

THE STATE OF SOUTH CAROLINA  
In The Court of Appeals

APPEAL FROM SPARTANBURG COUNTY  
Court of Common Pleas

Jean H. Toal, Circuit Court Judge

Appellate Case No. 2017-002611  
Case No. 2016-CP-42-1592

**RECEIVED**

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SC Court of Appeals

Beverly Dale Jolly and Brenda Rice Jolly, ..... Respondents,

v.

General Electric Company, et al., ..... Defendants,

Of whom Fisher Controls International LLC and Crosby  
Valve, LLC are the ..... Appellants.

RECORD ON APPEAL  
VOLUME IV

|                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p>C. Mitchell Brown<br/>A. Mattison Bogan<br/>James B. Glenn<br/>Nicholas A. Charles<br/>NELSON MULLINS RILEY &amp;<br/>SCARBOROUGH LLP<br/>1320 Main Street / 17th Floor<br/>Post Office Box 11070 (29211-1070)<br/>Columbia, SC 29201<br/>(803) 799-2000</p> <p>Attorneys for Appellants Fisher Controls<br/>International LLC and Crosby Valve<br/>LLC</p> | <p>Theile B. McVey, Esq.<br/>John D. Kassel, Esq.<br/>KASSEL McVEY ATTORNEYS AT<br/>LAW<br/>Post Office Box 1476<br/>1330 Laurel Street (29201)<br/>Columbia, SC 29201</p> <p>Jonathan M. Holder, Esq.<br/>Lisa White Shirley, Esq. (<i>Pro Hac<br/>Vice</i>)<br/>DEAN OMAR BRANHAM, LLP<br/>302 North Market Street, Suite 300<br/>Dallas, TX 75202<br/><a href="mailto:jholder@dobllp.com">jholder@dobllp.com</a></p> <p>Attorneys for Respondents</p> |
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Certificate of Counsel

1 and confers with them, educates himself.

2 THE COURT: I don't see that that hurts you, quite  
3 frankly. That's what you would normally do. The only  
4 thing I had a little bit of unease about was getting  
5 into the whole business of the volume of litigation.

6 MR. REID: I don't remember, frankly, but my  
7 colleagues tell me I did object to that series of  
8 questions.

9 THE COURT: Well, be that as it may, what I've  
10 said to you is to give you the opportunity to go  
11 forward. I'm not going to strike the testimony. If I  
12 let it in, I let it in. I'm not going to strike it  
13 now. I don't recall that, but I'm not going to dispute  
14 your colleagues.

15 Now, have we put everything on the record we want  
16 to put on the record?

17 Very good. Bring us the jury, please.

18 (WHEREUPON, the jury entered open court at  
19 11:19 a.m.)

20 THE COURT: All right. Mr. Martin, please come to  
21 the stand again.

22 Ms. Farrise, you may continue with the direct  
23 examination of Mr. Martin.

24 MS. FARRISE: Thank you, Your Honor.

25 Q Mr. Martin, Crosby never warned about the health

1 hazards and health danger associated with being exposed  
2 to asbestos from any asbestos having to do with Crosby  
3 valves?

4 A That's correct.

5 Q And it never, for instance, put a warning on a  
6 package?

7 A No. We saw no need to.

8 Q Never put a warning about the health hazards of  
9 asbestos in an instruction manual that told how to  
10 maintain the valve?

11 A No. We saw no danger from our valves. No, we did  
12 not.

13 Q Never sent anybody an e-mail, correct?

14 A No.

15 Q So the position of Crosby Valves today is that  
16 there is no danger whatsoever from being exposed to  
17 asbestos associated with valves and packing, correct?

18 A Our position is there's no danger associated with  
19 our valves using gaskets the way we use them. That's  
20 our position, yes.

21 Q So that's a little different. Is it the position  
22 today of Crosby, will Crosby recognize today that being  
23 exposed to asbestos that is liberated from an  
24 asbestos-containing gasket that was used on the flange  
25 of a valve and exposure occurred via removal, that that

1 poses a health risk?

2 A Are we talking about external gaskets?

3 Q Talking about flange face gasket.

4 A External gasket. We did not supply those gaskets,  
5 so we wouldn't warn anybody about those gaskets.

6 Q So my question now is not about warning.

7 A I thought it was.

8 Q Is it Crosby's position today that if a person is  
9 exposed to asbestos because of inhaling asbestos that's  
10 liberated from an asbestos gasket that came from the  
11 flange face of the valve, that that exposure causes a  
12 health risk?

13 A That's correct, it does.

14 Q It does?

15 A Yeah.

16 Q And can we agree that it is Crosby's position or  
17 awareness today that, if a person is exposed to  
18 asbestos that comes from the removal of  
19 asbestos-containing packing used in a valve, that if  
20 that exposure occurs, that that, too, poses a health  
21 risk?

22 A That would seem reasonable, yes.

23 Q At the Wrentham plant, sir, manufacturing plant,  
24 were rolls of sheet gasket material, first of all, at  
25 that location?

1 A No.

2 Q At the Wrentham location, was there already  
3 fabricated sheet gasket material that was handled and  
4 installed in valves that Crosby would sell?

5 A We bought preformed gaskets, and I don't know if  
6 that's what you're alluding to or not.

7 Q Right. So preformed, I think we can agree, is  
8 where there has been a sheet or roll of gasket  
9 material, and according to the directions of Crosby,  
10 holes have been punched, cut in it, depending on the  
11 application, and it's been cut to some shape and size  
12 to be used in the gasket; that's what you mean by  
13 preform, right?

14 A We purchase the gaskets with holes in them formed  
15 to our configuration. We bought them so you could just  
16 put them in the valves.

17 Q Right. And the factory workers at the Wrentham  
18 plant removed those preformed gaskets from the  
19 packaging that it was sent in?

20 A I would believe so, yes.

21 Q The employees of Crosby at the Wrentham plant with  
22 their own hands touched those gaskets when they  
23 installed them into the valve?

24 A Yes, they did.

25 Q In the spare parts operation, did Crosby take into

1 the factory asbestos-containing preformed gaskets?

2 A Yes.

3 Q And were they already packaged such that they had  
4 to send them on to the customer, put them in their  
5 inventory, or were they packaged by Crosby employees  
6 with a Crosby packaging?

7 A I don't know the answer to that.

8 Q At any time, did you see the Crosby replacement  
9 parts packaging for asbestos-containing gaskets to be  
10 something that was shrinkwrapped, if you know what I  
11 mean?

12 A I saw gaskets that were shrinkwrapped, yes. With  
13 the asbestos-containing, I don't know.

14 Q You could look at the gasket see that it was  
15 fabricated?

16 A Correct.

17 Q And on the gasket, there was written whatever the  
18 type of gasket it was or number or whatever it happened  
19 to be?

20 A It would have a number on it.

21 Q The gasket would have printed -- I'm sorry. The  
22 gasket would have the number of whatever the gasket was  
23 printed on it?

24 A No, on the package.

25 Q And if the gasket got loose from the package



1 before it got to the customer, how would the customer  
2 be able to verify that it was exactly the right gasket?

3 A I don't know the answer to that, but they were  
4 packaged on a cardboard backing with a shrinkwrap over  
5 it, and it's not likely that it would become separated.

6 Q And as I understand it, just so we're on the same  
7 page, the packaging had the Crosby part number on the  
8 packaging?

9 A Correct.

10 Q And the Crosby name?

11 A I don't know if the name would have been on the  
12 gasket packaging, but it would have been on the package  
13 that it was shipped in, yes.

14 Q And so this cardboard gasket shrinkwrap or  
15 see-through plastic is how it went packaged?

16 A Most of the time, yes.

17 Q And nowhere on that packaging was there a sticker  
18 or a label or anything that said -- would be construed  
19 to be a warning about the hazards of asbestos?

20 A No. If we didn't receive something like that from  
21 our supplier, we would not put anything like that on  
22 there because we're not aware it's dangerous.

23 Q Do you know what a Material Safety Data Sheet is?

24 A I've seen some, yes.

25 Q And have you -- the suppliers that you discussed,

1 to Crosby, they sent Material Safety Data Sheets for  
2 their asbestos-containing gaskets, did they not?

3 A I never saw one for a gasket, no.

4 Q I'm sorry?

5 A I never saw one for a gasket.

6 Q Did you see one for packing?

7 A No.

8 Q Let me show you a Material Safety Data Sheet from  
9 Crosby's suppliers. Here we go. Do you have 508? Let  
10 me show you what has been marked Plaintiffs' Exhibit  
11 508.2. For the record --

12 MR. REID: Your Honor, may we have a sidebar?

13 THE COURT: What's that?

14 MR. REID: May I have a sidebar with the court and  
15 counsel?

16 THE COURT: Yes. Going to involve this exhibit?

17 MR. REID: Yes.

18 THE COURT: Ms. Farrise, bring it up with you when  
19 you come up, please.

20 (WHEREUPON, a bench conference was held off the  
21 record in the presence of the jury, but out of the  
22 hearing of the jury.)

23 THE COURT: All right. This exhibit hadn't been  
24 admitted, but Mr. Martin is examining it to see if he  
25 can identify it.

1 Ms. Farrise.

2 BY MS. FARRISE:

3 Q Have you had a chance to look at Exhibit 508?

4 A I looked at it.

5 Q Do you recognize it as a Material Safety Data  
6 Sheet?

7 A That's what it says at the top of the sheet, yes.

8 Q Not just what it says. You said you're familiar  
9 with the format. Is it consistent in terms of the  
10 layout, the information, with what you understand a  
11 Material Safety Data Sheet to be?

12 A No. This is not what I've seen as a Material  
13 Safety Data Sheet.

14 Q So does looking at this refresh your recollection  
15 that the suppliers to Crosby sent to it Material Safety  
16 Data Sheets?

17 MR. REID: Your Honor, there's no foundation laid  
18 yet.

19 THE COURT: Overruled. She's asking him  
20 identification questions. It hasn't been admitted yet.  
21 Those are legitimate identification questions.

22 All right. Go ahead, Mr. Martin.

23 THE WITNESS: I have not seen one of these before.

24 BY MS. FARRISE:

25 Q Okay. So it doesn't refresh your recollection?

1     A        No.

2     Q        When were you at Crosby, your job did not include  
3     being in the health and safety department, right?

4     A        It did not.

5     Q        Although, I think the interrogatories that we saw  
6     or that we read to the jury last week from Crosby admit  
7     that it never had a medical department?

8     A        That's correct.

9     Q        It never had an industrial hygiene department?

10    A        That's correct.

11    Q        It never maintained a library of materials having  
12    to do with health and safety?

13    A        That's correct.

14    Q        I take it, sir, that there was never any training  
15    about asbestos hazards and protection, respirator use  
16    and the like having to do with asbestos for employees  
17    of Crosby who worked at the Wrentham plant?

18    A        Not that I'm aware of.

19            MR. REID: Your Honor, objection; relevance.

20            THE COURT: Repeat the question.

21            MS. FARRISE: That there was never any training  
22    for the employees at the Crosby Wrentham factory about  
23    the health hazards associated with asbestos, means of  
24    protection, and including the use of a respirator to  
25    protect themselves.

1 THE COURT: And you object to that question?

2 MR. REID: Yes, for the reasons -- for relevance  
3 and for the reasons we discussed at the break.

4 THE COURT: All right. Overruled.

5 THE WITNESS: No not that I'm aware of.

6 BY MS. FARRISE:

7 Q I just want to ask you briefly about this role  
8 that you have. In this particular case, do you still  
9 have Exhibit 6359? I think your counsel found you a  
10 copy. It's a collection of documents that are labeled  
11 "Crosby Duke."

12 A That's the first couple of them.

13 Q Looks like a drawing. Do you have that?

14 A I do.

15 Q And in connection with your position as a  
16 representative for Crosby in this case, you have been  
17 working on this case prior to Friday when you came to  
18 court and today, right?

19 A That's correct.

20 Q You've been working with and reviewing documents  
21 that you've been provided, correct?

22 A Yes.

23 Q And can you take a look at this set of 39  
24 documents, which include various types of documents,  
25 and tell me whether this is all you have reviewed for

1    this particular case as it relates to Crosby and Duke?

2    A        As it relates to this type of document?

3    Q        No, as it relates to this case, Crosby and Duke.

4    Have you seen any other documents --

5    A        Interrogatories.

6    Q        -- about Crosby's products or role at Duke?

7    A        I don't believe so.

8    Q        Okay. And you mentioned interrogatories.

9    Obviously, you looked at the responses that Crosby  
10   gave?

11   A        Yes.

12   Q        And you signed off on them?

13   A        Yes.

14   Q        Okay. So I just want to get the universe. Your  
15   universe are these 39 documents and the interrogatories  
16   which the jury had some portion of them read to them  
17   last week, correct?

18   A        Yes.

19   Q        Nowhere in these 39 documents are Crosby material  
20   specifications, correct?

21   A        I believe this last document is a part card that  
22   has material specifications on it.

23   Q        Does it look like this?

24            THE COURT: Is this 0039?

25            THE WITNESS: 0039.

1 BY MS. FARRISE:

2 Q So for the moment, other than this one document,  
3 which I'm going to ask you about, have you been  
4 provided for your review, for your work, for anything  
5 you've testified about in this case any Crosby material  
6 specifications?

7 A I don't believe so.

8 Q Okay. So this document -- I'll try to blow it up  
9 a little -- is -- would correspond to some drawing that  
10 has this number on it. We talked earlier about drawing  
11 numbers, correct?

12 THE COURT: What page are you on?

13 MS. FARRISE: The very last one, 00039.

14 THE COURT: The very last page, all right.

15 BY MS. FARRISE:

16 Q Correct?

17 A It's -- is the question does Drawing Number SK5349  
18 pertain to a valve? Is that the question?

19 Q No. The question is, this is a material  
20 specification, right? Let's start with step one. We  
21 agree on that, right?

22 A The card is a part card, and it does give you the  
23 material of that part if you look down under materials,  
24 yes.

25 Q Right. So it would tell us that this -- the name

1 of the part is the gasket set screw, right?

2 A It's a set screw gasket.

3 Q Set screw gasket?

4 A Yes.

5 Q And it would tell us that this gasket used to be  
6 Garlock Style 8740 --

7 THE COURT: 8.

8 BY MS. FARRISE:

9 Q -- 8 with nitrile, correct?

10 A Yes.

11 Q And at some point, because that's scratched out,  
12 it became Sepco Style 6234 no asbestos, correct?

13 A Correct.

14 Q But this part number has a drawing that would go  
15 through the revisions, and depending on the revision  
16 date, it would tell us when it went from being an  
17 asbestos-containing Garlock Style 8748 nitrile gasket  
18 to being a Sepco Style 6234 nonasbestos-containing  
19 gasket?

20 A No. That information is right there on that part .  
21 card. If you look, you see the A in a circle next to  
22 Sepco?

23 Q I see it. Thank you. 1989?

24 A Yes.

25 Q What is TPV, the person who made the change?



1 A That's the gentleman that made that change.

2 Q And does this -- and I don't know -- tell us that  
3 it goes with the valve that's drawing number -- is it  
4 SR5349?

5 A No. That's -- it's an SK5349. Means a sketch.  
6 And what that has on it is a table of part numbers, and  
7 it tells you what their dimensions are.

8 Q That particular drawing?

9 A Yeah.

10 Q So if we wanted to know if this were a gasket for  
11 a one-inch or five-inch valve or however big the gasket  
12 is, that drawing would tell us about the size of the  
13 gasket?

14 A Yes. It will tell you the size of the gasket, and  
15 it may give you a little more information on the  
16 material on the gasket.

17 Q Okay. So this is the only, for instance, who the  
18 supplier was?

19 A Correct.

20 Q Whether it was chrysotile or crocidolite?

21 A Won't say that on the SK. It would have to come  
22 out of the part number. It's Sepco Style 6234. What  
23 is that material; that's where we would get that.

24 Q What is that material after February of 1989?

25 A Right.

1 Q And this is the only material specification that  
2 Crosby has -- that you've seen having to do with the  
3 Duke plants -- Ocone, McGuire and others?

4 A Yes. It's the only one I looked at, yes.

5 Q And then I really wanted to kind of get a look  
6 briefly at the other documents.

7 This is a different kind of document. Can you  
8 tell the jury what this is? This is 0038.

9 A Yes. That is a typical bill of material which  
10 will tell you all the components of that particular  
11 valve. It happens to be a one-and-a-half G  
12 two-and-a-half. It's a JLT JOS35.

13 Q And that's the style which was partly what we  
14 talked about earlier?

15 A Yes. That's the style, yes. The one-and-a-half G  
16 two-and-a-half is the size. The inlet is a  
17 one-and-a-half inch inlet. The G is the flow control  
18 area. And the two-and-a-half is the outlet size.  
19 That's probably where that gasket part number came  
20 from, probably came off that bill.

21 Q And this here, assembly number, tells Crosby this  
22 specific valve number?

23 A Yes, it does.

24 Q And so just because it's a lot of technical, Valve  
25 Number 67261 at Duke that has these parts, one of those

1 numbers, part numbers, has that material specification  
2 that we just looked at?

3 A I believe that to be true.

4 Q And so let me see if I have a number. Well, the  
5 number is 103 --

6 THE COURT: It's 0036, Ms. Farrise.

7 MS. FARRISE: No, no. The part number was --

8 THE COURT: 103027.

9 MS. FARRISE: 103027.

10 THE COURT: Right, 103027, and 103028 is what  
11 you're looking at. Those two numbers are found on  
12 Crosby Duke 00036, if you look down at the bottom.

13 THE WITNESS: Yes.

14 MS. FARRISE: Okay. I will, Your Honor. Thanks  
15 so much.

16 Q This tells the jury, just in terms of trying to  
17 figure out how to read these things, that the gasket  
18 for the assembly -- it actually says Gasket Guide --  
19 327 for the set screw for the valve, looks like  
20 installed in September of 1977 at Duke, is an  
21 asbestos-containing gasket, at least through 1989?

22 A That's correct.

23 Q So if we took all of these part numbers, and we  
24 had these material specifications for the various  
25 components of gaskets, really, and packing, we could

1 know, yes or no, these were or were not  
2 asbestos-containing and for how long?

3 A Correct.

4 Q And none of that information, save for the one  
5 example we have just gone through, is what you have  
6 reviewed in this case?

7 A Correct.

8 Q And based on your experience with Crosby, that  
9 information is kept at the Crosby Valve engineering  
10 department?

11 A Specifications department, yes.

12 Q Right, the specifications department. And that's  
13 located up in Massachusetts at the new place of the new  
14 corporate headquarters?

15 A Correct.

16 Q And as part of your work in this case, did you  
17 travel up there to review with your eyes, even though  
18 you don't have the documents, the specifications that  
19 pertain to the gaskets for the valves that Crosby sold  
20 to Duke?

21 A I'm a little lost on that one.

22 Q First of all, did you travel up to the  
23 specifications department in Massachusetts?

24 A In reference to this case, no.

25 Q Yes. Did you or anyone else have the

1 specifications accessible, whether that be by computer  
2 screen, physical delivery, fax?

3 A I could contact the facility and get that  
4 information, yes.

5 Q Okay. I understand what you can do. I'm just  
6 trying to get a bound on in terms of the information  
7 that you have. No one, to your knowledge, has done  
8 that, or if they have done that, you've not been  
9 provided that information?

10 A What we did was --

11 Q I'm sorry. I'm just asking about the  
12 specifications. To your knowledge --

13 MR. REID: Your Honor, he's answering the  
14 question. May he answer?

15 THE WITNESS: What we did --

16 THE COURT: Let me make this suggestion,  
17 Mr. Martin. Answer her question, and then give your  
18 further explanation if you like.

19 THE WITNESS: Please ask the question again.

20 BY MS. FARRISE:

21 Q To your knowledge, no one from the Crosby legal  
22 team or otherwise has gathered from the specifications  
23 department in Massachusetts the specifications that go  
24 with the valves that Crosby sold to Duke?

25 A Correct. All the detailed specifications, no,

1 they have not.

2 Q Okay, sir. Let me ask you to take a look at what  
3 I'm going to mark as Plaintiffs' Exhibit 945.3232.

4 (WHEREUPON, Plaintiffs' Exhibit Number 945.3232  
5 was marked for identification.)

6 BY MS. FARRISE:

7 Q And do you recognize that document as one created  
8 by someone who is employed with Crosby Valve?

9 A No, I'm not familiar with this document.

10 Q Are you familiar with that type of document?

11 A No, I'm not.

12 MS. FARRISE: Your Honor, I would offer it into  
13 evidence, given that it appears to be  
14 self-authenticating as a Crosby Valve document.

15 MR. REID: Lack of foundation, Your Honor. Also  
16 no showing of any relatedness to this case.

17 MS. FARRISE: It's produced in litigation, Your  
18 Honor.

19 THE COURT: Where did you receive this document?

20 MS. FARRISE: Produced in discovery.

21 MR. REID: Not in this case.

22 THE COURT: In discovery by Crosby?

23 MS. FARRISE: Yes, Your Honor.

24 THE COURT: It will be admitted. Overruled.

25 (WHEREUPON, Plaintiffs' Exhibit Number 945.3232

1 was admitted into evidence.)

2 MR. REID: Your Honor, just to clarify, it wasn't  
3 produced in this case.

4 THE COURT: We've been down this road before. If  
5 we're going to have an extended discussion of this  
6 thing, then we need to have it. I think the ruling I'm  
7 making here is consistent with the ruling that I've  
8 made with respect to other documents for all the  
9 parties.

10 Now, if there's something different from that with  
11 this, I don't believe there is, so overruled. You're  
12 protected. It's admitted.

13 BY MS. FARRISE:

14 Q Mr. Martin, start at the top -- strike that.

15 This sort of Crosby Valve & Gage Company,  
16 Wrentham, Massachusetts, certification of blueprints  
17 valves. Do you see that?

18 A I do.

19 Q We talked earlier about how Crosby would furnish  
20 valves to another equipment maker, and then that  
21 equipment maker might -- equipment would land at the  
22 customer's site?

23 A Yes.

24 Q This is an example, for instance, of that kind of  
25 transaction where Crosby Valve is dealing with

1 Combustion Engineering, which is a boilermaker, right?

2 A Yes.

3 Q And the valve would end up at the site furnished  
4 by Combustion Engineering?

5 A So this valve ended up at Duke; is that what we're  
6 saying?

7 Q No. It would end up at the customer site  
8 furnished by Combustion Engineering --

9 A But not Duke.

10 Q -- right?

11 A Yes.

12 Q It purports to be a certification of blueprints.  
13 And if I now understand your testimony as an engineer  
14 speaking for Crosby, you don't know what a  
15 certification of blueprints is?

16 A I do. I'm not familiar with this form. I've  
17 never seen it.

18 Q So you're familiar conceptually that when Crosby  
19 prepares blueprints, that it certifies the correctness  
20 of those blueprints?

21 A That's correct, yes.

22 Q Okay. Now, in terms of having as a customer Duke,  
23 and for a nuclear facility, there are separate and  
24 additional and extensive documentary requirements when  
25 you sell products to be used at a nuclear facility,



1 correct?

2 A If they're classified nuclear products, yes.

3 Q Right. And the company, Duke, if you will, relies  
4 on the manufacturer of the products and equipment to  
5 maintain that documentation?

6 A That's correct.

7 Q So Crosby, as a supplier to Duke for nuclear  
8 service, would understand and comply with the extensive  
9 documentary requirements to keep documentation about  
10 the products it sold for the nuclear facilities?

11 A That's correct.

12 Q I want to show you 947, which is something we're  
13 referring to as the Fisher Controls book. 947 is the  
14 Fisher Controls valve handbook copyrighted in 1965.  
15 Here is what it looks like as a little book.

16 MR. REID: Your Honor, before we continue, I'm  
17 trying to see if I have a copy or if counsel has one  
18 she can put up.

19 THE COURT: I can't hear that well.

20 MR. REID: I have not been handed a copy, so I  
21 just would like --

22 THE COURT: This is that Fisher control handbook  
23 y'all have been dealing with.

24 MR. REID: I'm just trying to find one. I  
25 wouldn't expect Fisher to come up with Crosby --

1 THE COURT: There we go.

2 Go forward, Ms. Farrise.

3 BY MS. FARRISE:

4 Q I see, Mr. Martin, that you are thumbing through  
5 it?

6 A Yes.

7 Q Okay. And is it -- do you agree that the Fisher  
8 Controls valve handbook is a general reference guide  
9 for the valve industry?

10 A I wouldn't know that. I have never looked at it.

11 Q Well, there was some testimony that it doesn't  
12 pertain really to Fisher; it's something that Fisher  
13 made for the whole valve industry. And since Crosby is  
14 in that industry, I'm just wondering if Crosby agrees  
15 with that.

16 A I've never seen this document.

17 Q Okay. Then I won't ask you about it.

18 I will, however, turn and ask you if we can agree  
19 that starting or at least by 1933, Crosby was a company  
20 that had contracts with the United States government?

21 A We have supplied valves to the United States  
22 government.

23 Q Right. The jury heard a response to interrogatory  
24 last week that was written to them -- that was read to  
25 them, sorry, that says that Crosby manufactured valves,

1 for instance, that were used in 1933 aboard naval  
2 vessels including the USS New Orleans, the USS  
3 San Francisco, the USS Minneapolis, and the USS  
4 Astoria. Are you familiar with that discovery response  
5 on the interrogatories that you have --

6 A Yes, I am.

7 Q And those -- and what that means is that Crosby  
8 made valves that were sold to the Navy, and they were  
9 installed as part of the power systems of those ships,  
10 correct?

11 A I believe so.

12 Q And that relationship of Crosby selling valves to  
13 the United States government, in this instance, to be  
14 used to repair or make Navy ships, that has -- that's  
15 been a relationship that Crosby has maintained going  
16 back to the early days of its history, correct?

17 A We have supplied a lot of valves to the Navy, yes.

18 Q And that goes back to the early days of its  
19 history. This is 1933. Did it start there?

20 A I don't know when it started.

21 Q Okay. As a company that sold or had contracts  
22 with the United States government valued at more than  
23 \$10,000, the United States government informed Crosby  
24 Valve and required that it take certain steps to  
25 protect workers from exposure to hazardous things, and

1 specifically including asbestos by 1952, correct?

2 A I'm not aware of that.

3 MR. REID: Objection; compound, foundation.

4 BY MS. FARRISE: I'm sorry?

5 A I'm not aware of that.

6 THE COURT: Just a moment, Ms. Farrise.

7 Overruled.

8 BY MS. FARRISE:

9 Q Sir, you are familiar or Crosby is familiar with  
10 something referred to as the Walsh-Healey Act?

11 A I am not.

12 Q You're not?

13 A No.

14 Q So is it your testimony on behalf of Crosby that  
15 no one at Crosby has ever heard of the Walsh-Healey Act  
16 of the United States government?

17 A I have never addressed that with Crosby, and I  
18 don't know the answer to that.

19 Q Okay. So if I asked you one way or another  
20 whether or not Crosby complied with the Walsh-Healey  
21 Act of 1952 or companies that had contracts with the  
22 government valued at more than \$10,000 to supply  
23 respirators, isolate work, do wet-down for asbestos in  
24 particular, you don't know that and Crosby doesn't know  
25 that?

1    A        Crosby may. I do not. I have not asked Crosby.

2    Q        Sir, in the interrogatory responses, Crosby admits  
3    and says that its knowledge about the relationship  
4    between exposure to asbestos and disease was generally  
5    known in the 1970s because of the OSHA standards,  
6    correct?

7    A        That's correct.

8    Q        So you do know about the OSHA standard?

9    A        The company knew about the OSHA standards, yes.

10   Q        Starting in 1972?

11   A        I don't know when it starts, but yes.

12   Q        Now, let me hand you what we've marked as  
13   Plaintiffs' Exhibit 155. Do you recognize 155 as the  
14   June 1972 OSHA regulation relating to workplace  
15   exposure to asbestos?

16   A        I'm not personally familiar with this, no.

17   Q        Is there anybody at Crosby who's familiar with the  
18   OSHA standard?

19   A        I assume there are.

20   Q        As part of your designation and role as the voice  
21   for Crosby in this case, is it Crosby's position that  
22   it does not know about the 1972 OSHA standard?

23        MR. REID: Your Honor, I just object. Mr. Martin  
24   is subpoenaed. There was no list of categories he was  
25   supposed to address. I think it's an improper

1 question.

2 THE COURT: Overruled.

3 BY MS. FARRISE:

4 Q Well, sir, getting back to the interrogatory  
5 responses --

6 THE COURT: All right. Ms. Farrise, you asked him  
7 a question; they objected; I overruled the objection.  
8 Now, let's at least hear his answer.

9 MS. FARRISE: Thank you, Your Honor.

10 THE WITNESS: Would you repeat the question?

11 MS. FARRISE: Might I have the assistance of the  
12 court reporter?

13 THE COURT: Yes. Diane, can you repeat that  
14 question?

15 (WHEREUPON, the record was read.)

16 THE WITNESS: I do not know about it, and I did  
17 not ask the company about it.

18 MS. FARRISE: One moment, Your Honor. Apologies,  
19 Your Honor.

20 Q Sir, I have just the one page of a discovery  
21 response verified by you -- trying to get the rest of  
22 it -- that states, quote, Crosby became aware of the  
23 relationship between asbestos exposure and disease  
24 which evolved over time by, quote, the 1970s when OSHA  
25 promulgated its standards.

1 Do you recognize that as the type of a sworn,  
2 written statement that Crosby interrogatories contain,  
3 including in cases like this, and that you sign off on?

4 A Yes.

5 Q And is it your testimony now that, even though you  
6 sign off on this statement that Crosby became aware  
7 through OSHA, you don't know anything about OSHA and  
8 what it said in the 1970s?

9 A What I'm saying is that the company made that  
10 statement before I got involved in these  
11 interrogatories, and I believe it to be true.

12 Q The company made that written statement in legal  
13 documents, and you believe it to be true, so you signed  
14 off on it?

15 A That's correct.

16 Q And as I'm hearing you, I guess we can agree that  
17 you have done no investigation to find out what that  
18 knowledge was, who it went to, and where it was  
19 maintained?

20 A Personally, I have not.

21 Q Sir, can you say that Crosby, anyone at Crosby,  
22 ever tested the asbestos-containing gaskets associated  
23 with its valves to demonstrate that it would not  
24 release any airborne asbestos as the OSHA regulations  
25 require?

1 A I don't believe they ever tested any gaskets.

2 Q For any purpose?

3 A For asbestos purposes.

4 Q Right. They tested them for performance purposes?

5 A Yes.

6 Q Sir, Crosby valves belonged to -- let me back up,  
7 I'm sorry.

8 And if I ask you a variety of questions like about  
9 the 1994 OSHA standard, is it also accurate that Crosby  
10 valves, you don't know anything about that for Crosby  
11 valves?

12 A Personally, I do not.

13 Q I'm sorry?

14 A I do not. I personally do not.

15 Q You do not?

16 A I do not.

17 Q Okay. And so you're not in a position to disagree  
18 with OSHA's position that even at .1 fiber per cc, that  
19 is not a safe level and cancer will still occur?

20 MR. REID: Your Honor, lack of foundation, calls  
21 for expertise.

22 THE COURT: If he knows. Overruled.

23 THE WITNESS: I do not know.

24 BY MS. FARRISE:

25 Q Sir, you have also signed off on, under penalties



1 of law, interrogatories that admit that Crosby Valve  
2 personnel were members of the National Safety Council,  
3 correct?

4 A Correct.

5 Q And the National Safety Council is a general  
6 organization that does research and compiles  
7 information about safety?

8 A I believe so.

9 Q And the National Safety Council goes back to the  
10 time period around the beginning of the 1900s, at  
11 least, when your company and other companies were  
12 birthed, correct?

13 A I don't know the history.

14 Q I'm sorry?

15 A I do not know the history of the National Safety  
16 Council.

17 Q Can we agree that, through publications of the  
18 National Safety Council which were disseminated to its  
19 members, that Crosby Valve received information back in  
20 the 1930s specifically telling it that exposure to  
21 asbestos was dangerous to health?

22 A No way that I'd be aware of that. I don't know  
23 about that.

24 Q Let me hand you what we've marked as Plaintiffs'  
25 Exhibit 102. I'll hand you 102.

1 And I'm going to hand this to you Your Honor, but,  
2 apparently, you can only peek at it because we don't,  
3 have enough copies.

4 MR. REID: Your Honor, is there a copy for me?

5 THE COURT: She's saying that there isn't. Hang  
6 on. Let me look at it for a minute, and I'll hand it  
7 to you. This is 1934 transactions, National Safety  
8 Council.

9 (Document handed to Mr. Reid.)

10 THE COURT: All right. Ms. Farrise, it's your  
11 question.

12 MS. FARRISE: I know. Can I share your copy with  
13 defense counsel?

14 First of all, I've handed it to you.

15 THE COURT: Right.

16 BY MS. FARRISE:

17 Q And my question is: Does this appear to be the  
18 National Safety Council that your company says --  
19 admits that its employees were members of?

