

# EXHIBIT 12

Case No. 2-1998-023

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EXHIBIT 12



C O N T E N T S

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WITNESS

EXAMINATION

TERRY RAY WOODS

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

(1:29 p.m.)

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2  
3 MR. CLAXTON: For the record, today is March 10,  
4 1999. The time is approximately 1:29 p.m. and this is the  
5 interview of Terry Woods. The interview is taking place at  
6 the Tennessee Valley Authority located at 1101 Market Street  
7 in Chattanooga, Tennessee.

8 Also present at the interview is Thomas Fine, and  
9 Mr. Fine, I will let you introduce yourself and give your  
10 purpose for being here.

11 MR. FINE: My name is Thomas Fine, and I am the  
12 Assistant General Counsel in the Office of General Counsel  
13 with Tennessee Valley Authority, and I'm present  
14 representing Terry Woods and TVA.

15 MR. CLAXTON: Mr. Woods, are you aware of Mr.  
16 Fine's identity and that he's a corporate attorney for TVA?

17 THE WITNESS: Yes, I am.

18 MR. CLAXTON: And you have asked him to represent  
19 you here today?

20 THE WITNESS: Yes, I have.

21 MR. CLAXTON: And knowing that, are you aware that  
22 he also can share information he hears today to your  
23 employer?

24 THE WITNESS: Yes.

25 MR. CLAXTON: Are you aware that you can provide

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1 information to the NRC in a confidential way at any time  
2 without anybody else being present?

3 THE WITNESS: Yes, sir, I'm aware.

4 MR. CLAXTON: Do you have any objections to  
5 providing the information under oath?

6 THE WITNESS: No, I do not.

7 Whereupon,

8 TERRY RAY WOODS,  
9 the interviewee, was called for examination and, having been  
10 first duly sworn, was examined and testified as follows:

11 EXAMINATION

12 BY MR. CLAXTON:

13 Q Give us your full name.

14 A Terry Ray Woods.

15 Q Do you mind providing your home address and  
16 telephone number?

17 A ( [REDACTED] )  
18 [REDACTED] )

19 Q And thank you for spelling the name of your  
20 street, which reminds me if you have a proper name or  
21 acronym, or something a little unusual, if you would spell  
22 it for the court reporter that would be a big help.

23 A Yes.

24 Q What is your occupation?

25 A Chief Metallurgist and Codes Engineer for TVA

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1 Nuclear.

2 Q Where is our office located?

3 A It's here at the 4th Floor, 1101 Market Street,  
4 Lookout Place in Chattanooga in the corporate office.

5 Q Now, are you part of Central Lab Services?

6 A No.

7 Q Are you over that operation?

8 A No, sir. I am not.

9 Q What are your responsibilities?

10 A As Chief Metallurgical Engineer?

11 Q Yes.

12 A Provide technical direction and guidance for TVA  
13 Nuclear Power in the area of materials, and I'm a  
14 metallurgical engineer.

15 Q Do you have any -- some type of oversight over  
16 Central Lab?

17 A No, sir.

18 Q How does that fall in with your --

19 A Basically Central Laboratory provides a service to  
20 either myself or people at our various plant sites, whoever  
21 requests that particular service. But as far as  
22 jurisdiction, I have no jurisdiction over that at all.

23 As a matter of fact, Central Lab is part of the  
24 Fossil Hydro Organization and not part of Nuclear Power  
25 Organization.

1 Q Now, who do you report to? Who is your  
2 supervisor?

3 A My supervisor is John Rupert. He is the chief  
4 engineer of TVA Nuclear.

5 Q That's R-u-p-e-r-t?

6 A Yes.

7 Q How long have you been employed by TVA?

8 A Eighteen years, and roughly two or three months.

9 Q And how long have you been chief engineer?

10 A Been Chief Metallurgical Engineer for -- since  
11 1993 I believe, since the 1993 time frame, I think February  
12 of 1993 was when I first received my appointment.

13 Q Tell me a little bit about your professional  
14 education. Do you have a degree?

15 A BS degree in Metallurgical Engineering, University  
16 of Alabama, (████████████████████) X

17 Q Do you have other degrees or certificates?

18 A No other technical degrees or certificates. I  
19 recently received my professional engineers license for the  
20 State of Tennessee back here three or four weeks ago, in the  
21 February time frame.

22 Q As we talked about before the interview started,  
23 the purpose of the interview is to discuss the ice basket  
24 screw issue that came about back in June of 1995.

25 A Yes.

1 Q What was your role there?

2 How did you become involved -- first of all are  
3 you familiar with that?

4 A Yes, I am.

5 Q I notice you brought some documents today?

6 A Yes, sir.

7 Q Did you bring the reports that were produced?

8 A Yes.

9 Q I will let you have those. I have got copies, and  
10 I will let you have those so that you can refer to them.

11 A Okay.

12 Q How did you become involved in that issue, and I'm  
13 going back to June of 1995?

14 A Around that time frame, the first report -- I  
15 refer to the first report as being metallurgical reports on  
16 ice baskets screws which was dated 6-2-95.

17 James Adair, who is the civil engineer up at Watts  
18 Bar site, placed a telephone call to me regarding some  
19 information that was contained in this report. And  
20 specifically he asked me, you know, he was concerned on some  
21 of the conclusions that were drawn in this report.

