

EXHIBIT 17

Case No. 2-1998-023

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EXHIBIT 17

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C O N T E N T S

WITNESS

EXAMINATION

ROBERT PHILIPS

BY MR. CLAXTON

4

E X H I B I T S

NUMBER

IDENTIFIED

[NONE.]

P R O C E E D I N G S

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2 MR. CLAXTON: For the record, this is an interview
3 of Robert Phillips. Today's date is Wednesday, May 12th,
4 1999. This interview is being conducted at the Watts Bar
5 Nuclear Plant, 1260 Nuclear Plant Road in Spring City,
6 Tennessee.

7 Also present at the interview is Ed Bigluicci who
8 is an attorney with Tennessee Valley Authority, and prior to
9 the interview Mr. Phillips and I discussed the fact that he
10 has allowed Mr. Bigluicci to come in, that he is aware of
11 Mr. Bigluicci's identity and that he is also aware that he
12 can provide information confidentially at any time to the
13 NRC without anyone else being present.

14 Is that correct, Mr. Phillips?

15 MR. PHILIPS: Yes, sir, that is correct.

16 MR. CLAXTON: Okay. Do you have any objections to
17 being placed under oath --

18 MR. PHILIPS: No, sir.

19 MR. CLAXTON: -- for the information that you
20 provide?

21 MR. PHILIPS: No, sir.

22 MR. CLAXTON: Okay. Would you raise your right
23 hand, please?

24 MR. PHILIPS: Yes, sir.

25 Whereupon,

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ROBERT PHILIPS,

the interviewee, was called for examination and, having been first duly sworn, was examined and testified as follows:

MR. CLAXTON: You can put your hand down.

THE INTERVIEWEE: Yes, sir.

DIRECT EXAMINATION

BY MR. CLAXTON:

Q Would you give me your full name, please?

A Yes, my name is Robert Lester Phillips, and on my business card, I go by Robert.

Q All right. Do you mind providing your home address and telephone number, in case we need to contact you at a later date?

xc A Yes, sir. ([REDACTED]
[REDACTED]
[REDACTED]
[REDACTED])

Q As we talk, if you don't mind, if you have a proper name or an acronym, if you would spell that for me, I would appreciate it.

A Yes, sir.

Q For the transcriptionist that will be typing this out later. What was the name of the street that you live on?

A ([REDACTED]) 7c

7c

1 Q Okay. Are you presently employed with the TVA?

2 A Yes, sir, I am.

3 Q Where are you employed?

4 A I am employed at the Tennessee Valley Authority,
5 the Division of Nuclear Power. My address is 1101 North
6 Market Street, and my inter-office code is LP4H-C, and that
7 is located in Chattanooga and the zip code is 37402. My
8 office number is 423-751-8299.

9 Q What is your occupation?

10 A My occupation, I am the manager of materials --
11 well, actually, metallurgy and welding. We changed the name
12 of the organization. What we used to be called materials
13 and code, now we are metallurgical and welding, and I
14 supervise the section over metallurgy and welding.

15 Q Who is your supervisor?

16 A Mr. Terry R. Woods is my supervisor.

17 Q And what type section do you supervise?

18 A The metallurgy and welding section. He has three
19 groups. He has the code group, and then he has components
20 group, and then he has metallurgy and welding, so I handle
21 all the issues on metallurgy and welding.

22 Q And were you employed as manager in June of 1995?

23 A Well, June of 1995 we were transitioning. Paul
24 Guthrie was slated to retire in September of 1995 and so we
25 were transitioning. I am not quite sure what my title was

1 at the time, but Paul still functioned in his position,
2 which is kind of like a senior specialist, and my title only
3 changed after Paul had retired. So at that time I think I
4 was a PD-9, Paul was a PD-10, something in that range.

5 Q Do you recall what your responsibilities were in
6 June of '95?

7 A Well, again, we were in transition, so the
8 responsibilities of then both Paul and myself were like
9 senior metallurgical engineers. I know whether it was
10 clearly defined but the expectation was that I was going to
11 take over the metallurgical and the welding section, that is
12 the expectation.

13 Q Okay. Do you recall during that time period that
14 some ice basket screws were examined by the Central Lab
15 Services, those screws came from Watts Bar?

16 A Yes, sir.

17 Q Okay. What was your involvement with that
18 examination?

19 A Well, my involvement was that it was only after
20 the fact that they had started looking at the screws and
21 started drawing some conclusion. We would always go out and
22 take what we called a cursory look at what the Central Lab
23 had presented, and a lot of times the Central Lab would ask
24 us questions, mainly because the sites would typically
25 provide them say screws or something like that that they

1 wouldn't know exactly what they are looking for. So
2 sometimes the lab would ask us, does this make sense or
3 something to that effect.

4 Q Okay. And what -- how did that fit in with the
5 Watts Bar ice basket screws, what was your involvement
6 there?

7 A Well, my involvement at that time was probably
8 next to nothing in that, again, as I stated earlier, I had
9 transitioned from Browns Ferry up to Chattanooga, and I
10 still had a couple of issues back at Browns Ferry. So,
11 typically, they would ask me just like technical consultant.
12 Like does this really makes sense, or the conclusion that we
13 are making make sense? Something to that effect.

14 Q Do you recall that they made any sort of inquiry
15 in this case?

16 A They -- I am trying to remember. I don't know how
17 the request came about, or how it came about, but I do
18 recall that the Central Labs, typically, they draw a
19 conclusion, they said that the people at the site had
20 provided them some information. And they had already drawn
21 a conclusion between them and a site personnel that they had
22 saw thermal cycling in the ice condenser. Well, if you know
23 anything about the design of the ice condenser, it is
24 usually, generally designed to be around 15 to 20 degrees
25 Fahrenheit. And it is goes outside of that temperature

1 range, then it is outside of tech spec. And if it is
2 outside of tech specs, then you are in total violation.