20 A It appears to be.

21 Q And it's your understanding, is it not, that, for  
22 instance, by the 1930s, companies could get safety and  
23 health information including about toxins and how to  
24 protect their workers from those toxins from the  
25 National Safety Council?

1 A I'm not aware of that, but I imagine if I read  
2 this document, it will tell me that.

3 Q Well, you signed off, sir, on behalf of Crosby in  
4 their sworn answers that the company got knowledge from  
5 the National Safety Council.

6 A I signed off they were members of it.

7 Q And in the ten years or so that you've been  
8 engaged in that work, you've gotten no more information  
9 about the type of information that the National Safety  
10 Council would provide to its members?

11 A No.

12 Q Do you know what the National Safety Council  
13 Safety Congress is?

14 A I do not.

15 Q So as I understand it, sir, you cannot dispute on  
16 behalf of Crosby that it knew about the dangers of  
17 asbestos dust exposure to workers, and that it had  
18 specific information about how to protect those workers  
19 by virtue of its participation with the National Safety  
20 Council by 1935, correct?

21 MR. REID: Object to form.

22 THE COURT: Just a second, Ms. Farrise.

23 Yes, sir.

24 MR. REID: No showing we were a member in the  
25 '30s, and it's not our burden of proof to dispute; it's

1 her burden of proof to demonstrate, so on those  
2 grounds, I object.

3 THE COURT: Let me look at his answers to  
4 interrogatories.

5 What number is it of the interrogatories does he  
6 talk about the membership of the company?

7 All right. It says in Interrogatory Number 50,  
8 "Please state the names of trade associations  
9 periodicals to which you subscribed from 1928 to 1978;  
10 state whether during said period you had any knowledge  
11 of any articles printed in any industry trade journals,  
12 essays, memorandum or other similar sources pertaining  
13 to the hazard potential of asbestos. Please further  
14 state which of such articles were received by you."

15 And the response Mr. Martin made on behalf of  
16 Crosby was, "Crosby was a member of the National Safety  
17 Council, the American Boilers Manufacturers  
18 Association, Valve Manufacturers Association, American  
19 Petroleum Institute, and the Chlorine Institute.  
20 Further answering, Crosby may have received  
21 publications from these organizations but has no record  
22 of the publications it may have received. To the best  
23 of Crosby's knowledge, it has never received any  
24 material from the above-listed organizations related to  
25 asbestos during the time period specified."

1            All right. I am going to allow the document in on  
2 the basis of the declaration that during the time  
3 period specified, they were members of the National  
4 Safety Council. So overruled.

5            MR. REID: Your Honor, just for the record, I  
6 object. I don't think the answer says we were a member  
7 that whole period, but just for the record make that  
8 objection.

9            THE COURT: Well, you chose to answer it in the  
10 way you did, and the answer certainly specifies a time  
11 period and it refers to that time period in the rest of  
12 the answer, so overruled.

13            (WHEREUPON, Plaintiffs' Exhibit Number 102 was  
14 admitted into evidence.)

15 BY MS. FARRISE:

16 Q        For the record, that was Exhibit 102 which we are  
17 displaying here. This is the cover of the 1934  
18 Transactions, National Safety Council, 23rd Annual  
19 Safety CONGRESS. And if could I ask you, Mr. Martin,  
20 to turn over to Page 25. And before we go, do you know  
21 whether or not this is a recording of this meeting of  
22 the Safety Congress, which is when they basically bring  
23 people from across the United States to talk about  
24 various issues of safety and industry?

25 A        I have no idea.

1     Q     Okay. On Page 25 of the reported transactions of  
2 the National Safety Council, under a section entitled  
3 "Dust in Industry," part of what they address  
4 specifically is asbestos, and they say, "The only other  
5 type of dust which is generally recognized as a cause  
6 of severe pulmonary injury is asbestos, a silicate of  
7 magnesium." Did I read that correctly, Mr. Martin?

8     A     I can't read that from here.

9     Q     Hard to tell, okay. I appreciate that. That's  
10 fair.

11           The same reporting of the information from the  
12 National Safety Council Safety Congress in 1934  
13 contains an article or writing, "Using Exhaust Systems  
14 and Respiratory Equipment to Protect Workers Exposed to  
15 Dust." This is, sir, an example of where, in this case  
16 the Liberty Mutual Insurance Company, but folks  
17 concerned with workplace accidents are not only  
18 identifying what hazards are, but also disseminating  
19 information about how to prevent exposure to asbestos  
20 dust and other kinds of things that may hurt workers  
21 from a safety perspective. Do you agree with that?

22           MR. REID: Objection; it's compound.

23           THE COURT: Overruled.

24 BY MS. FARRISE:

25     Q     There is, by 1934, being reported in these trade

1 journals -- if I ask you to turn over to Page 28 --  
2 specifically the dissemination of information about  
3 respirators. It's a little section here. They afford  
4 the advantages of a pure air supply without something  
5 weight and without the restriction to breathing that is  
6 imposed by the filter respirator. Maybe there they're  
7 talking about ventilation systems, it could be.

8 THE COURT: I think that's too unclear and vague  
9 for him to be able to answer it. I will strike the  
10 question, Ms. Farrise.

11 MS. FARRISE: Okay.

12 THE COURT: We have got a very poor copy here.  
13 Unless we've got something that's a little better than  
14 that, I think it's difficult for anybody to follow.  
15 You're having trouble even identifying some of the  
16 words here.

17 MS. FARRISE: No question, Your Honor. It's a  
18 1934 document.

19 THE COURT: I understand that, but rather tenuous  
20 connection anyway and exacerbated by the fact that it  
21 can't be well read.

22 MS. FARRISE: You know, Your Honor, it's offered  
23 and accepted into evidence, and his knowledge is  
24 limited, so I'm going to move on from that.

25 THE COURT: Very good.

1 BY MS. FARRISE:

2 Q Sir, the discovery response included information  
3 that, in addition to the National Safety Council,  
4 Crosby employees, engineers and the like were involved  
5 in other professional trade organizations. I think  
6 there was the Boiler Manufacturers Association, the  
7 Chlorine Institute and the like?

8 A That's correct.

9 Q Have you or anyone, to your knowledge, undertaken  
10 to determine what information about the hazards of  
11 asbestos and ways to protect workers Crosby received  
12 from being a member of those organizations?

13 A We were not able to determine if we received  
14 anything from those organizations. We have no library  
15 where we kept information like that.

16 Q At the Crosby facility?

17 A At the Crosby facility.

18 Q And, sir, can we agree that no one employed by  
19 Crosby or hired by Crosby went to a medical library to  
20 find that information about the hazards of asbestos and  
21 ways to protect product users and workers at any time?

22 A That's correct.

23 Q I believe we agree that Crosby did nothing, to  
24 your knowledge, to stay abreast of the state of medical  
25 and scientific knowledge as it relates to whether and



1 if there was a health hazard from being exposed to  
2 minimal amounts or any amounts of asbestos?

3 A Not to my knowledge.

4 MS. FARRISE: Your Honor, those are all the  
5 questions that I have.

6 THE COURT: Very good.

7 Your witness, Mr. Reid.

8 Ms. Farrise, is this a copy?

9 MS. FARRISE: I just gave a copy to the court  
10 reporter, Your Honor.

11 THE COURT: All right.

12 CROSS-EXAMINATION

13 BY MR. REID:

14 Q Good afternoon, Mr. Martin?

15 A Thank you.

16 Q You weren't here at this trial last week when  
17 Mr. Jolly testified?

18 A I was not.

19 Q I have sent you a transcript of his testimony.

20 A Yes, you did.

21 Q You read a part of his trial testimony where his  
22 attorney described a 65-bolt valve?

23 A I did.

24 Q Just so we're all oriented, do you have the  
25 documents that are Bates-stamped 1 through 39 up there?

1 A I think I do.

2 MR. REID: Trying to get rid of the tripping  
3 hazard here first.

4 THE COURT: Are you talking about the Crosby Duke  
5 documents, Mr. Reid?

6 MR. REID: Yes, Your Honor.

7 THE COURT: Mr. Martin, this is what you're  
8 looking for.

9 THE WITNESS: Thank you.

10 THE COURT: Got all those valve drawings on it.

11 THE WITNESS: I have it. Thank you.

12 THE COURT: Great. All right.

13 BY MR. REID:

14 Q In fact, what I'm going to do, if you can start  
15 with the Bates-stamped Page 04. Do you see that?

16 A I do.

17 Q And what is that page?

18 A That's a record of the valves that we have  
19 installed at the Oconee Unit Number 1 nuclear plant.

20 Q What is Crosby's terminology for this document?

21 A It's called installation book, or in the local  
22 terms, it's called a green book because it's in green  
23 binders.

24 Q And in this particular case, this is for Duke's  
25 Oconee Unit 1?

1 A Unit 1, yes.

2 Q And if you will look at the next page, there is a  
3 list of valves placed at Duke?

4 A Yes, at the Oconee plant.

5 Q Incidentally, a couple of these valves say  
6 "factory consolidated." Is that a competitor of yours?

7 A Yes. This is a list put together by the sales  
8 department, so what that's saying is the pressurized  
9 safety valves were not awarded to Crosby; they were  
10 awarded to Consolidated, a competitor of ours.

11 Q This list of main steam valves -- in fact, 16 of  
12 them, apparently; is that correct?

13 A That's correct, 16 main steam valves.

14 Q And lists reheater valves?

15 MS. FARRISE: Your Honor, I'm going to object to  
16 the leading form of these questions.

17 THE COURT: He gets to lead. He's on  
18 cross-examination.

19 MS. FARRISE: Of his own witness?

20 THE COURT: Well, it is his own witness, but I  
21 know he's going to be fine.

22 MR. REID: It's preliminary, Your Honor.

23 THE COURT: Y'all are nit-picking the leading  
24 fairly well, but he's just trying to get the thing  
25 moving. I don't think it's a problem.

1 MS. FARRISE: Thank you.

2 BY MR. REID:

3 Q You recall in his testimony Mr. Jolly describing  
4 being able to walk through a main steam pipe or valve?

5 A Yes.

6 Q And he described that steam went through it  
7 constantly?

8 A Correct.

9 Q Is that Crosby's valve he was describing?

10 A No, not at all. The main steam valves on this  
11 particular plant have a six-inch inlet and a ten-inch  
12 outlet, and nobody is going to walk through that.

13 Q But what did you sell? Did you sell a main steam  
14 pipeline, or did you sell a relief or pressure valve  
15 attached to the main steam line?

16 A We sold safety valves attached to the main steam  
17 line.

18 Q How was that attached? Was it welded? Was it  
19 flanged? Was it threaded?

20 A In this case, for this plant, they're welded in.

21 Q Were there any asbestos-containing components in  
22 the 16 main steam valves or six reheater valves that  
23 Crosby sold and which were placed at Oconee Unit Number  
24 2?

25 A No. In fact --

1 Q Number 1, I'm sorry.

2 A Unit 1. In fact, there's no gaskets at all in the  
3 16 main steam valves, and the gaskets in the reheater  
4 valve, reheater safety valve, are metal gaskets.

5 Q Solid metal?

6 A Solid metal.

7 Q Was there any packing in any of these valves?

8 A No packing.

9 Q If you will turn the page to Bates-stamp 6. Got  
10 that?

11 A Yes.

12 Q And that is -- show the Bates page there first,  
13 Page 6. Is this Crosby's installation book for Duke's  
14 Ocone Unit Number 2?

15 A It is.

16 Q And, again, you sold 16 main steam -- what's the  
17 terminology?

18 A Safety valves.

19 Q Safety valves. Where it says size and style,  
20 there's a designation HC?

21 A Yes, HC.

22 Q H is Crosby's designation for its series of safety  
23 valves?

24 A Yes.

25 Q In any of the H valves that you sold to Duke, were

1    there any asbestos components whatsoever?

2    A        Yes.    In the HB valves sold on one of the -- for  
3    nuclear pressurizer application, it did have a gasket,  
4    a couple gaskets, but they're not asbestos.

5    Q        Where's the --

6    A        At McGuire.

7    Q        Those were not asbestos, you said?

8    A        No, they're not asbestos.

9    Q        And where is the pressurizer?

10   A        The pressurizer valve is installed in containment  
11   on the pressurizer vessel.    It's highly radioactive.  
12   Nobody usually goes in there.    Only if the plant is  
13   down.

14   Q        If you go in there, would you be wearing  
15   coveralls, radioactive mask, full outfit?

16   A        Fully suited up.

17            MS. FARRISE:    I'm sorry, Your Honor.    I'm having  
18   trouble following.    I object to the leading nature.  
19   And if it could be a question that's not leading and  
20   answer as opposed to a conversation, I think that's  
21   more appropriate.

22            THE COURT:    Don't lead, Mr. Reid, please.

23   BY MR. REID:

24   Q        Were there any asbestos-containing components in  
25   the valves shown on the installation sheet that Crosby

1 showed to Duke for Ocone Unit Number 2?

2 A No, there were not.

3 THE COURT: And that's HC and JB?

4 THE WITNESS: That's correct.

5 THE COURT: Main steam and reheater turbine?

6 THE WITNESS: That's correct.

7 BY MR. REID:

8 Q By the way, I just want to ask you about your  
9 efforts to gather information here. Who is Dave  
10 Lombardi?

11 A Dave Lombardi is my contact in the engineering  
12 specifications department.

13 Q And over the past couple of months, have you been  
14 in contact with him about what your company placed at  
15 Duke?

16 A Quite frequently.

17 Q Let me turn to you for a bit just so the jury has  
18 a sense of who you are. You said you live in  
19 Southport, North Carolina?

20 A Yes. Since I retired, I've lived in Southport,  
21 North Carolina.

22 Q How old are you?

23 A 73.

24 Q Where did you grow up?

25 A I grew up in Attleboro, Massachusetts.

1    Q      Were you in the military?

2    A      Yes. I was in the Navy for two years.

3    Q      What were the years you were in the Navy?

4    A      1965 to 1967.

5    Q      After you left the Navy, what did you do?

6    A      I went to college on the GI Bill. I was  
7 fortunate.

8    Q      Where did you go to school?

9    A      University of Mass.

10   Q      And what did you obtain a degree in?

11   A      Mechanical engineering.

12   Q      Did you work for Crosby?

13   A      I worked for Crosby from the time I got out of  
14 college until the time I retired.

15   Q      When did you start?

16   A      1973.

17   Q      When did you retire?

18   A      19 -- 2007.

19   Q      Can you just give us -- I don't want to keep the

20 jury here until 1 o'clock hearing about your

21 background, but can you give us a *Reader's Digest*

22 version of the position you held along the way while at

23 Crosby?

24   A      Initially, when I went to work at Crosby, I

25 started as a service engineer. Did that for two or



1 three years, then went into design engineering for four  
2 years or so, and then I went into sales and marketing  
3 and ended up selling large nuclear projects all over  
4 the world, so.

5 Q Were you -- did you hold the title of nuclear  
6 products manager for Crosby at one time?

7 A Yes, nuclear products manager. And, finally, last  
8 title I had there was the power products manager, which  
9 took in nuclear and fossil power.

10 Q Mr. Martin, just one caution. Let me finish my  
11 question before you respond so the reporter can get  
12 down everything.

13 Have you been in nuclear power plants across the  
14 country?

15 A I've been in several.

16 Q Let's talk a little bit about Crosby. You said  
17 before, it started in 1874?

18 A Correct.

19 Q What sort of things did it do at that time?

20 A Made steam whistles for locomotives, made safety  
21 valves. It did lots of things, gauges.

22 Q When did it start to sell the types of valves  
23 we're talking about in this case, safety valves and  
24 relief valves?

25 A Probably started being one of the larger

1 manufacturers in this marketplace sometime in the '40s,  
2 and we were one of the first valve suppliers to supply  
3 safety valves to the nuclear industry.

4 Q How many employees did it have at its peak during  
5 your time in the company, '73 on?

6 A Peak. I read the article in the -- that was given  
7 to me today. The peak seems to be about 600 or 650  
8 people.

9 Q Let me turn to the types of valves Crosby made  
10 from the, say, '60s forward. What types of valves did  
11 it make?

12 A Pressure relief valves primarily, and that  
13 consists of safety and relief valves. And also safety  
14 relief valves, but primarily they are safety devices  
15 that go on vessels. So when the vessel reaches its  
16 design pressure, which it shouldn't exceed, the valve  
17 opens and releases the fluid so the vessel does not  
18 explode. Exploding vessels could cause a lot of  
19 damage, could kill people, so it's safety equipment.

20 Q You're aware that various types of things pass  
21 through pipelines -- water, steam, other materials?

22 A Yes.

23 Q Are those materials typically passing through the  
24 type of valve that Crosby manufactures?

25 A No. The normal operating position of a Crosby

1 safety or safety relief valve is closed. So the only  
2 time that fluid passes through our valve is if there's  
3 an overpressure situation. If the plant is in danger  
4 and the valve has to open to relieve the pressure, then  
5 fluid will throw through the valve. Other than that,  
6 nothing flows through the valve.

7 Q We go off on one small tangent. We saw a video  
8 last week of a witness named Mr. Taylor who testified  
9 about working with Crosby gate valves. When is the  
10 last decade the Crosby made gate valves?

11 A From review of the catalogs that we have  
12 available, apparently in the '30s was the last time  
13 Crosby made a gate valve.

14 Q Back to the types of valves we're talking about  
15 here, safety and relief valves, is it fair to  
16 characterize those as safety devices?

17 A Yes, absolutely.

18 Q How so? Can you explain a little bit more about  
19 how they work?

20 A Yes. It's a self-contained valve. It's typically  
21 a spring pushing down on a disc against a nozzle. So  
22 when it sits on -- it's attached to the vessel it's  
23 protecting. And when that vessel pressure raises, it  
24 pushes up against this disc, and the spring will  
25 release and open the valve. When the pressure reduces

1 to a safe level, the spring takes over again and closes  
2 the valve.

3 Q What kind of maintenance is typically required on  
4 Crosby valves?

5 A That's a difficult question to answer. In the  
6 case of a nuclear power plant, the NRC dictates how  
7 frequently they test these valves. If they go in and  
8 test a Crosby valve, and they test it for its set  
9 pressure and seat leak and it performs adequately, they  
10 don't do any more with it. They would not go in and  
11 repair it because there's no need to repair it.

12 Q What's the term set pressure mean?

13 A That means that's the pressure at which the valve  
14 is set to open up so that you ensure that it goes off  
15 at the right pressure.

16 Q And when these valves are tested periodically  
17 under the Nuclear Regulatory Code, is that the type of  
18 test that is taking place?

19 A Yes. They verify set pressure so they're sure it  
20 will open at the right pressure, and then they check it  
21 for seat leakage. And if they pass both that criteria,  
22 they don't do anything.

23 Q Is the risk of not having the set pressure  
24 correctly calibrated that you will have an explosion on  
25 the vessel?

1 A That's a possibility, yes.

2 Q We have an exemplar valve here, and it's all  
3 metal?

4 A Yes.

5 Q No asbestos parts in it?

6 A No.

7 Q I'm going to get that, and we can talk about it.

8 MS. FARRISE: Your Honor, I probably don't have  
9 any objection. I just would like to mention I have not  
10 been shown it or disclosed to me, so I probably would  
11 like to have --

12 MR. REID: It's on our exhibit list, Your Honor.

13 THE COURT: That passed right over me. I didn't  
14 hear what you said, nor did I hear Mr. Reid's answer.  
15 Is this trying to get a copy of the exhibit?

16 MS. FARRISE: I thought -- well, I got a copy of a  
17 picture.

18 THE COURT: Right.

19 MS. FARRISE: And --

20 THE COURT: I presume he intends to introduce this  
21 through this witness.

22 Am I right, Mr. Reid?

23 MS. FARRISE: Yes. My --

24 THE COURT: Are you objecting?

25 MS. FARRISE: I'm really not, but there was a

1 disclosure rule and it wasn't complied with. That's  
2 all. I'm not objecting to this picture at all.

3 MR. REID: It absolutely --

4 THE COURT: Let's not get into a big argument  
5 about it. If you're not objecting to it, wonderful.  
6 It's coming in without objection.

7 MR. REID: Your Honor, with the court's  
8 permission, I'm going to get an exemplar valve to use  
9 as a demonstrative exhibit.

10 MS. FARRISE: So that I do have an objection to  
11 just because I have not heard of it, seen it. Can we  
12 talk about it before?

13 THE COURT: Mr. Reid, have y'all furnished this to  
14 them before?

15 MR. REID: It's on our exhibit list. There was no  
16 request to take a look at it.

17 MS. FARRISE: So I guess the answer is no.

18 THE COURT: Yes, but it was on their exhibit list.

19 MS. FARRISE: Actually, there is a piece of --  
20 white piece of paper that says "exemplar." I looked on  
21 their exhibits, and you did have a disclosure rule.  
22 And I may not have any objections. I just want to look  
23 at it not for first time with the jury, which I think  
24 is fundamental fairness. There was a 24-hour  
25 disclosure order as well. And we e-mailed them

1 yesterday saying, "What are you going to show?" I  
2 probably don't have an objection, but I would just like  
3 to be able to look at it before it's like show and tell  
4 with the jury.

5 THE COURT: I think that's fair, Mr. Reid. And if  
6 we've got any more exhibits like this, fairness  
7 dictates that they have some idea about it before you  
8 introduce it so they can take a look at it and ask  
9 whatever questions they want to ask.

10 So what we're going to do is this. We're going to  
11 let you examine on this thing, and then we may break  
12 and let them have some time to examine the thing before  
13 we take Mr. Martin down.

14 MS. FARRISE: It looks to me, Your Honor, like  
15 we're going to have a lunch break. I'll examine it  
16 whenever we have our lunch break.

17 THE COURT: That's good. All right. Go forward,  
18 Mr. Reid, and y'all don't do that again, please.

19 MR. BOUCH: Your Honor, all these were disclosed.  
20 Both sides --

21 THE COURT: Mr. Bouch. Mr. Bouch, there is no  
22 need for any further argument at this time. This  
23 matter is being introduced, and Mr. Martin is going to  
24 be examined about it.

25 Go ahead, Mr. Reid.

1 MR. REID: Thank you, Your Honor.

2 Your Honor, may I have Mr. Martin come down from  
3 the witness stand?

4 THE COURT: Sure.

5 THE WITNESS: This is typical --

6 MR. REID: Bob, you have got to have a question.

7 THE COURT: Let him ask you some questions,  
8 Mr. Martin, and then you can say what you want to say.

9 Stand there so you're looking at the jury and the  
10 court reporter so they can hear what you're saying.

11 MR. REID: Your reporter asked me for the exhibit  
12 number. It's Exhibit 72.

13 (WHEREUPON, Defendant's Exhibit Number 72 was  
14 admitted into evidence.)

15 BY MR. REID:

16 Q Mr. Martin, what kind of valve is this?

17 A It's a pressure relief valve.

18 Q Can you describe where it would be attached to a  
19 pressure vessel or pipe?

20 A Yes. We're responsible from the inlet to the  
21 outlet. And this valve would be mounted on a vessel of  
22 some sort. And this would be the inlet. So, it would  
23 be mounted by this flange.

24 Q And in the event that there was an  
25 overpressurization of what it's attached to, what would



1 happen, and where would whatever is in the pressure  
2 vessel go?

3 A With this mounted on the vessel, the connecting  
4 fitting would be here, so the pressure, whatever is in  
5 that vessel, would be pushing up on this disc in here.  
6 And when the pressure got high enough, this spring --  
7 would compress, and this shaft would go up, and this  
8 top section would lift up, and the fluid would come out  
9 here. I'm wrecking your desk here. When the pressure  
10 goes down and gets low enough, this spring takes over  
11 and slams it shut and seals it off.

12 Q Can we see gaskets in this valve?

13 A There are gaskets in this particular valve.  
14 That's why we cut it away so you can see them. They  
15 would be up here on the cap, down here where this joint  
16 goes together, and there would be two more gaskets  
17 where these little set screws go into the valve.

18 Q And on this exemplar, are the gaskets all metal?

19 A These are all steel gaskets, soft steel gaskets.

20 Q And is this the size -- I'm looking at the middle  
21 of the exemplar, which is shown in Exhibit 72. Is this  
22 gasket representative of what one would find in the  
23 field?

24 A Oh, absolutely. This is what you would find.  
25 Small one here. This is the largest gasket that would

1 be in there, and then these two real small gaskets that  
2 go in the back over here.

3 Q That's all I've got about this. Thanks very much.

4 MR. REID: Your Honor, can I take a moment? I'm  
5 not sure I want to hand this to the jury. It's heavy.  
6 I don't want anybody to wake up with a broken foot.

7 THE COURT: Yes. You can walk in front of the  
8 jury and hold it up for them to see.

9 (WHEREUPON, item published to the jury.)

10 BY MR. REID:

11 Q I want to talk about the subject of insulation for  
12 a moment. Was it ever appropriate to insulate a Crosby  
13 safety or relief valve?

14 A No, it's not.

15 Q Why not?

16 A These valves are all tested at the factory, and  
17 the steam valve, we would mount fully. We have a large  
18 steam facility. The valve would be mounted in our  
19 steam facility, and they would actually bring up the  
20 pressure and pop it and make it go off and seal it.

21 And what they do once they get it to what the  
22 exact pressure should be, they seal wire it so nobody  
23 can fool around with the settings. Now, that's tested  
24 on our facility. If you take the valve and you bring  
25 it into the field and insulate the valve, that

1 pressure, the temperature is going to get higher than  
2 it was tested at, and if the temperature goes up, the  
3 spring can lose compression or pieces can grow to  
4 affect the set pressure. So if you insulate it, what  
5 you're going to do is you're going to affect the  
6 pressure at which that valve opens, and now it becomes  
7 a dangerous situation because it's not going to open at  
8 the same pressure that you tested it. So, no. No  
9 insulation.

10 Q Did you ever seen a Crosby valve insulated?

11 A I have not.

12 Q Have you dealt with dozens of Crosby customers  
13 over the years?

14 A Yes, I have.

15 Q How would you describe them? Were they  
16 sophisticated?

17 MS. FARRISE: I'm going to object that it's  
18 overbroad, lacks foundation, calls for speculation,  
19 irrelevant to this case unless we're talking about  
20 Duke.

21 THE COURT: Yes. I would think you would want to  
22 direct your attention to Duke in regard to that  
23 question, Mr. Reid.

24 BY MR. REID:

25 Q Do you think Duke understood that valves sold to

1 them by Crosby should not be insulated?

2 MS. FARRISE: Objection; lacks foundation, calls  
3 for speculation.

4 THE COURT: Overruled.

5 THE WITNESS: Duke had a very highly regarded  
6 engineering capability, as did Westinghouse and the  
7 other major suppliers in the nuclear industry.

8 BY MR. REID:

9 Q Did Crosby ever sell insulation?

10 A No.

11 Q Did Crosby ever distribute insulation?

12 A No.

13 Q Recommend insulation?

14 A No.

15 Q Specify insulation?

16 A No.

17 Q I want to talk about the sales process, the  
18 selling of Crosby valves. How did -- what was the  
19 process that Crosby used to sell valves to nuclear  
20 facilities such as Duke?

21 MS. FARRISE: I'm going to object, Your Honor,  
22 that unless it is asked to Duke, it's irrelevant.

23 MR. REID: I strongly disagree, Your Honor.

24 THE COURT: You're wanting to know the general  
25 process for selling valves to customers?

1           MR. REID: Right. We're going to describe the  
2 back-and-forth between Crosby and its customers.

3           THE COURT: That's fine.

4           Overruled.

5           THE WITNESS: For a nuclear valve, the customer  
6 sends us a certified specification sheet that is  
7 certified by a professional engineer, and it lists on  
8 it the set pressure he wants that valve to go off at to  
9 protect his system, the fluid that's going to pass  
10 through the valve, the temperature, and what the  
11 materials are of the major components. He specifies  
12 the material for nozzle, the body, the bonnet, the  
13 spring. And with that information he gives us, then we  
14 design a valve to meet that need.

15 BY MR. REID:

16 Q       Do you exchange drawings with the customer before  
17 you begin to manufacture the valve?

18 A       Yes. For a nuclear valve, we're required to  
19 create the drawing, show all the materials that we're  
20 going to use on that drawing and send it to the  
21 customer for approval before we can manufacture the  
22 valve. So in the case of Duke, we prepare the drawing  
23 based on his certified data sheet; we'd send it to him,  
24 and he would go through it and approve it, send it  
25 back, either modify it because they don't like this or

1    approve to be used.

2    Q      What was the typical time range, the time that  
3    that process would last, between the time you get the  
4    specifications from the customer certified by a  
5    professional engineer, exchange drawings, and are set  
6    to start manufacture of the valve?

7    A      Early on when they started building the nuclear  
8    plants, it was a very long process. It was not unusual  
9    for us to receive an order but not ship a valve for two  
10    years. There would be that much upfront work before  
11    everything happened and the product was finally  
12    shipped.

13    Q      Did those drawings that were exchanged back and  
14    forth have to be finally approved by the customer  
15    before you began your manufacturing process?

16    A      Absolutely. They had to be approved.

17    Q      Was there also an exchange of information about  
18    procedures?

19    A      The -- just about every procedure we used to  
20    manufacture, assemble, and test that valve had to be  
21    approved by the customer, yes.

22    Q      Can you give the jury an understanding of some of  
23    the specific types of procedures that we're talking  
24    about?

25    A      Yes. Even if -- these valves are built to the

1 ASME code. The ASME code has different provisions or  
2 sections. Section 1 is for boilers; Section 8 is for  
3 unfired pressure vessels, and Section 3 is for nuclear.  
4 And what they tell us as the manufacturer is if you're  
5 going to supply a nuclear valve, you have to do certain  
6 testing on the key components. Like the nozzle is a  
7 very key component because that attaches to the vessel.  
8 We would have to do some nondestructive test work on  
9 that piece. We have to send those procedures to Duke  
10 to get their approval that we can run that test on that  
11 piece. We would have to get a cleaning procedure  
12 approved so that Duke understood how we were cleaning  
13 each and every piece before we put it in the valve.  
14 That would have to be approved. The assembly procedure  
15 would have to have approved by Duke. The test  
16 procedure would have to be approved. The packaging  
17 procedure all have to be approved by Duke before we can  
18 ship them.

19 Q What's the purpose of those requirements under the  
20 ASME code?

21 A The purpose of the requirements is to make sure  
22 that the product conforms to the requirements of the  
23 ASME, which are rather strict, and also that the  
24 customer buys into the requirements.

25 Q Where did your responsibility under the ASME code

1 with respect to your valves start and where did it end?

2 MS. FARRISE: I'm just going to object, Your  
3 Honor, that it's irrelevant. It seems to perhaps call  
4 for a professional opinion. This witness is not an  
5 expert witness.

6 THE COURT: Overruled.

7 THE WITNESS: Our responsibility by code begins at  
8 the inlet flange and ends at the outlet flange. Has  
9 nothing to do with the connecting pipe.

10 MR. REID: Can I have the overhead projector?

11 THE COURT: What code are you talking about?

12 THE WITNESS: ASME, American Society of Mechanical  
13 Engineers Section 3.

14 THE COURT: Right. The connections between -- you  
15 obviously sold some asbestos-containing material  
16 because you said that in your --

17 THE WITNESS: Internal gaskets, yes.

18 THE COURT: All right. Any of the connecting  
19 material -- and you're saying your responsibility stops  
20 at the flange, right?

21 THE WITNESS: Correct.

22 THE COURT: What I'm asking is, do any of the  
23 valves you sold Duke have the necessity of having a  
24 gasket attached to the flange rather than just being  
25 welded together?



1           THE WITNESS: We sold valves with outlet flanges  
2 that the end user would be responsible for deciding  
3 what gasket goes into that connection.

4           THE COURT: And did some of those gaskets -- were  
5 some of those gaskets asbestos gaskets?

6           THE WITNESS: I don't know. I would think that  
7 one of the standards at that time would be asbestos,  
8 but there are other materials they could have used.

9           THE COURT: Right. And some of the materials in  
10 this document we're looking at now, particularly right  
11 there at the last, specified that there were some  
12 gaskets that were asbestos, and then they were changed  
13 for other kind of gaskets.

14          THE WITNESS: Those are internal gaskets.

15          THE COURT: Internal gaskets, not the flange  
16 gaskets?

17          THE WITNESS: Not the flange gaskets at all.

18          THE COURT: Did y'all supply any flange gaskets?

19          THE WITNESS: To the best of my knowledge, no.

20          THE COURT: But the design was a flange that would  
21 have to have a gasket?

22          THE WITNESS: Correct.

23          THE COURT: All right. I understand what you're  
24 saying.

25          All right, Mr. Reid.

1 BY MR. REID:

2 Q Mr. Martin, I'm showing you the document  
3 Bates-stamped Page 21.

4 A Yes.

5 Q And I'm just pointing out to the jury where it  
6 says, "Valve build to ASME Boiler and Pressure Vessel  
7 Code 19727." Do you see that?