22 And basically what he wanted to know was how could  
23 a metallurgical evaluation at a laboratory produce such  
24 conclusions.

25 Q Uh-huh.

1           A     And he requested me to look into that in my role  
2 as the Chief Metallurgical Engineer for Nuclear Power.

3           Q     Who is Mr. Adair?

4           A     He -- at that time, he was the chief -- I'm sorry,  
5 not the chief -- I'm sorry, the lead civil engineer at Watts  
6 Bar Nuclear Plant, and apparently he was in charge of the  
7 ice condenser issue. I'm assuming he was.

8                     Maybe that's an erroneous assumption, but he was  
9 involved in the issue none the less. I don't know what his  
10 official capacity was as far as the issue was concerned, but  
11 he was involved in that issue.

12          Q     And did he site some specific items in the report  
13 that he questioned?

14          A     Well, he basically talked about these conclusions  
15 here, this is one through seven in the report on Page 2.

16          Q     Okay.

17          A     I can't recall what he specifically pointed out to  
18 me, but I do know we had a conversation regarding some of  
19 those conclusions.

20                     And when I looked at the conclusions, I had some  
21 concerns of my own in terms of how a laboratory analysis  
22 could derive such conclusions.

23                     The ones that I had specific -- I mean, I looked  
24 at all of them. I probably questioned three to four of  
25 them, but there were two that really stuck out that I really

1 did question in my own mind. And we had a follow-up  
2 conversation with the laboratory and further discussed these  
3 two.

4 Q Which ones were those?

5 A They were Conclusion Number 2 and Conclusion  
6 Number 7.

7 Q And what happened as a result of that phone call  
8 from Mr. Adair?

9 A We had a meeting with people at Central Laboratory  
10 that had performed this work. I think present at that  
11 meeting was Adair, Delsa Frazier -- I think she was present  
12 also. I believe Vonda -- I'm quite sure that Vonda Sisson  
13 was present at that meeting and myself.

14 And we discussed this in great detail and when we  
15 talked about Conclusion Number 2, a statement was made that  
16 tests higher than design limits specifically at the thread  
17 roots.

18 I questioned them as to how could they determine  
19 that stresses were higher than the design limits from a  
20 metallurgical failure analysis.

21 And I asked them specifically do you have access  
22 to what the design limits are, and they said no.

23 Q When you said they, were you directing your  
24 questions like to Daryl, who was the author?

25 A I probably was talking to Daryl because -- I'm

1 sure because Daryl was the person that did the metallurgical  
2 failure analysis on this.

3 Q Okay.

4 A And you know, I asked questions like do you have  
5 access to the information. And he said no.

6 I said what tests or what objective evidence can  
7 you guys provide in laboratory space that would demonstrate  
8 that the stresses were higher than the design limits.

9 And basically, they did not have any evidence that  
10 they could provide. And after I went along that line of  
11 questioning, I mean, we all more or less agreed that  
12 laboratory testing could not derive such a conclusion.

13 And they went on to state that, well, the  
14 cognisance engineer at Watts Bar site more or less told us  
15 that.

16 Q Who was that?

17 A At that time, it was just referred to as one of  
18 the engineers at the site told us that. I really didn't get  
19 into names.

20 Q Okay.

21 A I later found out that that information was  
22 relayed to the them by Vonda, who had it related to her by  
23 Curtis Overall. That's my understanding of what happened.

24 But in that particular meeting, we didn't get into  
25 exactly who it was that said that.

1 Q And that is Vonda Sisson?

2 A Yes.

3 Q Was she the site metallurgical engineer?

4 A She was the site metallurgical engineer.

5 Q And Mr. Overall was the systems engineer for the  
6 ice condenser system?

7 A Yes.

8 Q Was he at that meeting?

9 A No, sir.

10 So like I said, you know, we discussed this issue  
11 in great detail and I pointed out that laboratory analysis  
12 didn't show this, and it came down to them agreeing this is  
13 something that we put in there based on what somebody else  
14 told us, rather than, you know, the laboratory analysis  
15 actually showing this. And we all agreed on that.

16 The next issue that we discussed in detail was  
17 Conclusion Number 7, thermo cycling where may have initiated  
18 micro-cracking and promulgation in preexisting cracks.

19 And I asked them, I mean, how -- what objective  
20 evidence do we have, can you guys produce, that would show  
21 thermo cycling of our ice condenser. And I pointed out, I  
22 said now, thermo cycling to me means that the ice condenser  
23 operates hot, cold -- hot, cold --alternating. That's what  
24 thermo cycling is to me.

25 So what objective evidence do you have on the

1 fracture surface of the screws anywhere that would suggest  
2 thermo cycling took place.

3           Again, they did not produce any objective evidence  
4 that showed that, and they went back to the statement, well,  
5 you know this information was provided by the engineer at  
6 the site.

7           So we all agreed that as far as metallurgical  
8 analysis was concerned, it should be an independent document  
9 standing alone, supported by the facts that come out of the  
10 evaluation.

11           That's when he it was agreed by everybody in the  
12 room that this document really needed some more work, and we  
13 all consistently agreed that a second report would be issued  
14 that provide clarity, that more or less contains the facts  
15 from the laboratory analysis.