3 So for us as metallurgical engineers, typically,
4 if we are talking about thermal cycling, you would have to
5 have like a 50 to a 100 degree temperature swing. And so if
6 you had a temperature swing outside of that, then that would
7 mean I violated tech spec, so it would mean a bigger problem
8 than just thermal cycling of ice basket screws. So on the
9 technical merit, the conclusion that they made didn't even
10 make sense. So at that point, when I found out that they
11 had already drawn that conclusion, I made it a principle in
12 life that you don't argue with people if their mind is
13 already made up. If they think that that is what is right,
14 all you can say, provide information and, look, I don't
15 think that is right, and challenge what they say, and I
16 don't think that is right, and then don't try to go any
17 deeper than that.

18 Q Okay. So what I hear you saying was that you saw
19 possibly some issues that you differed with in the
20 conclusion of the report that was issued by the Central
21 Labs, is that what you are saying?

22 A Well, yes, sir. In a nutshell, yes, sir. What I
23 was saying, again, the Central Labs, typically, they draw
24 their conclusion from information that is provided to them
25 from the site. So someone from the site has provided them

1 some information, and I even think they even suggested that
2 they had thermal cycling of the ice baskets there at Watts
3 Bar. So they kind of had written that into the report.
4 But, again, if you look at the design of the ice baskets, it
5 didn't even make sense for them to have thermal cycling. I
6 mean they could have had failure, but how they failed and
7 why they failed, it wouldn't have been thermal cycling.

8 Q Now, were there other issues -- well, let me back
9 up just a little bit.

10 A Yes, sir.

11 Q The report that you are referring to, would that
12 have been the first report dated June 2nd, do you recall
13 that it was the June 2nd report?

14 A The June 2nd report?

15 Q Let me ask you this, do you recall that two
16 reports were issued on the ice basket screws?

17 A I recall that they -- I recall that the Central
18 Labs, had made -- typically, what they will do, they would
19 make a report and they would send it out to the sites. And
20 then a lot of times, if they feel like they made an error,
21 they do what they call an amendment to a report. So they
22 typically made amendments. And I have been working with the
23 Central Labs since June of 1981 and they constantly make
24 amendments. A number might be out of spec or something like
25 that, just slightly out of spec, of if they didn't look hard

1 enough to see whether the exception or conclusion they wind
2 up making exception to that. And that is their internal way
3 of making changes.

4 Q Okay. We are looking at the Central Lab Services
5 report Number 95-1021 dated June 2nd, 1995.

6 A Okay. Yes, sir.

7 Q And on the second page there are seven
8 conclusions.

9 A Okay.

10 Q The seventh conclusion is referring to thermal
11 cycling. Was that what you were just referring to?

12 A Uh-huh. Right. Yes, sir.

13 Q Okay. So you had some questions about the
14 findings of the report dated June 2nd?

15 A Yes, sir.

16 Q Okay. Were you aware that a subsequent report was
17 then issued?

18 A I knew that the -- we went out to the Central
19 Labs, and, again, the Central Labs, they have no nuclear
20 plant operational experience. They know nothing about the
21 design. I remember that we did go out there to Central Labs
22 and start asking them some basic design questions like, I
23 believe like -- how many ice baskets there are at Watts Bar?
24 Well, nobody at the lab knew that. What was the temperature
25 at the ice condenser? I don't think anybody at Central

1 Labs, they didn't know that either.

2 So you started to -- if you don't know the design
3 of it, you don't know the temperature, how can you reach the
4 conclusion that you had thermal cycling? So it is one of
5 those kind of. And they said, well, we got some information
6 provided to us from the site. And so they took whatever
7 information they got, from whomever they got it from, at
8 face value. And so that face value was, okay, we have --
9 someone suggested to them that they had thermal cycling.
10 And so apparently that carried over into their report and
11 they wrote it up as such.

12 MR. CLAXTON: Okay. Mr. Bigluicci was just called
13 out of the room. So why don't we take a short break at 8:41
14 a.m.

15 THE INTERVIEWEE: Yes, sir. All right.

16 [Recess.]

17 MR. CLAXTON: We are back on the record at 8:41
18 a.m. Mr. Bigluicci is back in the room.

19 BY MR. CLAXTON:

20 Q We were talking about the report that was issued
21 by the Central Lab Services. How did you determine, or how
22 did you pick up on this information that you felt like
23 needed to be corrected regarding thermal cycling?

24 A Well, first of all, I had worked at Sequoia
25 Nuclear Plant from 1985 to 1988, and I served as the

1 metallurgical engineer there on site, myself and Mr. David
2 Geches. I worked at the plant when it was fully operational
3 to the time they shut down, and then I came back in 1990
4 when they restarted, so I have made many visits and trips
5 inside the ice condensers, when they had ice weigh-in, when
6 they had ice weigh-in outages, is what they used to call
7 them back in the old days. I had a lot of dealings with the
8 ice condenser. You had to put on thermal clothes and the
9 whole nine yards. And, again, as I stated earlier, it
10 becomes a tech spec issue, if the ice condensers operate
11 outside of a certain temperature range, then we are in
12 violation of our tech specs, and that is a no-no as far as a
13 licensee concern. So just the mere suggestion that you may
14 have had some kind of thermal cycling in your ice condenser
15 doesn't make technical sense to me at all.