8 A Yes.

9 Q And that's the code we've been talking about,  
10 correct?

11 A Yes, it is.

12 Q All right. You've worked for Crosby for 34 years?

13 A Yes.

14 Q You dealt regularly with Crosby customers?

15 A Yes.

16 Q Did customers come any more sophisticated than  
17 Duke?

18 A No.

19 MS. FARRISE: I'm going to object -- excuse me.  
20 I'm going to object that it lacks foundation, calls for  
21 speculation as to Duke.

22 THE COURT: Very good. Overruled.

23 THE WITNESS: No. The big firms building nuclear  
24 plants and the big suppliers to the nuclear plants,  
25 like the Westinghouses and the GEs, had very, very good

1 engineering firms. I mean, they had to. These are  
2 very critical nuclear power plants.

3 BY MR. REID:

4 Q Would it be fair to characterize it as the best  
5 and the brightest?

6 A I would have to believe so.

7 Q How could Crosby -- what were the various means in  
8 which Crosby valves could be attached to pressure  
9 vessels?

10 A They could be welded on. They could be flanged  
11 mounted. And if they were real small valves, they  
12 could be threaded. They would thread them to the  
13 system.

14 Q Did I ask you to take a look at what was sold to  
15 Duke to determine the percentage or proportion of the  
16 valves Crosby sold that were welded?

17 A Yes.

18 Q And what was that proportion?

19 A It was about -- had to be -- it's about 48 out of  
20 170, something like that.

21 Q Let's talk about the flange gaskets that go  
22 between those valves that had flanges and the pressure  
23 vessel. That would be this area at the base?

24 A Yes.

25 Q And it might be this area at the outlet?

1 A Correct.

2 Q Did Crosby -- are you aware of any instance where  
3 Crosby supplied those flanges gaskets?

4 A I am not.

5 Q If Duke had wanted to use metal or Teflon for --  
6 or any other type of valve or I should say flange  
7 gasket, would they be within their rights to do so?

8 A Yes. If they determined that was an appropriate  
9 gasket for their system, yes.

10 Q Did Crosby have any role in determining what type  
11 of gasket would be used on the flange?

12 A No, we did not.

13 Q Were there some internal flanges in Crosby valves?

14 A Yes, there are some internal flanges.

15 Q If there is a purchase order that references a  
16 flange with Crosby selling a replacement part, would  
17 that be a reference to the internal flanges or to  
18 something else?

19 A In the few documents we've looked at, yes, that's  
20 exactly what they were.

21 Q Such as a Belews flange?

22 A Yes.

23 Q What is a Belews flange?

24 A A Belews is an internal piece to the valve. If  
25 the valve is discharging into a closed system,

1 sometimes that system can impose a pressure back on the  
2 outlet of the valve. If you don't do something with  
3 that pressure, it can affect the point at which the  
4 valve opens, so they put a Belegs in it, which is a  
5 series of convolutions, and the pressure acts on that  
6 Belegs, and the Belegs counteracts the effect of the  
7 back pressure, and that little piece has a flange to  
8 hold it in place.

9 Q Last week Mr. Jolly testified that he, in general  
10 terms, relied on valve manufacturers to determine what  
11 flange gaskets to use. My question to you is: Did  
12 Crosby ever produce a manual that identified what  
13 flange gaskets should be used to connect its valves to  
14 pipes?

15 A It did not.

16 Q We talked about testing. I just want to have you  
17 briefly describe the testing that took place before  
18 Crosby shipped valves out.

19 A If I -- if it's a steam valve, it would go on a  
20 large steam test facility, and we would set it and  
21 verify that it opens at the design pressure of the  
22 valve, make sure that it opens fully and closes and  
23 make sure it seals off tight. So those are the types  
24 of tests we ran.

25 Q Once a valve is in the field, would anyone not

1 specifically trained to work on a safety relief valve  
2 that Crosby sold be expected to work on those?

3 A No. I would say no.

4 Q Is that because of the sophistication needed to  
5 determine the set pressures and things like that?

6 A Yes, because of the sophistication and the safety  
7 implications if they do it wrong.

8 Q Meaning what?

9 A If it's improperly set, the vessel could explode.

10 MR. REID: Your Honor, I think this is an exhibit  
11 used last week I think admitted. I'm not a hundred  
12 percent sure.

13 THE COURT: Looks like Plaintiffs' Exhibit  
14 6364.01.

15 Admitted, Diane?

16 THE REPORTER: 6364.01 is admitted on 7/25, yes.

17 THE COURT: It's an admitted exhibit. You may  
18 examine on it.

19 Wait a minute. Ms. Farrise, have you got a copy  
20 of the exhibit?

21 MS. FARRISE: Yes, Your Honor. Thank you.

22 BY MR. REID:

23 Q Mr. Martin, for the record, I just want to refer  
24 to the fact that this is actually three exhibits, all  
25 admitted last week, 6364.01, .02 and .03?

1    A        I've looked at them.

2    Q        These are records that show that Crosby was at  
3    Duke to inspect, repair and test some valves in 1973  
4    and 1974?

5    A        Yes.

6    Q        And last month, did you look into the types of  
7    valves referred to in these documents to determine  
8    whether or not the components had asbestos?

9    A        Yes.

10   Q        And what did you find?

11   A        These are main steam valves, and they're the H  
12   series that we mentioned that never had any gaskets, so  
13   no, they have no asbestos materials at all.

14            THE COURT: This is 6364.4. Is this in evidence,  
15   Diane?

16            THE REPORTER: It is.

17            THE COURT: All right. You may examine, Mr. Reid.  
18   BY MR. REID:

19   Q        Mr. Martin, in this exhibit, if you could turn to  
20   the third-to-the-last page. Do you see that where it  
21   says "Item 7 through 12," a little more than halfway  
22   down the page?

23   A        Yes, I do.

24   Q        And then following that, if you look in the item  
25   number there in the left-hand column, there are numbers

1 corresponding 7 through 12?

2 A Yes.

3 Q And each of those has reference to asbestos  
4 gaskets?

5 A Yes, it does.

6 Q Now, let's take a look at the second-to-last page,  
7 just as an example. You see Items 8, 9 and 10 there?

8 A I do.

9 Q Eight starts with the word "guide"?

10 A Correct.

11 Q Nine starts with the word "disc"?

12 A Yes.

13 Q Ten starts with the word "stem"?

14 A Yes.

15 Q All right. And then is the description after  
16 those words the same description for Items 8, 9 and 10?

17 A Yes, it is.

18 Q What was being sold in Item 8?

19 A Item 8, it was a metal piece, a guide.

20 Q How about Item 9?

21 A Nine is a disc, which is another metal piece.

22 Q Item 10?

23 A Is a stem, which I call a spindle, but that's also  
24 a metal piece.

25 Q Gaskets. Did Crosby ever make, manufacture



1 gaskets?

2 A No, we did not.

3 Q We talked a little bit about where it obtained  
4 them. Have you found anything in your -- or let me put  
5 it this way. From either your days at Crosby or in the  
6 work you've done for Crosby, have you seen anything  
7 suggesting that the gasket suppliers to Crosby informed  
8 or identified any hazards associated with the asbestos  
9 gaskets?

10 A No, I have not.

11 Q When did Crosby stop using asbestos components?

12 A I think we found the latest date was 1989.

13 Q Have you looked into whether any of the valves  
14 that Crosby sold to Duke contained packing?

15 A Yes.

16 Q What did you find?

17 A None contained packing.

18 Q Was that uncommon?

19 A No. It was very rare for Crosby to use asbestos  
20 packing.

21 Q How about any packing at all?

22 A Very rare.

23 Q And is there something about the nature of Crosby  
24 valves that did not call or have a need for packing?

25 A Yeah. Typically, packing is used on a gate or a

1 globe valve where you actually have a handle and you're  
2 turning the handle which turns a shaft which opens or  
3 closes the valve. Our valves don't operate like that,  
4 so we have very, very little need for packing or none,  
5 essentially.

6 Q Counsel was asking you about this page  
7 Bates-stamped Page 2. Do you have that?

8 A Just a second. Yes.

9 Q What type of valve is the subject of that drawing?

10 A That's a JB valve, and it's a large valve that's  
11 used on the turbine section on the reheater section.

12 Q Says style JB- --

13 A -- TD, yes.

14 Q I want to show you the summary that counsel used.  
15 Is there a Style JB on that summary?

16 A Yes, Style JB is on there.

17 Q When was that product phased out?

18 A That's -- this JB and this JB are two different  
19 products.

20 Q Okay.

21 A This product has never been phased out.

22 Q All right. I'll take that back. By the way, this  
23 summary had no H Series valves with the exception of --  
24 bear with me -- HPV and HBV-ST?

25 A Correct.

1 Q Is this a list of all the types of valves that  
2 Crosby ever made?

3 A No.

4 Q It's just the ones that had asbestos components at  
5 some point?

6 A Correct.

7 Q Just a couple other topics. We talked about the  
8 Wrentham facility?

9 A Yes.

10 Q Do you know what kind of asbestos was being abated  
11 from that facility?

12 A I have to believe it had to do with the  
13 construction of the building. The building, Crosby  
14 moved there in 1949, and the building was old then. So  
15 when they decided to move out of the Wrentham facility  
16 into a new facility, they had to tear down the  
17 facility. And I believe what they're talking about is  
18 old tiles in the roof construction, nothing to do with  
19 gaskets and packing.

20 Q Do you have Exhibit 945.3219?

21 A I think I did have it somewhere. I saw it.

22 THE COURT: It is. It's back here.

23 THE WITNESS: I have it.

24 BY MR. REID:

25 Q Turn to the second page. And by the way, what

1 type of valve is the subject of this document?

2 A These are H Series safety valves.

3 Q And it has a list of the various parts in these  
4 diagrams?

5 A Yes, it does.

6 Q Is there any gasket or packing in these valves?

7 A No, there are not.

8 Q There was discussion about the National Safety  
9 Council. Do you know when Crosby was first a member of  
10 the --

11 A I have no idea, no.

12 Q Turn your attention to the back, to the  
13 Bates-stamped documents. Do you have those?

14 A Yes.

15 Q If you look at Page 1, please.

16 A Yes.

17 Q This, in the upper right-hand corner, has a  
18 listing of all the parts in this valve?

19 A That's correct.

20 Q And the name of that part? Column 2, name of  
21 part?

22 A I'm sorry. I didn't --

23 Q Sure. Column 1 is the part number?

24 A Oh, yeah.

25 Q And that's all the parts in this valve?

- 1    A      Yes.
- 2    Q      And Column 2 is the name of the part?
- 3    A      Yes.
- 4    Q      And are there any gaskets or packing?
- 5    A      There are gaskets.
- 6    Q      There's a material column?
- 7    A      Yes.
- 8    Q      What does SST stand for?
- 9    A      Stainless steel..
- 10   Q      Is that a completely metal, one hundred percent
- 11   metal --
- 12   A      Yes.
- 13   Q      -- stainless steel gasket?
- 14   A      It is.
- 15   Q      So there is a cap gasket?
- 16   A      Yes.
- 17   Q      Stainless steel?
- 18   A      Yes.
- 19   Q      What other gaskets?
- 20   A      Let's just go down. Cap gasket, then a bonnet
- 21   gasket, and a set screw gasket.
- 22   Q      If you look at Part 170, is that a gasket as well?
- 23   A      170 is, yes. It's a cap -- plug gasket.
- 24   Q      What are those gaskets made out of?
- 25   A      All stainless steel.

- 1 Q I'd like you to look at Page Number 2.
- 2 A Yes.
- 3 Q I'm going to be a little challenged here
- 4 reading-wise because of the small print. Can you see
- 5 the print on the page in front of you?
- 6 A I can.
- 7 Q How many gaskets are in this JB-TD model?
- 8 A I have to count them. Looks like four.
- 9 THE COURT: I got five.
- 10 THE WITNESS: You win.
- 11 MR. REID: She does win, Mr. Martin.
- 12 Q Let's go through them. Line 5 is a gasket?
- 13 A Yes.
- 14 Q What's that made out of?
- 15 A Steel.
- 16 Q Line 25, what's that?
- 17 A That's steel also.
- 18 Q What part name is that?
- 19 A Says cap gasket.
- 20 Q Line 40, what kind of gasket do we have there?
- 21 A 40 is a shaft bearing gasket.
- 22 Q What's that made out of?
- 23 A That is steel.
- 24 Q Line 43?
- 25 A That is a cap top gasket.

1 Q Made out of?

2 A Steel.

3 Q Line 48?

4 A Is a test rod gasket. Steel.

5 THE COURT: What did you say that one was made out  
6 of?

7 THE WITNESS: Steel.

8 THE COURT: Steel? I got steel above. Must be a  
9 hash mark.

10 THE WITNESS: Two little hash marks.

11 BY MR. REID:

12 Q If you go to Page 9, please. Mr. Martin, can you  
13 please tell the jury what Page 9 is?

14 A That's valve style is HC.

15 Q Well, let's get a little more general than that.  
16 This is a list. What do you call this list?

17 A Oh, it's a bill of material.

18 Q Does this list all the materials used in a  
19 particular type of valve?

20 A Yes.

21 Q What type of valve?

22 A HC with a W after it means it has a welded inline.

23 Q So HC-65W indicates welded?

24 A Yes.

25 Q And what you're talking about is the connection

1 between the valve and whatever vessel it's on?

2 A Correct.

3 Q Are there any gaskets or packing at all in this  
4 type of valve?

5 A No, there is not.

6 Q Go to Page 18, please. What type of valve is  
7 shown on this page?

8 A This is a style, looks like an HA valve. Yes,  
9 it's a Style HA valve.

10 Q And it says Duke Power Company, McGuire Units 1 and  
11 2?

12 A Yes.

13 Q That was the purchaser?

14 A Yes. Duke was the purchaser. These are main  
15 steam valves.

16 Q Does this also have a list of materials?

17 A It does.

18 Q Any asbestos-containing components in this list?

19 A Not at all.

20 Q Go to Page 19. What type of valve do we have  
21 here?

22 A That is, again, another HA style main steam valve  
23 sold to Duke for McGuire.

24 Q Any gaskets or packing in that valve?

25 A No.



1 Q Let's go with 21 next, if you would be so kind.

2 What type of valve is shown on Page 21?

3 A It's a little different. This is a vacuum relief  
4 valve.

5 Q What is a vacuum relief valve?

6 A Vessels, in most parts, are designed to contain  
7 internal pressure. So they're designed for pressure  
8 inside the vessel. But if you take a vessel and you  
9 empty it if it's full with liquid or anything, if you  
10 empty it real quick, it could cause a vacuum in the  
11 vessel, and the vessel is strong from the inside out,  
12 but it's not strong from the outside in, and it could  
13 crush. So these vacuum relief valves are set very low,  
14 and when this vessel tries to crush, this vacuum relief  
15 valve opens and lets in air so it doesn't happen. So  
16 it works opposite of a pressure relief valve.

17 Q And what Duke plant did this product of Crosby go  
18 to?

19 A This one goes to the McGuire plant.

20 Q Both Units 1 and 2?

21 A Yeah, I believe so. Yes, says on the drawing 1  
22 and 2.

23 Q Is there a list of material for this valve?

24 A Yes, there is.

25 Q Any packing?

1 A No packing.

2 Q Any gaskets?

3 A I'll have to look.

4 I don't see any gasket mentioned.

5 Q Any asbestos-containing components at all?

6 A No, there are not.

7 Q Did you and Mr. Lombardi make an effort to  
8 determine how many or what proportion of the valves  
9 that you sold to Duke either had no packing or gaskets  
10 at all or had none that were asbestos-containing?

11 A We did tabulate up the valves from the three  
12 plants that we found in this installation book, yes.

13 Q Did the majority have any asbestos-containing  
14 components or not have asbestos-containing components?

15 A Not. Probably 85 percent did not have.

16 Q In terms of whether there is a health risk from  
17 asbestos-containing gaskets or packing, is that  
18 something that you defer to industrial hygienists and  
19 medical experts on?

20 A Yes.

21 MR. REID: Your Honor, I think that's all I have.

22 THE COURT: Very good.

23 Ladies and gentlemen of the jury, we're going to  
24 adjourn for lunch now. Let's see here. Let's be back  
25 at 2:30.

1 (WHEREUPON, the jury exited open court at  
2 1:14 p.m.)

3 THE COURT: All right. Lunch break.

4 All right. Now, let me ask you this.

5 Mr. Martin, you can retire from the stand. Thank  
6 you, sir.

7 There may be some redirect after lunch, but in the  
8 meantime, I guess we'll go right into Maddox's, so  
9 let's talk about Maddox. Can we talk about Maddox now  
10 or do you want to wait to come in early?

11 MR. BOUCH: We can do it right now.

12 THE COURT: Mr. Martin, of course, you are an  
13 experienced witness and know no discussion of your  
14 testimony during lunch. But you can go to lunch with  
15 him if you want to. All right.

16 I've read or the best way I could trying to listen  
17 to testimony. I have read the Maddox deposition, and  
18 all I see is objections to the form of the question.  
19 This is a de bene esse deposition, is it not?

20 MS. McVEY: It is.

21 MR. BOUCH: The rule doesn't make any distinction,  
22 and it limits me to those objections, Your Honor.

23 THE COURT: Well, I have looked at the form of  
24 these various questions, and I do not see any dilemmas  
25 with the form so point them out to me if you've got

1 them.

2 Mr. Bouch.

3 MR. BOUCH: The hypothetical starts on Page 16 and  
4 goes over to 17. I object to it as an improper and  
5 incomplete hypothetical. It calls for each and every  
6 exposure opinion. Make the same objection on --

7 THE COURT: Just a second.

8 Overruled.

9 MR. BOUCH: Same objection to Page 18, 19 and 20.

10 THE COURT: Overruled.

11 MR. BOUCH: 25, I make the same objection to  
12 stated hypothetical on the grounds asserted earlier.

13 THE COURT: Overruled, but certainly the content  
14 of the opinions expressed will be juxtaposed against  
15 the content of the other testimony offered to determine  
16 whether or not that expression of opinion by Dr. Maddox  
17 is credible. I mean, he's speaking within the confines  
18 of the hypothetical that was given to him. Y'all are  
19 free to attack the content of that with other  
20 witnesses, and you just put up a witness who's doing  
21 just that, so I think -- I don't think the form of the  
22 question is the problem, but it's the believability of  
23 its content may well be, and if it is, you will be able  
24 to make that to the jury.

25 MR. BOUCH: I understand your ruling.

1           THE COURT: Anything further?

2           MS. McVEY: No, ma'am.

3           THE COURT: Very good. See you at 2:30.

4           (WHEREUPON, lunch recess was taken from 1:20 p.m.  
5 to 2:38 p.m.)

6           (WHEREUPON, the jury entered open court at  
7 2:38 p.m.)

8           THE COURT: Ladies and gentlemen, please be  
9 seated.

10          We'll continue with the redirect of Mr. Martin,  
11 and we'll have a short read deposition, and then we  
12 will see where we go from there, but those are the  
13 first two things that will take place this afternoon.

14          All right. Mr. Martin, you are still under oath,  
15 as you know.

16          Ms. Farrise.

17          MS. FARRISE: Okay.

18                               REDIRECT EXAMINATION

19 BY MS. FARRISE:

20 Q          Mr. Martin, I need to clarify a few things about  
21 how many valves we're talking about at the Duke  
22 facilities. Okay?

23 A          Okay.

24 Q          Now, as I understand it, we've got Ocone. And do  
25 you still have the packet of documents that Crosby has

1 provided in this case up there?

2 A I should have.

3 Q If you go through that 39-page thing, there's  
4 those green sheet or green book sheets, right?

5 A Yes.

6 Q And it's -- I went through and was able to find --  
7 if you turn to, let's say, 005, and maybe it will be up  
8 by the time you get there. Do you have that? So at  
9 Ocone, there was a Number 1 unit that had Crosby  
10 valves, right?

11 A Correct.

12 Q And if you turn to Page 005 of the green book,  
13 which I hope will appear, there are listed, and counsel  
14 just went through that, 16 Crosby valves; the location  
15 of the Crosby valves at Unit Number 1 Ocone is the  
16 main steam, correct?

17 A 16 main steam valves, that's correct.

18 Q Yes. And then on 007, there were 16 main steam  
19 for Number 2, right?

20 A Yes.

21 Q And on Number 2, there are six reheaters, correct?

22 A Yes.

23 Q And those are valves that are on the reheater  
24 turbine, I believe from memory, right?

25 A Yes, on the section of the valve called the

1 reheater, yes.

2 Q And there is an assembly number for the reheater  
3 turbine valves, right?

4 A Yes.

5 Q Can you tell me what that is?

6 A Yes. It looks like it's 51425.

7 Q Okay. And so this assembly number is a Crosby  
8 number?

9 A That's correct.

10 Q And it means something to the folks at Crosby in  
11 terms of -- let me find out what's happening. Let me  
12 just put it up here. I need a clean copy. Here's the  
13 paper. And this is where all this information comes  
14 from.

15 There's 16 Crosby valves on the main steam that  
16 have a Crosby subassembly number of 553932, and then  
17 there were six Crosby valves on the turbine reheater  
18 with the Crosby subassembly Model Number 51425, right?

19 A Yes.

20 Q Okay. And these other numbers, these documents  
21 that Crosby has --

22 THE COURT: Ms. Farrise, are you looking at this  
23 time at Unit 1 or 2? There are main steam for reheater  
24 at each of those locations. There is a main steam 16  
25 and a reheater 6 at Unit Number 1, and that's on Page

1    005, and then there is another one.

2            MS. FARRISE:    Yes.

3            THE COURT:    Same number at Unit Number 2, 007.

4    Which one are you looking at?

5            MS. FARRISE:    I'm looking at 007 Unit Number 2  
6    right now, Your Honor.    And I lost my pointer.

7    Q        And the reason that you have these two models over  
8    here is so that you will know what the assembly is for  
9    these 16, correct?

10   A        That's correct.

11   Q        So like right here, it says "power cont"?

12   A        Stands for power control.

13   Q        Okay.    Power control valves, factory number,  
14   Consolidated?

15   A        That was a competitor.    They got that order.    We  
16   did not.

17   Q        So why would it be in the Crosby green book?

18   A        Because it was a green book for the sales  
19   department.    So it would be beneficial to know who got  
20   which orders on that project.

21   Q        So the fact that you got your number over here  
22   tells you that those are Crosby and they're not  
23   somebody else?

24   A        Correct.

25   Q        So that's what makes up the 22 turbines -- I mean



1 the 22 valves right there. And if you turn back, Your  
2 Honor's question, to Unit Number 1, the same  
3 tabulation, we have this Crosby model number?

4 A Yes.

5 Q And a size and a style?

6 A Yes.

7 Q And even a factory number?

8 A Yes.

9 Q But we have no valves?

10 A Do you see the 6 at the end of the Crosby factory  
11 number?

12 Q Uh-huh.

13 A It's out of place. Belongs with your yellow.

14 Q Six?

15 A Yeah.

16 Q I see. So we need to add six more reheater  
17 turbine valves to Unit Number 1?

18 A Yes.

19 Q Okay. And so now we have a total of 22 -- we have  
20 a total of 44 valves between Ocone Unit Number 1 and  
21 Number 2?

22 A Correct.

23 Q How many Crosby valves on Ocone Number 3?

24 A The same number.

25 Q We don't have a sheet for that?

1 A I'm sorry, but it's the same. I don't know why  
2 you don't have it, but there is a sheet for it, and  
3 they're exactly the same.

4 Q Do you have it?

5 A Not here. I have it at the office in my home.

6 Q And do you know why, when we asked Crosby for all  
7 the documents it had about valves at these plants, we  
8 didn't get the sheet for Number 3?

9 A I can't answer that question. They're all the  
10 same.

11 Q Okay. So you're telling us now -- I'll put it in  
12 green -- that it's 22 more. Okay. And then in terms  
13 of the numbers, and just so we're clear, this is the  
14 JB, the 6, anyway, it's the JB style and then the 16,  
15 that's the HC style?

16 A Yes.

17 Q Okay. This is the JB right here, and this is the  
18 HC. And when we say the JB and the HC, that may or may  
19 not correspond to what was in the discovery response in  
20 terms of the model which we talked about a little  
21 earlier, right?

22 A Well, I don't believe you'll find any HCs in there  
23 because they never had any gaskets.

24 Q But there was a JB in here?

25 A Yeah, there was the JB in there.

1 Q Okay. And -- okay. And then on McGuire, you've  
2 got -- did you see two sheets for both McGuire units?  
3 I thought we only had one. McGuire Number 1 is at  
4 0013, right?

5 THE COURT: 0015.

6 MS. FARRISE: Well, is the cover.

7 THE COURT: 0016 is Unit 2 McGuire.

8 MS. FARRISE: Right.

9 Q When this says "installed at," does that mean  
10 Crosby installed it at?

11 A No, no. That means those valves were shipped  
12 there. It just means --

13 Q Okay. And in the case of where Crosby is  
14 furnishing a valve that's going to be at Duke, but  
15 they're furnishing it indirectly to Westinghouse -- are  
16 you following me -- and it's shipped to Westinghouse --

17 A Following you, yes.

18 Q -- and then it makes its way to Duke, is that  
19 included in the count?

20 A Yes. This was a list put together by salespeople  
21 for salespeople so that when they call on the plant,  
22 they would have an idea of what valves we had there.

23 Q Okay. So as to -- sorry, Your Honor -- McGuire  
24 Number 1, there were -- 23, 9, 30 -- 36 Crosby valves?

25 A That's what it looks like, yes, 36.

- 1 Q And you think it's the same for Number 2 at  
2 McGuire?
- 3 A Yes. The sheet looks the same.
- 4 Q And what model were those, as you have it?
- 5 A Those were HB-BPs.
- 6 Q HB?
- 7 A HB-BP-86, three of those. And there's eight  
8 6U8HA65Ws.
- 9 Q Is that HA?
- 10 A Yes, it is.
- 11 Q Okay. 65Ws, uh-huh.
- 12 A And there's twelve 6R10HA75Ws.
- 13 Q Ten, okay.
- 14 A No, 12. It's 6R10, but there's 12 of them.
- 15 Q 12 of them. Sorry about that. Okay.
- 16 A And six 18AA24JPV8s.
- 17 Q How many of those?
- 18 A There are six.
- 19 Q And the same is true over here, right?
- 20 A Yes. What I read to you is Unit 2. Unit 1 is the  
21 same.
- 22 Q And how about the two units at Catawba?
- 23 A Okay. Want me to read them off to you?
- 24 Q Yeah. First of all, how many and what page are  
25 you looking at?

1 A I'm looking at 25.  
2 Q How many you got?  
3 A There's six 18AA24JBT.  
4 Q How many total, first of all?  
5 A All right.  
6 Q 18, right?  
7 A Yes.  
8 Q Okay. And what kind?  
9 A There's six 18AA24JBTD.  
10 Q Okay.  
11 A There's four one-by-one vacuum relief, VR, valves.  
12 And there's two four-by-four VR valves, slightly  
13 larger. And two J025s. There are two JMB-WRs.  
14 Q JM?  
15 A JMB.  
16 Q Okay.  
17 A And there's two J025WRs. Different sizes, but the  
18 same style as the first.  
19 Q J0s, okay. And on this discovery response in the  
20 chart, are these -- there's something referred to as  
21 Sage and/or Crosby 400, 500 and 600 Series. Are those  
22 different than those ones that you --  
23 A Yes, they are.  
24 Q And where is the exhibit that counsel had? Do you  
25 still have -- maybe you never had -- a copy of

1 Plaintiffs' Exhibit 6364.4?

2 A I don't recognize the number.

3 Q It was the purchase order to Crosby for  
4 replacement parts from Mill Power. If not, I have an  
5 extra.

6 Sir, we have in evidence the purchase order for  
7 replacement parts to Crosby for some of these units or  
8 for, I guess it is McGuire, let's say, either Unit  
9 Number 1 or Unit 2; do you see that?

10 A I do.

11 Q So they are ordering, Mill Power on behalf of  
12 Duke, replacement parts from Crosby for a Series 600  
13 Sage safety relief valve?

14 A That is correct.

15 Q And do we add the Sage here? Wouldn't you presume  
16 if they're ordering spare parts for a Sage valve that  
17 they have a Sage valve?

18 A I would presume they have a Sage valve.

19 Q So just that little fact tells us that the  
20 information from Crosby about the type of valves that  
21 they have at these plants is not complete, right?

22 A Not really. What you have in the installation  
23 books is valves sold by Crosby that we knew of to those  
24 plants. This company, Sage, is a Houston company that  
25 happens to be owned by Crosby, but we didn't keep

1 records of where they sold their valves, and they would  
2 be non-nuclear valves.

3 Q Sir, you verified discovery responses in this case  
4 for Crosby where, when it was asked all of the names  
5 it's gone by, among those was Crosby Sage, right?  
6 Right?

7 A Yes.

8 Q So Crosby Sage is an alias of Crosby Valve; is  
9 that what you're saying?

10 A No, it's a company that was owned by Crosby, but  
11 it was located in Houston, Texas, and it was a  
12 stand-alone company. That's why they didn't make it  
13 into that what we call a green book, because those  
14 valves in the green book were manufactured by the  
15 Crosby facility in Wrentham. So we would not have  
16 known that Sage engineering out of Houston shipped  
17 valves to that plant.

18 Q Mr. Martin, I think what I'm hearing you say --  
19 okay. We don't have a disagreement, do we, Mr. Martin,  
20 that these 600 Sage model and down valves are Crosby  
21 valves?

22 A They were never stamped Crosby. The company Sage  
23 was owned by Crosby. You don't find the Crosby name on  
24 those valves, and that's why they're not on the list  
25 that we called the installation list because we did not

1 know that those valves were shipped to that plant.

2 Q So I just highlighted here Crosby Sage safety  
3 relief valve. And if I understand what you're saying,  
4 those valves, although they are from the Crosby  
5 company -- can someone stop clicking their pen? Thank  
6 you -- have the name Sage on the body of the valve?

7 A That's correct.

8 Q And this is an example of the Sage brand of  
9 Crosby, an order for replacement parts for those  
10 valves?

11 A Yes.

12 MR. REID: Objection to the form of the question,  
13 Your Honor. First part of it is very unclear.

14 THE COURT: How about rephrase it, Ms. Farrise?  
15 It's real simple. You know, did they order these Sage  
16 replacement parts from Crosby Valve?

17 MS. FARRISE: I'm not sure that's the question.

18 THE COURT: Well, then, let's get a question out  
19 where we can understand what you want.

20 BY MS. FARRISE:

21 Q First, the question is under the Crosby Valve  
22 family, there is the Crosby brand of valves with a  
23 "Crosby" on the bottom, correct?

24 A Correct.

25 Q And there is also the Sage valve with "Sage" on



1 the valve?

2 A That's correct.

3 Q And your listings and the information that Crosby  
4 provided, excluding the information about Number 3,  
5 does not include the type or the number or any  
6 information about the Crosby Sage valves?

7 A We would not know which Sage valves were shipped  
8 to McGuire or Ocone. We would not have records of  
9 that.

10 Q So the answer is no, this count does not include  
11 Crosby Sage valves?

12 A It does not.

13 Q As you sit here, Mr. Martin, as the spokesperson  
14 for Crosby, how many Crosby Sage valves were at Ocone  
15 Number 1?

16 A We would have no way of knowing.

17 Q How many Crosby Sage valves at Ocone Number 2?

18 A We would have no way of knowing.

19 Q How many Crosby Sage valves at Ocone Number 3?

20 A Same answer.

21 Q How many Crosby Sage valves at McGuire Number 1?

22 A Don't know.

23 Q Number 2?

24 A Don't know.

25 Q Catawba Number 1?

1 A Don't know.

2 Q Number 2?

3 A Don't know.

4 Q There's invoices for replacement parts for Crosby  
5 Sage that call for asbestos gaskets?

6 A Okay.

7 Q Do you know where in the Crosby Sage valves the  
8 gaskets are utilized?

9 A Internally, yes.

10 Q You have seen the drawings and the material  
11 specifications all those types of documents for the  
12 Sage valves?

13 A I've seen a catalog for the Sage valve.

14 Q And these two companies were related in business?

15 A Crosby owns Sage, yes.

16 Q And as part of your work in this case, have you  
17 been -- have you sought out the Sage valve information?

18 A No. I didn't realize there were any Sage valves  
19 at McGuire.

20 Q The invoice from Mills Supply, which I asked you  
21 to look at to Crosby Valve & Gage, which is this  
22 invoice to Crosby Valve & Gage, you weren't supplied  
23 that as part of the work you were asked to do in this  
24 case?

25 A That's a purchase order from Mill Power that

1 Crosby Valve engaged through the representative of  
2 Fluid Engineering Company. And if you look at the  
3 bottom, it says "FOB Houston." So they placed that  
4 directly on Sage.