16           Q     Okay. And a second report was subsequently  
17 issued?

18           A     Yes, sir.

19           Q     Did you read that report?

20           A     No, I did not. I read it like after all of this  
21 came up, you know, sometimes later -- two or three years  
22 later, but I was involved in this from the standpoint of the  
23 site called me and wanted me to look at something specific.  
24 I addressed that specific.

25                     We all was in agreement. There was no discord.

1 Everybody was in harmony and, you know, we discussed it in  
2 great detail. People had different opinions but when we  
3 left the room everybody was in agreement, that yes, we were  
4 a little overzealous here. We did put some stuff in there  
5 that we could not substantiate. And we didn't want to do  
6 that.

7 They issued the second report. The second report  
8 went out. I assumed that it went out. I mean, I know it  
9 went out, but what I'm saying is I did not necessarily read  
10 it prior to it being issued.

11 Q Now, did Mr. Adair talk to you about the set of  
12 screws that had come from the warehouse, the new screws?

13 A During that time frame, during the 1995 time  
14 frame?

15 Q Yes.

16 A No, sir.

17 Q That wasn't an issue?

18 A We did not get into that level of detail with him.  
19 I personally did not get into that level of detail with him.

20 He basically asked me to look at this area --  
21 these conclusions. I remember reading this report, this  
22 first report. I read through the report, but I really  
23 focused on the conclusions. This stuff about new screws,  
24 old screws -- I really did not get that involved in it.

25 I was asked to look at a specific issue. I more

1 or less addressed that specific issue, and this is something  
2 that we do on a routine basis.

3 We address specific issues every day. That's more  
4 or less our role and charter here in the corporate office in  
5 order to address issues as they come up at the site.

6 Q Conclusion Number 6.

7 A Okay. The presence of quench screws received from  
8 the manufacturer?

9 Q Is that basically referring to a manufacturing  
10 defects?

11 A That's what I would interpret that as meaning.

12 Q Was that issue discussed at all between you and  
13 Mr. Adair?

14 A No.

15 Q Did you see that as a significant issue that there  
16 was a conclusion there that there may have been some  
17 manufacturing defect?

18 A I had no problem with the -- to me is a technical  
19 attribute that could be addressed by the Central Lab. I had  
20 no problem with that. They could do metallography. They  
21 could do destructive assay, and they could make that  
22 determination. I had no problem with that.

23 Q Who is -- well, let me ask you this since they  
24 don't report to you, you may not know. I'm trying to, there  
25 again, find out who is responsible for different areas?

1 A Okay.

2 Q And activities. If, as we see here in Number 6,  
3 there appears to be some manufacturing defects.

4 So what happens then, who is responsible for  
5 reporting that or taking some kind of action?

6 A Okay. In my opinion, this would have typically go  
7 back to the site. Report would be issued, go back to the  
8 site and it will be evaluated once it makes it back to the  
9 site.

10 Everything don't necessarily come through me. I  
11 get involved most of the time at the site's request, but you  
12 know, everything don't necessarily come through me.

13 This information would have been sent back to the  
14 site. The site would have evaluated it, and if they needed  
15 my support or to address this particular issue, they would  
16 have requested it. But that aspect of it would more than  
17 likely been dispositioned back at the site.

18 Q Okay.

19 Would it -- in your opinion would it be  
20 significant if that statement was not included in the second  
21 report with all the possible manufacturer's defects?

22 A I'm sorry. I didn't understand the question.

23 Q Would it be significant that that statement -- if  
24 that statement had been left out of the second report?

25 A Yes. It would have been significant.

1 Q Okay. Did it sometime -- or did you learn at some  
2 time of a possible defect in the new unused ice basket  
3 screws? And I will let you pick it up from there.

4 A Honestly. This particular -- the part about the  
5 new unused ice basket screws being cracked, it really just  
6 came to light for me back here in September of 1998 time  
7 frame, when Nicky Economos came down, and we discussed  
8 information that had been included and excluded from Report  
9 Number 1, and Report Number 2.

10 Q He's an inspect for the NRC?

11 A Yes, that's when that popped out at me.

12 Q And you spell his name E-c-o-n-o-m-o-s?

13 A Yes. I mean, that's really -- out of everything  
14 that had gone on all the testifying we had done in court and  
15 all the depositions that had been taken, everything, that's  
16 when it really came to light to me that that was a situation  
17 whereby, and I know I probably had read this thing and it  
18 just didn't pop out at me.

19 But like I said, that's when it came to light that  
20 a new screw had a crack in it.

21 Q Okay. What brought that conversation on?

22 A Well, what happened was this, and it was actually  
23 not a conversation. What happened is this. We met around  
24 -- September time frame of 1998 to further discuss what had  
25 gone on with the ice condenser in terms of who did what, who

1 was responsible for what, what the metallurgical analysis  
2 showed and what information was left in and what information  
3 was omitted and et cetera, et cetera.

4 And at that meeting, at Central Lab, Jim Mattox,  
5 he's the site engineering manager was there.

6 Q Who?

7 A Jim Mattox. He's the site engineering manager.  
8 He was there and a representative from the Central Lab was  
9 there. Economos and I think one of his other guys was with  
10 him.