16 Q Were you responsible for reviewing this report for
17 accuracy? My question is we have the report and there is
18 one of the conclusions that you differed with, how did you
19 pick up on that? How was it brought to your attention?

20 A Oh. We were there at the Central Labs and I think
21 what had happened was they said, here is what we found,
22 something to that effect. I can't even remember exactly how
23 the issue came up, but there were several things that came
24 up. The only one that sticks in my mind is this whole deal
25 about thermal cycling. And there was a young engineer named

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1 Darrell Smith who had just come to TVA. I don't know how
2 long he had been at TVA. And then the other engineers,
3 Delsa Frazier and probably Leslie Blankenship, and I don't
4 know whether Cleveland was there, or Becky Roberts, I think
5 she retired at some point. But none of those people had any
6 operational experience, and the inline reviewer, Delsa
7 Frazier, I don't think that she had any operational
8 experience. So this young man, Darrell, was left to make
9 conclusions on his own.

10 The conclusion he made, though, again, as I stated
11 earlier, was based off conversation with whomever submitted
12 the screws to him from Watts Bar. So they kind of said,
13 here is what we found, and it was like, how did you come up
14 with thermal cycling? And, again, that is when we just
15 started challenging them.

16 At that time, 1995, it is still not uncommon even
17 today, if something else is out at the lab, you would be out
18 there looking and they would probably want to share some
19 information with you, say here is what we got, what do you
20 think about it? Myself, I was -- like I say, I have worked
21 with the Central Labs since 1981, so I have a long-term
22 relationship, so they would probably ask me a question just
23 because I had been in the TVA so long and because I have
24 worked in nuclear as well as in fossil and hydro-power, so
25 it was not uncommon for them to ask me questions.

1 Q Okay. Now, several times you referred to we were
2 out.

3 A Yes.

4 Q Quote, "we," unquote, were out.

5 A Yeah, at the labs.

6 Q Who else was there?

7 A You have Terry Woods was there with me and there
8 was Vonda Sissom, I believe Vonda Sissom was there.

9 Q Now, when you discussed the issue of the June 2nd
10 conclusions with the lab personnel, do you recall that you
11 were there on another matter, or did you go there to discuss
12 that issue?

13 A Well, again, coming -- still having Browns Ferry
14 fresh on the back burner, I could have been there for a
15 Browns Ferry issue, I could have been there for a Sequoia or
16 Watts Bar. Or, again, as I said, they may have even asked
17 me something about fossil and hydro, just because.

18 Q Do you recall or did you discuss with Darrell or
19 Delsa the issue of some new unused screws which had come
20 from the warehouse which were tested at Central Labs?

21 A New and unused screws? Hmm? I am not sure. I do
22 -- I think you showed me earlier a meeting roster and then
23 you are showing me a report. I don't know whether -- which
24 came first at this point. Whether the report came first or
25 the meeting came first, I came remember.

1 Q Okay. There was -- the report that I showed you
2 was dated June 2nd.

3 A All right. Yes, sir.

4 Q And that had the seven conclusions listed on page
5 2, and conclusion Number 6 discusses the presence of quench
6 cracks in the screws.

7 A Okay.

8 Q Which apparently from reading this were present
9 upon receipt from the manufacturer. Did you discuss that
10 with anybody or did you see that as being --

11 A We probably very could have very well have done
12 that. A lot of times if you get -- what I remember about
13 these screws, there was something screwy about the
14 Westinghouse requirement they had on that. I think
15 Westinghouse had required a EISI 1020 or 1022, somewhere in
16 that range spec, but then they called out for a hardness of
17 about 50 something [inaudible]. Well, if you look at that,
18 the only way they get a 1022 up that high is to go back and
19 carborize it. And when they carb off, do some kind of
20 surface treatment is probably the better way to put it, when
21 they perform this surface treatment, they can either nitrite
22 the surface or they can carbonize it, or carbonitride, so
23 get the surface up hard enough.

24 So when they do that, chances are when you got
25 something real small in the quenching medium and stuff like

1 that, you run the risk of having cracks occur. So sometimes
2 it is not uncommon to see quench cracks in carborize
3 surfaces.

4 Q Okay. The subsequent report that was issued on
5 June 19th.

6 A Yes, sir.

7 Q There was some information omitted regarding the
8 set of screws, set B screws, with the new screws which had
9 been taken from the warehouse.

10 A Okay.

11 Q And that is the ones I believe that they are
12 referring to in conclusion number 6.

13 A Okay.

14 Q Okay. And then that information was omitted from
15 the second report dated June 19th.

16 A Okay.

17 Q Does that mean anything to you? Did you discuss
18 that with anybody as to whether this information needed to
19 be taken out, could be taken out, should be taken out? Does
20 that mean anything to you?

21 A If -- well, let me see look, see what they are
22 doing here. As I stated to you earlier, the Central Labs, a
23 lot of time what they do is if they start drawing some
24 conclusion early on in the ball game and they are not sure
25 of it, it is not -- it wasn't uncommon for them to go back

1 and amend any report. And usually, okay, yeah, like this
2 over here, they would have the same report number. Then
3 they will go back and say this is an amendment or something
4 to whatever report they had issued out earlier. So, chances
5 are, if they had probably drawn some conclusions that were
6 -- that they weren't sure about, it is not uncommon for them
7 to say, oh, well, maybe I ought to just take that out, or go
8 back and put some information in about it later.

9 Q Are you aware that -- do you know for a fact that
10 that is what happened, or did you have discussions with --

11 A No. No.

12 Q -- whether or not that information should be
13 removed?

14 A Information should be removed? If -- no, I am not
15 sure. I don't quite remember, but as I stated earlier, I
16 know the lab, it is not uncommon for them to say, okay,
17 well, I probably put something in here I really didn't mean
18 to put in, like if I wasn't relevant. I haven't seen these
19 reports in a while, so I would have to go back and read, and
20 see -- try to get the flavor of what was going on.