5 Q May question, sir, is this the first time you have  
6 seen --

7 A No. I've seen this.

8 Q So you were aware before you took the witness  
9 stand that Crosby has this other line of valves, Sage,  
10 which were present at Mr. Jolly's worksites?

11 A From this, yes.

12 Q Did you bring with you the material  
13 specifications, drawings, and specific information  
14 about the Sage valves that were at Mr. Jolly's worksite  
15 that you learned about from having seen this document  
16 before coming to court?

17 A We tried to find documentation for these valves,  
18 but this line has been discontinued, and those  
19 documents do not exist anymore.

20 Q The valves, the Sage valves, may continue to exist  
21 at the Duke Oconee station, correct?

22 A They could, yes.

23 Q The service life of these valves can be 25, 30,  
24 40 years, right?

25 A Can be.

1 Q This plant and this unit, let's take McGuire, for  
2 instance, was completed in the early 1980s. These  
3 valves would still be in service today?

4 A They could be.

5 Q They could still be in service today?

6 A They could be.

7 Q And replacement parts for them required?

8 A Would not be available today.

9 Q In the interrogatory responses -- I think I put  
10 mine under the table -- in the interrogatory responses  
11 to Crosby, it lists and you sign off on this particular  
12 type of valve, Sage and Crosby, as being one that has  
13 asbestos-containing packing and gaskets, correct?

14 A I don't recall packing.

15 Q Well, it's going to say what it's going to say.  
16 Asbestos-containing gaskets?

17 A Correct.

18 Q And that that line was phased out with the 400  
19 Series and the 500 Series in 1991?

20 A Correct.

21 Q Have you brought any documents to demonstrate that  
22 these lines ever went asbestos-free?

23 A No.

24 Q Sir, when you worked for the company, did you make  
25 \$300 an hour?

1 A No.

2 Q And in this particular case, just in terms of the  
3 time you've spent, is it a reasonable estimate that  
4 your bill may be \$20,000?

5 A I haven't added it up.

6 Q But that's not unreasonable, is it?

7 A It depends on how many hours I've put in, yes.

8 Q Well, you said you've talked with Mr. Lombardi,  
9 right?

10 A Yes.

11 Q How many hours did you spend doing that?

12 A I don't know.

13 Q What's your estimate?

14 A I don't have one.

15 Q You reviewed 39 documents, right?

16 A Yes.

17 Q How long did you spend doing that?

18 A I don't know. I have it listed somewhere, but I  
19 don't know.

20 Q You reviewed the interrogatories and signed off.  
21 How long did you spend doing that?

22 A I don't know.

23 Q You drove here the other day, I guess, from  
24 Southport?

25 A I do know. Five and a half hours.

- 1 Q And then you drove back?
- 2 A Same.
- 3 Q So that's 11 hours, right?
- 4 A Yes.
- 5 Q And you get paid \$300 an hour to drive?
- 6 A I do.
- 7 Q Do you get paid \$300 an hour to stay overnight and  
8 sleep?
- 9 A No.
- 10 Q So like a regular ten-hour day or something?
- 11 A Whatever I actually work.
- 12 Q And you drove back, and you're going to drive back  
13 today, so that's another 11 hours of time driving,  
14 right?
- 15 A Yes.
- 16 Q And is there any other prep, document review,  
17 that's going to go into this bill?
- 18 A I don't know yet.
- 19 Q Okay. So by the time you add it all up, it could  
20 be at least \$20,000 or more just for your work here?
- 21 A It's possible.
- 22 Q The valves -- do you still have that packet?
- 23 A I do.
- 24 Q If I ask you to turn over to Page 00021, do you  
25 have that?

1 A I believe so.

2 Q Okay.

3 A Yes.

4 Q It's a drawing for two vacuum relief valves that  
5 were sold to McGuire Nuclear Station?

6 A That's correct.

7 Q And is it accurate, sir, that this, the weight of  
8 these valves were like 17 pounds apiece, or does that  
9 refer to something else?

10 A No. It should be on here.

11 Q See where I've highlighted?

12 A I'm sorry. Yes, that would be correct.

13 Q And so that's about the size of that exemplar that  
14 I never got to look at, wherever it went?

15 A No. It's much smaller than that. This valve here  
16 is nine inches tall. And that exemplar is a lot taller  
17 than nine, and the valve, the exemplar, weighs a lot  
18 more than 17 pounds.

19 Q But the valves that Crosby and/or Sage supplied to  
20 Mr. Jolly's worksites, some of them were many multiples  
21 of that in terms of the size of them, correct?

22 A I don't know where you're getting that  
23 information.

24 Q Let me ask you to turn to the page that ends in  
25 0017. 17.

- 1 A Yes.
- 2 Q And this, for instance, is a valve that Crosby
- 3 sold to Duke Power McGuire 1 and 2, right?
- 4 A Yes.
- 5 Q And this valve is about 700 pounds?
- 6 A That's correct.
- 7 Q So that's quite a bit bigger than the 17 pounds?
- 8 A But that's not a Sage valve.
- 9 Q The weight of the valve is 700 pounds?
- 10 A You asked about a Sage valve.
- 11 Q No, I said Crosby or Sage.
- 12 A I'm sorry.
- 13 Q This is a Crosby valve that's 700 pounds?
- 14 A Absolutely.
- 15 Q But in terms of the valve supply, that's not
- 16 nearly the smallest one, right?
- 17 A It's not nearly the smallest or the largest.
- 18 Q Or the largest to Mr. Jolly's worksites?
- 19 A Correct.
- 20 Q There is, for instance, a valve from Crosby
- 21 that -- or at least two valves, actually, which are
- 22 1,150 pounds, correct?
- 23 A What number are you referring to?
- 24 Q 0019.
- 25 A Yes.



1 Q And this says that it was for McGuire Units 1 and  
2 2, so there would be one of these 1,150-pound valves at  
3 McGuire 1 and an 1,150-pound Crosby Valve at McGuire 2?

4 A More than one, but yes, they would be there.

5 Q There would be more than one 1,150-pound valve?

6 A Oh, yeah.

7 Q How many of these are 1,150 pounds or more?

8 A Let's see. It would be the main steam valves at  
9 McGuire.

10 Q There's three or is it the eight?

11 A It would be the 12. See the 12?

12 Q 12?

13 A Yes.

14 Q Main steam. Are they 1,150 pounds or larger?

15 A They're about 1,150 pounds.

16 Q And there would actually, therefore, be total at  
17 McGuire 24 Crosby valves, each of which weighs, of the  
18 main steam variety, 1,150 pounds?

19 A Yes.

20 Q And the 700-pound weighted one that we just looked  
21 at, which valve was that?

22 A That's a pressurized safety valve, HB.

23 Q At McGuire?

24 A Tell you in a second.

25 Q Well, that's the only HB.

1    A        It's going to take more than a second.

2    Q        It's okay. We can look at the drawing.

3    A        Yeah, they're at McGuire.

4    Q        They're at McGuire. So that's the three --

5    A        Yes.

6    Q        -- 700-pound valves, six total Crosby valves?

7    A        Yes.

8    Q        And if I were to ask you how big the Sage valves  
9    of Crosby are in the 400 Series, for instance, how big  
10   are those valves?

11   A        Those are about seven pounds apiece.

12   Q        Those are smaller valves?

13   A        Smaller, real small.

14   Q        You made a calculation, and I have to admit I  
15   couldn't really hear what you were saying, but I think  
16   you said that 85 percent of the valves, the Crosby  
17   valves, at these three plants did not have  
18   asbestos-containing components?

19   A        That's from our list, our installation list, yes.

20   Q        Right. But you don't know totally how many valves  
21   were at Ocone, McGuire, and Catawba from Crosby or  
22   Sage?

23   A        Do not.

24   Q        So, really, the 85 percent is not an accurate  
25   number for all of the valves that the Crosby Valve

1 Company is responsible for?

2 A It's accurate for the valves that we know are  
3 there.

4 Q I'm sorry?

5 A It's accurate for the valves that we know are  
6 there.

7 Q Okay. And of your calculation, I take it you must  
8 have had some documents and information about precisely  
9 which valve and which parts and how many asbestos  
10 gaskets and all of that, right?

11 A Yes.

12 Q Right. Where is your calculation?

13 A I just looked at the drawings. The drawings tell  
14 you what valves have asbestos in them and what valves  
15 don't and I just added up the valves.

16 Q So there's no like show-your-work calculation that  
17 we can see?

18 A No.

19 Q And we can't say of the 15 percent of the valves  
20 that have the asbestos-containing gaskets, are those  
21 the 1,150-pound valves or the 17-pound valves?

22 A They're not the 1,150-pound valves because those  
23 are all H series and they have no gaskets at all.

24 Q Is there a drawing of them?

25 A Of the valves?

1 Q Yes.

2 A Right in here.

3 Q Do they have a flange?

4 A They have a welded inlet and flanged outlet.

5 Q We'll look at the drawings ourselves since we have  
6 a drawing.

7 And in terms of the various -- oh, there was a  
8 parts list. Let's not leave that out. Do you have the  
9 parts list?

10 A Is it -- what am I looking at?

11 Q If you look at 0009 of that same exhibit, this is  
12 a parts list.

13 A It's a bill of materials.

14 Q For a particular valve?

15 A Yes, for one of the main steam valves.

16 Q Prepared by Crosby?

17 A Yes.

18 Q With those same part numbers that -- similar-type  
19 part numbers that we looked at earlier?

20 A Correct.

21 Q So, for instance, if we were to know specifically  
22 what items were made out of, we could go to a card like  
23 we looked at earlier, a parts number card, and on that  
24 card, it would have the information specifically about  
25 what this part was made out of?

1 A That's correct.

2 Q And these part numbers and the material  
3 specifications of what they are made out of for all of  
4 the valves at Mr. Jolly's worksites are not included in  
5 these 39 pieces of paper that Crosby gave to us about  
6 its connection to his worksites?

7 A We did not give you all the bills of material for  
8 all the valves because some of them do not have any  
9 asbestos in them. You can tell from the drawings. You  
10 look at the drawing, the drawing lists the material.  
11 If it doesn't say asbestos, then we didn't provide a  
12 bill of materials.

13 Q Counsel asked you a bunch of questions about what  
14 this gasket is made out of and what this gasket is made  
15 out of. There is a document prepared by someone at  
16 Crosby that says exactly what the gasket is made out  
17 of?

18 A The drawing says that.

19 Q I understand you read steel. My -- there's a  
20 material specification. The drawing is not a material  
21 specification, is it, sir?

22 A It is not.

23 Q And there are material specifications for each of  
24 those parts?

25 A There are.

1 Q And you did not bring those to court?

2 A I did not.

3 MS. FARRISE: Your Honor, that's all we have on  
4 redirect.

5 THE COURT: All right.

6 Anything further, Mr. Reid?

7 MR. REID: Very briefly, Your Honor.

8 RECROSS-EXAMINATION

9 BY MR. REID:

10 Q Do you have their summary chart, the  
11 Exhibit 6364.06?

12 A Yes.

13 Q If you look at the second page, last column, the  
14 last line, that's where the Sage 400, 500, 600 valves  
15 are listed?

16 A Yes.

17 Q And third column from the right, does that  
18 identify when asbestos was removed from those products?

19 A It does.

20 Q Can you please read that?

21 A Says, "3/600 not altered or removed before the  
22 products were discontinued. The 1986 and 1984 400/500  
23 were removed in 1989 because of" -- that's when the  
24 asbestos was removed.

25 Q Was the valves of the Sage company smaller?

1 A Yes.

2 Q Counsel just asked you about Page 9 of our  
3 Bates-stamped Duke documents.

4 A Yes.

5 Q Any packing or gaskets on the Style HC-65 welded  
6 inlet Crosby Valve?

7 A No.

8 Q Any reason to look at a part card if there's no  
9 packing or gaskets and no nonmetal pieces?

10 A No.

11 Q We talked in considerable length right now about  
12 an 1,150-pound valve that's on Page 19.

13 A Yes.

14 Q Is there a list of material?

15 A Yes, there are.

16 Q Any packing or gaskets on the 1,150-pound valve  
17 shown on that page?

18 A None whatsoever.

19 Q Talked about a 750-pound valve, I think, in the  
20 pressurizer area. Is that containment?

21 A That is containment.

22 Q Radioactive?

23 A Very.

24 Q Nobody is going to be there unless they're fully  
25 clothed, helmet included, breathing apparatus?

1 A That's correct.

2 MR. REID: No further questions, Your Honor.

3 THE COURT: Mr. Martin, you may come down.

4 All right. Ms. Farrise, Ms. McVey.

5 MS. McVEY: At this time we call Dr. John Maddox  
6 via deposition.

7 THE COURT: Very good. Who's going to read what?

8 MS. McVEY: I'm going to play me, and Jonathan is  
9 going to play --

10 MR. HOLDER: I'll be the good doctor.

11 THE COURT: Come right on up.

12 Ladies and gentlemen, this is going to be the oral  
13 deposition of Dr. Maddox, and it will be read to you.

14 JOHN MADDOX, M.D.

15 (Via read deposition)

16 TESTIFIED AS FOLLOWS:

17 DIRECT EXAMINATION

18 BY MS. McVEY:

19 Q Good afternoon, Dr. Maddox. How are you?

20 A Good afternoon.

21 MS. McVEY: Go to Page 4. You can start at Line  
22 16 at this point.

23 A Very well. Thank you. I just got back from  
24 Washington, D.C. I've been up visiting my children,  
25 and we literally just drove into the driveway at home.



1    Q        Thank you for fitting us in on a Sunday afternoon.

2    I appreciate it.

3    A        Yes, ma'am.

4    Q        Can you explain to the jury what you do for a  
5    living?

6    A        I'm a pathologist. I work in the pathology  
7    department at a community hospital.

8    Q        And what is it that a pathologist does? And what  
9    is it that a pathologist does?

10   A        A pathologist is a physician, an M.D., who assists  
11   other physicians like surgeons or internal medicine  
12   practitioners in making a diagnosis of disease in their  
13   patients.

14            In other words, to give you an example, a surgeon  
15   would take a patient to the operating room to biopsy a  
16   lump. The surgeon would send that biopsy to a  
17   pathologist. The pathologist would have microscopic  
18   slides made so that he could examine those slides under  
19   an optical microscope and figure out what it was. Is  
20   it a tumor -- a benign tumor, a malignant tumor -- some  
21   sort of an infection or so forth.

22            Sometimes -- sometimes we also help other doctors  
23   evaluate clinical laboratory findings, things like  
24   blood counts or serum chemistries that are abnormal or  
25   various type of -- various types of lab tests that may

1 indicate the presence or absence of disease.

2 Q And can you give the jury the benefit of your  
3 educational background?

4 A Sure thing. I grew up in Charlottesville,  
5 Virginia, where I attended the public schools. Then I  
6 went to the University of Virginia and took a  
7 Bachelor's degree in biology. I took that degree in  
8 1972. Then I went to medical school also at the  
9 University of Virginia, also in Charlottesville,  
10 Virginia, and I took my M.D. degree in 1976.

11 After that, I did a total of six years of  
12 residency training in pathology. The first three years  
13 were spent at Stanford University, which is located in  
14 Palo Alto, California. During that time, on and off  
15 over a period of three years, I worked with Dr. Charles  
16 Carrington, who at the time was the chairman of the  
17 U.S. and Canadian mesothelioma panel. And that's where  
18 I was introduced to the study of asbestos-related  
19 diseases, particularly things like mesothelioma.

20 After I finished the three years at Stanford, then  
21 I went to do a one-year fellowship at the MD Anderson  
22 Cancer Center in Houston, Texas. While I was there, I  
23 worked on and off with Dr. David Dail, who was the lung  
24 pathologist at MD Anderson. And he is the coauthor of  
25 one of the standard textbooks called Dail and Hammar's

1 Pulmonary Pathology. It has a long section in there  
2 about mesothelioma that was written by Dr. Sam Hammar,  
3 the coauthor of that book.

4 Then after -- after spending a year at MD Anderson  
5 Hospital, then I went to Virginia Commonwealth  
6 University Medical College of Virginia in Richmond,  
7 Virginia, where I studied clinical pathology for one  
8 year and then hematology for a second year. At that  
9 point, I took my board examinations in anatomic and  
10 clinical pathology and began a private practice, a  
11 community hospital practice of pathology at Riverside  
12 Regional Medical Center here in Newport Beach,  
13 Virginia.

14 Q And do you currently work at Riverside Hospital?

15 A Yes, ma'am. I'm the senior member of the  
16 pathology department now. I've been in the same job  
17 for almost 35 years.

18 Q Okay. Just a few years?

19 A Well --

20 Q As part of your experience working as a full-time  
21 pathologist, how many people with mesothelioma have you  
22 seen?

23 A We see a lot of people with malignant  
24 mesothelioma. At the hospital, over the last -- over  
25 the last 35 years, we have had over 500 patients with

1 malignant mesothelioma. Back in the mid to late 1980s,  
2 we were seeing up to 30 patients a year with malignant  
3 mesothelioma. It's less than that now, and that's  
4 partly because of the people with the older World War  
5 II era exposures have died off, and also insurance  
6 regulations have sent some of the patients to other  
7 hospitals. But at one time, we were seeing almost one  
8 percent of all mesotheliomas in the United States per  
9 year.

10 Q And because of your experience with mesothelioma,  
11 do other institutions seek out your expertise?

12 A Yes, ma'am. Over the years, I have received  
13 consultations about mesothelioma and asbestos-related  
14 disease from other physicians, from other hospitals,  
15 from defense law firms, from plaintiffs' law firms, all  
16 of the above over a 35-year period.

17 Q And do you charge for your time in cases like this  
18 one?

19 A Yes, ma'am. When I receive a case for  
20 medical-legal consult like this, Peninsula Pathology  
21 Associates charges for my time spent on the case. They  
22 charge \$500 per hour. I am a partner in that group,  
23 and I would receive a little less than one fourth of  
24 that, so, in other words, each hour I receive about  
25 \$110.

1 Q So you're hired by law firms representing folks  
2 like Mr. Jolly, but have you also been hired by  
3 companies that make asbestos-containing gaskets?

4 A Yes, I have. For example, we used to have an  
5 electron microscope laboratory between the years 1985  
6 and 2000. During that 15-year period of time, I  
7 counted approximately 1,200 samples of lung tissue to  
8 determine its asbestos content.

9 Now, not all of those were mesothelioma. Some of  
10 them were lung cancer as well, but I would estimate  
11 that about one third of the cases that came in during  
12 that period of time were from defense law firms.

13 Q Dr. Maddox, I have marked as Exhibit 972 to your  
14 deposition a CV of yours dated March 15, 2016. Would  
15 that be the most recent CV?

16 A Yes, ma'am, that would be correct.

17 MS. McVEY: At this point, we move this into  
18 evidence.

19 MR. BOUCH: I have no objection, Your Honor.

20 MS. McVEY: And we would also tender Dr. Maddox as  
21 an expert in pathology, specifically as it relates to  
22 asbestos and asbestos-related disease.

23 MR. BOUCH: Again, I have no objection.

24 THE COURT: No objection by either counsel, both  
25 having reviewed the CV, I declare Dr. Maddox as a

1 recognized expert witness in the subject pathology,  
2 specifically as it relates to asbestos and  
3 asbestos-related diseases.

4 MS. McVEY: Thank you, Your Honor.

5 Q Dr. Maddox, if you evaluate causation in a patient  
6 with mesothelioma, are there certain factors you  
7 consider in determining that causation?

8 A Well, yes, ma'am. There are the criteria from the  
9 document called "The Helsinki Criteria." The Helsinki  
10 criteria for diagnosis and attribution of  
11 asbestos-related diseases. I have tried to interpret  
12 those in the form of six points that I may have listed  
13 at the end of the report on Mr. Jolly.

14 Q Go ahead. I'm sorry.

15 A Oh, I'm sorry. It was quiet for a while. I just  
16 wanted to make sure that we were still on the phone.

17 Q We are.

18 What are those six factors you considered?

19 A Well, let's see. In my report on Jolly, I listed  
20 the six points that were actually in the Helsinki  
21 article. And, number one, I said that the great  
22 majority of mesotheliomas are due to asbestos exposure.  
23 That's a quote from the article.

24 Number two, mesothelioma can occur in cases with  
25 low asbestos exposure. However, very low background

1 environmental exposures carry only extremely low risk.

2 Next point: About 80 percent of mesothelioma  
3 patients have had some occupational exposure to  
4 asbestos, and, therefore, a careful occupational and  
5 environmental history should be taken.

6 Next point: An occupational history of brief or  
7 low level of exposure should be considered sufficient  
8 for mesothelioma to be designated as occupationally  
9 related.

10 Next point: A minimum of ten years from the first  
11 exposure is required to attribute the mesothelioma to  
12 asbestos exposure, though in most cases, the latency  
13 period is longer. For example, on the order of 30 to  
14 40 years.

15 And last of these points is smoking has no  
16 influence on the risk of mesothelioma.

17 Now, actually, during my deposition, I think I  
18 mentioned the six points that are used that are  
19 interpretations of the Helsinki criteria. May I list  
20 those again for you?

21 Q No, I think we're good on that. Thank you.  
22 Unless you'd like to. Do you want to list them again?

23 A I think I need to.

24 Q Okay. Please do.

25 A Number one, consideration should be given to real

1 exposures. In other words, exposures that have some  
2 factual basis to them. If they are witnessed by the  
3 patient or the coworker, or if they're inevitable,  
4 given the circumstances.

5         Number two, these exposures should be  
6 significantly above normal background in air levels.  
7 Now, the normal background and air levels that I use  
8 are the ones that are in Dr. Roggli's textbook on  
9 *Pathology of Asbestosis-Associated Diseases*, Second  
10 Edition, on Page 26. The industrial hygienist that I  
11 talked to have told me that they should be two orders  
12 of magnitude above the average and at least one order  
13 of magnitude above the upper limit of the normal range  
14 so as to avoid any confusion with extremely low levels  
15 that are still within the normal ambient air range.

16         The third point is you should consider how these  
17 levels are known. It is because of the observation of  
18 visible dust, which with the exposures that are  
19 thousands or hundreds of thousands of times above  
20 normal background ambient air levels, and it is by  
21 reference to work studies that have been done, either a  
22 simulated work study or an actual measurement of  
23 somebody doing that type of work.

24         Point four is the exposure should be repetitive.  
25 A single walk-by low level exposure, in my mind, would



1 not suffice. I would tend to jump -- I'm sorry. I  
2 would tend to just lump that back into background.

3 Number five is the exposures are dose response.  
4 In other words, the bigger the cumulative dose to  
5 asbestos, the bigger the cumulative risk of developing  
6 mesothelioma. The -- well, a big component dose is a  
7 big component risk. And small-components dose is a  
8 small-component risk.

9 And then the final point, number six, would be the  
10 exposures need to be within a reasonable latency period  
11 which Helsinki defines as ten years, at least ten  
12 years.

13 Q Okay. Dr. Maddox, did you have an opportunity to  
14 evaluate the pathology for Mr. Jolly?

15 A Yes, ma'am, I certainly did. And I have discussed  
16 that in my report, TL16-31, which was issued on  
17 April of 2016.

18 Q And what did you determine after reviewing the  
19 pathology?

20 A I determined that Mr. Jolly had a right pleural  
21 malignant mesothelioma, epithelioid type.

22 Q And is that diagnosis, does that line up with what  
23 his treaters believed his diagnosis to be?

24 A Yes, ma'am. At the hospital where he was treated,  
25 the right pleural biopsy pathology was read as

1 malignant mesothelioma, epithelioid type.

2 Q And do you have an opinion to a reasonable degree  
3 of medical certainty whether or not that mesothelioma  
4 was caused by his exposure to asbestos?

5 A Yes, ma'am. I believe that it was caused by his  
6 cumulative asbestos exposure throughout his life, up  
7 until the time the mesothelioma developed.

8 Q Dr. Maddox, what is epidemiology, and how does it  
9 help doctors understand something like  
10 asbestos-causative disease?

11 A Well, epidemiology is one way of determining what  
12 causes. Now, what you generally do is take a group of  
13 people, measure their exposure to something like, for  
14 example, asbestos exposure, and then see what happens  
15 to them over a period of time. A certain percentage of  
16 the people exposed to asbestos will probably develop  
17 mesothelioma.

18 Now, there's another way of conducting  
19 epidemiological study called a case control study.  
20 That's where you take a number of people that are found  
21 to have mesothelioma, and then you retrospectively look  
22 back and see what their exposures were. For example,  
23 were all of them insulators? Were all of them shipyard  
24 workers? Were some construction workers? Were some  
25 household members of actual workers' families? You

1 look at these different groups to see what the  
2 association is between their exposure and the  
3 development of mesothelioma.

4 Q Is there literature that examines at various  
5 levels how many people in a group get mesothelioma  
6 after being exposed to asbestos?

7 A Yes, ma'am, there are. There are a number of  
8 papers. For example, there's one from a French  
9 Mesothelioma Group -- I think the first author's last  
10 name is Becklake -- where he looks at occupational  
11 groups to see what their risk of mesothelioma is.

12 There's the health and safety executive from the  
13 United Kingdom who did the same thing for several dozen  
14 occupational classifications to see what they -- what  
15 their risk of rate of developing malignant mesothelioma  
16 is or was. There is a large study from Scandinavia by,  
17 Pukkala, P-u-k-k-a-l-a, that does the same thing, and  
18 what those studies show in general is that there are  
19 occupations that have a relative high average exposure  
20 to asbestos, and likewise, those occupational groups  
21 have a high rate of developing malignant mesothelioma.

22 Q The studies in the lowest-exposed group and the  
23 folks that have the lowest exposure, were people still  
24 dying at increased rates after being exposed to  
25 asbestos?

1 A Yes. Some people, even in the low-exposure  
2 groups, did develop malignant mesothelioma and die from  
3 the disease. The rate was higher in the high-exposure  
4 groups and lower in the low-exposure groups.

5 Q Okay. Dr. Maddox, based on your knowledge and  
6 experience and the factors you used to evaluate  
7 causation, I'd like to give you some hypotheticals.  
8 Would that be okay?

9 A Yes, ma'am.

10 Q Okay. I want to you assume the following facts,  
11 first about duration, that the exposure to Mr. Jolly  
12 was the over three to four years in the early 1980s.  
13 Okay?

14 A Yes, ma'am.

15 Q Assume that the exposures came from  
16 asbestos-containing gaskets and packing used in some  
17 but not all of the valves at a power plant during  
18 outages and shutdowns at several plants which happened  
19 as a regular part of his job. Are you with me?

20 A Yes, ma'am.

21 Q All right. Assume that the exposures were not  
22 direction, but as an inspector, he was close enough to  
23 see the dust, often working one to two feet from where  
24 the work was being done.

25 A Yes, ma'am.

1    Q      Okay. And assume that this is an exposure that  
2    resulted in visible dust from brushing grinders where  
3    the jury has heard that the exposures were in the  
4    hundreds or in the thousands to hundreds of thousands  
5    to millions of times higher than background. Okay?

6    A      Yes, ma'am.

7    Q      And we spoke to an occupational medicine doctor  
8    already, but I want to focus on epidemiology more than  
9    industrial hygiene. Given those assumptions that I've  
10   given you, is this exposure, as compared to low dose  
11   exposures in epidemiology, significant and substantial?

12   A      Yes, ma'am. I believe that would constitute a  
13   significant exposure to asbestos because they were real  
14   exposures that were witnessed; they were high enough to  
15   provide visible dust; they were repetitive, and they  
16   were within a reasonable latency period.

17   Q      If this person came in with mesothelioma and this  
18   was the only exposure, as I've described to you, would  
19   it by itself be the cause of the disease?

20   A      I believe that if the mesothelioma, if that was  
21   the only known exposure to asbestos, then the  
22   mesothelioma, then that would be considered a causation  
23   of the malignant mesothelioma. That does not exclude  
24   any other possible recognized or unrecognized causes,  
25   but I believe that that exposure would be sufficient to

1 deem that causative.

2 Q Okay, Dr. Maddox. Now I want you to assume that  
3 Mr. Jolly had multiple exposures like that, like I've  
4 described to you, from Fisher valves and Crosby valves  
5 in addition to several other companies' equipment.

6 Will you assume that?

7 A Yes, ma'am.

8 Q In a situation where the exposure to Fisher valves  
9 as I've described above is one of several exposures,  
10 can you tell me if that exposure, given the facts about  
11 dose, frequency, proximity and intensity was a  
12 substantial contributing cause in Mr. Jolly's  
13 development of mesothelioma?

14 A Yes, ma'am. I believe that the exposures as  
15 described would be significant contributors to the  
16 diagnosis and development of malignant mesothelioma.

17 Q And would that also be true if the valve at issue  
18 came from Crosby?

19 A Yes.

20 Q And just -- I was just going after you.

21 Okay. One more hypothetical, Dr. Maddox. Can you  
22 assume for me that Mr. Jolly had multiple significant  
23 exposures, and you took away one of them, assume he no  
24 longer had three or four years of exposure as I've  
25 described from Crosby valves. Will you assume that?

1 A Yes, ma'am.

2 Q Can you state to a reasonable degree of medical  
3 certainty that but for that exposure to Crosby,  
4 Mr. Jolly would get the same meso at the same time?

5 A I believe that he would not get the same  
6 mesothelioma at the same time. I believe that he would  
7 still have a risk of developing mesothelioma, but that  
8 would be less than the risk that he had with his actual  
9 cumulative exposure. If you subtract a component  
10 exposure, that gives you a lower cumulative exposure,  
11 and, therefore, your risk is lowered by the  
12 dose-response principle.

13 Also, medical literature has shown very clearly  
14 that if you have lower doses, lower cumulative doses of  
15 asbestos, you're going to have a lower rate of  
16 mesothelioma, and, conversely, the latency period  
17 between the time of exposure and the time of  
18 development of the disease is going to become longer.

19 Q And would that also be true if you took out the  
20 exposures to Fisher valves?

21 A It would be the same if you took out any of the  
22 component exposures that were significant to start  
23 with. If you remove a significant component exposure,  
24 you're going to lower the cumulative exposure. That  
25 will lower your rate of mesothelioma in a population

1 and increase the latency period for those mesotheliomas  
2 that do eventually develop in that population.

3 Now, please understand that I'm making a  
4 translation between the rate in a group of people and  
5 the risk in an individual. An individual either has it  
6 or doesn't. So you must talk about risk rather than  
7 rate.

8 Q Okay. Dr. Maddox, let me follow up on one other  
9 issue. You said that lower exposures had less disease.  
10 Lower exposures to asbestos had less disease than  
11 higher exposures. Are there studies where the  
12 lowest-exposed group have more than double the risk of  
13 the general population?

14 A Yes, ma'am. There are studies that attempt to  
15 show the level of exposure, the lowest level of  
16 exposure. Those include articles by Iwatsubo,  
17 I-w-a-t-s-u-b-o, by Rodelsperger,  
18 R-o-d-e-l-s-p-e-r-g-e-r, by Roland, and by LaCourt.

19 Q Can you give us, Dr. Maddox, an idea of how low  
20 those lifetime exposures were in the lowest-exposed  
21 group where there was more than a doubling of risk?

22 A Yes, ma'am. The studies have various levels of  
23 the odds ratios that were found at the lowest levels of  
24 exposure, but they were -- the lowest levels were in  
25 the range of: For Iwatsubo, .5 fiber years; for



1 Rodelsperger, .15; for LaCourt, .1 fiber years; and for  
2 Roland, .07.

3        Now, none of those were actually the level where  
4 there was 2. -- 2.0 increased risk. Some of those were  
5 increased risk at 2.8 times or 4.3 times or even 7  
6 times.

7 Q        Dr. Maddox, we were talking about latency a moment  
8 ago. Is there an inverse relationship between dose and  
9 latency of the disease?

10 A        Yes, ma'am, there is.

11 Q        Can you tell us about that?

12 A        Yes, ma'am. There's an article that I would cite  
13 by Bianchi, B-i-a-n-c-h-i, and other authors as well  
14 titled *Latency Periods in Asbestos-Related Mesothelioma*  
15 *of the Pleura*. It was published in the *European*  
16 *Journal of Cancer Prevention*, Pages 162 through 166.

17        Now, in this paper, they looked at some high-level  
18 exposure groups and some low-level exposure groups.  
19 The high-level exposure groups includes insulators and  
20 shipyard workers, which should have been shown by a  
21 number of different studies to be high exposure or high  
22 rate of mesothelioma groups.

23        They contrasted these groups with sailors and with  
24 family members of asbestos workers from all the groups,  
25 and they found that the latency periods were much

1 shorter for the high-exposure groups and much longer  
2 for the low-exposure groups.

3 In fact, if I were to look at those levels, they  
4 would be something like this: The insulators have a  
5 mean latency period of 29.6 years. The dock workers  
6 had a mean latency period of 35.4 years. The domestic  
7 exposure family members had a mean latency period of  
8 51.7 years, and the sailors had a mean latency period  
9 of 56.2 years, so I believe that's a very significant  
10 difference, and they did a statistical test called the  
11 Anova test, A-n-o-v-a, which indicated a high degree of  
12 statistical significance to the difference in those  
13 numbers.

