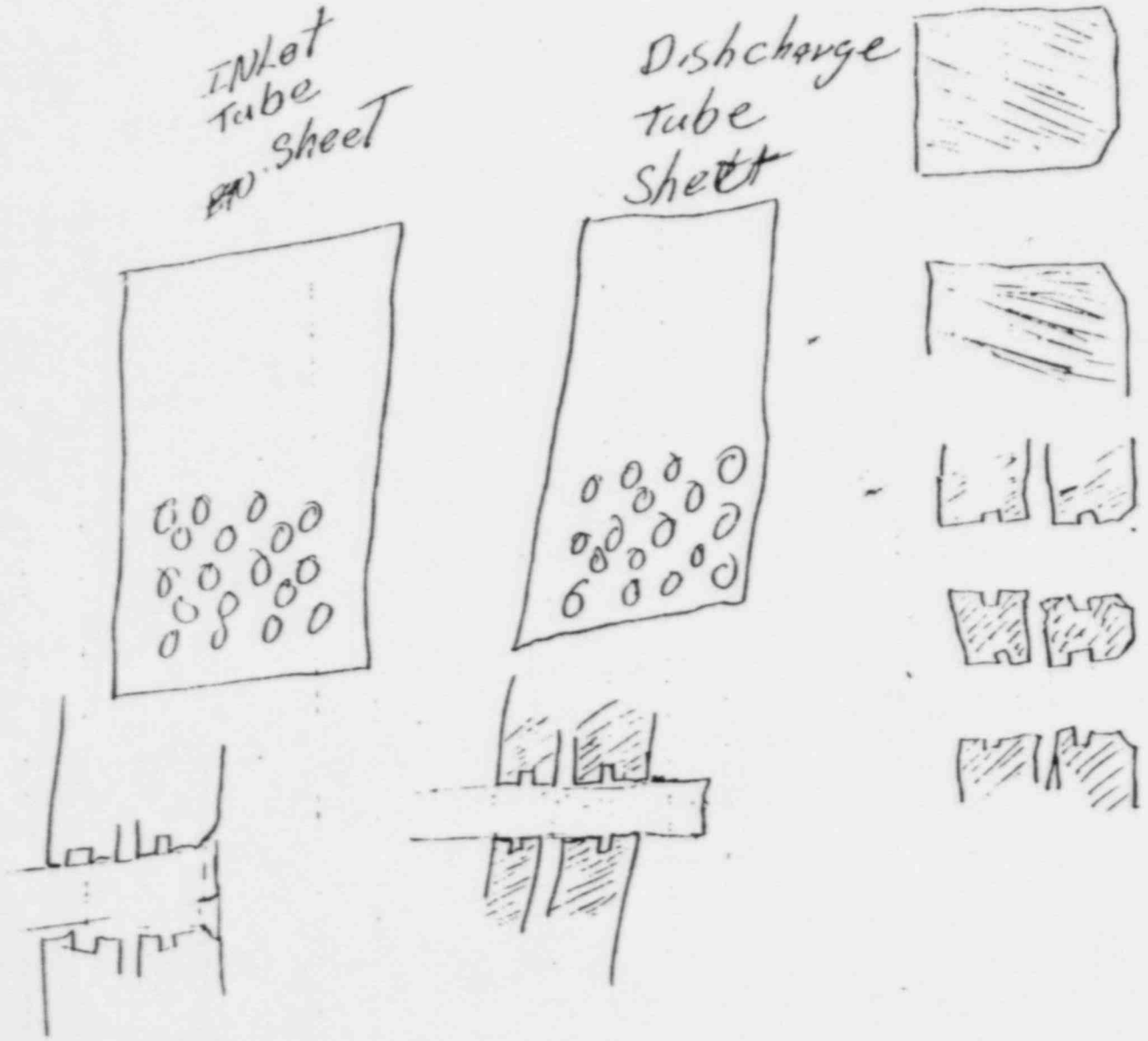
[redacted]: On your inlet tube sheets. They are 1/32nd flush, the tubes, and they are flared. If they are sticking out, you get a build-up between your tubes. So when we flared these we busted a lot of tubes, or quite a few of them as a matter of fact.

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

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

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

([redacted] Exhibit 3, the document just referred to, follows:)


Inlet
Tube
Sheet
Discharge
Tube
Sheet

MR. HERR: What is this?

[redacted]: We have got cracks here on these flares.

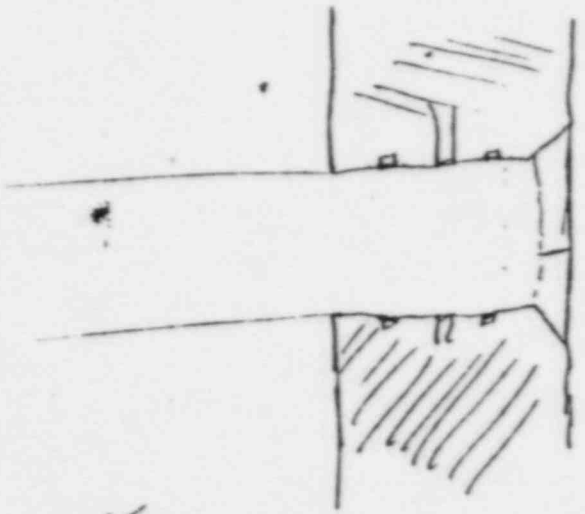
MR. HERR: What is the location of the plant?

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

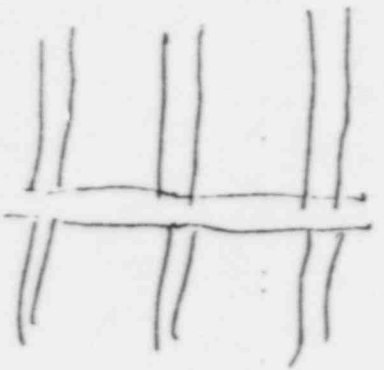
MR. HERR: Is this in Glen Rose?

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

([redacted] Exhibit 4 follows:)



CONDENSER
Tubes



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

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

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

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

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

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

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

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

([redacted] Exhibit 5A and 5B follows:)

[redacted]

#5
BOTH SIDES

MR. GRIFFIN: [redacted], were there engineers involved in all this work?

[redacted]: No, a lot of it there weren't, no.

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

[redacted]: Right.

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

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

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

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

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

MR. GRIFFIN: The condenser tubes?

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

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

[redacted]: Yes.

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

([redacted] Exhibit 6 follows:)

Hole I D	Tube O.D.	Tube I D	Tube I D After Rolled
1.135	1.125	1.033	1.069

The Rolled we were Going For With WAS The HALF WAY Point

We were Aloud 3 to 7 WALL Reduction

MIN.	MAX
1.068	1.071

CONDENSERS Tubes
A AND B
UNIT # 1

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

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

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

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

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

MR. GRIFFIN: This is something new?

[redacted]: Yes.

MR. GRIFFIN: Okay.

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

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

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