11 Q Uh-huh.

12 A I believe Mr. Adair was there. And we talked in  
13 general about -- well, and specific, too -- about items that  
14 had been left out of the second report.

15 And at that time, we all came to the agreement  
16 that yes, there was some information that was left out of  
17 the second report, and we need to do two things. We need to  
18 identify what information that had been excluded from the  
19 second report. Just specify what that information was.

20 And Number 2, we needed to assess the impact of  
21 the exclusion of that information. That was two things that  
22 we walked out of the meeting with. That was like on a  
23 Monday or Tuesday or sometime like that. I believe it was  
24 Monday.

25 And Mattox tabbed me as the person responsible for

1 performing what we call a reconciliation. And so I got  
2 tapped to put together this reconciliation document.

3 Well, I think Economos and his guy was up at Watts  
4 Bar doing some type of inspection during that time frame,  
5 and we received a call either the next day or a couple of  
6 days after then regarding this Set B screw which has been  
7 identified as a new screw with a crack in it, and why was it  
8 left out.

9 And we started getting questions along that line.  
10 And when that came up, I mean, we was more or less stunned.  
11 I really did not know what they were talking about.

12 So we went and we got the report. And we read the  
13 report and sure enough there was. It did say that Set B was  
14 a new screw that had -- in the first report -- and they  
15 wanted to know why it has been omitted from the second  
16 report.

17 I was not involved in the preparation for the  
18 first report nor was I involved in the preparation of the  
19 second report. I didn't even read the second report prior  
20 to the second report being issued.

21 So I had no answer in terms of why this particular  
22 screw was not included in the second report. I mean, I  
23 personally didn't. But I was there with people from the  
24 Central Laboratory and I happened to be at the laboratory  
25 when the call came in.

1 I then turned and asked Central Lab personnel, I  
2 mean, this is the question that came in to me. I really  
3 don't have an answer. Can you guys shed some lights on the  
4 issue. That question went to Delsa Frazier to address.

5 Based on them going back and them researching  
6 their records, they issued this memorandum to me -- well, we  
7 discussed it, but this is the official memorandum -- I don't  
8 know if it was official or not, but this was the memorandum  
9 that was issued to me, which provided that explanation.

10 MR. CLAXTON: Just for the court reporter's  
11 benefit, this is a memo dated September 3rd, 1998 to Terry  
12 Woods signed by Delsa Frazier. And that has an NRCOI  
13 Identifier Number 7 on that.

14 BY MR. CLAXTON:

15 Q So Ms. Frazier prepared this memo in response to  
16 your question, and can you summarize it for me and tell me  
17 what it means to you?

18 A Well, basically to me, when they went back and  
19 issued a second report they had to include some additional  
20 information on there which came as a result of some  
21 subsequent testing that they had done on some screws.

22 What they saw is in -- they saw the same fracture  
23 morphology in the sample H screws and in the whole screw of  
24 Set A that had been seen in Set B.

25 So therefore what they said is that the fracture

1 morphology was the same, i.e. it was intergranular cracking  
2 that was transverse in nature, so in an attempt to  
3 incorporate information from all the testing that had taken  
4 place, they substituted Sample H in page rather than B, and  
5 it was just completely got dropped in the crack that Set B  
6 was a actually a new screw that had cracked, whereby Set H  
7 was the transverse crack.

8           Whereby Set H was actually a screw that had been  
9 in service that had a transverse crack in it. They just  
10 inadvertently omitted it. The fact that B was a new screw  
11 fell in the crack. They looked at the fracture morphology.  
12 We have got to put something in from the additional testing  
13 that took place, and they chose to put H in there which  
14 showed the same information that B showed and also in that  
15 report, that second report, that whole Screw A that they  
16 referred to, it in the first report had been referred to as  
17 a new screw and turns out it was a whole screw.

18           And I think that during this reconciliation  
19 effort, we really couldn't prove that this was actually a  
20 new screw. It turns out it was postulated that this was  
21 actually a screw that was picked up off of the floor of the  
22 ice condenser and submitted for metallurgical evaluation.

23           Q     An unbroken screw?

24           A     It was an unbroken screw, but it had the same  
25 fracture morphology as the Set B screw and the Set A screw.

1 So that's when I really started focussing and zeroing in on  
2 the fact that Set B was actually a new screw. This B screw  
3 was actually a new screw.

4 Q Did you respond in any way to that memo once you  
5 received that memo from Ms. Frazier?

6 A As a result -- first of all, I incorporated that  
7 information under Item 3 in the -- in the reconciliation  
8 report that I put out. Do you have a copy of that?

9 Q Yes, I do.

10 A That was covered under Item 3 in the  
11 reconciliation statement and I went on to make a statement  
12 regarding the impact -- of a potential impact of failing to  
13 document that information in the first report -- I'm sorry  
14 -- the second report.

15 Q I'm sorry, you said you went on and did what?

16 A I went on and stated what the potential impact was  
17 for leaving that information out of the second report. It's  
18 paragraph --

19 Q Yes. Let's that make sure we're talking about the  
20 same narrative, on the second page and third paragraph from  
21 the bottom which starts out "the information"?