14 Q Okay. So is it typically the case that if you  
15 have less exposure, the disease will present itself at  
16 a later time for those who do get mesothelioma?

17 A Yes. If you have a low-exposure group, you'll get  
18 fewer mesotheliomas and they will take longer to  
19 develop. If you have a high-exposure group, you will  
20 have a higher rate of mesothelioma, and they will  
21 develop more quickly.

22 Q And is the exact amount of time lost associated  
23 with each major exposure, is it known?

24 A You mean each of the component exposures?

25 Q Right. Can you give -- in other words, is it

1 exact about how much time is lost from each -- how much  
2 life is lost from each major exposure?

3 A Well, I would not be able to calculate that  
4 because I think what you're talking about is more of an  
5 industrial hygiene question as to the quantification of  
6 level of exposure for each component. I have neither  
7 the training nor the experience to do that.

8 Q Okay, Dr. Maddox. Do you have an opinion to a  
9 reasonable degree of medical certainty that but for  
10 each significant exposure some life is lost by  
11 shortening the likely latency period?

12 A Yes, ma'am. I believe that that is correct. If  
13 you subtract -- if you're able to retrospectively  
14 subtract a component exposure, then that would give  
15 less risk and a lower rate in a group of developing  
16 mesothelioma and an increased length to the latency  
17 period.

18 Q A few more questions, and I'll be through. One  
19 more question on epidemiology studies. If you have a  
20 10.8 or 7.8 increased risk, is that more than double  
21 the risk?

22 A Yes, ma'am. Yes, ma'am. That would be  
23 proportionately more than doubling the risk, depending  
24 on the particular study.

25 Q Can you explain why?

1 A Can I explain why what?

2 Q I'm sorry, Dr. Maddox. Last question. Would  
3 exposures I've asked you to assume about Mr. Jolly to  
4 Crosby valves over that three- to four-year period be  
5 significant and substantial?

6 A Based on the hypothetical questions and parameters  
7 that you expressed in your hypothetical question  
8 earlier, I would say yes.

9 Q And the same would be true, based on the  
10 hypothetical, about the valves that were the Fisher  
11 valves?

12 A Once again, based on the parameters that you  
13 expressed in the hypothetical question, I would say  
14 yes.

15 Q Thank you, Dr. Maddox. Those are my questions.

16 | A Yes, ma'am. Thank you.

17 CROSS-EXAMINATION

18 BY MR. BOUCH:

19 Q Dr. Maddox?

20 | A Yes, sir.

21 Q Always good to hear your voice again. This is Tim  
22 Bouch. I think we've known each other for 20 years or  
23 so.

24 A Mr. Bouch, it's been something like that. It's  
25 good to hear your voice as well.

1    Q      Dr. Maddox, I believe you were sent material  
2    involving Mr. Jolly in early or late March 2016; is  
3    that correct?

4    A      Yes, sir. I received it on the 21st of  
5    March 2016.

6    Q      And you issued your report, oh, about three weeks  
7    later?

8    A      Yes, sir, that's correct.

9    Q      And I believe your opinion at the time was that  
10   Mr. Jolly, according to his medical records that you  
11   received, worked at Duke Energy Company for over  
12   30 years, with probable exposure to asbestos when  
13   employed?

14   A      Yes, sir. At the time that I issued my report,  
15   that was the exposure history that I had received at  
16   the time. And it was subsequently updated in a letter  
17   from the plaintiffs' attorney. That letter was dated  
18   June 12, 2017.

19   Q      Well, I'll get there, Doctor, but my question is  
20   this: Your report of April 13th, 2016, said, according  
21   to the records you had at the time, he worked for Duke  
22   Energy for over 30 years with probable exposure to  
23   asbestos when employed. I'm quoting from the second  
24   sentence of your report, correct?

25   A      Yes, sir, that is correct.

1 Q And I believe you found, as a result of that  
2 information, based on the exposure history, Mr. Jolly's  
3 cumulative exposure, asbestos exposure, caused his  
4 malignant pleural mesothelioma?

5 A Yes, sir, that's correct.

6 Q And then about a year later, you received  
7 additional information including the letter you  
8 mentioned before of June 2017, a little over six weeks  
9 ago from today, providing you information that  
10 Mr. Jolly also worked for two years making deliveries  
11 for a local lumber company in Gaffney, South Carolina  
12 named Getty's Lumber Company. Do you remember that?

13 A Yes, sir. I see that in the more recent letter.

14 Q Okay. And then he would, during his couple of  
15 years working for Getty's Lumber, he would deliver  
16 joint compounds once or twice a week, including two or  
17 three bags of joint compound or more for bigger  
18 projects at each work stop, correct?

19 A Yes, sir. That's the history that was contained  
20 in the letter.

21 Q All right. And that during his years, Mr. Jolly  
22 estimated he was in the vicinity of construction  
23 workers mixing joint compound and sanding the compound  
24 20 to 25 percent of his time, correct?

25 A You know, I don't recall the exact estimate of

1 that, but I am not disputing that. I simply don't  
2 remember the precise number.

3 Q Do you have the letter in front of you?

4 A Oh, yes, sir. I can now -- the last -- I can see  
5 now the last paragraph on the first page does use the  
6 estimate of 20 to 25 percent. Pardon my error on that.

7 Q It's all right. Perfectly understandable. And  
8 that the plaintiff recalled Georgia Pacific and Kaiser  
9 Gypsum as the manufacturers of the joint compound he  
10 delivered for Getty's Lumber?

11 A Yes, sir, that's correct.

12 Q And then we took your deposition a day later, on  
13 June 13, 2017. It was your opinion to a reasonable  
14 degree of medical certainty that the exposure to joint  
15 compound by Georgia Pacific and Kaiser Gypsum in and of  
16 itself was sufficient to cause his mesothelioma?

17 A Well, I said that, that would, if that was the  
18 only exposure that would have been known, that I would  
19 attribute the mesothelioma to those exposures because I  
20 consider them to be significant exposures. However, if  
21 there are other significant exposures as well, I would  
22 certainly also include those in my causation statement.

23 Q Doctor, I believe you understand that Mr. Jolly  
24 claims exposure to a variety of different asbestos  
25 products?

1 A Yes, sir, I do.

2 Q Have you attempted to determine a comparative dose  
3 from one product to another?

4 A No, sir, I have not. That is the type of  
5 procedure that's done by an industrial hygienist, and I  
6 have neither the training nor the experience to do that  
7 myself.

8 Q Okay. Doctor, there was some mention of  
9 epidemiology during your discussion with Ms. McVey. Do  
10 you recall that?

11 A Yes, sir.

12 Q You're not an epidemiologist, are you?

13 A That is correct. I'm not an epidemiologist, but  
14 in the study of asbestos-related diseases, I have come  
15 across many epidemiological articles that have  
16 discussed exposures and attribution and so forth.

17 Q Okay. Now, Doctor, you have the opinion that work  
18 with thermal insulation provides an extremely high rate  
19 of mesothelioma in those that engage in that activity?

20 A Yes, sir, that's correct. It varies depending  
21 upon -- upon the exposure of the people in that group.  
22 People that have used some products for many years will  
23 have a greater risk of mesothelioma than other people  
24 that have used other products for a lesser period of  
25 time. And I would agree that, overall, pipe insulation



1 work, boiler insulation work does give a fairly high  
2 risk of rate of mesothelioma.

3 Q In the past I've asked you that question, and you  
4 have cited the work by Dr. Selikoff and others that  
5 indicate almost a ten percent incidence of mesothelioma  
6 in those workers?

7 A Yes, sir. In the insulators union group, people  
8 that were doing insulation work of this sort, there is  
9 an incidence of up to ten percent in the long term,  
10 heavily exposed workers.

11 Q Okay. Doctor, you have not been asked to treat  
12 Mr. Jolly or participate in his treatment, have you?

13 A No, sir, I have not.

14 Q And you have not met either Mr. Jolly or his  
15 family?

16 A That's correct, sir.

17 Q And as far as this particular case goes, you have  
18 had no discussion with any other expert, plaintiff or  
19 defendant, about Mr. Jolly's case?

20 A That is correct, sir.

21 Q And all the exposure information you have been  
22 given has been from the lawyers involved in the case;  
23 is that correct?

24 A The exposure information that I've received has  
25 been from the attorneys and also what little may have

1 been in the medical records that I did review  
2 personally.

3 Q Okay.

4 A I don't think there's -- there's not much detail  
5 in the records.

6 Q Fair enough. The medical records and the lawyers  
7 have provided you with what exposure information you  
8 have been provided, correct?

9 A Yes, sir, that's correct.

10 Q And you have not reviewed Mr. Jolly's deposition  
11 testimony, have you?

12 A I have not. I was not asked to be an exposure  
13 witness in this case because I was told other people  
14 were doing that.

15 Q You have not reviewed the depositions of  
16 Mr. Taylor, Mr. Simpson, Mr. Freeman, or Mr. Rogers,  
17 who have been identified as additional fact witnesses  
18 on his exposure, have you?

19 A I do not recall reviewing their depositions.

20 Q And you have not reviewed Mr. Jolly's trial  
21 testimony given in this case either, have you?

22 A No, sir, I have not.

23 Q Dr. Maddox, you and I have discussed this before  
24 on several occasions. The jury has heard some  
25 testimony that there is in the literature, and I

1 believe you have expressed it in the past, that  
2 exposure of even one day to asbestos could be  
3 significant enough to cause mesothelioma, correct?

4 A Well, there have been a few case reports, reports  
5 and individual cases that are in the medical literature  
6 where extremely short exposures of a day or a week or a  
7 month have been the only known exposures in some  
8 malignant mesotheliomas; however, I would strongly  
9 state that there is a dose response. The people with  
10 larger cumulative exposures have a higher rate of  
11 mesothelioma, and the people with very short exposures  
12 have a very low rate of malignant mesothelioma.

13 Q And I believe you and I have discussed animal  
14 studies in the past, and you have cited to me  
15 Dr. Wagner's study of rats in support of your opinion  
16 that high doses for short periods of time indicate a  
17 causal relation of exposure to chrysotile in the  
18 development of mesothelioma; is that not correct?

19 A Well, I don't recall the precise details of  
20 Dr. Wagner's study, but I do know there are a number of  
21 animal experiment studies out there where animals have  
22 had an intraperitoneal injection of one type of  
23 asbestos or another, and they have developed malignant  
24 mesothelioma.

25 Q And the animal studies having inhalation of

1 chrysotile by both Dr. Wagner and later by Dr. Brody in  
2 which these animals were subjected to thousands of  
3 fibers per cc over a period of six months, over seven  
4 hours per day, those studies did not result in any  
5 mesotheliomas as a result of that chrysotile exposure,  
6 did they?

7 A You know, it would be difficult for me to recall  
8 the exact results of those studies. My memory just  
9 isn't sufficient to bring that information to my mind,  
10 sir. I beg your pardon.

11 Q That's all the questions I have, Doctor. Thank  
12 you.

REDIRECT EXAMINATION

14 BY MS. McVEY:

15 Q Dr. Maddox, just a couple of follow-ups if I  
16 could.

17 A Yes, ma'am.

18 Q Do you routinely rely on epidemiological studies  
19 and articles in your field, in your practice?

20 A Yes, ma'am.

21 Q And do others in your field routinely review and  
22 rely on epidemiological studies?

23 A It's my belief that they do, yes, ma'am.

24 Q And, Dr. Maddox, does insulation need to have  
25 asbestos in it to cause asbestos-related disease?

1 A Well, yes, it does. I mean, there are some types  
2 of insulation that just have calcium silicate binder in  
3 it without having actual asbestos in it, and those have  
4 not been shown to be causative of malignant  
5 mesothelioma. Now --

6 Q Thank you, Dr. Maddox. Sorry.

7 A I was going to continue that the thought of --  
8 with the thought that there's an old article by Balzer,  
9 B-a-l-z-e-r, and Cooper in which they list the six  
10 different types of thermal insulation that were used  
11 back in the 1950s, '60s, '70s and '80s. And, you know,  
12 some contained asbestos; some did not. Some had high  
13 concentrations; some had low concentrations.

14 Q Typically, in order to cause asbestos-related  
15 disease, the thermal insulation would need to have  
16 asbestos in it, correct?

17 A Yes, ma'am. That would be part of the definition,  
18 in my opinion.

19 Q Thank you, sir. Those are my questions.

20 RE CROSS-EXAMINATION

21 BY MR. BOUCH:

22 Q Doctor, I have one question. You still there?

23 A I am yes, sir. I'm right here.

24 Q Doctor, you mentioned the animal injection studies  
25 when we spoke earlier. Do you recall that?

1 A Yes, sir.

2 Q Those animal injection studies were also able to  
3 create mesothelioma in those animals when injected with  
4 nonasbestos substances such as fiberglass, ceramics,  
5 things of that nature, correct?

6 A Yes, sir. Some mesotheliomas were observed with  
7 other substances, generally in much lower rates, but  
8 nonetheless, that is correct.

9 Q Thank you, sir. That's all I've got.

10 A Yes, sir. Thank you.

11 THE COURT: All right, Mr. Holder. You may step  
12 down.

13 That concludes the deposition of Dr. Maddox.  
14 Plaintiffs?

15 MS. FARRISE: Your Honor, plaintiffs would offer  
16 into evidence a few more documents.

17 THE COURT: All right.

18 MS. FARRISE: Plaintiffs would offer  
19 Exhibit 6364.07, which is a letter from Fisher Controls  
20 to Mill Power Supply produced with the Duke documents.

21 THE COURT: All right.

22 Defendants?

23 MR. BOUCH: No objection, Your Honor.

24 THE COURT: No objection? Admitted, Plaintiffs'  
25 6364.07.

1           (WHEREUPON, Plaintiffs' Exhibit Number 6364.07 was  
2 admitted into evidence.)

3           MS. FARRISE: Thank you, Your Honor.

4           Plaintiffs would also offer what we've labeled as  
5 1008.10670.

6           JUROR: Excuse me, Your Honor. May we have a  
7 ten-minute break?

8           THE COURT: All right. Ms. Farrise, the jury has  
9 requested that they be given a break right now.

10          MS. FARRISE: Certainly.

11          THE COURT: Absolutely, you may. Jury, we'll call  
12 you back about 15 minutes after 4:00.

13          JUROR: Thank you so much.

14          (WHEREUPON, the jury exited open court at  
15 4:03 p.m.)

16          THE COURT: You're probably right at the end of  
17 putting in your documents.

18          MS. FARRISE: Just a few more.

19          THE COURT: Be that as it may.

20          (WHEREUPON, a recess was taken from 4:03 p.m. to  
21 4:15 p.m.)

22          MR. McLEOD: Continuing objection to them entering  
23 documents without a witness on the stand to lay the  
24 foundation. In addition, we would move, just for the  
25 record, to strike Maddox's testimony, Dr. Maddox's

1 testimony, based on the same, every exposure and  
2 reasons that we've already argued thoroughly in this  
3 court.

4 THE COURT: Yes. Thank you, and you're protected  
5 on the record on both of those points. No problem  
6 about continuing to be sure. All of that is noted.

7 MR. McLEOD: And I would suppose the documents  
8 that they're trying to admit, Fisher, the Fisher  
9 representative was here.

10 THE COURT: I understand, and we've plowed that  
11 ground, of course, before the Fisher representative  
12 testified, and they're admitted over your objection,  
13 and it's completely protected in the record. No  
14 problem.

15 MR. McLEOD: Thank you, Your Honor.

16 (WHEREUPON, an off-the-record discussion was  
17 held.)

18 (WHEREUPON, the jury entered open court at  
19 4:18 p.m.)

20 THE COURT: Please be seated, ladies and gentlemen  
21 of the jury. We have a few more documents to be  
22 admitted by plaintiff, and then we'll kind of see where  
23 we're going from there.

24 So, Ms. Farrise.

25 MS. FARRISE: Thank you, Your Honor.



1            We had offered Exhibit 1008.10670. That's where  
2 we are.

3            THE COURT: All right. If you just kind of come  
4 up in this area right here as you begin to offer those  
5 documents, I bet we can --

6            THE COURT: I gave you that one.

7            THE COURT: It's a letter on Fisher stationery, as  
8 I call it.

9            MS. FARRISE: Dated July 1980.

10           THE COURT: I hope you have got your copy. I  
11 don't know where exactly mine is.

12           This is Plaintiffs' 1008.10670 on Fisher Controls  
13 Marshalltown, Iowa stationery, July 11, 1980, from Mr.  
14 Paul S. Adams, Fisher Controls, to University Hygienic  
15 Laboratory, Iowa City, Iowa?

16           Have you shown it to defendants?

17           MS. FARRISE: I have provided a copy.

18           THE COURT: Very good.

19           Defendants?

20           MR. BOUCH: Noted objection.

21           THE COURT: The noted objection.

22           MR. McLEOD: Yes, Your Honor.

23           THE COURT: Then overruled, and the document will  
24 be admitted.

25           (WHEREUPON, Plaintiffs' Exhibit Number 1008.10670

1 was admitted into evidence.)

2 MS. FARRISE: It says, "Dear Ivan, enclosed are  
3 two gaskets for your use as bulk samples. As I stated  
4 in our recent telephone conversation, I mailed four  
5 asbestos samples to you for analysis. Sample 3 was  
6 taken while flat black gaskets were being packed and  
7 Number 4 while spiral-wound, parenthesis, blue, end  
8 parenthesis, gaskets were being packed. Both gasket  
9 types were being handled when Samples Number 1 and  
10 Number 2 were taken. The asbestos types used on these  
11 gaskets are probably chrysotile and crocidolite. More  
12 specific information on the asbestos types used is not  
13 readily available. Sincerely, Fisher Controls, Paul  
14 Adams, facilities and equipment engineering."

15 And we would offer into evidence 100.10665. It's  
16 a Fisher Controls letter dated July 9, 1980.

17 THE COURT: This is a letter, as you say, and  
18 attached to it are Fisher Controls Control Sampling  
19 Analysis Data Sheet 1, 2, 3, 4, and then another letter  
20 dated July the 25th, 1980, from Mr. I.A. Schwabbauer,  
21 chief of occupational health and air quality,  
22 University of Iowa to Mr. Paul Adams, facilities and  
23 equipment engineering, Fisher Controls Company,  
24 Marshalltown, Iowa.

25 MS. FARRISE: Yes.

1            THE COURT:    Defense?

2            MR. BOUCH:    Subject to our earlier objection, Your  
3 Honor.    Nothing further.

4            THE COURT:    Very good.    The documents will be  
5 admitted.

6            (WHEREUPON, Plaintiffs' Exhibit Number 1008.10665  
7 was admitted into evidence.)

8            MS. FARRISE:    Just so the jury can see it.    Fisher  
9 Controls to University Hygienic Laboratory.

10           "Dear Ivan, enclosed are four samples requiring  
11 analysis for asbestos.    Accompanying these samples are  
12 copies of the sampling analysis data sheets for your  
13 reference and other information.    Sincerely, Fisher  
14 Controls, Paul Adams, equipment and facilities  
15 engineering."

16           Your Honor, my colleague, Mr. Holder, has just a  
17 couple more documents.    I would offer to read one  
18 single interrogatory from Crosby Valves, Number 31.  
19 And not to even publish it, just to read it into the  
20 record, the question and the answer.

21           THE COURT:    These are interrogatories to Crosby  
22 Valve, Inc., dated May 29th, 2008, verified by  
23 Mr. Robert Martin, and Ms. Farrise is reading from  
24 Interrogatory Number 31?

25           MS. FARRISE:    A.

1           THE COURT:   A?

2           MS. FARRISE:   Yes.   "Question" --

3           MR. REID:   Your Honor, can I just have a moment to  
4 read it before --

5           THE COURT:   Certainly.   Certainly.

6           MR. REID:   Which part is being offered?

7           MS. FARRISE:   31(a).

8           THE COURT:   On Page 19.

9           MR. REID:   Okay.   Proceed.

10          MS. FARRISE:   Interrogatory Number --

11          THE COURT:   Hang on with me for a second.   I'm  
12 going to use this thing so I may snap them together  
13 here.

14          All right, Ms. Farrise.

15          MS. FARRISE:   Interrogatory Number 31 to Crosby  
16 Valve:   "Question, if your answer to any subpart of  
17 Interrogatory Number 31 regarding asbestos-containing  
18 products is in the affirmative, state:   A, the trade  
19 brand name and/or generic name of each such  
20 asbestos-containing product marketed in any form or  
21 quantity between 1930 and 1985."

22          Response to A:   "The valves were manufactured  
23 under the Crosby Valve, Ashton Valve, Sage and valve  
24 trade names."

25          And that completes my offer, and my colleague,

1 Mr. Holder, has a couple of things to offer.

2 MS. FARRISE: Thank you.

3 THE COURT: Mr. Holder.

4 MR. HOLDER: First is the last thing of Duke  
5 invoices. Here it is. It's for Catawba for Crosby.  
6 And it's Exhibit 6395. And I don't need to publish  
7 them to the jury. We just want to admit them for the  
8 jury because they have been referred to.

9 THE COURT: Counsel for the defense, take a moment  
10 to look at that and see if there's any objection.

11 MR. BOUCH: I think just subject to our earlier  
12 objections, Your Honor.

13 THE COURT: Your already stated objections.

14 Mr. Holder, they will be admitted.

15 (WHEREUPON, Plaintiffs' Exhibit Number 6395 was  
16 admitted into evidence.)

17 MR. HOLDER: There were four exhibits that came in  
18 and were shown as part of the David Taylor deposition  
19 video, and I just wanted to enter those into evidence  
20 officially, and I can show them.

21 THE COURT: Show them all to counsel, and we'll --

22 MR. HOLDER: I have copies for them.

23 THE COURT: I take it they're individually  
24 numbered?

25 MR. HOLDER: Yes, ma'am.

1 THE COURT: Good.

2 MR. HOLDER: Again, I think these have already  
3 been shown to the jury during the deposition.

4 THE COURT: That is 943.4, an exhibit shown to  
5 Mr. Taylor in his deposition.

6 Counsel, any objection?

7 MR. McLEOD: Your Honor, I think we've already  
8 been over these. There's no objection other than --

9 THE COURT: Other than the standing objection  
10 we've got.

11 (WHEREUPON, Plaintiffs' Exhibit Number 943.4 was  
12 admitted into evidence.)

13 MR. HOLDER: The next one is a brush, 943.5.

14 THE COURT: That, of course, was also shown during  
15 Mr. Taylor's deposition.

16 Same position by defense; the exhibit is admitted.

17 (WHEREUPON, Plaintiffs' Exhibit Number 943.5 was  
18 admitted into evidence.)

19 MR. HOLDER: The next one is 943.6 and same --

20 THE COURT: And 943.6, again, this is out of the  
21 Taylor deposition. This is a flange gasket.

22 MR. HOLDER: Yes, Your Honor.

23 THE COURT: And the same objection from defense,  
24 and subject to that, it's admitted.

25 (WHEREUPON, Plaintiffs' Exhibit Number 943.6 was

1 admitted into evidence.)

2 MR. HOLDER: Thank you, Your Honor.

3 MR. McLEOD: Thank you, Your Honor.

4 MR. HOLDER: The last one from Mr. Taylor's  
5 deposition is 943.7.

6 THE COURT: A showing of gasketing material on a  
7 flange, four-bolt flange.

8 Subject to the same objection, admitted.

9 (WHEREUPON, Plaintiffs' Exhibit Number 943.7 was  
10 admitted into evidence.)

11 MR. McLEOD: Thank you, Your Honor.

12 MR. HOLDER: Thank you, Your Honor.

13 Finally, these are exemplars of the worksites.

14 MR. BOUCH: No problem with these, Your Honor.

15 THE COURT: No problem with those?

16 MR. BOUCH: No, ma'am.

17 THE COURT: Admitted. That's exemplar photographs  
18 of Catawba.

19 (WHEREUPON, Plaintiffs' Exhibit Number 935.1 was  
20 admitted into evidence.)

21 MR. HOLDER: This one is Oconee, 935.1.

22 THE COURT: Aerial photography of Oconee.

23 MR. HOLDER: 935.2.

24 THE COURT: 935.2.

25 MR. HOLDER: Is Catawba.

1 THE COURT: Aerial photograph of Catawba.

2 MR. HOLDER: And 935.3 is McGuire.

3 THE COURT: 935.3. This is a frontal photograph  
4 over a settling pond or body of water at the plant  
5 looking at the Units 1 and 2 of McGuire.

6 MR. HOLDER: Yes, Your Honor.

7 MR. BOUCH: I think the one they have Catawba is  
8 actually Cherokee, but I really don't care. It doesn't  
9 matter.

10 MR. HOLDER: I thought it was Catawba.

11 MR. BOUCH: If they want to call it Catawba, they  
12 can call it Catawba.

13 MR. HOLDER: It's plaintiffs' position that it's  
14 Catawba. I'm kidding.

15 THE COURT: I just saw the three units there but  
16 other than that, I take you generally at your word.

17 (WHEREUPON, Plaintiffs' Exhibit Number 935.2 was  
18 admitted into evidence.)

19 (WHEREUPON, Plaintiffs' Exhibit Number 935.3 was  
20 admitted into evidence.)

21 MR. HOLDER: Yes, Your Honor. The last thing that  
22 plaintiffs would just like to do is that there's  
23 been -- we got an exhibit list from the court reporter  
24 today of exhibits that were identified and been entered  
25 to date. There were several that were identified that



1 have not been moved into evidence, and except for those  
2 that you have actually made rulings upon that were  
3 excluded or were specifically for identification and  
4 specifically not to go back to the jury, for all the  
5 others we would ask that those be admitted into  
6 evidence that have been identified.

7 THE COURT: Those have been identified. They have  
8 the same objection attached to them, and you're going  
9 to give a list of them to Mr. McLeod?

10 MR. HOLDER: He's got the list.

11 MR. McLEOD: Your Honor, I don't know -- I'm not  
12 exactly sure what he's talking about.

13 THE COURT: He's talking about exhibits that were  
14 actually identified by someone, and they thought they  
15 had been moved into evidence, but they're doing  
16 housekeeping now, and they represent to the court that  
17 these were documents that had been identified --

18 MR. McLEOD: The court reporter handed us a list  
19 because there has been a lot of confusion as to which  
20 exhibits and numbers, and we were trying to work with  
21 her, of course, to figure out what exhibits had been  
22 admitted. To the extent that --

23 MR. BOUCH: Your Honor, we can do this when the  
24 jury is gone.

25 THE COURT: Certainly. We can do this when

1 they're gone, and the two of y'all can work it out, and  
2 the plaintiffs' case will remain open for the --  
3 Mr. Bouch, Mr. McLeod, and Mr. Holder, the plaintiffs'  
4 case, even after the plaintiff rests, will remain open  
5 for the limited purpose of getting these exhibits  
6 straight.

7 MR. BOUCH: Perfectly fine.

8 MR. McLEOD: Sure.

9 THE COURT: If there are dilemmas, why you can let  
10 me know that tomorrow morning.

11 MR. HOLDER: Thank you, Your Honor.

12 THE COURT: All right.

13 Now, what say the plaintiff?

14 MR. HOLDER: The plaintiffs at this time rest  
15 their case-in-chief, Your Honor.

16 THE COURT: Thank you, Ms. Farrise.

17 Ladies and gentlemen of the jury, plaintiffs have  
18 now rested their case, and the next thing that will  
19 happen is that the attorneys will speak with me about  
20 various motions that will be made, and then the  
21 defendants' case will commence.

22 I'm going to let y'all go for the day, and then  
23 we'll start off fresh tomorrow morning with the  
24 defendant, the beginning of the defendants' case.

25 I have a lot of things to talk with the lawyers

1 about, some that relate to various motions, and others  
2 relate to the issue of my charge to the jury, and both  
3 sides have been submitting information to me about  
4 that. And I may -- I'm going to have you come in at  
5 9:30. I was thinking about earlier, but I'm going to  
6 have you come in at 9:30 with the idea that I may meet  
7 with the attorneys earlier about the charges.

8       So that's what we'll be doing. And I'll tell you,  
9 your ears should be burning is all I have to say. My  
10 husband is a lawyer, as am I. We graduated together  
11 shortly after we were married 49 years ago, and married  
12 the year before we graduated and then loosed upon the  
13 world 49 years ago. And so, of course, I've told Bill  
14 about y'all and how impressed I am. The two of us have  
15 each had long careers trying cases in front of many,  
16 many juries. This is such a technical matter, and I  
17 just continue to be really so awed at the attention  
18 that you are paying to this matter of great importance  
19 to the parties who are bringing it to you. It just  
20 proves once again to me the wonderful thing that we  
21 have in this country of a jury trial. You're just  
22 citizens of this county like I'm a citizen of Richland,  
23 and we're together trying to create an atmosphere in  
24 which this complex matter can be tried and a verdict  
25 reached, and you're really taking it in the way that

1 great Americans take it. You are the great Americans,  
2 and I'm so impressed with you. Thank you so much.

3 Have a good evening.

4 (WHEREUPON, the jury exited open court at  
5 4:35 p.m.)

6 THE COURT: All right. Who would like to begin?  
7 Mr. Reid, would you speak first for the defense?

8 MR. REID: Yes, Your Honor. I have a written  
9 motion for directed verdict.

10 THE COURT: Thank you. Wonderful.

11 MS. McVEY: Your Honor, I haven't seen that, so  
12 it's hard for me to respond to it.

13 THE COURT: They're bringing it to you right now.

14 MS. McVEY: Your Honor, before you get started, I  
15 assume they have had this all day. It's 35 pages long.

16 THE COURT: Well, I'm in the same boat you are,  
17 which is that I'm just seeing it, and so what I propose  
18 we do is hear from Mr. Reid at least briefly about it,  
19 and we can do this one of two ways. We have got a lot  
20 of work to do with those charges, and I want to spend  
21 some time tomorrow doing that, but I really appreciate  
22 the lengthy memorandum because it's going to give me a  
23 chance to do a little cogitation rather than be  
24 completely off the hip about it.

25 One thing that I would appreciate so much,

1 Mr. Reid, or, Mr. McLeod, if you could e-mail me this  
2 document so I will have it in e-mail form and I can  
3 send it to Josh.

4 MR. REID: We'll do that, Your Honor.

5 THE COURT: And that will help me at least have  
6 one other set of eyes upon it. And, obviously, you  
7 would give a hard copy or e-mail to them as well.

8 Ms. McVey, what I propose to do is let them just  
9 give me kind of a brief overview, and that gives you  
10 some concept about kind of the general landscape, and  
11 you can either respond to that now, or you can wait  
12 until in the morning to respond to that. I'm,  
13 obviously, going to study these materials and not going  
14 to rule on it.

15 And, Mr. Reid, if you would prefer to wait until  
16 tomorrow to make your presentation, that, of course, is  
17 also very acceptable because I certainly do want to  
18 have a chance to study these materials, and it might be  
19 very well to simply study them and let you give a  
20 complete projection tomorrow, that would at least give  
21 Ms. McVey and her colleagues the chance to, A, decide  
22 what they would want to say upon the record; and, B, if  
23 they decide there's anything they want to file, why  
24 they can do so.

25 So that would be my current plan unless either

1 side has an objection to my handling it that way.

2 First you, Mr. Reid.

3 MR. REID: Thank you, Your Honor. I'm happy to  
4 give the oral presentation right now. Whether I go  
5 today or tomorrow, my intention is to have the brief  
6 serve as the primary focus and to incorporate by  
7 reference what we have there when I give you the verbal  
8 presentation.

9 And if you would like, I could give mine today and  
10 wait for them to speak to you tomorrow. That way, at  
11 least, we'd fill the day. So I'm ready to proceed if  
12 you would like me to address the issues we have.

13 THE COURT: I'm going to turn to Ms. McVey for a  
14 minute.

15 Ms. McVey.

16 MS. McVEY: Your Honor, obviously, if you would  
17 like a written response to this, we would like to get  
18 one to you. I'm not even sure I can do it by the  
19 morning, to be honest, to respond in this depth, but we  
20 can do something. If the main points are those bullet  
21 points found on Pages 1 and 2 --

22 THE COURT: That's what I take it to be, and I  
23 have just done the quickest little flip-through you  
24 have ever seen in your life. I am a speed reader, but  
25 even I cannot pretend to be Ernest Connor in that

1 regard, so I'm thinking these points are the points  
2 that they wish to make, and they're made well enough  
3 here that if you wanted to not truncate matters,  
4 Mr. Reid, but rather start off fresh tomorrow, that  
5 would be fine with me.

6 MR. REID: We could do it that way.

7 THE COURT: Here is what I suggest. Could we come  
8 in at 8:30?

9 MS. McVEY: Sure.

10 THE COURT: Is that acceptable to everyone?

11 MR. REID: Yes.

12 THE COURT: I think that would be well. That  
13 would give us all a chance to look at this and really  
14 be honed in on the points of importance and me a chance  
15 to look at the authorities and so forth and at least  
16 try to be prepared to react in a good way.