21 Q Okay. But what you are saying is conjecture, I
22 mean you don't know that for a fact?

23 A No. No, sir.

24 Q No one told you that?

25 A No.

1 Q Okay. Did you -- or were you aware of a
2 conversation with Mr. Adair and Mr. Woods where they
3 discussed the first report? Or did Mr. Woods tell you about
4 the conversation he had with Mr. Adair?

5 A No, I don't remember that. Mr. Woods had worked
6 here at Watts Bar back in -- I think he came up here in '89,
7 '88, so he knew a whole lot more people than I could ever
8 imagine here at Watts Bar, and still there is not a lot of
9 people I know here. So at that time I may not even have
10 known who Mr. Adair was, who Mr. Adair was at the time. He
11 could have had a conversation with you and I wouldn't have
12 known whether or not you were a Watts Bar employee or not.

13 Q Okay. Did Mr. Woods discuss with you what -- some
14 problems that he had with the first report as far as
15 wording?

16 A Well, we talked, again, like I said, we were at
17 the Central Labs, and I think one of these reports may have
18 been there. I can't remember which one, but I do recall
19 asking questions about the -- what the design of the ice
20 condenser, how many baskets, what is the temperature? Or
21 something to that nature and challenging some information
22 that the lab had put in there. And so, I said, okay, they
23 kind of admitted that there is a lot of things they didn't
24 know about ice baskets and ice condenser screws and all
25 that.

1 Q Okay. Well, let me kind of go at it from this
2 angle. Mr. Woods and Mr. Adair had a conversation, and Mr.
3 Adair is in engineering.

4 A Uh-huh. Yes.

5 Q He talked to Mr. Woods and questioned some of the
6 findings or the wording.

7 A Okay.

8 Q And some of the findings in the first report. In
9 essence, asked him if he could take a look at the report.
10 And apparently, Mr. Woods, as a result of looking at the
11 report, went to the lab, all right, as you are telling me.

12 A Right.

13 Q To talk to them about their findings. And my
14 question to you is, did he give you some background on, hey,
15 we need to go down to the lab and talk to them about this
16 report, take a look at this, or something like --

17 A We -- like I said, it is not uncommon for us to go
18 to the lab on a number of issues. But we probably went out
19 there to talk about this report, but it might have been
20 coupled with some other issues. Yes, sir.

21 If you don't mind, I would just like to refresh my
22 memory.

23 MR. CLAXTON: Go right ahead. Matter of fact, why
24 don't we take a break at 8:53 a.m.

25 [Recess.]

1 MR. CLAXTON: We are back on the record at 9:09
2 a.m., and Mr. Phillips, I would like to remind you that you
3 are under oath.

4 THE INTERVIEWEE: Yes, sir.

5 MR. CLAXTON: For the information that you
6 provide.

7 BY MR. CLAXTON:

8 Q We have been discussing the two reports dated June
9 2nd and June 9th from the Central Lab Services, and you have
10 been comparing those reports.

11 A It is June 19th.

12 Q Both -- I'm sorry, June -- what did I say?

13 A You said 9th, it is the 19th.

14 Q I'm sorry, June 2nd and June 19th.

15 A Yes, sir.

16 Q All right. You were comparing the information in
17 both of the reports.

18 A Yes, sir.

19 Q And can you summarize basically the difference
20 that you found?

21 A Yes, certainly.

22 Q Or what was left out?

23 A Certainly. I am looking on the first page of a
24 report dated June 2nd, and it is the very last paragraph,
25 and it is the last sentence, and then it continues on the

1 top of the second page. And on the first report, dated June
2 2nd, the last sentence in there, they talk about two sets of
3 screws, both A and B, B being the new set. Then the
4 sentence continues on and it gives the implication that they
5 found zinc in the new screws which said that they had quench
6 cracks formed during the manufacturing process.

7 Well, when I look at the figures in the pages and
8 I look at the conclusions in the table where the EDX
9 analysis were compared, none of them match up with each
10 other. The figures that they were referring to was on
11 Figure 7, the EDX analysis was done on set G, which is
12 Figures 5 and 6, so there is a little bit of confusion, the
13 implication that the new screws had some zinc in them, and
14 just based on what I see in this report, there is nothing to
15 support that.

16 Q Okay. Now, you have referred to EDX several
17 times.

18 A Yes, sir.

19 Q Is that E-D-X?

20 A Well, yeah, EDX.

21 Q What does that stand for?

22 A It stands for energy disperses analysis, and it is
23 a method in which you can find qualitative amounts of
24 elements in a metal sample. It is not very accurate. When
25 it gets to less than half a percent, it is not very

1 accurate, but it can tell you that something is present, but
2 it is can't give you a quantitative amount, in other words.

3 Q Now, on the first report dated June 2nd, --

4 A Yes, sir.

5 Q -- I think you referred to the set B screws.

6 A Yes, sir.

7 Q That -- and reading from the report, it said it
8 revealed the presence of zinc, indicating that the crack may
9 have been present prior to plating.

10 A Yes, sir.

11 Q Or formed during the manufacturer's heat
12 treatment.

13 A Yes, sir.

14 Q And that was not included in the second report, or
15 was it your understanding --

16 A I just -- I haven't -- I looked at the second
17 report, but going back to this first report, the table that
18 they refer to, and they talk about the presence of zinc,
19 that is actually in set G. When I look at this description
20 of set G, it says screws removed from service. The set B
21 you were referring to was the new screws, and those are
22 actually on Figure 7.