22 A Yes, sir.

23 Q Okay. And you include the statement in the  
24 paragraph that the second report doesn't mention any  
25 evidence of cracking in Set B which is --

1 A That's right.

2 Q What is the significance of that.

3 A Well, I went on to say that failure to include  
4 such pertinent information could impact all the critical  
5 action employed to address this issue.

6 In other words, we eventually -- well, what  
7 happened is that when this screw was identified as being  
8 cracked, if it had been included in the second report as  
9 such and it had been known that it was a new screw that had  
10 cracked, it could have directed us to, or sent us to do  
11 additional testing at that time, or additional inspections  
12 at that time.

13 We may have pulled additional samples from power  
14 stores since this was a new screw and done additional  
15 metallurgical tests on it in order to determine whether or  
16 not that mode of cracking existed in other new screws there  
17 in power stores.

18 Q What was the date of your reconciliation report?

19 A Okay. According to this if you read our RIMS  
20 number, it will be 10-20-98. The RIMS number more or less  
21 indicates what the date is.

22 Q I don't have a RIMS on mine because it was  
23 apparently a faxed copy.

24 A However, since that time we have went and pulled  
25 additional screws from power stores, did a metallurgical

1 analysis on them in order to try to determine whether or not  
2 that mode of cracking was present.

3 Q And who was responsible for conducting that  
4 examination?

5 A I did the metallurgical analysis out at the  
6 Central Lab. That particular activity was requested by the  
7 site engineer manager, but it was my responsibility to do  
8 the metallurgical evaluation and make that determination.

9 Q Do you have some documentation on that new  
10 additional --

11 A Yes, sir.

12 Q Just to save time, can you tell me what your  
13 findings were?

14 A Basically what we pulled, we pulled seventy-two  
15 screws. And in the introduction here, it tells what we did  
16 to this population of screws.

17 We said five was section transverse and  
18 metallurgical evaluated. Fifty-eight of the screws was  
19 longitudinal and metallurgically evaluated. And we did  
20 chemical analysis on five of the screws.

21 What we did was we zeroed in -- did chemical  
22 analysis to determine what the material composition was. We  
23 looked in the transverse direction and also in the  
24 longitudinal direction for evidence of cracks, defects or  
25 anything else that we would consider injurious to the

1 screws.

2 We took data from our metallurgical evaluation and  
3 compared it to the Westinghouse specifications, the data  
4 Westinghouse specs call for the core hardness of the  
5 material to fall within a range of thirteen -- thirty-two to  
6 forty, Rockwell-C and the case on the material to be 52  
7 Rockwell-C.

8 Q What is that term you're using?

9 A Rockwell-C.

10 Q Is that like Rockwell-C, C as in Charlie.

11 Is that an industry standard?

12 A Yes, sir.

13 Based on the results from the testing -- let's  
14 talk about the hardness values first, on Page 3 of the  
15 report, we talk about the range of hardness that we  
16 measured.

17 The range of hardness, we measured to be 39 to 43  
18 Rockwell-C. Well, obviously this is outside the range of  
19 the hardness that was specified by Westinghouse. We looked  
20 at the microstructure of the material, we used  
21 microstructural results which showed that we had quenched  
22 and tempered martensitic, m-a-r-t-e-n-s-i-t-i-c, martensitic  
23 structure. For the most part, it was a quenched and  
24 tempered martensitic structure.

25 Q Quenched?

1 A Q-u-e-n-c-h-e-d. As in cooling.

2 Q What is that second -- tempered?

3 A Yes, martensitic structure.

4 And when I looked at that, that told me that even  
5 though I was outside of my hardness range, my strength in  
6 this particular screw in the core region, the core region of  
7 the screws actually was higher than what the Westinghouse  
8 spec called for. That was good.

9 From our perspective that was good; that was not a  
10 bad finding. The only place that could have been a  
11 liability was if this core material had been hard and I had  
12 a microstructure that we would interpret as a brittle  
13 microstructure, and we did not have that. A quenched and  
14 tempered microstructure was a desired microstructure.

15 Now, the case on this material --

16 Q And let me add that I'm not an engineer, and I'm  
17 not -- so if we could summarize this because I'm sitting  
18 here going uh-huh, uh-huh.

19 A Okay.

20 Q So if you could kind of summarize your findings  
21 here?

22 A The bottom line is this -- we looked at these  
23 number of screws. We did see some cracking in these screws.  
24 The cracking was lap cracking from the fabrication process,  
25 rolling.

1           In the root region we saw some cracking, but the  
2 cracking that we saw is not considered to be injurious type  
3 cracking. We saw lapping defects and we saw some cracking  
4 that was conferential in nature versus transverse.

5           Transverse meaning it would be running across the  
6 cross-section of screw, where the screws carries the load,  
7 which was seen in B It was cracking like was seen in B.

8           But this was more or less in the thread roots that  
9 ran conferential around the thread, which based on our  
10 qualitative analysis, it was determined not to be an  
11 injurious type of crack.

12           Q     Now, did you discuss or share this sampling with  
13 the NRC?

14           A     I believe that -- I personally didn't -- but this  
15 information, I believe, was submitted to the NRC. I believe  
16 it was included in part of the report.