17 So, let's do it that way, and that means we'll  
18 adjourn now and be back here in this courtroom, Marcia,  
19 if we may, at 8:30, if that's okay.

20 THE CLERK: Yes, Your Honor.

21 THE COURT: Very good. And then we'll move  
22 forward from there.

23 Let's kind of see how we get along with this case  
24 to decide when it is we're going to talk about the  
25 charges. I won't force you to do that. We'll get the

1 motions out of the way, and then your case, the defense  
2 case, can proceed, and then we'll talk about when it is  
3 we're going to put our heads together about the  
4 charges.

5       Theile has just sent me her charges, and I'm sure  
6 she's sent them to you as well, with headers on them so  
7 I will be able to match them up with yours a little  
8 more conveniently.

9       MR. McLEOD: Did you receive ours that we sent  
10 earlier?

11       THE COURT: I did. Thanks very much, Yancey.  
12 I've got all of that. I've got two things I'm wanting  
13 to at least do a little bit of looking at tonight.

14       MS. McVEY: So in the morning we'll be prepared to  
15 argue directed verdict at 8:30, and then at 9:30 the  
16 jury is coming in, and I don't know what order, but we  
17 have Dr. Oury's video. We have --

18       THE COURT: I think what he wants to do, now that  
19 we've gone over the day, he wants to start with a  
20 substantive in-person witness. Am I right, Mr. Bouch?

21       MR. BOUCH: We'll have one of our two witnesses up  
22 first, then the video. Ms. Sahmel and Dr. Crapo, the  
23 two live witnesses.

24       THE COURT: So you'll have your live witnesses,  
25 and somewhere in that you'll put in the deposition of



1 Dr. Oury. And then what else have we got?

2 MR. BOUCH: That's it.

3 THE COURT: Wonderful. That's going to give us --  
4 thank you very much for that. That's very organized  
5 and very well done. And we can see what we need to do  
6 about post defendant's case motions, of course, as well  
7 as spend a little bit of time on these charges.

8 MR. BOUCH: The only -- and I may be a little  
9 early, Your Honor, but I'm optimistically thinking I'll  
10 finish tomorrow. And I'm not asking them to commit,  
11 but do the plaintiffs have any --

12 THE COURT: Have y'all got anything in reply that  
13 you know about right now?

14 MS. McVEY: I don't -- we need to talk about it,  
15 but nothing definite.

16 THE COURT: So it sounds more the answer is no  
17 than the answer is yes, but we'll --

18 MR. BOUCH: I understand, Your Honor. I just  
19 didn't know if there was something they had in mind.

20 THE COURT: I don't think they have got any  
21 definite plans at the moment.

22 MR. BOUCH: Right now I'm more concerned about the  
23 Marriott letting us stay past Wednesday than anything  
24 else. That's all I'm concerned with.

25 THE COURT: Do they have a logjam?

1 MR. BOUCH: I don't know if they have got a  
2 logjam, but I haven't consulted with them yet, though  
3 we've been a pretty good customer last couple of weeks.

4 MR. HOLDER: They got a lot of Panther's fans  
5 coming in for the camp.

6 THE COURT: Okay. Thank you very much. And,  
7 again, our thanks to all of you for the very  
8 professional way you're handling this and handling your  
9 jury. This is a very diverse group of people, but I am  
10 impressed with the way in which they're handling this  
11 matter and attentiveness. It's an awful lot for  
12 laypeople to keep their attention on, but I think  
13 they're making a valiant effort to be serious and  
14 attentive as a tribute to y'all as well. So thank you  
15 very much.

16 (WHEREUPON, proceedings adjourned at 4:44 p.m.)  
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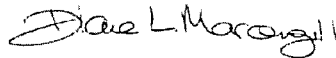
Certificate of Reporter

I, Diane L. Marcengill, Official Court Reporter  
for the Tenth Judicial Circuit of the State of South  
Carolina, do hereby certify that the foregoing is a  
true, accurate, and complete transcript of record of a  
portion of the proceedings had and evidence introduced  
in the trial of the captioned case, relative to appeal,  
in the Circuit Court for Spartanburg County, South  
Carolina, on the 31st day of July 2017.

This transcript may contain quoted material. Such  
material is reproduced as read by the speaker.

I do further certify that I am neither of kin, counsel,  
nor interest to any party hereto.

November 4, 2017



\_\_\_\_\_  
Diane L. Marcengill, RPR, CRR  
Circuit Court Reporter

1 State of South Carolina  
2 County of Spartanburg

In the Court of Common Pleas

4 Beverly Dale Jolly and  
5 Brenda Rice Jolly,

6 Plaintiffs,

7 -vs-

8 Crosby Valve, LLC and  
9 Fisher Controls  
International, LLC,

10 Defendants.

2016-CP-42-1593

August 1, 2017

Volume 7 of 9  
Pages 1368 - 1658

Transcript of Record

11

12

13 B E F O R E:

14 The Honorable Jean Hoefer Toal, Judge;  
15 and a jury.

16 A P P E A R A N C E S:

17 Theile McVey, Esquire  
Kassel McVey  
18 Jonathan M. Holder, Esquire  
Dean Omar Branham  
19 Simona A. Farrise, Esquire  
Farrise Law Firm  
20 Attorneys for Plaintiffs

21 Timothy W. Bouch, Esquire  
Yancey A. McLeod, Esquire  
22 Leath, Bouch & Seekings  
Philip C. Reid, Esquire  
23 Von Briesen & Roper  
24 Attorneys for Defendants

25

Diane L. Marcengill, RPR, CRR  
Circuit Court Reporter

Motions  
 Jolly v. Crosby Valve, LLC & Fisher Controls, LLC 2016-CP-42-1593

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E x h i b i t s

For the Plaintiffs:

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|--------|------------------------|------|----------|
| 6385   | Biography of Dr. Crapo |      | 1466     |

For the Defendants:

| Marked    | Description                                              | I.D. | Admitted |
|-----------|----------------------------------------------------------|------|----------|
| Crosby 66 | CV of Jennifer Sahmel,<br>MPH, CIH, CSP                  |      | 1579     |
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| Fisher 74 | University of Iowa Test<br>data from I.A.<br>Schwabbauer |      | 1642     |

1           (WHEREUPON, court convened with all parties  
2 present and the following proceedings were had  
3 commencing at 8:30 a.m.)

4           MR. REID: Good morning. And thank you, Your  
5 Honor.

6           Just at the outset, I want to state that what I  
7 think I'll do is incorporate my brief by reference.  
8 I'm relying on that, don't want to waive anything by  
9 not talking about it. I presume you have read it --

10          THE COURT: I have.

11          MR. REID: -- and don't need argument about every  
12 point within the brief.

13          We have, I think, essentially seven motions within  
14 the brief asking for a directed verdict on various  
15 points. The first is for a directed verdict on the  
16 failure to warn claim. There are various bases within  
17 that, by reading the brief, we're asking for that  
18 relief.

19          One is that the risk was open and obvious to  
20 Mr. Jolly. He testified that he was aware of the  
21 hazard of asbestos by virtue of it being posted by Duke  
22 from the day he started at Duke and continually through  
23 the time that he finished. The period of work that  
24 we're focused on here, which is the 1980 to '84 period,  
25 and under the case law, we think we're entitled to

1 relief under his acknowledgement of the risk.

2       Secondly, we think the sophisticated intermediary  
3 doctrine or rule applies here. We encourage the court  
4 to adopt the elements of the Webb case. We note that  
5 Duke was as sophisticated a customer as possible. This  
6 was a nuclear power plant, after all. They had posted  
7 warnings about asbestos before the period that  
8 Mr. Jolly worked there, and as Dr. Frank acknowledged,  
9 there was nothing we could tell them about asbestos  
10 that they didn't already know.

11       There's also no proof that valves were in the same  
12 condition as when shipped. At the time Mr. Jolly  
13 encountered them, to the extent they -- I don't know if  
14 the plaintiffs in this case are blaming insulation, but  
15 at the time of their opening statement, they don't seem  
16 to have done that, but to the extent they're suggesting  
17 that our valves used insulation or employed flange  
18 gaskets, neither of which our clients provided, and are  
19 blaming for us for that, we think that principle that  
20 we did not -- that the valves were not in the same  
21 condition as when shipped would provide relief for us.

22       And then, of course, we also are asking the court  
23 to grant relief on this duty to warn claim by virtue of  
24 the fact that the plaintiffs have not proved that the  
25 lack of a warning was a proximate cause of injury to

1 Mr. Jolly.

2 And in that regard, I wanted to emphasize the  
3 factors that we outlined at Pages 12 and 13 of our  
4 brief. There's no proof about a warning -- what a  
5 warning from either Fisher or Crosby should have said;  
6 no proof about where such warning should have been  
7 displayed; no proof about who would have seen it, which  
8 I think is significant in Mr. Jolly's case since this  
9 is a bystander case; no proof what any person would  
10 have done in response to a warning; and no proof how it  
11 would have impacted his alleged exposure or how he  
12 would have responded to it.

13 In fact, one thing that I think was dramatic here  
14 in a sense was there were no questions directed to  
15 Mr. Jolly in this trial and no other proof submitted on  
16 this point of what he would have done had he seen a  
17 warning.

18 So that's as much as I wanted to add on the oral  
19 record this morning on that point, Your Honor. I don't  
20 know if you would prefer me to continue on to the other  
21 specific motions we have or address them one by one.

22 THE COURT: Why don't we start with your first,  
23 which is your failure to warn.

24 You have pointed out the case that I think  
25 controls -- I know you do not -- but *Lawing vs. Univar*



1 is the case that I think is the latest discussion by  
2 the South Carolina Supreme Court about *Bragg* and how it  
3 interacts with the sophisticated intermediary doctrine.

4 The focus is on labeling in *Lawing*, and that is  
5 one of the contentions that is made here, and the  
6 employer's knowledge about asbestos does not affect the  
7 obligation of the supplier in that regard.

8 And here there is at least enough evidence to meet  
9 the standard of looking at the evidence in the light  
10 most favorable to the nonmoving party to suggest that  
11 both these valve companies well knew that asbestos was  
12 used in their products, that they either placed some of  
13 the asbestos-containing materials in their products or  
14 knew that the flanges on their products would have to  
15 be insulated, and the real telling aspect of that is  
16 that they, the valve companies, some evidence that they  
17 at some points, particularly Fisher, supplied them with  
18 the initial delivery of the valves, but in both the  
19 Crosby and the Fisher case, the way the purchaser,  
20 Duke, received replacement parts was to order them from  
21 Crosby, and the fact that Crosby chose to use a  
22 supplier to supply the materials it sent to Duke does  
23 not absolve it of its failure to warn.

24 I think there's evidence to suggest that both  
25 valve companies well knew that in the ordinary course

1 of using these valves that takedowns would occur, and  
2 the gaskets would be removed, and new gaskets would be  
3 placed in the valves, and sometimes new packing, and  
4 they well understood the methodology that would be used  
5 to remove those gaskets that involved grinding and use  
6 of brushes and even just using rubber gloves and  
7 lifting the gaskets off. I thought the video was very  
8 revealing that there was obvious flaking off and  
9 flaking off of asbestos material from those ring valves  
10 when the demonstration was made of how you removed  
11 them, and that just sat there on the table and, you  
12 know, that is what is contended was the problem here.  
13 All right.

14 Mr. Jolly is not a simple bystander. He's a  
15 participant in the process that involved the removal  
16 and replacement of these valves, and the suggestion  
17 that kind of a bare metal defense as a way of getting  
18 out of having any responsibility for the designing and  
19 supplying of asbestos-containing materials as a part of  
20 the use of valves supplied by these two valve  
21 manufacturers is not something that I would embrace.  
22 Judge Hill and the cases that he has tried has not  
23 embraced that defense. We had motions before the case  
24 began about that, and I indicated that I would not  
25 accept the concept of bare metal. Even Judge Norton,

1 who initially accepted that notion, has retreated from  
2 it in the federal venue.

3       So for all those reasons on this -- and I realize  
4 some of the concepts I'm discussing will have impact on  
5 some of the other rulings that have been made, but I  
6 think failure to warn is not something I would grant a  
7 directed verdict on, so that motion is denied on issue  
8 number one.

9       MR. REID: Thank you, Your Honor.

10       Our second motion is a request for a directed  
11 verdict on the design defect claim. The plaintiff is  
12 obligated to show that our product is unreasonably  
13 dangerous from 1977 forward. If there was a danger,  
14 Duke well knew how to deal with it, and for that reason  
15 and the reasons set forth in our brief, Your Honor, we  
16 think we're entitled to a directed verdict on the  
17 design defect claim.

18       THE COURT: This is a more sophisticated area, and  
19 before I make any ruling on it, Ms. McVey, I want to  
20 hear from you on this.

21       MS. McVEY: Your Honor, this is point two, and  
22 what we would argue is that plaintiffs have, in fact,  
23 met their burden on the design defect claim.

24       There are two points that they make. One is that  
25 we have to prove alternative design under risk/utility.

1 Point number one, and I don't know this even applies in  
2 this case because not only did we prove there's an  
3 alternative design, the corporate representatives came  
4 in the courtroom and testified, of course, we had  
5 alternatives. We had metal; we had rubber; we had all  
6 sorts of things that would have worked in the '50s and  
7 '60s in these valves and gaskets. The corporate rep  
8 said that yesterday, and you're well aware of that,  
9 Mr. Dumistra and Mr. Crosby -- I mean Mr. Martin, who  
10 spoke for Crosby.

11 The other point I want to make is in a failure to  
12 warn case, I don't know that the plaintiff always has  
13 to prove an alternative design. And what I mean by  
14 that is in, for example, in *Lawing*. With that case,  
15 there are some products that cannot be made safer,  
16 right, an explosive of some type. You cannot make a  
17 stick of dynamite safer by providing a safer design.  
18 It has to explode.

19 But what you can do is you can warn. And so in  
20 this case, I don't think it matters because we have an  
21 alternative design the defendants have said were  
22 available long before Mr. Jolly ever got to the Duke  
23 worksite. But, two, in a failure to warn case, I don't  
24 think that's a requirement, Your Honor, so I would say  
25 that.

1 I can go through the testimony if you would like  
2 of Mr. Dumistra and Mr. Crosby where they talk about  
3 what was available and when, and I'm happy to do that,  
4 but Mr. Dumistra in particular testified that in the  
5 '50s and '60s alternative gaskets and packing were  
6 available to consumers.

7 THE COURT: All right. I would not grant a motion  
8 for directed verdict on design defect. I agree with  
9 the discussion Ms. McVey has given of the *Brown* case  
10 and the risk/utility doctrine in that regard. I'm  
11 going to assume for purposes of my ruling that a  
12 reasonable alternative design must be shown, so I'll  
13 base my ruling on the fact that if a reasonable  
14 alternative design must be shown, both Fisher and  
15 Crosby's witnesses have shown it. Mr. Dumistra  
16 testified, as you have pointed out, that alternatives  
17 were available from a much earlier period than the sale  
18 of these parts to Duke and Mr. Jolly's exposure  
19 thereto.

20 But in addition to that, Mr. Martin testified at  
21 length using the spreadsheets that indicated from his  
22 interrogatory answers the kinds of valves that  
23 contained asbestos and when the asbestos was removed,  
24 and he -- the import of his testimony points to me, at  
25 least minimally and maybe more, makes out the case that

1 Crosby changed to no asbestos because the asbestos was  
2 dangerous, too dangerous to use in these kind of  
3 industrial settings. And they had the ability to  
4 change because from way before they had other materials  
5 that could have been used in these settings, so I will  
6 deny that motion.

7 MR. REID: Your Honor, our third motion is for  
8 directed verdict on the negligence claim. Of course,  
9 the difference between that and a strict liability  
10 claim is that in the negligence setting, the plaintiff  
11 is required to prove the standard of care and that it  
12 was breached.

13 I submit that on this record there is zero  
14 evidence going to either one of those two things.  
15 There's no evidence whatsoever. No expert testified  
16 what the standard of care was for a valve maker at the  
17 time in question; and, furthermore, no evidence from  
18 any quarter that that standard was breached. There's  
19 no evidence that warnings were the norm from valve  
20 companies, that asbestos-free valves were the norm, or  
21 that we in any way, shape, or form deviated from what  
22 other companies did or what the norm in the industry  
23 was, and so for that reason, we think both defendants  
24 are entitled to a directed verdict on the negligence  
25 claim.

1           Again, as with all my arguments, we'll incorporate  
2 what we have set forth in the brief on that issue.

3           THE COURT: Ms. McVey.

4           MS. McVEY: Your Honor, we would submit that the  
5 defendants breached the standard of care in three  
6 distinct areas. The first was in designing a valve  
7 that contained asbestos products. As we've said  
8 before, there were alternatives available, and as a  
9 result of using asbestos-containing products, the  
10 product was defective. And that's obvious. And these  
11 alternatives were available in the '50s and '60s, as we  
12 just went through.

13           The defendants also had a duty to warn of their  
14 defective and dangerous product, and they admit today  
15 that they have never, not one time, warned about the  
16 dangers of this product. And, in fact, they say our  
17 products don't need a warning. Didn't need it then and  
18 don't need it now.

19           And, finally, Your Honor, they breached the  
20 standard of care in failing to test their product. Our  
21 case law says that a manufacturer has a duty to test  
22 their product. And in this case, the defendants admit  
23 that they never tested their product. And, in fact,  
24 they want to rely on OSHA, but OSHA says you've got to  
25 test your product to determine if the asbestos is

1 friable. And if they had done that when Mr. Jolly was  
2 being exposed, they would have realized, as all science  
3 says, that the asbestos from the gaskets and packing  
4 exceeded acceptable levels for OSHA. So they breached  
5 their duty in failing to test their product and failing  
6 to warn about their product and designing their product  
7 with an asbestos gasket and packing.

8 MR. REID: Your Honor, if I may add one thing.

9 THE COURT: Yes, of course.

10 MR. REID: Of course, when questions were directed  
11 to Dr. Maddox yesterday and the doctors last week, all  
12 the causation questions were directed to the 1980 to  
13 '84 time period. And I mention that simply because, of  
14 course, nothing is relevant if it didn't cause injury,  
15 so we're talking about conduct up to 1984 and not  
16 later.

17 And there's certainly no evidence directed to any  
18 of the points, particularly the requirement of warning  
19 and alleged failure to test, that that was some  
20 industry norm in 1984 or before.

21 THE COURT: All right.

22 Ms. McVey, address for a moment the contention  
23 that you haven't established the standard of care. You  
24 talked a lot about the breach in design, duty to warn,  
25 failure to test. But how was the standard of care



1 established? Mr. Reid relates it to -- I know you  
2 can't listen to two people at one time.

3 Mr. Reid argues that the standard of care should  
4 be established from what was the industry norm. How  
5 did you establish the standard of care, and do you  
6 agree that it's established by the industry norm?

7 MS. McVEY: Your Honor, I don't think the standard  
8 requires what is the industry norm. In other words,  
9 all the industry could bury their heads in the sand and  
10 say, "We're not doing this testing; we're not warning."  
11 That's not how you establish the standard of care.

12 Our law says what the standard of care is. It  
13 says what the duty of a manufacturer is. And, Your  
14 Honor, there have been witnesses in this case that have  
15 talked about OSHA. And they have talked about the duty  
16 to test; a product manufacturer has a duty to test.  
17 And, Your Honor, I believe that establishes the  
18 standard of care.

19 THE COURT: All right.

20 MS. McVEY: And, I'm sorry, Your Honor. And OSHA  
21 says not only do you have to test, but you have to  
22 label, you have to warn.

23 THE COURT: All right, Mr. McLeod.

24 MR. McLEOD: Your Honor, I just want to make sure  
25 the record is clear. OSHA does not require us to test

1 to provide evidence -- to provide assurances that our  
2 workers inside of the manufacturing plants are safe.  
3 It does not require any duty for us to test some other  
4 manufacturer's product we didn't make or supply that  
5 went to Duke. OSHA requirements have to do with our  
6 employees, not Mr. Jolly. He's not our employee, and  
7 the record is clear on that.

8 THE COURT: Well, their argument is not an  
9 argument based on Mr. Jolly's status as your employee.  
10 It is argument based on their contention that the  
11 asbestos gaskets were part of your design, a gasket was  
12 required by your design, and that you supplied  
13 asbestos-containing products in packing and in flange  
14 gaskets, either in the initial manufacture or in  
15 supplying replacement parts, that both Crosby and  
16 Fisher did that. That's the contention. And I say  
17 there is at least some evidence of that in the record  
18 at this point.

19 Their basis of duty to warn is not based on the  
20 employee status, but it is based on something you  
21 disagree with, which is they contend this is a part of  
22 your design and supply of the product you're supplying.

23 MS. McVEY: Your Honor, just to make the record  
24 clear, OSHA, also in 1972, OSHA also applies to product  
25 manufacturers. So I want to make sure that's clear.

1           THE COURT: Right. What they're trying to do is  
2 confine it to their own employees in their own plant.  
3 I understand that argument. The contention is made  
4 that these standards also apply to those who work in  
5 plants where a manufacturer has supplied product, and I  
6 understand you disagree with that, but I don't think we  
7 need to get hung up on that.

8           I must say that none of you has analyzed,  
9 discussed the very detailed analysis of negligence in  
10 these type of cases that was made in the *Brown* case.  
11 And I still got some cause for pause when I read  
12 Justice Kittredge's opinion in that case.

13          So I'll say that my mind is certainly not made up  
14 about this, but at the present time, I think there is  
15 at least a bare minimum of information sufficient to  
16 overcome a directed verdict, and I will deny the  
17 directed verdict on negligence, but I may revisit that  
18 at the end of the defendant's case before this matter  
19 goes to the jury.

20          All right. Mr. Reid.

21          MR. REID: Your Honor, our next directed verdict  
22 motion goes to the -- obviously, there has been  
23 testimony in this case about insulation and flange  
24 gaskets. And the court commented earlier on those  
25 gaskets for internal use that would have been supplied

1 by our clients. And we certainly know since we put  
2 those replacement gaskets, to the extent the  
3 replacement gaskets came from our clients, we bear  
4 responsibilities for that, but I think the case law in  
5 this state and the logical view of things is that we  
6 bear responsibility only for those things we put in the  
7 stream of commerce. So, in effect, we're asking the  
8 court to rule, and this certainly will be something  
9 discussed in the jury instruction conference, we ask  
10 the court to rule now that we do not have  
11 responsibility for those things our clients did not  
12 place in the stream of commerce such as flange gaskets  
13 and insulation.

14 Of course, this was extensively discussed on, I  
15 think it was July 18th, at the motion in-limine motion,  
16 summary judgment hearing that incorporated our  
17 arguments there as well as those we have in the brief  
18 on this point.

19 THE COURT: Yes, sir. And at least at the moment,  
20 I will continue with my ruling that the bare metal type  
21 approach to this matter is not one I will embrace, and  
22 that at least for purposes of this motion, I continue  
23 to believe that there is evidence that's been presented  
24 to indicate that, both in terms of design and supply,  
25 that these two valve companies placed in the stream of

1 commerce asbestos-containing materials. So I will deny  
2 that motion as it relates to the stream of commerce,  
3 bare metal, et cetera.

4 All right, sir.

5 MR. REID: Next, Your Honor, we're seeking a  
6 directed verdict based on causation. And, again, I'd  
7 incorporate what we put in our brief. I think that  
8 starts at Page 22 and goes on for some amount of time.

9 THE COURT: Yes, sir. I'm right there.

10 MR. REID: And there are various aspects to it,  
11 but I think the one I would like to emphasize this  
12 morning is the fact that all the testimony -- we've got  
13 three doctors from the other side. Dr. Brody really  
14 didn't get into specific causation, just gave a general  
15 overview of things. So what I'm really focused on are  
16 the opinions of Dr. Maddox and Dr. Frank.

17 The problem with their testimony is that it is the  
18 each and every total cumulative dose evidence which has  
19 been rejected by numerous courts. I don't know if the  
20 court has had the opportunity to review the recent  
21 decision of I think it's Judge Norton.

22 THE COURT: I have. I looked in detail. Of  
23 course, I remembered it when it came out, and I have  
24 reviewed it, just kind of in general preparation for  
25 trying these cases, but I looked at it again yesterday

1 evening.

2 MR. REID: I think the central point that I take  
3 away from that case is that by virtue of saying that  
4 anything above background contributes to mesothelioma,  
5 these doctors' opinions are, in effect, eliminating the  
6 word "substantial" from the requirement that there be  
7 substantial -- that any party's exposure must be shown  
8 to be a substantial contributing factor.

9 So, again, I'll rely on the arguments we made on  
10 July 18th and those set forth in the brief. But that's  
11 one of the essential points that I think ought to cause  
12 the court to rule in our favor on this issue this  
13 morning.

14 THE COURT: All right, sir.

15 We talked about each and every exposure, of  
16 course, and we talked extensively about the *Lohrmann*  
17 case and the *Henderson* case and our jurisprudence that  
18 embraces *Lohrmann*.

19 Two things occur to me. One is that our knowledge  
20 about the effects of exposure and the amount of  
21 exposure to asbestos is growing and evolving, and it  
22 has continued to do so since the *Lohrmann* and *Henderson*  
23 decisions were issued in a context that was a little  
24 simpler from a factual standpoint. But you do have  
25 experts in this case that talk about what is known

1 about mesothelioma specifically, and they seem to be  
2 well aware of the requirement of substantial exposure  
3 that is discussed in such detail in *Henderson* and in  
4 *Lohrmann*. And I take away from their testimony that  
5 their scientific investigation leads them to the  
6 conclusion that every exposure is substantial if it's  
7 beyond background and if it is an exposure in a factual  
8 context like this one.

9       So to evaluate whether there is sufficient  
10 testimony to at least go past summary judgment -- I  
11 mean go past directed verdict on the issue of how much  
12 exposure is needed to develop mesothelioma, the doctors  
13 talk about the substantial nature of each exposure in  
14 an industrial setting like this, whether exposure is  
15 coming from grinding and release into the atmosphere of  
16 asbestos-containing materials on these valves, and they  
17 distinguish from ambient air regular asbestos -- I mean  
18 regular normal background kind of exposure. And they  
19 also make some distinctions in terms of the witnesses  
20 make some distinctions factually in terms of  
21 insulation-type material as opposed to these gaskets  
22 and the intense exposure to dust from the grinding off  
23 of those gaskets and the removing of the packing.

24       I think that is enough to go past a directed  
25 verdict. Again, we will revisit this area again, and I

1 haven't completely foreclosed, and I don't mean to  
2 foreclose another discussion of this, but it seems to  
3 me that if substantial is the test, as it is, and if  
4 the experts say what they said, particularly the two  
5 doctors, about the effects, that, combined with the  
6 uncontested fact that this gentleman suffers from  
7 mesothelioma, which can only, according to the experts,  
8 be contracted by exposure to asbestos.

9 Now, we haven't heard the rest of the defendant's  
10 case about asbestos and various kinds of asbestos and  
11 so forth. So what I'm saying to you is I'm just going  
12 on what's been presented in the plaintiffs' case so  
13 far, and on that basis, I will deny the motion for  
14 directed verdict on causation as it relates to the each  
15 and every exposure issue.

16 If you have some other issues about causation,  
17 then you certainly may address them, Mr. Reid.

18 MR. REID: And, Your Honor, we acknowledge the  
19 court's ruling. I do want to just set forth for the  
20 record that it's our position that, in effect, those  
21 doctors are trying to supplant the legal standard set  
22 forth in *Lohrmann* and *Henderson*. It's not an expert's  
23 role to do that, and we think that's inappropriate, and  
24 that's also a basis for our position.

25 THE COURT: All right, sir. And you're fully



1    protected on that. That's been a very consistent  
2    theme, well discussed in briefing papers previously  
3    submitted and well discussed in the memorandum that  
4    you're relying on today.

5            MS. McVEY: Your Honor, I don't want to -- you  
6    have already ruled, but I think the record is clear  
7    that Dr. Frank and Dr. Maddox are not relying on each  
8    and every exposure. It's a medical fact.

9            THE COURT: Yes. I understand. I was trying to  
10   address what they have raised in this particular thing.  
11   There's cumulative exposure -- there are many other  
12   things were said, but they are focusing on if all that  
13   is being contended is that each and every exposure is  
14   substantial, they think that that is not appropriate.  
15   And I want to preserve their ability to make that slice  
16   of the contention and have me rule upon that, and  
17   that's what I've done, I hope.

18            MS. McVEY: Thank you, ma'am.

19            THE COURT: Mr. Reid.

20            MR. REID: Your Honor, to the extent we have other  
21   causation arguments, I'll just rely on what we've got  
22   in the brief and argued on July 18th. So with that,  
23   should I move on -- I think the court has ruled on all  
24   aspects of our causation motion, or do you need us to  
25   elucidate?

1           THE COURT: I think you are completely protected.  
2 You say it's speculative. You make a number of other  
3 contentions about the causation testimony of these  
4 experts, about the cumulative approach, and you rely on  
5 Judge Norton's analysis of the cumulative approach and  
6 in contending that they don't have strong probative  
7 value, and in this -- and, of course, all in aid of  
8 your argument that they can't prove causation under the  
9 *Henderson, Lohrmann* standard.

10           And, again, I think that there is enough in the  
11 cases as it stands at this point to support through  
12 expert testimony as well as the testimony of lay  
13 witnesses their arguments as to causation, and,  
14 therefore, I will deny the motion.

15           MR. REID: Your Honor, I'm batting 0 for 5 so far.  
16 Perhaps I can improve my batting average on the next  
17 argument. In part, I'm going to direct this to  
18 Ms. McVey.

19           We have seen their jury charges. Their jury  
20 charges include claims for strict liability, breach of  
21 warranty, and negligence. There was no proof offered  
22 at trial that would support the premises liability and  
23 fraudulent misrepresentation claim. I'm not sure if  
24 those are being pursued at this point so I'll leave it  
25 at that now.

1            THE COURT: I'll hear you if there's anything you  
2 would want to say, but I'll certainly grant his motion  
3 unless you can explain to me why I should keep this in  
4 the case.

5            MS. McVEY: I want everybody to be a winner today,  
6 so I think you're right.

7            THE COURT: The motion is granted. Premises  
8 liability and fraudulent misrepresentation are out of  
9 the case.

10           MR. REID: Your Honor, just for the record, we did  
11 also move for judgment on the loss of consortium claim.  
12 I'll, again, leave the arguments as those we have set  
13 forth in the brief in that regard.

14           MS. McVEY: Your Honor, I'm not sure this is -- I  
15 mean, there is lots of evidence in this record from  
16 both Tracy Pavlish and Mrs. Jolly about her loss of  
17 consortium claim. I'm happy to go through that  
18 evidence, but it's clear that she suffered extensive  
19 damage as a result of Mr. Jolly's illness.

20           THE COURT: Yes. I thought about that a lot last  
21 night when I was reading over the competing charges  
22 with respect to consortium, and as we know, this is an  
23 area that is not as measurable from a strictly  
24 technical standpoint as other aspects of damages.

25           Services of a spouse are not measured in terms of

1 a classic measure of services, but, rather, it's  
2 companionship, it's other things that are in addition  
3 to strictly numerically measured services that are  
4 given and the loss of those services, though the  
5 classic terminology for loss of consortium is loss of  
6 services of the spouse.

7 I believe there is enough from the testimony of  
8 Mr. Jolly, Mrs. Jolly, and the daughter to establish  
9 the wife's -- to have the wife's claim for loss of  
10 consortium survive a directed verdict, so I will deny.

11 MS. McVEY: Thank you, Judge.

12 MR. REID: And then, lastly, Your Honor, we have  
13 got an argument relating to punitive damages. And  
14 there are really two aspects of this.

15 The first part is this: Of course, as the court  
16 knows, to prove punitive damages in this state, the  
17 defendants (sic) must demonstrate that the defendants's  
18 conduct was willful, wanton, or in reckless disregard  
19 of the plaintiffs' rights. Again, I just want to focus  
20 on the fact that in this case, we're talking about  
21 conduct in 1984 or before.

22 And, Your Honor, I think it's fair to  
23 characterize, accepting their arguments for the moment  
24 about the conduct, the conduct that the plaintiffs are  
25 relying on is conduct that I think that is

1 appropriately characterized as omissions, not  
2 commissions, not active conduct by the defendants.  
3 And, certainly, I think the words "willful, wanton, and  
4 reckless" have a conscious aspect to them, a conscious  
5 failure to exercise due care. In fact, I think that's  
6 the definition of recklessness. There is no proof of  
7 any conduct like that, and for that reason, we think  
8 the punitive damage claim should be missed at this  
9 point.

10 There's also a second aspect to our claims set  
11 forth in the brief, and, Your Honor, I recognize that  
12 this may be something better addressed at the  
13 instruction conference, but so no one suggests we  
14 waived anything, I want to make the argument here.