23 Now, looking at the second report, that sentence
24 is removed from the first page. Matter of fact, I see there
25 are major differences, I guess, just looking at it, on the

1 one, two, three, fourth -- one, two, three. Okay, the third
2 paragraph on the old one -- on the, pardon me, the report
3 dated June 19th doesn't even mention the service temperature
4 or someone saying the screws were over-torqued, that is
5 missing out of this report.

6 The chemical analysis, they have -- their earlier
7 report, it stated something about the 1022, and that has
8 been removed or revised. The micro-hardness, a lot of
9 things have been taken out of order, so it has been
10 rearranged also, so it is not a one-for-one comparison.

11 Q Rob, do you see a section of an EDX analysis here?

12 A Yes. Okay. Okay. Now, yeah, now the EDX
13 analysis, it talks about -- it corrects it, and it talks --
14 states that that was from G, as I pointed out about that
15 earlier. So now they talk directly about that. Okay. So,
16 yeah, that agrees with what I was saying earlier.

17 They did the EDX analysis and when they did the
18 EDX analysis on G, they said they saw some zinc, but also
19 they point out they had some lap regions they discovered at
20 the tip and the root [inaudible]. That is typical of the
21 rolling, thread rolling process. And zinc being very
22 ductile, if I have a lap or something in there, I could have
23 very easily squeezed it in there. It doesn't necessarily
24 mean that it was -- well, yeah, well, you could have had a
25 crack prior to, but it doesn't necessarily mean that the

1 plating process got the zinc in there, anything could have
2 got it in there.

3 But I guess my whole point was, Mr. Claxton, is
4 that this first report kind of implies that the set B screws
5 had zinc in them, and on the second one it doesn't even
6 mention that at all.

7 Q Now, it does talk about set B screws later on,
8 [inaudible].

9 A Right here. Over here where they talk about the
10 SEM of the fracture surface revealed that it failed by a
11 void coalescence. They are just talking about the --

12 Q And also here when it talks about the microscopes
13 represented screws from each set with a turn to be tempered.
14 Figure 12, about slack quenching. Here, once again, I
15 thought I saw set B in here.

16 A Yeah, you did. Keep going. The intermediate
17 transformation products was --

18 A Discovered at the --

19 Q -- root of four new screws from the set B, one
20 screw set from that page.

21 A Right. Yes, sir. But, again, as I was pointing
22 out to Mr. Bigluicci, this original statement they had there
23 kind of alluded to that you saw some zinc in the cracks
24 there, and there was nothing to substantiate that. So
25 apparently they removed that information from this report

1 because either they could substantiate it -- I don't know
2 why. They just -- maybe they got challenged, but they
3 couldn't substantiate what they saw. There is no pictures
4 to substantiate what they saw there. So that probably is
5 the reason why that was removed from the second report.

6 Q Do you have an opinion on it, this statement with
7 regard to the set B screws?

8 A Okay. I need to look at this. Let me look at --

9 MR. CLAXTON: Well, why don't we go off the record
10 just so we can understand what each other --

11 THE INTERVIEWEE: Okay.

12 MR. CLAXTON: I am not sure what you are looking
13 at or talking about.

14 THE INTERVIEWEE: Yes, sir.

15 MR. CLAXTON: So we will go off the record briefly
16 at 9:16 a.m.

17 [Recess.]

18 MR. CLAXTON: We are back on the record at 9:24
19 a.m. Mr. Phillips has been, again, looking at the two
20 reports to compare the information. And we were talking
21 about the location of the original report. And I think Mr.
22 Bigluicci is going to look into the -- where we might locate
23 that, whether it is at Central Labs.

24 BY MR. CLAXTON:

25 Q And, Mr. Phillips, I think my question to you

1 would be the information that is contained at the bottom of
2 the June 2nd report --

3 A Yes, sir.

4 Q -- regarding the set B screws.

5 A Yes, sir.

6 Q And the information as it continues over to the
7 top of page 2.

8 A Yes, sir.

9 Q Where it talks about the manufacturing process or
10 certain properties would probably occur during the
11 manufacturing process.

12 A Yes, sir.

13 Q Can you, from reading that information in the June
14 2nd report, would that be significant to you, whether or not
15 appeared in the second report?

16 A See, if you asked me about it back June 1995, no,
17 because someone had made a conclusion of a thermal cycling.
18 If I have quench cracks, then quench cracks do not qualify
19 as thermal cycling. If you are asking me today, it would
20 become a quality control issue that I would be concerned
21 about, but it doesn't necessarily -- wouldn't necessarily
22 affect the function, fit, form and function of the screw.

23 Q Now, if the author of the first report, June 2nd,
24 determined that there were some properties exhibited in the
25 screws as a result of the manufacturing process, and the way

1 -- let me ask this. The way it is being described here, the
2 properties in the screw, would that cause some concern, or
3 would that be cause for a further investigation, in your
4 thinking?

5 A What it would do, typically, if you have something
6 you want to make extremely hard, if it is under a high load
7 like it is in a gear, then quench cracks are not acceptable.
8 But if it in something that is very low load, you just have
9 it on there for just wear resistance, then quench cracks
10 doesn't matter at all. Typically, we use a lot of material
11 like hard facing materials in the welding arena. We weld
12 them up onto turbine blades or whatever, and cracks are just
13 expected to be there. You just can't get around it, it is
14 just a fact of life. But putting the hard material on
15 there, are you making the surface hard just because of wear
16 resistance, not for load carrying ability?