17           But basically what I did was I did the report and  
18 turned that report over to the Watts Bar engineer. And I'm  
19 sure that -- I know for a fact that this information has  
20 been shared with NRC because I saw some NRC document that  
21 referenced some of the conclusion that I had drawn on this  
22 report, yes.

23           Q     From your testing of these screws -- well, I think  
24 what I heard you say was out of the fifty screws --

25           A     Fifty-eight.

1 Q You found no manufacturing defects that would  
2 match those in Set B in the initial report?

3 A That's correct.

4 Q That's correct?

5 A That's correct.

6 Q And it's your opinion that according to the sample  
7 that you saw there is no generic problem with the screws in  
8 the warehouse?

9 A That's correct.

10 Q Are those screws used for anything else other than  
11 ice baskets?

12 A I don't know. I really don't know. They are just  
13 screws, they are just machine screws. They may be used for  
14 something else, but I can't testify that they are. I'm  
15 sorry. I didn't mean to get so technical.

16 Q That's all right.

17 Now, the reconciliation report that you prepared,  
18 and you made a statement in the conclusion, that the overall  
19 core metallurgical properties were adequate for the intended  
20 application.

21 Did that include the examination of these  
22 fifty-eight screws?

23 A No, sir.

24 Q I don't believe it would have.

25 A I don't think that was part of this -- no, sir, I

1 don't think that was part of this set.

2 Q What did you base that statement on?

3 A What I was explaining to you just a few minutes  
4 ago, talking about the martensitic structure, the hardness  
5 value, things of that nature.

6 Q Okay. Now, what I'm referring to is before you  
7 conducted this test on October --

8 A I went back and I looked at the work that the  
9 laboratory had done on this initial population of screws  
10 from the 1995 time frame. They had done a sufficient amount  
11 of work in order for me to make that determination.

12 Q Okay.

13 A I'm saying based on the work that they had done, I  
14 looked on the hardness value of the screws. I looked at the  
15 microstructure during that time frame.

16 Now that crack that we saw, that transverse crack  
17 that we saw, would -- was unacceptable. That was an  
18 injurious defect. In my opinion, that crack would have been  
19 an injurious defect because of promulgating the transverse  
20 direction.

21 But as for the core metallurgical property of the  
22 material, it met specifications, the core metallurgical  
23 property of the material met specification.

24 Q Do you have any sense about these 170 screws or so  
25 that were found in the melt pot that were broken?

1 A Do I have any sense -- what do you mean?

2 Q Have you talked with anybody with about what could  
3 have been the reason to find so many broken screws?

4 A I mean, I can't tell you anything about the  
5 specifics I talked to about it, but in general conversation  
6 people felt that I -- the consensus of that was that these  
7 things probably broke off when installing the screws. I  
8 mean, you're standing there with a torque wrench zipping  
9 down on them, and they just pop off. One pops off and you  
10 take another one, and you put it in.

11 MR. CLAXTON: Okay. Why don't we take a short  
12 break at 2:08 p.m.

13 (Pause.)

14 MR. CLAXTON: Go back on the record at 2:21 p.m.  
15 and the same parties present and I will remind you that  
16 you're under oath for the information that you provide.

17 BY MR. CLAXTON:

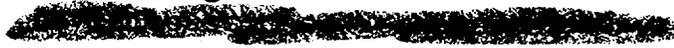
18 Q Did you ever discuss this ice basket screw issue  
19 with any of the ice condenser people Landy McCormick?

20 A No, sir.

21 Q Or Curtis Overall?

22 A No, sir.

23 Q 

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[REDACTED]

Q Okay. Now, June 14th, there was a meeting that you had called, and in the Department of Labor transcript, you testified that yes, you did call that meeting and you discussed that issue.

A That was at the lab? Wasn't that the laboratory meeting.

Q I believe that's correct?

A Yes, that was at the lab.

Q And Curtis Overall was at that meeting; is that correct?

A No, no. No, sir.

If that's the laboratory meeting, no, sir, he was not at that meeting. I'm not up on the date, as to what happened when

[REDACTED]

) And that's what I testified

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1 to, and I still don't have any recollection of.

2 And I went around and asked people that was  
3 allegedly at that meeting and three out of four people that  
4 I asked said that we don't recall such a meeting. And I  
5 noted that and I documented that. No, sir.

6 Q When you had the meeting over at the lab, and I  
7 will tell you, I'm a little confused over which one was  
8 which.

9 A Okay.

10 Q When you had the meeting at the lab, did you have  
11 a sign-in sheet, do you recall that, or would you normally  
12 have a sign-in sheet for people that come to a meeting?

13 A They have a sign-in sheet at the front desk.  
14 Sometimes we sign in; sometimes people don't.

15 Q I think this was just a sheet of paper that was  
16 passed around?

17 A I can't remember. I honestly can't remember that.  
18 I mean, typically we wouldn't do that for a meeting such as  
19 this, but I can't remember nothing at that level of detail.

20 MR. FINE: I may be able to be helpful here, Mr.  
21 Claxton.

22 If I may recall from the testimony at the  
23 Department of Labor proceeding Mr. Overall said, I think, he  
24 was not present at any meeting at Central Laboratories, when  
25 these report were being discussed.

1 He did testify about a meeting that he said took  
2 place at Watts Bar in June of 1995 where he placed Mr. Woods  
3 and other people at that meeting, but that was at Watts Bar.