15 Certainly, we believe that when it comes time to  
16 structuring the verdict form, it will be appropriate to  
17 put on the verdict all wrongdoers, those parties that  
18 have settled out, those parties that were in bankruptcy  
19 such as the insulation manufacturers. In order to  
20 demonstrate -- well, here's the problem. If our  
21 clients are the only ones on the verdict form, we think  
22 that will provide an undue focus by the jury on their  
23 behavior and not comparing it to the relative fault and  
24 the behavior of other parties who contributed,  
25 allegedly contributed, to Mr. Jolly's mesothelioma. If

1 the jury believes we're at fault and gets to the  
2 punitive damage part of the case, then their focus will  
3 be as though we're the sole wrongdoers when, obviously,  
4 even the plaintiffs have put in evidence that there  
5 were exposures from numerous other sources. So as set  
6 forth in the brief, we think that would be an  
7 unconstitutional approach to having punitive damages  
8 awarded by the jury.

9        THE COURT: Let me ask you one question about this  
10 argument. Are you suggesting -- we, of course, know  
11 what *Machin vs. Carus* says. Is your argument that,  
12 when it comes to punitive damages, just looking at that  
13 for a moment, that the verdict form ought to change and  
14 you ought to have all other wrongdoers listed on the  
15 verdict form?

16        MR. REID: Your Honor, I think either in that way  
17 or on the first go-round. I come from Wisconsin where  
18 we would have a series of, you know, every defendant  
19 who contributed to a plaintiff's injury would be  
20 listed. I think that would be appropriate to do that  
21 here. It's probably more appropriate to do it on the  
22 general verdict form rather than waiting until one gets  
23 to a punitive damage aspect of things. But at least in  
24 one of those ways, it ought to be done.

25        And, of course -- well, I'll leave it at that,

1 Your Honor.

2        THE COURT: I am looking once more at *Smith vs.*  
3 *Tiffany* as well as *Machin vs. Carus Corporation* when I  
4 tried to evaluate this. Going to let Ms. McVey reply,  
5 but just to let you know, it's not just *Machin*; it's  
6 both *Machin* and *Smith vs. Tiffany* that I'm looking at  
7 trying to sort through the argument that has been put  
8 before me.

9        Ms. McVey.

10        MS. McVEY: Your Honor, if I could, let me address  
11 the first part about the punitive damages going to the  
12 jury.

13        In this case, the jury has heard evidence that  
14 neither Fisher nor Crosby has ever warned. They sold  
15 these asbestos-containing products until 1989. We have  
16 seen invoices from 1993 selling asbestos replacement  
17 parts.

18        They didn't test their product before putting it  
19 out. And even when they warned their own workers about  
20 how to take the precautions, how to wet down that  
21 gasket so you don't get dust flying up on that video,  
22 they never warned any other users of their product.

23        Crosby, Mr. Martin got on the stand yesterday and  
24 said, yes, asbestos gaskets and asbestos packing are  
25 hazardous to health. That's what he said yesterday.

1 Not the gaskets we put inside, not the asbestos gaskets  
2 we put inside, just the ones that are on the flange.  
3 That's the same gasket. That's reckless.

4        They know that they were supposed to be testing  
5 and warning since 1972 about OSHA, and they never did.  
6 And they, nevertheless, sold these asbestos products  
7 for decades without warning, without testing. And  
8 there is evidence in this record that their conduct,  
9 their products substantially contributed to the  
10 development of Mr. Jolly's disease. I think this is a  
11 no-brainer on the punitive damages, assuming we get  
12 that far.

13        One small point is that Fisher has given us net  
14 worth of their company. Crosby has not. And, Your  
15 Honor, if we were to get to the punitive damage phase,  
16 we would request that net worth information so it can  
17 be presented quickly, if that were the case.

18        As to the verdict form, you've already ruled under  
19 *Smith vs. Tiffany* and the *Machin* case that no other  
20 potential tortfeasors or settled defendants or bankrupt  
21 defendants go on the verdict form. And those two cases  
22 are brand new, and they're from our supreme court; and  
23 they make it very clear only the defendants remaining  
24 in the case go on the verdict form.

25        That analysis doesn't change if we get to the



1 punitive damages because at that point, what we've  
2 proven is that Fisher and Crosby were reckless. And at  
3 that time, the jury is determining the recklessness of  
4 Fisher and Crosby and no one else. And I don't even  
5 think there is support in the law for the fact that, at  
6 the punitive damages phase, other folks would go on the  
7 verdict form.

8 THE COURT: Thank you, Ms. McVey.

9 Mr. Reid.

10 MR. REID: If I may, Your Honor. Just a few  
11 points to make.

12 First of all, I think what has been described as  
13 being the factual basis for the claim, again, is  
14 something that can only be characterized as omissions,  
15 which is not sufficient to support a punitive damage  
16 award.

17 Then as to -- well, also generally, I don't  
18 believe that conduct that is unrelated to damages can  
19 support a punitive damage award. Your Honor, my  
20 Wisconsin experience is we have a case there, and I  
21 think the law is the same here in South Carolina, where  
22 there was a car accident and one of the drivers fled  
23 the scene. The courts in our state said that you can't  
24 use that conduct to support punitive damage. And I  
25 think the same holds true here. It's only

1 damage-producing conduct which can support such an  
2 award.

3 So when we talk about 1989 or we talk about the  
4 Fisher video, Fisher Service Company video, those  
5 things are irrelevant. In the case of the video  
6 particularly because it's a different company.

7 There was a citation to Mr. Martin's testimony  
8 yesterday. I disagree with the characterization. He  
9 was talking about risk. He was also talking about the  
10 present time.

11 And with respect to the unconstitutionality  
12 argument, of course, I understand the case law here is  
13 that there is a maximum of a nine-to-one ratio, but it  
14 relates to actual damage caused by the conduct of the  
15 defendant. The fact that we have joint and several  
16 liability in this state does not or potentially does  
17 not mean that the actor's conduct, our defendant's  
18 conduct, caused all the damage.

19 Again, they pointed to numerous other exposures,  
20 so a jury would have to have a vehicle by which to  
21 limit punitives to the percentage of the fault  
22 attributable to one actor and not base that on joint  
23 and several liability concepts.

24 THE COURT: Well, I just point you to *Smith vs.*  
25 *Tiffany*. This is at Headnote 11. As explained by this

1 court in *Machin*, a plain reading of the words defendant  
2 and defendants in the apportionment statute reveals the  
3 legislature's intent to allow only a defendant or  
4 defendants to be listed on the jury form and included  
5 in the allocation of fault. In reaching this  
6 conclusion, we examined the recent decision of *Walker*  
7 *vs. Tensor Machinery Ltd.*, Georgia case, in which the  
8 Supreme Court of Georgia held that a jury may assess a  
9 percentage of fault to an immune nonparty.

10 "Critical to the *Walker* analysis was the language  
11 of the relevant Georgia statute which provides in  
12 assessing percentages of fault, the trier of fact shall  
13 consider the fault of all persons or entities who  
14 contributed to the alleged injury or damages,  
15 regardless of whether the person or entity was or could  
16 have been named as a party to the suit, citing the  
17 Georgia statute. In light of this language, as we  
18 observed in *Machin*, the result in *Walker* is  
19 understandable based on the Georgia statute. However,  
20 in stark contrast to the Georgia statute, our  
21 legislature determined that fault may be allocated only  
22 to the plaintiff and to the defendants and requires  
23 that the total or percentages of fault attributed to  
24 plaintiff and defendant must be one hundred percent.  
25 Thus, guided by the language of the statute of the

1 actor with respect to the legislature's prerogative,  
2 this court held that fault may not be apportioned to an  
3 immune nonparty under the act."

4       There's plenty of other analysis in here of what  
5 can go on the verdict form. There's also plenty of  
6 analysis of the use the term "tortfeasor" in the  
7 evaluation of the empty chair as well as the plaintiff  
8 chooses rule with respect to who are actually  
9 defendants, so I'm sure we'll get into this more fully,  
10 and you want to preserve your position on the verdict  
11 form, and we're still a long way from deciding exactly  
12 how that verdict form is going to be arranged.

13       But with respect to the motion for a directed  
14 verdict on punitive damages, I am evaluating really  
15 only the normal standards for the award of punitive  
16 damages, and the contention of omission is not the only  
17 contention made. The contention plaintiff makes and is  
18 at least offered enough to survive directed verdict, in  
19 my view, is based on recklessness on the notion that a  
20 deliberate decision was made to omit warnings, testing  
21 and so forth, and that that was a reckless decision.  
22 On that basis, I think there is enough there to allow  
23 the plaintiff to go forward.

24       We'll revisit all of these issues, of course,  
25 after the case is fully tried, so I would deny the

1 directed verdict motion on punitive damages at this  
2 time.

3 All right. Does that take care of our directed  
4 verdict motions, Mr. Reid?

5 MR. REID: Your Honor, I think it does, but let me  
6 just check my notes.

7 I think that covers everything, Your Honor.

8 THE COURT: All right.

9 Ms. McVey.

10 MS. McVEY: Your Honor, just the other thing that  
11 I raised is at some point we would like the Crosby net  
12 worth information so that if we were to get to that  
13 phase, it would be available.

14 THE COURT: Well, I understand that, and you're  
15 letting them know what your expectations are, and I  
16 presume those expectations are based on interrogatories  
17 that have been propounded, and I would hope y'all could  
18 get together on that with respect to the punitive phase  
19 of the case.

20 MR. REID: Your Honor, just so the record is  
21 clear, we have never been asked for that. I've not  
22 asked the client because we have never been asked for  
23 it.

24 THE COURT: Well, I'm not going to ventilate that  
25 issue right now, but I don't want to delay this trial

1 when it comes to that, so we're going to need to have  
2 some discussion about that well before we get into  
3 punitive damages. So I'm not going to -- that's not  
4 the purpose of this hearing at the present time.

5 We're so close to the beginning of the  
6 commencement of the defendant's case. You have all  
7 your rights preserved. We're not discussing it at this  
8 time and not waiving anything, but I can tell you,  
9 we're going to settle that hash well before we reach  
10 the stage when that evidence would be expected to be  
11 produced. And if they haven't asked for it, why that  
12 will bear very much on what I say about it, but I'm not  
13 going to go there right now. So I'm making no decision  
14 one way or another about who said what to whom and who  
15 asked what of whom.

16 MS. McVEY: Fair enough.

17 THE COURT: All right. We have about five minutes  
18 before we commence the defendant's case, so I'm going  
19 to go to my office for a minute and be at ease, and  
20 I'll be back shortly.

21 (WHEREUPON, a recess was taken from 9:26 a.m. to  
22 9:37 a.m.)

23 THE COURT: All right. Bring the jury in.

24 (WHEREUPON, the jury entered open court at  
25 9:38 a.m.)

1 THE COURT: Good morning, ladies and gentlemen of  
2 the jury. I hope you had a pleasant evening, and  
3 please be seated.

4 As I explained yesterday, we are now going into  
5 the defendant's case. So defendant will begin to  
6 present its case this morning with some live witnesses,  
7 and I think there may be some deposition witnesses as  
8 well.

9 I turn now to Mr. Bouch.

10 Yes, Ms. Farrise.

11 MS. FARRISE: Your Honor, I sincerely apologize.  
12 May we approach for a moment?

13 THE COURT: Yes, ma'am.

14 (WHEREUPON, a bench conference was held off the  
15 record in the presence of the jury, but out of the  
16 hearing of the jury.)

17 THE COURT: All right. Mr. Bouch.

18 Ladies and gentlemen, I might say we were just  
19 facilitating the exchange of exhibits before they begin  
20 the case. Just a few little technical things, then  
21 they'll be ready to go.

22 MR. BOUCH: Your Honor, Fisher Controls and Crosby  
23 Valve would offer Dr. James Crapo.

24 THE COURT: Doctor, come around, and you will be  
25 administered the oath.

1 JAMES CRAPO, M.D.,  
2 BEING FIRST DULY SWORN, TESTIFIED AS FOLLOWS:.

3 THE COURT: Have a seat in the witness box,  
4 Doctor.

5 THE WITNESS: Thank you.

6 DIRECT EXAMINATION

7 BY MR. BOUCH:

8 Q Doctor, would you introduce yourself to the jury.

9 A Yes. I'm Dr. James Crapo.

10 Q And where do you live?

11 A I live in Denver, Colorado.

12 Q Okay. Doctor, I'm going to hand you what has been  
13 marked as Exhibit 69, ask you if you can identify that,  
14 sir.

15 A Yes. This is a recent copy of my curriculum  
16 vitae.

17 Q What is that?

18 A It's a résumé, summary of the work that I've done.

19 Q Your education, your books, that sort of thing?

20 A Yes.

21 Q Okay. Doctor, have I asked you to prepare a  
22 PowerPoint summary to illustrate and demonstrate your  
23 testimony?

24 A Yes.

25 Q And have you prepared such examples in the past



1 including for these lawyers?

2 A I have.

3 Q Okay. And does it fairly and accurately represent  
4 your opinions and the basis for your opinions you're  
5 about to give?

6 A Yes.

7 MS. FARRISE: I'm sorry. Is that an exhibit?

8 It's this one here. Okay. Thank you.

9 BY MR. BOUCH:

10 Q Dr. Crapo, I will ask you if that is a printed out  
11 copy of what you prepared at my request?

12 A Yes, it is.

13 Q Okay.

14 MR. BOUCH: Your Honor, I would move into evidence  
15 Dr. Crapo's CV, Exhibit 69, and I would move into  
16 evidence as a demonstrative exhibit Defendant's  
17 Exhibit 1511, his PowerPoint slides.

18 THE COURT: First with respect to the CV, no  
19 objection?

20 MS. FARRISE: No objection to the CV going into  
21 evidence.

22 THE COURT: Right. That's all I'm establishing  
23 right now. Crosby Exhibit 69 admitted.

24 (WHEREUPON, Defendant's Exhibit Number Crosby 69  
25 was admitted into evidence.)

1 THE COURT: Then we have Defendant's Exhibit 1511  
2 for demonstrative purposes.

3 MS. FARRISE: I would object because the witness  
4 has not yet been qualified and tendered as an expert,  
5 and I'd like to voir dire.

6 THE COURT: Here is what I will do. I will  
7 provisionally allow the document to be used to examine  
8 Dr. Crapo, but we might want to just, as a matter of  
9 housekeeping, do whatever you want to do by way of  
10 qualifying him so that I can then rule on his  
11 qualifications, Mr. Bouch.

12 MR. BOUCH: Your Honor, I'll be happy to do it in  
13 the order you want. I'd like to display the first  
14 slide and then go into qualification, if that is  
15 satisfactory. If not --

16 THE COURT: Let's just qualify him first, and then  
17 there's nobody looking over my shoulder to say that's  
18 not the way you do it.

19 BY MR. BOUCH:

20 Q Dr. Crapo, can you give the jury the benefit of  
21 your education and training?

22 A Yes. I went to college at Brigham Young  
23 University, graduating in chemistry and English. I  
24 then went to medical school at the University of  
25 Rochester in New York, where I graduated with an M.D.

1 in 1971.

2 After that, I went to Southern California, did a  
3 year of medical internship at the Harbor General  
4 Hospital, which is part of UCLA. And then following  
5 that, I moved to North Carolina where I worked for the  
6 National Institute of Environmental Health Sciences for  
7 three years as a staff associate. That's where I  
8 started doing research.

9 And following that, I moved to Duke University,  
10 where I completed training in internal medicine and  
11 pulmonary diseases and joined the faculty at Duke in  
12 1976. I stayed on the faculty at Duke for about  
13 20 years.

14 Q How did you progress through the hierarchy at Duke  
15 University Medical Center?

16 A Well, after about three years there, I was  
17 appointed the chief of the division of pulmonary and  
18 critical care medicine, so I ran the program for  
19 pulmonary diseases -- teaching, education, research,  
20 patient care in intensive care and lung disease for  
21 about 17 years. And that's where I started doing a lot  
22 of research on asbestos, and I was an administrator, a  
23 teacher, a clinician and research scientist during  
24 those 20 years at Duke.

25 Q Did you perform any original research at Duke?

1 A I did. I did. That was the primary thing that I  
2 did. It did involve all kinds of exposures to the lung  
3 by things you might breathe, including asbestos.

4 Q During this time, did you begin to consult with  
5 lawyers on various medical-legal issues?

6 A At the very end of that. I guess the first time I  
7 testified on a case was in the early 1990s, so it was  
8 in the last few years that I was at Duke.

9 Q And what was your final position at Duke?

10 A I was professor of medicine and professor of  
11 pathology, and I was the chief of the division of  
12 pulmonary and critical care.

13 Q Well, you're not a pathologist. How did you get  
14 to be a professor of pathology?

15 A A lot of my research was on pathology. I did a  
16 lot of electromicroscopy on the study of lung. I  
17 taught pathology, but I was a research pathologist, not  
18 a clinical pathologist, so I had boards in internal  
19 medicine and in pulmonary diseases, but I was never a  
20 clinical pathologist.

21 But, nevertheless, I did teach lung disease and  
22 lung pathology in the pathology department.

23 Q Who were some of the physicians you worked with at  
24 Duke when you were doing your research of contaminants  
25 to the lung including asbestos?

1     A      Well, Phil Pratt was one of the early ones, a very  
2     well-known pathologist in the area. He taught me a lot  
3     of pathology. Victor Roggli, Tim Oury. Tim Oury  
4     trained, got his Ph.D. with me. I was his principal  
5     supervisor. Victor Roggli was a very common colleague.

6     Q      In addition to your M.D. agree, do you have a  
7     Ph.D.?

8     A      No, I don't.

9     Q      Following your 20 years at Duke, where did you go?

10    A      Well, I moved in 1996 to Denver, where I became  
11    the chair of the medicine department and the executive  
12    vice president for National Jewish Health, which is a  
13    hospital that specializes in lung disease and is  
14    affiliated with the University of Colorado.

15    Q      Did you also have positions at the University of  
16    Colorado?

17    A      Yes. I still hold those, as a professor of  
18    medicine.

19    Q      Okay. And what have your positions at National  
20    Jewish Hospital been through the years?

21    A      Well, I started out as -- the primary one was the  
22    chair of medicine, and I did that for just close to ten  
23    years. I stepped down from that, as my other  
24    administrative duties as the executive vice president,  
25    which is a dean's kind of role. I stepped down in

1    2004, 2005 from those roles, and so at this point,  
2    after the last 12 years, I focused on doing research  
3    and continued teaching and research, and I stopped  
4    clinical practice, oh, I guess it's been five, six,  
5    seven years ago.

6    Q        Do you charge for your time, Doctor?

7    A        I do.

8    Q        What is your hourly rate?

9    A        I charge \$600 an hour for any type of  
10   medical-legal consulting.

11   Q        Is that a rate paid for your answers or your time?

12   A        It's paid for my time.

13   Q        Okay. Do you derive income from this on an annual  
14   basis?

15   A        I do. It's been a significant source of income  
16   for me over 20 years.

17   Q        About how much?

18   A        It varied. Started out much lower number, but the  
19   last, I'd say, last three or four years, it's been  
20   close to \$800,000 a year.

21   Q        In your professional work, have you belonged to  
22   professional organizations?

23   A        Yes.

24   Q        And give us an example that is listed on your CV.

25   A        Well, there's quite a few, but the largest one is

1 the American Thoracic Society. That's the major  
2 professional society for lung disease in the United  
3 States and worldwide.

4 Q About how big is it?

5 A It's about 15- to 20,000 people who are doctors or  
6 Ph.D. scientists in areas of lung disease.

7 Q And what have your roles been with the American  
8 Thoracic Society?

9 A Well, I served in many roles. I directed their  
10 annual conference for four years. I was president of  
11 the American Thoracic Society in the early 1990s, and  
12 I've held many other positions with them.

13 Q Doctor, there is an organization called the  
14 Fleishner Society on your CV. What is that?

15 A That's a very different society. It's a small  
16 society of about 70 people. It was started about  
17 50 years ago in the honor of Dr. Fleishner, who is the  
18 physician who started the whole field of chest  
19 radiology, sort of brought chest x-rays to the United  
20 States, and it has about 70 people in it worldwide that  
21 are invited, I'd say, two or three people are invited  
22 once a year to join the society. It gives courses. It  
23 teaches, and it writes position papers on lung disease  
24 and lung -- in particular lung imaging. So I became a  
25 member of the Fleishner Society in the early '90s.

1 Q And have you held official roles with the  
2 Fleishner Society since then?

3 A Yes. I've taken a number of roles with them,  
4 including being president of the Fleishner Society.

5 Q Doctor, you indicated when you went to North  
6 Carolina, you were involved with the National Institute  
7 of -- I forget the whole title. What was that?

8 A National Institute of Environmental Health  
9 Sciences.

10 Q Okay. And what is that?

11 A Well, the National Institutes of Health are the  
12 primary government agency that funds health research.

13 Q Is that called NIH?

14 A NIH, right. And it's broken up into about 20  
15 different divisions. One of those is the NIEHS, which  
16 is located not only in the Washington area, but in  
17 North Carolina, and it studies the environment and how  
18 that affects your health. So it, basically, deals with  
19 water and air and toxicology of things that you're  
20 exposed to in water and air. So that field belongs to  
21 the NIEHS in terms of U.S. funding for general  
22 research.

23 Q What's their research budget?

24 A Actually, I don't know their research budget. I  
25 primarily work today with the Heart, Lung, and Blood



1    Institute, which has a research budget of about  
2    \$3 billion a year.

3    Q        Is that also part of NIH?

4    A        That's part of NIH. And the NIEH is smaller. The  
5    Heart, Lung, and Blood Institute is one of the three  
6    largest institutes there.

7    Q        Do you hold any roles with the Heart and Lung  
8    Institute concerning approval of research?

9    A        I do. I'm serving on their council right now,  
10   which is the senior body of advisory people that makes  
11   the final decision on how they administer their  
12   \$3 billion of research across the United States. So  
13   every grant comes before the council for final  
14   approval.

15   Q        So NIH, through their various sections and the one  
16   that you're on the council of, contributes about  
17   \$3 billion of research money a year?

18   A        Yes.

19   Q        Does that include asbestos?

20   A        It does a little bit, but most of the asbestos  
21   work would go through the NIEHS instead of the Heart,  
22   Lung, and Blood Institute.

23   Q        And there's something on your résumé called the  
24   Clean Air Scientific Advisory Committee. What is that?

25   A        Well, when the -- in the 1970s when the Clean Air

1 Act was based by Congress, it mandated that the EPA  
2 would set standards for the major pollutants in the  
3 air. There are five criteria pollutants: Ozone, NO<sub>2</sub>,  
4 particulates, lead, and carbon monoxide. And they're  
5 the major pollutants that we have in the air that we  
6 breathe.

7 And the Clean Air Act mandated that a committee  
8 called the Clean Air Scientific Advisory Committee  
9 would review the quality of the air research every five  
10 years and make recommendations if those standards  
11 should be tightened or loosened. And there are six  
12 members of the Clean Air Scientific Advisory Committee  
13 mandated by Congress. I was asked to serve as one of  
14 those six a few years ago. And for six years, I served  
15 on the committee while we're reviewing the clean air  
16 standards for all those pollutants, and we actually  
17 tightened them for most of them during those six years,  
18 so it was a period of time when we were really trying  
19 to get cleaner air in the United States.

20 Q You mentioned particulates. Is asbestos one of  
21 those particulates?

22 A Well, asbestos is a particulate, but the standard  
23 we're talking about for clean air, there's very little  
24 asbestos in the air. It's not one of the criteria  
25 pollutants. The particulates are small particles.

1 There's small and medium-sized particulates that are  
2 usually kind of dust environments that are background,  
3 and they are one of the major factors that causes  
4 adverse human health. So asbestos would contribute to  
5 it, but only to a very tiny degree.

6 Q There's also an item on your résumé, Asbestos  
7 Panel for Risk Assessment. What's that?

8 A Well, after 9/11, a lot of focus was placed on  
9 risk for asbestos in the air that could occur. And  
10 Drs. Berman and Crump were asked by the EPA to do a  
11 large study analyzing the risk of asbestos in various  
12 kinds of exposures; and they brought their publication  
13 forward in early 2000s, and they set up a panel to  
14 review their work, and there are 13 members of that  
15 panel. I was one of them. We met for several days in  
16 San Francisco in open session and listened to all of  
17 their research and made recommendations for how their  
18 research report should be modified.

19 Q That was an EPA panel?

20 A Yes. It was an EPA panel, basically, set up by  
21 the Eastern Research Group, which was a contract agency  
22 for the EPA, and it was to do review of the Berman and  
23 Crump report.

24 Q Doctor, have you published in the professional  
25 literature during your career?

1 A I have.

2 Q About how many are we talking about here?

3 A There's over 300 peer-reviewed publications in the  
4 CV.

5 Q Does that include books?

6 A Yeah. There's about 50 book chapters and 10 or 12  
7 textbooks.

8 Q And you say these 300 or better are peer reviewed?

9 A Yes.

10 Q What is that?

11 A Well, that means that you submit them to a journal  
12 that sends them out to colleagues in a blinded fashion  
13 and have them critique it and make recommendations for  
14 changes and final recommendations for how -- whether it  
15 should be accepted for publication or not.

16 Q Have you served as a peer reviewer?

17 A Yes, many times.

18 Q Have you been involved in the editing of any of  
19 these professional journals?

20 A Yes. I have been an editor for several of the  
21 journals. At the current time, I'm the editor for the  
22 Journal of the COPD Foundation. So I actually started  
23 the Journal of COPD about 10 or 12 years ago, and then  
24 I transitioned it to be funded by the COPD Foundation,  
25 and I serve as the editor for that journal today.

1 Q Have you been editor of any other journals?

2 A I've been a coeditor of the Experimental Lung  
3 Research is the other major one that I've been involved  
4 with as an editor.

5 Q Now, Doctor, I know you have given up clinical  
6 practice for the last several years and your asbestos  
7 research for the last several years. What are your  
8 current professional activities?

9 A I'm currently doing two things on the professional  
10 side besides legal consulting. One of them, I'm the  
11 principal -- one of the two principal investigators of  
12 a big research project called COPD Gene. That stands  
13 for Chronic Obstructive Pulmonary Disease Genetics.  
14 And it's a study funded by the Heart, Lung, and Blood  
15 Institute, and we have been funded for ten years, and  
16 we started the last five years on it. It's a study of  
17 10,000 people across the United States who are smokers  
18 and are at risk of developing chronic lung disease.  
19 You might think of it as emphysema. And we're studying  
20 all the characteristics of that disease, and we're  
21 doing the genetics on it. So we have collected the  
22 blood from all the people, and we're analyzing the  
23 entire human genome of all 10,000 people. We will have  
24 that data completed by probably Christmas this year.  
25 So we're trying to look at the genes that would

1 tell you why one person would be exposed or, say,  
2 smoked and develops bad lung disease and another one  
3 doesn't and from that try to dissect out the pathways  
4 that are protective for this disease and ultimately end  
5 up looking for new medications and drugs and treatments  
6 that would make a breakthrough and treat that disease.  
7 It's actually the third leading cause of death in the  
8 United States today.

9 Q Doctor --

10 A So that's half of what I do.

11 Q Okay. In your role as the -- what's the title on  
12 that COPD Gene study?

13 A I'm the principal investigator at National Jewish.  
14 I have a colleague who's also a co-principal  
15 investigator at the Brigham Hospital in Boston, but the  
16 two of us run the study, and there's about 200  
17 investigators across the United States working on this  
18 area.

19 Q Has this study generated any professional articles  
20 in the professional and medical literature?

21 A It has. It's already published over 200 articles,  
22 and it's changing the field of COPD. It's a very  
23 exciting study.

24 Q What is a genome?

25 A Well, a genome means your DNA. It's your DNA,

1 it's the genes in your body that determine your -- the  
2 coding for all the things that happen in the human  
3 body. Every single cell has two copies of your DNA.  
4 Each piece of DNA is about three billion base pairs  
5 long. So you have an enormous copy of DNA that codes  
6 for how the body is formed. And that's the code that  
7 we're decoding. One thing is we actually have  
8 sequencers that can tell us the code all the way  
9 through, but then you have to interpret it, and there  
10 is a lot of work left to be done to understand it.

11 Q What else in your professional life occupies  
12 significant pieces of your time?

13 A Well, the other thing that I've been doing, I  
14 started it back when I was at Duke is I've been  
15 studying antioxidant enzymes and trying develop a new  
16 class of drugs that are very, very powerful  
17 antioxidants and anti-inflammatory drugs that can be  
18 used to treat diseases. I've been working on that for  
19 almost 40 years.

20 In the last about six, seven years, we brought  
21 them to the point where they're ready for human  
22 clinical trial. We formed a small biotech company  
23 that's sponsoring those, and we now have two of these  
24 drugs in human clinical trials. One trial is for  
25 patients with brain cancer glioblastoma, which you have

1    heard about in the news recently, and another one is  
2    for laryngeal cancer, which is cancer of larynx, and  
3    the third one is for people with very inflammatory skin  
4    diseases, atopic dermatitis or psoriasis. So we had  
5    clinical trials in those areas that are taking place  
6    today and hoping to show that they're going to be  
7    really effective drugs to bring forward over the next  
8    five or ten years.

9    Q     Doctor, in the last 40 years, have you devoted  
10   your professional life to the study of pulmonary  
11   medicine and pathology?

12   A     Yes. That's been the emphasis since the early  
13   1970s.

14   Q     And since the 1970s, has considerable time in your  
15   professional career been devoted to the research,  
16   knowledge, and etiology of asbestos and  
17   asbestos-related diseases?

18   A     Yes, it has. In the early '70s -- excuse me, late  
19   '70s and all through the '80s I started studying how  
20   asbestos could impact the lung. And that's been a  
21   major interest of mine for all my career.

22   Q     Have you maintained current interest in the state  
23   of the science, the state of the literature, and the  
24   state of research in asbestos and asbestos-related  
25   diseases since that time?



1     A        Yes, I do. I -- actually, my research spanned  
2     about 15 years from the late '70s to the early '90s.  
3     But after I stopped research, I started doing some  
4     testifying in the area, and I've continued to read all  
5     the literature and stay abreast of the science as it's  
6     moved forward since that time.

7            MR. BOUCH: Your Honor, we would offer Dr. Crapo  
8     as an expert in pathology, pulmonary diseases, with an  
9     emphasis on asbestos and asbestos research.

10          THE COURT: All right. I find that by --

11          MS. FARRISE: I just would like to lodge an  
12     objection.

13          THE COURT: Yes, ma'am.

14          MS. FARRISE: The plaintiffs would just like to  
15     object to Dr. Crapo being qualified in those areas, and  
16     if the court would permit it to voir dire, but if not,  
17     we'd like to lodge our objection.

18          THE COURT: Is there any particular area that  
19     you're concerned about?

20          MS. FARRISE: Yes, Your Honor.

21          THE COURT: What is it?

22          MS. FARRISE: Asbestos.

23          THE COURT: All right. I find that by reason of  
24     the training, education, and experience that Dr. Crapo  
25     has, he's qualified as an expert under the guidelines

1 I've explained to the jury previously, understanding  
2 that plaintiff will have full ability to examine  
3 Dr. Crapo in detail about the opinions he expresses  
4 including opinions about asbestos. So this doesn't say  
5 anything about the opinions he's going to express; it  
6 simply qualifies him as an expert in those areas.

7 Very well. You may proceed, Mr. Bouch.

8 MR. BOUCH: Thank you, Your Honor.

9 Q Dr. Crapo, I think I have asked you to express  
10 certain opinions, and I believe they're reflected on  
11 your first slide. Can you show that to the jury,  
12 please? Is that what I've asked you to do?

13 A Yes.

14 Q Okay. We're going to talk about the respiratory  
15 defense system, correct?

16 A Yes.

17 Q I don't want to lead, but I want to get through  
18 it.

19 THE COURT: Don't lead, Mr. Bouch.

20 MR. BOUCH: No, no. It's preliminary, Your Honor.

21 Q But as it's reflected, the fact that low-dose  
22 chrysotile, do they cause or create risk for  
23 mesothelioma?

24 A No. It's my opinion that low levels of chrysotile  
25 exposure do not create risk for mesothelioma.

1 Q And is it your opinion that mesothelioma can be  
2 caused by amphibole exposure?

3 A Yes. It's well established that amphibole forms  
4 of asbestos are a major risk factor for causing  
5 mesothelioma. And it's possible that very, very  
6 high-dose chrysotile like that experienced by a  
7 chrysotile miner, for example, or an insulator would  
8 develop mesothelioma from exposure.

9 Q And, Doctor, all the opinions that you have  
10 expressed so far and will express this morning, are  
11 they expressed to a reasonable degree of medical  
12 certainty?

13 A Yes, they are.

14 Q And if we come to a fork in the road where you  
15 cannot say that with certainty, will you let us know?

16 A I will.

17 Q Thank you. Now, I believe there are -- I think  
18 you have expressed three issues, you know, on the way  
19 we approach this. What are they?