17 In this particular case, just looking at the way
18 just -- so they have got a 1022 and it is a self-tapping
19 screw, it is probably just so that the screw can cut into
20 whatever else it is going to cut into. It is intended for
21 this screw to be harder than I guess the basket itself, the
22 sheet metal that makes up the basket.

23 Q Okay. Let me ask you this, the author of the
24 first report dated June 2nd noted the manufacturing process
25 had caused some -- is it quench cracks?

1 A Yes. Uh-huh, quench cracks.

2 Q And I think what I hear you saying is that that
3 may or may not be significant, depending on the use of the
4 screws.

5 A That is correct.

6 Q From your reading of the second report, was that
7 addressed in any way?

8 A Mr. Claxton, I didn't get a chance to thoroughly
9 go through the second one, but, however, looking at it, not
10 necessarily. I am a little bit confused because in the
11 paragraph on the second page, and it is the one, two, three,
12 four, five -- fifth paragraph down, they start talking about
13 flat quenches and stuff like that, which says that the
14 screws hadn't been properly heat treated, that is what that
15 suggests. And slack quenching doesn't necessarily translate
16 into quench cracks. Those are two separate processes.

17 Q Let me ask you this, were you involved in any way
18 with the writing or the reconciliation report?

19 A No, sir, other than the fact that we may have
20 challenged some of the conclusions that they had.

21 MR. BIGLUICCI: Let me -- when he refers to
22 reconciliation report, he is not referring to report number
23 2, he has got a separate report.

24 THE INTERVIEWEE: Oh.

25 MR. BIGLUICCI: Authored about a year or so ago.

1 THE INTERVIEWEE: Okay.

2 BY MR. CLAXTON:

3 Q This is a report, I have a cover letter from Mr.
4 Woods addressed to Mr. Maddox, dated October 20th, 1998, and
5 it is a reconciliation report.

6 A Okay.

7 Q Comparing the findings of the two reports that we
8 have just been looking at. Are you familiar with this
9 reconciliation report?

10 A Very -- only scant. Mr. Woods did that report
11 himself entirely, so I don't think he had much help on that
12 at all.

13 Q All right. Have you had a chance to read it?

14 A No, sir.

15 Q It is fairly lengthy, about 14 pages, so I won't
16 ask you to try to familiarize yourself with it now. Since
17 you didn't have anything to do with it, I won't ask you any
18 questions about your input in it.

19 A Hopefully, he picked up on the differences that I
20 picked up on just right offhand.

21 Q Did you ever review that second report when it was
22 issued at the time, 1995?

23 A Probably not. No, uh-uh. Typically, what would
24 do is that an issue would come at each one of the sites, we
25 would make sure that the sites have total responsibility and

1 ownership of it. So the person that would have been
2 responsible for its content would have been Vonda Sissom.

3 Q All right. Now, just so I understand, you and Mr.
4 Woods questioned the wording or the findings in the first
5 report?

6 A Yes, sir.

7 Q And is it fair to say that as a result of your
8 questioning the first report, a second report was issued?

9 A They have some discrepancies here, and once you
10 challenge the discrepancies, like I just saw here, then
11 Central Labs, they would always go back, say, oh, we made a
12 boo-boo, and they would go back and issue out a second
13 report. So, typically, no. I had some other issues I know
14 that was coming up at Browns Ferry, probably would have --
15 they probably would have said, does this sound okay, or
16 something like that. But reviewing it, no.

17 MR. BIGLUICCI: I am a little unclear on that one.

18 THE INTERVIEWEE: Yes, sir.

19 BY MR. CLAXTON:

20 Q Well, let me -- maybe I can restate it.

21 A Okay. Certainly.

22 Q You can answer it yes or no.

23 MR. BIGLUICCI: If you can, answer it yes or no.

24 THE INTERVIEWEE: Try for yes or no, yes, sir.

25 BY MR. CLAXTON:

1 Q You read the first report.

2 A Right. Yes, sir.

3 Q And there were some questions regarding the
4 wording or the findings.

5 A Yes, sir.

6 Q And some of those concerns came or originated from
7 you?

8 A Uh-huh.

9 Q Okay. A second report was issued. Did you ever
10 read that second report at the time it was issued to see if
11 you still had problems with it?

12 A Let's see, I want to answer your question
13 directly?

14 Q I understand that.

15 A All right. To answer your question directly, no.
16 Now, would I have known about parts of the contents prior to
17 its issue, then, yes. And if they would have gone back --
18 the only -- like I said, the technical concern I would have
19 had at that time was the issue of thermal cycling. So if
20 they would have said, look, we have thought about this
21 thermal cycling, and, yes, you are right, it doesn't make
22 sense, then I am happy with whatever they put in there at
23 that point, if they got rid of that. For me that was a
24 major stumbling block.

25 Q And I think you just answered my question, but let

1 me restate it directly. Did you have any concerns with the
2 information in the first report concerning the set B screws
3 which were the new unused screws?

4 A No, not that I remember. No, sir. I just --
5 after you put this report back in front of me, I am a little
6 bit concerned about some of the content. I am over here
7 kicking myself in the butt, how did this statement over
8 here, right here, slip past me way back when? But I don't
9 know. Again, like I said, my brain shuts down. When they
10 say thermal cycling, it just shuts down. Like if that is
11 wrong, then this -- you probably could find a whole bunch of
12 other things wrong.

13 Q Okay. Now, you said this statement.

14 A Uh-huh.

15 Q You pointed to a statement and said it caused you
16 some problems.

17 A Yes, sir.

18 Q Okay. And you --

19 A I am talking about the thermal cycling. I said,
20 oh, yeah, pardon me, I said, I am just sitting here looking
21 at this statement right here.