4 Mr. Overall never placed himself at a meeting at  
5 Central Labs in June of 1995.

6 MR. CLAXTON: Why don't we take a break here.

7 (Pause.)

8 MR. CLAXTON: Back on the record at 2:42 p.m.

9 BY MR. CLAXTON:

10 Q And we were just discussing some meetings that Mr.  
11 Woods may or may not have attended.

12 And Mr. Woods, I would like to show you a list  
13 here and it's a FAX copy of a -- what appears to be a  
14 sign-in sheet and it's captioned ice basket screw issue,  
15 roster, 6-14-95.

16 A Okay.

17 Q And it appears -- if you could tell me if that's  
18 your name or that's your signature? If you could tell me a  
19 little about that list or what it is or do you know anything  
20 about that list?

21 A That's my name and that's my signature, and  
22 apparently I was there. I don't recall it.

23 Q And the first name on the list is Curtis Overall  
24 from tech support?

25 A Yes, sir.

1 Q Does that list mean anything to you?

2 A No. This is the first time I have seen the list  
3 and I just still can't recall it. But, you know, by the  
4 same token, I go to a thousand meetings and stuff all the  
5 time. There is nothing about that that sticks out in my  
6 mind. I just can't recall it.

7 Q That's dated 6-14-95?

8 A Yes, sir.

9 Q Which would have been -- is that -- well -- I'm  
10 not sure what the significance of that date is.

11 Does it mean anything if I told you that Mr.  
12 Overall may have brought some ice basket collars or rings,  
13 I'm not sure what they call it, some screws to show or to  
14 demonstrate what they look like?

15 A No, sir. Could I see your list again.

16 Q Sure.

17 A I definitely don't remember this.

18 Q Okay. That was the meeting?

19 A I talked to three -- 

20  I could not recall being at this meeting. I  
21 see -- in some write-up that I saw, he had identified some  
22 of these people on this list. I went up and I asked them,  
23 do you guys remember a meeting that we all was at. No. I  
24 asked Theresa Chapman. I asked -- I believe Wally Elliot's  
25 name was included on there. I don't see it on there now.

1                   At the time he was the site engineering manager.  
2 I just don't recall. And I wrote -- when I wrote back to  
3 you last summer or summer before last, I had went around  
4 asked those people, but you know, we go to a lot of meetings  
5 and --

6           Q     Okay.

7           A     I still do not recall it.

8           Q     Supposedly this was to deal with the ice basket  
9 screw issue.

10          A     Okay.

11          Q     Took place on site hosted by Terry Woods?

12          A     Hosted by Terry Woods? How can I host a meeting  
13 on site?

14          Q     To discuss the -- to discuss the PER and the  
15 metallurgical report findings.

16                   When Mr. Adair talked to you about the problems  
17 with the first report, somehow those first reports were  
18 brought back, did you ask Delsa to recover those reports?  
19 How did that go about?

20          A     No. It was general agreement that a second report  
21 would be issued to provide clarity based on our discussion.  
22 I ain't asked anybody to bring anything back. I don't even  
23 have the authority to ask anybody to pull anything back.

24          Q     Did -- well, since you don't remember the meeting,  
25 I can't ask you if something happened there.

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1 Q Do you recall making a determination as to whether  
2 this was a safety significant issue?

3 A I don't even have that technical capability. I  
4 have seen that statement, and I don't even have the  
5 technical capability to make such an assessment.

6 I'm a metallurgical engineer, which is very narrow  
7 focus, and I dealt with the metallurgical aspects of this  
8 particular issue and that is it.

9 As far as doing a safety analysis and determining  
10 safety significance, I don't have the technical capability  
11 to make such an assessment.

12 Q I think I asked you, did you discuss with this  
13 Gordon Yetter at any time?

14 A Not to my recollection, I didn't. The meeting at  
15 the Central Lab, it came back to me and was clear to me in  
16 terms of what we discussed, but for the most part I just  
17 don't remember that meeting.

18 Q What day was the meeting at Central Labs; do you  
19 have a record of that somewhere?

20 A No. This whole issue during that time frame was  
21 no different from any other issue that I addressed on a  
22 daily basis. People call me all the time. My phone rings  
23 constantly, Terry, can you do this. Terry, can you do that?  
24 Can you look into this, can you look into that?

25 This was just another issue that I was looking

1 into, but as far as this being a high profile issue, a big  
2 time thing -- it was not that.

3 I mean I have been involved in the welding project  
4 at Watts Bar, which was a major issue. I had been involved  
5 in heat code traceability at Watts Bar, which was a major  
6 issue. I have been involved in other start up issues at  
7 other sites that have been flagged as major issues.

8 When they called me pertaining to this, this was  
9 something from my perspective that was just a routine issue.  
10 I didn't know nothing about no ice condenser basket.

11 Man, in my life I might have been -- might have  
12 seen the ice condenser once in my lives. Seemed like when I  
13 worked at Sequoyah, I went in the ice condenser. I don't  
14 know anything about the ice condenser. It was just not a  
15 major issue to me during that time.

16 Q [REDACTED]  
17 [REDACTED] --

18 A [REDACTED]  
19 [REDACTED]

20 Q [REDACTED]  
21 [REDACTED]  
22 [REDACTED]

23 A [REDACTED]  
24 Q [REDACTED]

25 MR. CLAXTON: [REDACTED]

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[REDACTED]

MR. FINE: [REDACTED]

MR. CLAXTON: [REDACTED]

MR. FINE: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

What's the date on that?

MR. CLAXTON: June 14th, 1995.

MR. FINE: Consider it done, sir.

BY MR. CLAXTON:

Q Okay. Now, Mr. Woods, I think you said -- let me ask you. Did you have anything to do with consulting with Westinghouse on the standards?

A No, sir.

Q Do you know who would have?

A On the standards?

Q Who would have been responsible or who would have had liaison with Westinghouse?

A That would have happened at site; that was somebody at the site.

Q Now, I think just a couple of more things I would like to go back and tie down.

One is when you discussed the ice basket screw issues with Delsa Frazier?

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1 A Yes.

2 Q Did you discuss in any way how to deal with  
3 references to the new screws or Set B screws?

4 A We did not talk about that particular -- talking  
5 about here recently?

6 Q 1995.

7 A We didn't talk about that back in the 1995 time  
8 frame. We didn't talk about the Set B screws. During that  
9 conversation, and I will go back, we focused primarily on  
10 those seven conclusions and specifically those two. That  
11 was the gist of the conversation.

12 Q Did you the discuss this examination at all with  
13 Daryl Smith?

14 A Not outside of that particular meeting that we was  
15 in. What examination?

16 Q The initial examination?

17 A Not outside that meeting. That meeting that we  
18 had we all discussed it in that forum.

19 Q Never a one on one discussion?

20 A During that time frame?

21 Q Yes.

22 A Not to my recollection, no, sir.

23 I think most of our conversations was in that  
24 forum.

25 Q I think given the unanswered question we have, I

1 will just ask you if you have anything that you would like  
2 to add or if you have any questions of me regarding anything  
3 we talked about?

4 A Well, the only thing, say you talked about defects  
5 -- once defects are identified or something or who would  
6 have the responsibility for reporting that.

7 Q Uh-huh.

8 A You know, any time you work with nuclear power,  
9 anybody can report anything at any time. That's one of the  
10 things I want to clarify, but as far as the information that  
11 was contained in that report, if the information was  
12 contained in that report, that report would go back to the  
13 site. The site would read that report and would extract  
14 information from it and it would disposition it accordingly.

15 That might involve getting somebody else involved  
16 in order to help with that, but typically it would be sent  
17 back to site for site disposition. I just wanted to clarify  
18 that.

19 But anybody can report what they consider to be  
20 anything that impacts nuclear safety and we understand that.

21 Q One other thing I just thought about, was there  
22 ever any suggestion that you go back into the ice condenser  
23 area and inspect the basket for missing screws?

24 A During that time frame?

25 Q Yes, with video cameras?

1           A     I don't recall talking about anything like that  
2 level of detail. I primarily was focusing on those two  
3 issues.

4           Q     Would that have been your responsibility?

5           A     To inspect?

6           Q     To inspect for missing screws?

7           A     To do the inspection?

8           Q     Well, to physically do the inspection, but would  
9 that come under your authority or purview to go out and  
10 inspect for missing screws?

11          A     That could have been initiated by somebody at site  
12 engineering, Adair, whoever was the owner of the PER or  
13 whatever. They might have sought my advice on something  
14 like that, but that's at their own pleasure though. They  
15 could have picked up the phone and said, Terry, do you think  
16 we can do a video inspection or something like that. They  
17 could have done that, but nobody asked me that though.

18           MR. CLAXTON: Mr. Fine do you have anything?

19           MR. FINE: No, sir.

20           MR. CLAXTON: I don't think I have anything else.

21           MR. FINE: Apart from I think that I request that  
22 when a transcript is prepared and one is otherwise  
23 available, give Mr. Woods a chance to review it.

24           MR. CLAXTON: I will note that request.

25           I don't think I have anything else.

1 BY MR. CLAXTON:

2 Q I would like to ask you if the information that  
3 you have provided has been given freely and voluntarily?

4 A Yes, sir.

5 Q Has anyone inside the NRC or either myself over  
6 any other employee with the NRC made any promises or threats  
7 to you?

8 A No, sir.

9 MR. CLAXTON: Okay. If there's no other questions  
10 or statements, we'll conclude the interview at 2:58 p.m.

11 (Whereupon, at 2:58 p.m., the interview was  
12 concluded.)

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REPORTER'S CERTIFICATE

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

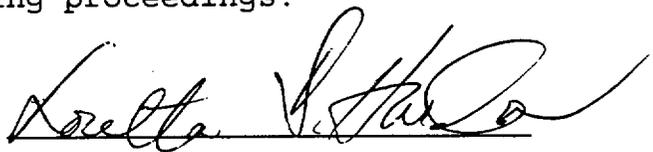
NAME OF PROCEEDING: INTERVIEW OF  
TERRY RAY WOODS  
(CLOSED)

CASE NUMBER:

ASLBP No.

PLACE OF PROCEEDING: Chattanooga, Tennessee

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.



Loretta D. Harden

Official Reporter

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