22 Q Okay. And that is the last sentence on the first
23 page.

24 A First page, right. This is where there is almost
25 an implication that they had found some zinc in the set B

1 screws. And when you look at the table and the information,
2 it is actually referring to the set G screws. So I am just
3 sitting there thinking, hmm, that don't make sense. But,
4 again, that is probably one of those examples where my brain
5 shut down on this thermal cycling, and if that was bad,
6 then, for me, I would said, all right, everything else is
7 bad. I usually shut down.

8 Q Now, again, let me make sure I understand you,
9 when you say gave you problems, are you saying that at that
10 time you wish you had caught that, or you should have caught
11 it, or you thought you would have caught it? I mean you are
12 saying there is an error there that --

13 A Yeah, that is an a glaring error.

14 Q You feel like at this time you should have caught
15 that?

16 A Yeah, I probably should have caught it. But,
17 again, we weren't really there -- we were there to challenge
18 the conclusions. They had made a conclusion that they had
19 seen thermal cycling, somebody had made that conclusion.
20 And so, again, if you look at an ice basket, thermal cycling
21 don't make sense to me, so if I look at the report, this
22 report right here, if they say thermal cycling, then I am
23 already at odds with everything.

24 Q Okay. We are not so concerned about the thermal
25 cycling.

1 A I understand.

2 Q But this statement at the bottom of page 1, and
3 just to make sure I understand what your concern was, what
4 was your concern with this statement?

5 A Okay. Just reading it just a couple of minutes
6 okay, there is an implication here that they saw some zinc
7 in the set B screws. And I am not saying that they did or
8 they didn't, but if I was challenging that today, I would
9 ask them to show me the evidence you have that. And they
10 refer to Figure 7, so when I go to Figure 7, I show -- they
11 show me one screw over here and it is at 400X, there is no
12 presence of zinc in it, and granted that it is a Xerox, I
13 said, okay, well, -- then they said, well, the evidence came
14 from the EDX and that is on Table 1. So I go to Table 1, it
15 says, oh, well, this is from a crack on set G screws. So
16 that is not G, not of that information actually relates to
17 B, it only relates to set G.

18 Q Okay. And everything you just said refers to the
19 report dated June 2nd?

20 A Yes, sir.

21 Q Okay.

22 A Dated June 2nd. So if I looked at the set B
23 screws, which were supposedly the 12 new screws, and I look
24 at this statement that they made, it almost implied that
25 they saw something. Now, if they did see it, they didn't

1 document it in this report.

2 Q I see. From the context of what you are saying, a
3 fact I understand that I want to ask you directly.

4 A Yes, sir.

5 Q Did you instruct anyone at the Labs to remove the
6 references to set B screws?

7 A No, sir.

8 Q Okay. Do you know if Mr. Woods instructed anyone?

9 A No, sir. I don't remember if -- no, I don't
10 remember at all.

11 Q Okay. Did you have anything to do with the
12 rewriting of the report? I mean the actual rewriting. Did
13 you do -- did you review the first report, put a red pencil
14 to it, anything along those lines?

15 A If I looked at this second report, and, again, --

16 Q Okay. I'm sorry. We are back [inaudible], yeah,
17 we had better refer --

18 A June 2nd.

19 Q Yeah, we had better refer to it.

20 A June 2nd. If I looked at June 2nd, if there was
21 anything I would have noted, it was just for clarification
22 purposes. First of all, when we would write a report, it
23 would be different from this. It would be clear here is an
24 introduction, here is a discussion, here is different
25 properties, and it would be like a road map where you could

1 follow. And then there would be a protocol or order of
2 things that we would have had to make it easier for your
3 reader. And then I would try to make sure that all the
4 figures and the conclusions and stuff match up. And then
5 after the conclusions and stuff, the figures and conclusions
6 match up, then you sit back and throw the whole thing down
7 and say, all right, does this make sense? So when I send
8 this second -- this report dated June 2nd through the sanity
9 test, which says does it make sense, the conclusions on --
10 conclusion 7 doesn't make sense to me.

11 Now, you are asking me specifically about the set
12 B screws. Dealing with fasteners all the time, typically,
13 you could see cracks in the fastener but it doesn't affect
14 its fit, form and function, not necessarily affect its fit,
15 form and function, because of the service load. It just
16 depends on how you got it loaded. If it is a load in
17 tension, then, yes, it could affect. If it is a load in
18 sheer, no, it wouldn't affect it at all.

19 Q All right. Now, if we can shift back over to the
20 meeting of June 14th now.

21 A Yes, sir. All right. Yes, sir.

22 Q Do you recall that meeting?

23 A No. They -- even the interest we had there at
24 Watts Bar changed. So many things changed. I probably was
25 -- again, I had just transferred from Browns Ferry. If it

1 came up to Watts Bar to talk about ice condensers, it may
2 have been -- the same day I may have had other meetings that
3 I was attending also, and I just wasn't really sure of. And
4 I am pretty sure that if there were a literal transcript of
5 the words that were there, if you went there and you
6 probably looked for did Robert Phillips say one or two
7 words, probably not. I probably just sat in the room and
8 daydreamed about Browns Ferry maybe.

9 Q Okay. And I may have asked you before the
10 interview started, and we will probably need this for the
11 record. I think I showed you a list of the --

12 A Attendees.

13 Q The attendees at that meeting.

14 A Yes, sir.

15 Q And there is --

16 A My name is on this.

17 Q Your name.

18 A One, two, three, four, five -- I am the fifth name
19 down.

20 Q Okay. You recognize that as your signature?

21 A Yes.

22 Q Okay.

23 A Well, this is my script, the sign-in, yes, sir.

24 Q You didn't have someone sign in for you?

25 A No, sir.

1 Q Okay.

2 A No, sir. That is my left-handed scratching. Yes,
3 sir.

4 MR. CLAXTON: Okay. Do you have any questions,
5 Ed?

6 MR. BIGLUICCI: No, I don't have any other
7 questions.

8 MR. CLAXTON: Do you need to take a break? I
9 think at this --

10 THE INTERVIEWEE: Yeah.

11 MR. CLAXTON: Why don't we break at 9:41.

12 THE INTERVIEWEE: Okay. Yes, sir.

13 [Recess.]

14 MR. CLAXTON: Back on the record at 9:45 a.m.,
15 with the same parties present.

16 BY MR. CLAXTON:

17 Q Do either of you have any questions about what we
18 have talked about?

19 A No, not really. Other than the fact that I just
20 can't recall the meeting that was -- that you had the roster
21 there. I may have been there present physically, but not
22 mentally. And the other part is that when I look at those
23 reports today, if I looked at what was on the June 2nd
24 report and I looked at parts of what is on June 19's, I can
25 probably see why the Central Labs may have said, ah, this

1 information wasn't really necessary, it really didn't add to
2 the validity of the conclusion, the outcome. I think if you
3 start looking at it, they didn't totally, deliberately
4 remove information about set B, they just kind of changed
5 some of the things that they had said about set B in there.
6 They made some not necessarily strong, as a matter of fact,
7 I don't even consider those strong when I look at the
8 function of those screws, when I look at the set B screw on
9 that paragraph that I am referring to, they said, well, I
10 saw something and maybe I saw some thinking there. Well,
11 that is extraneous information, it really didn't mean much.
12 And then when I looked at it over on the second report, it
13 just wasn't that important. So, typically, like I said, the
14 labs, they usually do stuff like that all the time.

15 Q All right. I might invite you to read the
16 reconciliation report.

17 MR. CLAXTON: Ed, could you provide a copy of that
18 to him.

19 MR. BIGLUICCI: I sure can. Okay.

20 BY MR. CLAXTON:

21 Q And if -- and the reason I say that is, from what
22 I hear you saying, and this is not a criticism of you, but
23 it sounds like there is some conjecture that this may have
24 been what happened, this may have been what Central Labs was
25 thinking.

1 A Uh-huh.

2 Q And you are thinking, well, this could have
3 happened. But I would like for you to read the
4 reconciliation represent --

5 A Okay.

6 Q -- that Mr. Woods wrote.

7 A All right.

8 Q If you have any question, you know, if you think
9 you need to provide some more information on -- regarding,
10 you know, the importance of that set B screw, whether it
11 should or should not have been in there. But I think to
12 save time, you know, so you don't have to read that
13 reconciliation report now, would you take a look at that.

14 A All right.

15 Q In relation to the two met lab reports.

16 A All right. Yes, sir. I need to --

17 Q I would be glad to talk to you again regarding any
18 other information that you may have. Now, go ahead if you
19 want to.

20 A I was just putting -- I think I have Mr. Bigluicci
21 in here. Let me just check first. Yeah, I already have you
22 in there.

23 Q Okay. What I would like to do, we have talked
24 quite a bit about technical aspects of these two reports.
25 And you told me earlier that you were a metallurgist.

1 A Yes, sir.

2 Q Can you tell me a little bit about your
3 professional background? Are you degreed?

4 A Yes, sir, I have a B.S. in metallurgical
5 engineering from the University of Tennessee, registered PE
6 since 1987. I worked at NASA combustion engineer and TVA
7 fossil and hydro division, TVA nuclear division. I worked
8 for a Canadian paper firm in South Alabama called
9 MacMillan-Bloedel.

10 Q How do you spell it?

11 A MacMillan-Bloedel? Okay. It is capital
12 M-a-c-and-then-capital-M-i-l-l-i-a-n, and Bloedel, the
13 Canadian spelling is capital B-l-o-e-d-e-l, Bloedel.

14 Q Thank you.

15 A Pine Hill, Alabama.

16 Q Now, when did you receive your degree?

17 A [REDACTED]

18 Q Okay. Do you have any other advanced degrees or
19 professional degrees? You said you were a professional
20 engineer?

21 A Yeah, a registered professional engineer,
22 registered in the State of Tennessee, license number 019616,
23 and took a couple of graduate courses in metallurgy as well
24 as executive management.

25 Q Okay. And you have been a metallurgist ever since

1 you received a degree?

2 A Yes, sir.

3 Q All right. Have you provided all the information
4 freely and voluntarily this morning?

5 A Yes, sir.

6 Q Okay. Have you received any threats or promises
7 regarding the information you have given?

8 A No. No, matter of fact I am quite well aware of
9 NRC Form 4 and 10 CFR 50.9 and 50.7 for disclosure.

10 MR. CLAXTON: All right. If you have no further
11 questions. Mr. Bigluicci, if you have no further questions.

12 MR. BIGLUICCI: I have nothing.

13 MR. CLAXTON: We will conclude the interview at
14 9:50 a.m.

15 [Whereupon, at 9:50 a.m., the interview was
16 concluded.]

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CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: INTERVIEW OF
ROBERT PHILIPS
(CLOSED)

Docket Number: 2-1998-023

Place of Proceeding: Spring City, TN

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission transcribed by me from recorded tapes provided by the Nuclear Regulatory Commission, and that the transcript is a true and accurate record of the foregoing proceedings to the best of my belief and ability.



Martha Brazil

Transcriber

Ann Riley & Associates, Ltd.