20 A Well, the primary thing -- I don't think I put it  
21 in that slide. The primary issues are the dose a  
22 person receives, and it's the clearance of the fibers,  
23 how many fibers remain in the lung, and then the impact  
24 or the quality of those fibers on causing disease. So  
25 I need to know -- the key to the whole thing is dose,

1 and understanding how the body handles that dose  
2 determines, ultimately determines, the risk that one  
3 has.

4 Q Doctor, does the fiber size and the fiber type  
5 have anything to do with your opinions?

6 A Absolutely. Fiber length and fiber type are  
7 critical, as you understand those. So we need to know  
8 which type of fiber it is and how long the fibers are,  
9 and those are the elements that are used to ultimately  
10 create the dose.

11 Q Doctor, let's talk a little bit about the  
12 respiratory system. I believe that's your next group  
13 of slides. Tell us how it works. How do we breathe?  
14 How do we exist?

15 A This is a diagram, actually, from one of the  
16 textbooks that I wrote about lung exposures. And it's  
17 a cutaway of the upper and the lower respiratory tract.  
18 The upper respiratory tract would be your head, the  
19 nose, and the back of the throat. And when you breathe  
20 in, the air that we breathe looks like it's clean in  
21 this room, but it actually contains lots of things.  
22 You only have to go out in the spring and react to all  
23 the pollens in the air. You can't see them, but you  
24 can tell that there is a lot there.

25 Well, in fact, a single cubic sonometer of gas,

1 that much, tip of my finger, on the average contains a  
2 hundred thousand particles in it. You can't see them  
3 because they're so small, but they include pollutants,  
4 allergens, as I said, proteins from animals and humans,  
5 the cats and dogs that are around. Tobacco smoke is  
6 there, dust, fibers are all in there.

7 And what happens is when you breathe those in, the  
8 first thing they do is go into the nose and have to  
9 make a right-hand corner to go down. And 90 percent  
10 fall out in the nose. They hit the side of the nose or  
11 the back of the throat. And that's the first clearance  
12 system to clean the air that you breathe. And I would  
13 say 90 percent do that. And -- but there is about ten  
14 percent that will make the corner and start down at the  
15 lung, and these are the lower respiratory tract.

16 Q How much do we breathe, take a deep breath? How  
17 much?

18 A Well, an average breath, just sitting here  
19 quietly, is a half a liter. And a big breath is  
20 typically about a liter. So a liter is about a  
21 quarter, about that much. And the average person, when  
22 they're walking, would breathe about ten liters a  
23 minute, in and out. If you're sitting quietly, it  
24 might be six liters a minute. But you will increase  
25 the depth of breath and the number of breaths as you

1 exercise. So think of the breathing rate as being  
2 between six and ten liters a minute, going in and out.

3 Q 24 hours a day our entire life?

4 A 24 hours a day.

5 Q Okay. The jury has heard testimony before about  
6 ambient levels of asbestos. Can you tell us what that  
7 is?

8 A Asbestos is part of our environment. I told you  
9 it's a low concentration. Of a hundred thousand  
10 particles, there's probably a very small number that  
11 are asbestos. But, typically -- I'll come to that in a  
12 slide and show you -- but, typically, in, say, New York  
13 there might be three fibers in a liter on an average  
14 out of the hundred thousand per sonometer.

15 There's actually -- a liter contains a thousand  
16 milliliters. Each milliliter contains about a hundred  
17 thousand particles. So the amount of asbestos is tiny  
18 in the total, but it's still about three fibers per  
19 liter in New York.

20 So, yes, you would be breathing those in. If you  
21 breathe ten liters a minute in and out, you would be  
22 breathing 30 fibers per minute in and out. And we've  
23 got to talk about what happens to them.

24 Q Doctor, after the pollutants, the allergens, the  
25 tobacco smoke, the fibers, including asbestos, the dust

1 and minerals get into your nose and make the right  
2 turn, the ten percent, what happens?

3 A Well, let's go on down and show what happens.  
4 Let's take that part and blow it up and just take the  
5 bottom part.

6 That's starting with the windpipe and going down.  
7 So that's the trachea going down the throat and going  
8 down the right side. You can see it divides about 20  
9 times as it goes down. Each time the airstream  
10 divides, the particles are being breathed in the middle  
11 of that.

12 (Microphone top fell off microphone.)

13 Q I think we're tearing apart Spartanburg County's  
14 equipment here, Doctor. You're not the first one to do  
15 that.

16 A Okay.

17 THE COURT: Let's just not tear apart the jurors.  
18 BY MR. BOUCH:

19 Q This looks like a very interesting model, Doctor.  
20 What is this?

21 A Well, this is a model from a -- of the human lung.  
22 It's one that we designed and drew, to correct. Let me  
23 go on, and I'll show you a picture of where it actually  
24 came from.

25 Q Go ahead.

1 A But the important thing is right here is that  
2 every time the airstream divides, the particles hit the  
3 dividing point. That's the right upper lobe; this is  
4 the right middle lobe, and it goes on down. So  
5 there's -- I've told you that about 90 percent of the  
6 particles come out in the head. Another 90 percent  
7 come out on these branches of the airways going down.

8 So what happens is -- in fact, this is a picture  
9 of it. This is a cast of a human lung that I made when  
10 I was working with the EPA in the 1980s with other  
11 people helping make this. Somebody donated their lungs  
12 to science, and we filled the lungs with latex and let  
13 it solidify and took the lungs away and just had a  
14 latex cast of the inside of the lung.

15 Then what happened is we made the measurements of  
16 the length and the branching angle for every one of  
17 these branches here. And from that we draw diagrams of  
18 the human lung and we calculated how particles would  
19 distribute. And that thing I drew back here is an  
20 exact drawing from that cast.

21 In fact, on this cast, it's that pathway right  
22 down there like that, right down into here.

23 Q Okay. So just to keep the math straight, if we  
24 breathed in a hundred particles of something,  
25 90 percent of them would be caught in the nose?



1    A      Right. 90 would be in the head.

2    Q      In the head. Ten would go down, and as they would  
3 hit the branches, another nine would be caught by each  
4 branch?

5    A      By that whole system right there.

6    Q      Okay. Then what happens?

7    A      Well, then there would be one that would make it  
8 all the way down. Let me first show you what happens  
9 to the first part.

10   Q      Okay.

11   A      Take that part right there and blow it large, and  
12 it looks like this. That's the surface of one of these  
13 airways. And there's single cells in here. You see  
14 these kind of cells with little knobs sticking up?  
15 That's a ciliated cell -- excuse me, that's a Clara  
16 cell that would secrete secretions of mucus onto the  
17 surfaces of the lung. So you have a layer of liquid on  
18 top of the lung. We washed that off to take this  
19 picture. And the fibers would actually land on that  
20 liquid.

21        Now, that's another cell there. It's called a  
22 ciliated cell, and I'll blow that up. That's a single  
23 cell, now. It's only about ten microns in diameter.  
24 The top of it has all these little villi on it like  
25 this sticking up, and they're beating like this all the

1 time. There is a layer of liquid on top of it going  
2 like this, shoving it to the back of your throat.

3 So if a fiber lands that that liquid, it will come  
4 up to the back of your throat. And we have actually  
5 done that. We've reached in with a bronchoscope and  
6 put a little drop of India ink upside down here in the  
7 lung, and it shows up at the back of the throat about  
8 15 minutes later. And that clears the particles out.

9 We don't know it, but you make about a quart of  
10 mucus a day in your lungs. And it's always coming up,  
11 and you're always swallowing it. We swallow several  
12 times a minute.

13 I just challenge you to not swallow for a minute  
14 and see if you can do it. You will find that  
15 unconsciously you are just cleaning your lungs all the  
16 time.

17 Q Okay.

18 A But that actually means that all the fibers that  
19 land in your head come back by mucus secretion and  
20 movement to the back of the throat where they are  
21 swallowed; all the fibers landing on the lung down here  
22 come to the back of your throat and are swallowed. And  
23 that handles 99 percent of all this stuff that we  
24 breathe.

25 So the -- that's the incredible thing about the

1 thing. It's really well designed to let us live in a  
2 fairly polluted environment and have clean lungs for a  
3 70-year lifespan.

4 Q Doctor, we talked about the body's defenses. Can  
5 you continue on with how the respiratory system works?

6 A Okay. The problem is I made one percent of the  
7 particles getting all the way down, didn't I? That's  
8 where the toxicology comes in. So we take that area  
9 and blow it up.

10 This is the end of each one of those airways. In  
11 the lung, there's 20,000 of these units. There's  
12 20,000 small airways, each opening up into a pattern  
13 like this. Cut away on the slide and sort of  
14 artistically drawn on this slide are little air sacs.  
15 And particles do make it down here, but if they do,  
16 they tend to land right there. They tend to -- that's  
17 because you breathe in this far and you breathe out.  
18 You don't breathe all the way like that because when  
19 you breathe out, you don't exhale all the air in your  
20 lungs, so you're breathing on the top, and the fresh  
21 gas goes in about this far and goes out. So some  
22 particles land there. And the question is, what  
23 happens to them, just so you know.

24 Q What happens to them?

25 A What happens is this right here. Here is a

1 picture of the one of those small airways. This is in  
2 a rat. It's a small airway. You can see, it's opening  
3 channels going across the lung very similar to what I  
4 drew back here. That's the picture of this airway  
5 right here opening. So now each one of these air sacs  
6 has little cells in it called macrophages. And there's  
7 an average of ten macrophages for every one of those  
8 air sacs. And they're the cells that crawl around on  
9 the surface, and they eat any particle that comes in.

10 Q Kind of like a PAC-MAN?

11 A Kind of like a PAC-MAN. I love that game, but  
12 that's exactly what they do, and that's their job in  
13 life, and they can then crawl up on the surface and  
14 disappear from the lung or break the particle down.  
15 But they're called macrophages. They're all through  
16 the body, but there is a very specialized group that's  
17 in the lung. And there's lot of them.

18 So the bottom line for the whole thing is that  
19 when you breathe fibers in, there is a rapid clearance  
20 mechanism right here. This is this upper airways that  
21 I talked about with the cilia that are beating with the  
22 mucus coat to the back of the throat. And then there  
23 is a macrophage system down here that clean up the rest  
24 of the particles, and they're very effective. But  
25 those are the two defense pathways that we have.

1           And the macrophages are slower. They take weeks  
2 to months to clear things out. The mucous cilia  
3 clearance is fast, but the macrophages do handle the  
4 rest of it.

5 Q       Doctor, is the lung designed to process and clear  
6 inhaled pollutants?

7 A       Yes, it is, and the whole risk -- the problem here  
8 is to define at what level of exposure you finally  
9 overwhelm that and then start to create disease.  
10 That's the field of respiratory toxicology. So it can  
11 handle lots of things. Where does it not handle it, is  
12 the question.

13 Q       Is there a threshold at which inhaled pollutants  
14 can cause injury?

15 A       Yes, there is. For every pollutant, there is a  
16 threshold.

17 Q       Let's talk about asbestos in a dose. What are we  
18 talking about on this side here?

19 A       Okay. Asbestos is a special process because the  
20 fibers have long duration once they make it down there.  
21 And so everybody -- to understand this field, the  
22 standard is to calculate dose as the dose to the nose.  
23 We don't really know how many exactly are cleared, so  
24 you calculate the dose to the nose, and that's  
25 calculated as the number of fibers per cc. A cc is

1 that size. So fibers per cc times the number of  
2 occupational years that you breathe it. And an  
3 occupational year is 2,000 hours. There are 40 hours a  
4 week for 50 weeks. So the dose to the nose would be  
5 how many fibers in the gas that you're breathing while  
6 you're working multiplied by years.

7 Let me give you an example of what this is. A  
8 dose of one hundred fiber cc years would be  
9 breathing -- well, you can get it by breathing five  
10 fibers per cc. This is a cc. Five fibers per cc all  
11 of your whole working lifetime for a total of 20 years,  
12 then you would have a dose of one hundred fiber cc  
13 years. Or you can breathe one fiber per cc for a  
14 hundred years, theoretically, obviously, or you can  
15 breathe 20 fibers per cc for five years and get that  
16 dose. It's just a method of having everybody speak the  
17 same language when we're talking about dose. That's  
18 all this is.

19 Q And I believe your last example is .1 fiber per cc  
20 for a thousand years?

21 A Well, that's the current standard for occupational  
22 exposure. That's the PEL for current standards. And  
23 you would have to breathe that for 1,000 years to get  
24 that high, one hundred fiber cc years.

25 I actually put that illustration on here because,

1 in my opinion, if chrysotile is a cause for  
2 mesothelioma, it would take doses of at least one  
3 hundred fiber cc years. Now, the people who got it  
4 were the miners who got exposed like this, 20 fibers  
5 per cc for five or ten years. But that's why this is  
6 showing you what that illustration would be.

7 We need to talk about other ways you can cause  
8 this disease.

9 Q We'll do that, Doctor. Just I digress a little  
10 bit. The jury has heard that a cc is a sugar cube, but  
11 they don't serve sugar cubes anymore. Is that why  
12 you're making it the tip of your finger?

13 A Yeah. That's a sugar cube.

14 Q What is a dose-response curve?

15 A Well, once we start talking about dose, we need to  
16 express how the dose relates to disease. And this is  
17 called a dose-response curve. And this axis right  
18 here, we calculate the amount of disease, the number of  
19 cases, whatever you're measuring from. More cases goes  
20 up. And on this side is exposure from very low  
21 exposure, zero right here, to very high exposure.

22 So a typical dose-response curve for any substance  
23 looks like this. It's an S-shaped curve, which means  
24 that there is a portion of it where there's exposure  
25 has no relationship to disease and then a threshold

1 where you start to develop disease. And it comes up.

2 And it always curves off, and that's because  
3 there's no such thing as an exposure that causes a  
4 hundred percent of all deaths. There's many things in  
5 life going on besides that. So it can increase, but it  
6 can't ever be the only cause of death, in standard  
7 toxicology terms.

8 But the real question is this area here. The  
9 point I would make is every single substance we get  
10 exposed to has a dose-response curve that looks  
11 something like this. It even applies to water. I have  
12 to drink that every day. But if I drank three to  
13 four gallons of that right now, I would get very sick.  
14 I would dilute my bloodstream. I could have seizures.  
15 I could have death from water intoxication.

16 So there is a dose for every substance that's bad.  
17 And from any substance, there is a dose that's very  
18 good. But you need to understand that relationship of  
19 this curve, how much of a substance you can take before  
20 it starts to cause risk of disease.

21 Q Doctor, we mentioned asbestos in the ambient air  
22 or in the everyday air before. Have you done any  
23 research of the data on what we're talking about, what  
24 we call ambient airborne asbestos?

25 A Yes. This highlights just a few of them. There



1 are many, many studies reporting on the ambient air,  
2 what's in it. There is a huge range. In rural parts  
3 of the United States, it can be a really low number  
4 like it's showing here. This is fibers per cc, and  
5 there's four zeros before the one on the high end of  
6 that. The EPA has reported -- I think that's supposed  
7 to be EPA there -- has reported in the five major urban  
8 zones is .004.

9        Now, to help translate that, let me translate some  
10 other areas first. This is another government agency,  
11 the Agency for Toxic Substance and Disease Registry,  
12 said that in Midtown New York, a typical concentration  
13 is 0.003.

14 Q        I note that's the same upper limit as U.S.  
15 schools.

16 A        Yes. Some schools have had that high, right.  
17 And, of course, using measurements made back in the  
18 '80s, West Coast is maybe ten times higher than that.  
19 And that's because there is a lot of serpentine-type  
20 rock that makes chrysotile on the West Coast of the  
21 United States.

22        Let me translate these crazy numbers because  
23 you're seeing .0003, what does that mean. .003. Well,  
24 a liter is that much, about a quart, and it contains a  
25 thousand ccs. And that number is for numbers per cc,

1 so if I have .003 -- excuse, me two zeros and a three,  
2 that's three parts per thousand. Well, that would mean  
3 that in a liter in New York City, you have three fibers  
4 on the average in a liter of that much. And you would  
5 breathe a liter with any large breath. Or walking  
6 through New York, you would breathe ten liters a  
7 minute.

8       So translating that data right there means that  
9 walking through New York City, the average person, on  
10 days like this, would breathe in 30 fibers -- they're  
11 all chrysotile -- per minute while they're walking  
12 through New York. That's to give you an idea of what  
13 ambient air is. I don't want to say it's high because  
14 I've told you already it's a tiny, tiny fraction of  
15 what's in the air, but there are asbestos fibers in the  
16 air. It could be that high in New York. It could be  
17 ten times higher than that in San Francisco.

18       And the important thing to all this it's all  
19 harmless. This is well within the body's capacity to  
20 handle it. It does not cause disease. There's no risk  
21 to anybody. The risk of incidence of disease like  
22 mesothelioma in rural Iowa and San Francisco is the  
23 same. There's no change in background grade. So  
24 ambient air has been well studied. It does not cause  
25 disease. I'm trying to give you a sense of what

1 background is before we start making it higher  
2 exposures and occupational disease.

3 Q Doctor, your next slide, I think you may have  
4 already given that example of the drinking water, but  
5 is there asbestos in our drinking water?

6 A There is. Every time it rains, the raindrops form  
7 around the particles in the air, bring it down into the  
8 water supply. The oceans and the water of the earth  
9 contain asbestos and contain up to a million fibers per  
10 liter. The average, by the EPA, is 32,000. They're so  
11 tiny, they go right through the filter. That bottle  
12 right there is not a liter, it's a half a liter, but on  
13 the average, it contains 16,000 asbestos fibers.  
14 They're harmless. They're part of our natural  
15 environment. They have been there for years.

16 If you go to the North Pole and you take an ice  
17 corer that goes all the way down that gets ice that's  
18 10,000 years old, it still has asbestos in it at the  
19 same concentration as the fresh ice.

20 Q Does everybody walking the streets in New York get  
21 sick?

22 A It's part of our natural environment. I'm just  
23 trying to describe the low levels that exist in water  
24 and air as a platform now to understand where we  
25 actually get disease.

1 Q Doctor, are there different types of asbestos?

2 A Yes. That's important to understand. There  
3 are -- I'd separate them into two big classes, one  
4 called amphibole, of which the ones that are used, one  
5 was used primarily for insulation in the United States  
6 was amosite. And there is a similar one called  
7 tremolite that is sometimes a contaminant of chrysotile  
8 mines. They're a very low-level contaminant, and then  
9 there's chrysotile.

10 And let me illustrate what they look like. That  
11 is a picture of chrysotile asbestos from the work that  
12 I did back in the '70s. It comes from one of the  
13 biggest mines in Canada. You will notice that this is  
14 a long fiber. This bar here is one micron. So a cell,  
15 an average human cell, let's say a red blood cell, is  
16 seven microns across. A macrophage would be about ten  
17 microns. So a cell would be bigger than this whole  
18 screen.

19 Now, this fiber here, look at the end of it how  
20 it's splaying out like that. We'll go forward.  
21 Chrysotile is actually made up of magnesium silicate,  
22 which is a sheet. It crystalizes as a sheet like that,  
23 and then that sheet rolls up, like you see in the  
24 picture there, really fine. Forms like fibrils. And  
25 so it's in a sheet form.

1           And if I go back to this slide here, you see the  
2 end of that breaking up. I brought a piece of, I'll  
3 call it string, I guess. Notice how it's made up of  
4 little fibers splaying out at the end like that?  
5 That's what you're seeing on this fiber that's coming  
6 down from here. Each one of these little fibers,  
7 fibrils, let's call it, is made up of a rolled-up sheet  
8 like that. It's all much finer than human hair. You  
9 can't see a small one.

10           Now, what happens is it's held together by  
11 magnesium. It's a metal. The macrophage would grab it  
12 like that. It leaches out the magnesium over weeks.  
13 Then the fibers separate like this, and then they break  
14 down into little pieces. And you see the little pieces  
15 all over this picture. See the little piece there,  
16 little piece there, little pieces up there. That's how  
17 the fiber, the macrophage breaks it down.

18           On the average, we say the average lifespan -- I  
19 would say the average lifespan of a chrysotile fiber in  
20 the body is about 90 days. It takes about three months  
21 for the macrophages to totally break down half the  
22 fibers.

23 Q       Doctor --

24 A       And they break it down into little tiny fibrils  
25 like that.

1    Q     Have those fibrils been shown, through research,  
2    to cause harm?

3    A     No. The little fibrils are harmless. They're  
4    mostly what's in water and air. They're everywhere.  
5    They don't cause disease, and there's been no  
6    correlation between the little fibrils and disease. So  
7    the thing that causes disease is the long fiber. If  
8    that long fiber can make it all the way and make it all  
9    the way out to the pleura and stay there for decades,  
10   it can cause mesothelioma. That's why I say, but the  
11   little fibrils are everywhere. They're all through our  
12   body right now. They're in any water-based media, and  
13   they don't cause disease.

14   Q     What's the difference between the chrysotile and  
15   the amosite?

16   A     So this is chrysotile. I'm going to show you  
17   amosite. Amosites are very different. The magnesium  
18   silicate, instead of being bonded in a sheet, it's  
19   bonded like a little solid bar. I'll use my pen to  
20   illustrate it. It's a solid bar like that, and it's  
21   cross-linked all the way through it. It's held  
22   together with iron and other metals. And the  
23   macrophage that takes it can't extract from it because  
24   it's so solidly bound together. So it's very hard for  
25   the macrophage to break it down. If it does break it

1 off, it breaks in small chunks. And you can see little  
2 chunks on this slide here and here. It doesn't unwind  
3 because it's not made that way. So it's a very  
4 different fiber. It has magnesium and silicate and  
5 metals in it like chrysotile, but they're structurally  
6 different. One is soft and wavy like that, and one is  
7 a hard, straight one. This one is broken down, and it  
8 doesn't have the capacity to make it to the pleura and  
9 stay there for months because it's broken down. Or  
10 years, let's say.

11 But this one, the half-life of an amosite fiber is  
12 probably best estimated to be about seven years, which  
13 means that if you breathe in one hundred of these,  
14 seven years later, you still got 50 of them, and  
15 14 years later, you've still got 25 and so forth.

16 And these have the durability to migrate to the  
17 lung and to reach the pleura and remain there for long  
18 periods of time and cause mesothelioma. And so that's  
19 going to be a scientific basis for why I would conclude  
20 that the biggest risk is in exposure to amosite.

21 Q Is it the iron?

22 A Well, the iron is part of it. It's really the  
23 length -- you need long fibers to do it, but the  
24 iron -- iron can catalyze oxygen radicals and cause DNA  
25 damage. So it could be that the iron that's carried

1 with that is as part of disease. That's one of the  
2 hypotheses that's being studied today, but it's the  
3 length of the fiber and the iron content both combined  
4 and the durability of this fiber to reach the pleura,  
5 those all combined create risk for disease.

6 Q Doctor, you mentioned earlier when you were asked  
7 by the EPA to review a Berman and Crump study. Can you  
8 tell us about that?

9 A Sure. Berman and Crump reviewed all the  
10 literature and looked for good-quality studies where  
11 they could get the dose and the fiber type figured out  
12 from the study.

13 Q I'm a victim of parochial schools. What does  
14 cohort mean?

15 A Cohort means a group of people that share  
16 something in common, like they worked in steel mills,  
17 or they worked at a certain textile factory, they  
18 worked at a mine. Something -- it could be anything.  
19 It could be all women if you wanted to make a cohort of  
20 women. But cohort just means a defined group of people  
21 that have something in common. What these have in  
22 common is where they worked. Like this cohort worked  
23 in the Quebec mines, and this cohort worked at a plant  
24 in Connecticut making friction materials and so forth.

25 Of the cohorts they looked at, some of them had



1 only a little bit of amphibole, two to four percent,  
2 and some of them had a lot of amphibole in them. You  
3 see down here. Amphibole, in most cases in the United  
4 States, means amosite.

5 Q Did your review include the conclusions of Berman  
6 and Crump in evaluating these?

7 A I took part in the 2003 meeting that reviewed  
8 their work. And I'm just going show -- one of their  
9 conclusions from that report they gave to us was that,  
10 "Our analysis indicates a substantial difference in the  
11 relative potency of amphiboles and chrysotile toward  
12 the induction of mesothelioma, with amphiboles  
13 estimated as almost 1,000 times more potent than  
14 chrysotile fiber for fiber."

15 Q Did they also have a conclusion regarding  
16 chrysotile?

17 A Yes, they did.

18 They went further and they said, "Moreover, the  
19 data are consistent with the hypothesis that chrysotile  
20 has a zero potency toward the induction of  
21 mesothelioma."

22 What they meant by that is that the increased risk  
23 of chrysotile is sufficiently low and had large  
24 boundaries that it could have been zero. But at the  
25 very least, they said it was like a thousand times less

1 than amphibole.

2 Q Doctor, have you done your own literature review  
3 concerning the incidence of mesothelioma and  
4 chrysotile?

5 A Right. They looked at 12 cohorts. I decided to  
6 look at every cohort, even though some of them weren't  
7 as well defined what the dose was.

8 Q When you say "every," what do you mean?

9 A I tried to read all the literature I could find  
10 and read every group that was reported in the medical  
11 literature that gave you data about mesothelioma and  
12 fiber-type exposure. And by looking at everyone, if  
13 they didn't have really good dose data, I still looked  
14 at it. But I recognized that characteristic.

15 And I found that there were -- at the time I did  
16 this was a few years ago, and there were 62 studies  
17 reported then. There's been about another ten since  
18 then.

19 Q Those ten inconsistent with what --

20 A Another ten or so show the same thing.

21 Q Describe the --

22 A I found 12 were high-dose chrysotile studies;  
23 seven were low-dose chrysotile studies; 32 that had  
24 mixed-fiber exposure; four that were primarily exposed  
25 to amosite; and seven that were primarily exposed to

1 crocidolite. I can't show you the data from all 62 at  
2 a time here, but I can show you an example.

3 Q Okay.

4 A This is what I found. If there were high-dose  
5 amphibole exposures -- and this is amosite, and those  
6 are two crocidolite ones -- there is a very high risk  
7 of mesothelioma, ranging from three to 18 percent of  
8 deaths. If you think about it, take this 11 percent of  
9 deaths here. This is mixed fibers that had very high  
10 exposure, nine-percent deaths. That means if you had a  
11 thousand people in the cohort, there were close to a  
12 hundred dying of mesothelioma. This is a disease that  
13 has a spontaneous rate that's only one or two or three  
14 per million per year, so it's a dramatic increased risk  
15 of mesothelioma when you're exposed to the amphiboles  
16 here.

17 Q Doctor, just to put it in perspective, about how  
18 many lung cancer cases do we have in the United States  
19 a year?

20 A There's about 180,000, the last time I saw the  
21 report, of lung cancers a year in the United States.

22 Q About how many mesothelioma cases do we have?

23 A Between 2,000 and 2,500. So it's -- there's about  
24 a hundred times more lung cancer than there are  
25 mesotheliomas.

1    Q      Now, Doctor, this particular slide, you focused on  
2    the four cohorts to the right. How about the four  
3    cohorts to the left?

4    A      When I went to chrysotile, I found -- I looked at  
5    high-dose chrysotile and low-dose chrysotile. For  
6    low-dose chrysotile, there are a lot of reports of  
7    industries that have a low dose, like auto mechanics,  
8    who had automotive gaskets and things likes that that  
9    had some chrysotile in it, and there are many, many  
10   studies of them showing that there's no increased risk  
11   of mesothelioma, and they're done in five countries all  
12   the around the world repetitively. Low-dose exposure  
13   does not cause mesothelioma.

14   Q      Okay.

15   A      Then if you look at high-dose chrysotile, there is  
16   a mixture. There were some sites -- like this is a  
17   South African mine. There is a chrysotile mine in  
18   South African reported by Reese, and there were no  
19   mesotheliomas there, even though they were chrysotile  
20   miners. And that's a chrysotile that was pure  
21   chrysotile. And then you have -- but you move over to  
22   Canada and look at the chrysotile miners in Quebec, and  
23   you found -- well, there's about 11,000 workers that  
24   have been studied there for many years, and after 8,000  
25   of them had died, there were about 30, 36

1 mesotheliomas. So about one out of every 200 deaths  
2 was a mesothelioma. So that raises the possibility  
3 that high-dose chrysotile can cause mesothelioma.

4 Q Doctor --

5 A But you're talking about high doses. Hundreds --  
6 a hundred or hundreds of fiber cc years before you see  
7 a mesothelioma risk.

8 Q And, Doctor, in this case have you reviewed  
9 Mr. Jolly's information concerning his exposure while  
10 working for Duke Power?

11 A I have.

12 Q Where would Mr. Jolly fit on this scale?

13 A Well, he would have two kinds of exposure. He was  
14 exposed to thermal insulation, amosite. There is a lot  
15 of amosite insulation in the power plant. And in that  
16 case -- he was an inspector, but he would have been in  
17 the vicinity of people doing insulation repairs, and  
18 that would put him, in amosite exposure, equivalent to  
19 that group right there, but probably on the low end of  
20 that group because he was an inspector but not the  
21 actual insulator. But in the power plant, he would  
22 have had four and a half years of exposure to  
23 amosite-containing thermal insulation.

24 Now, in terms of chrysotile and gaskets and  
25 packings, he would be more like -- actually be lower

1 like this group over here. He would be -- the  
2 chrysotile would be a very low-level exposure when  
3 compared on this side. So I would say he would have  
4 exposure comparable to this one and exposure group  
5 comparable to that one.

6 Q Doctor, the studies you have cited here in the 62  
7 studies on the prior slide, do these studies include  
8 actual data?

9 A The studies that I've been giving you?

10 Q Yes, sir.

11 A Yes. I'm reading the actual results of what they  
12 were exposed to and how much disease they had.

13 Q So they had fiber-dose measurements, they had  
14 incidence of disease, actual numbers in these articles?

15 A Yes.

16 Q They weren't somebody's editorial opinion or  
17 somebody's review of the literature or anything else  
18 like that?

19 A That's correct. I think your decision should be  
20 based on data.

21 Q Now, just to wrap up this slide, what do  
22 amphiboles have to do with it?

23 A Well, the amphiboles are showing that -- exposure  
24 to amphiboles carries a big risk for causation of  
25 mesothelioma, even at fairly low levels of exposure.

1    That's what I'm pointing out.

2    Q      Okay. And for high-dose chrysotile and low-dose  
3    chrysotile, what do you get?

4    A      Well, for high-dose chrysotile, I'd say it may be  
5    a cause of mesothelioma at very high dose. At low  
6    doses, it's not a cause for mesothelioma.

7    Q      Do you get that high dose in, typically, in  
8    working with gaskets and packing, in your experience?

9    A      No. Gaskets and packings are a very, very  
10   low-level exposure. It's often even lower than what  
11   you would find in ambient air in some parts of the  
12   country.

13   Q      Doctor, to sum up, mesothelioma risk for  
14   amphiboles?

15   A      Is high and can occur at low levels of dose, but  
16   with a very, very high risk.

17   Q      High-dose chrysotile?

18   A      May be a cause of mesothelioma.

19   Q      Low-dose chrysotile, such as packing and gaskets?

20   A      Is not a cause for mesothelioma.

21   Q      Doctor, one term that we may have come across in  
22   this case is something called the regulatory model.  
23   What is that? Almost through. Promise, I'm almost  
24   through.

25   A      It's a model of how -- when people are trying to

1 regulate, it's a model they use to predict risk in a  
2 way that's protective of the human health and  
3 overestimates risk at low levels.

4 Q Could you go to your next group of slides.

5 A So the regulatory model was first developed for  
6 asbestos in the 1980s, and the EPA did it first using  
7 four studies by Finkelstein, Peto, Seidman, and  
8 Selikoff, all of which had exposures to either a  
9 combination of a chrysotile and an amphibole or to an  
10 amphibole.

11 Q Were these high-dose studies?

12 A They were very, very high-dose studies. Then OSHA  
13 came along shortly thereafter and added two studies,  
14 they added Dement and Weill, which were primarily  
15 chrysotile exposures. I think they added those because  
16 they wanted some chrysotile exposures in the mix. But  
17 those are the six. And if I graph them, it looks like  
18 this. Those first four studies are right there.  
19 There's no axis here because I want to just  
20 conceptually show you what happened.

21 There are high levels of exposures. And exposures  
22 here is on a log scale. So zero, ten, one hundred,  
23 1,000, going across. And this is to show that these  
24 are exposures in the somewhat -- between 50 and 100  
25 fibers per -- some of these are getting closer to a



1 thousand fiber cc years.

2 And they're red because they're primarily  
3 amphibole. And these were the two highest, and these  
4 were the two middle-sized exposure levels. And then  
5 when they added the two more, the two chrysotile ones,  
6 actually Weill was there and Dement was there. This is  
7 a mesothelioma number here. They had very few, like  
8 just one, two, or three mesotheliomas in that study and  
9 this study. That's a cement plant here in South  
10 Carolina, the Dement study. And these --

11 Q It was a textile mill in South Carolina.

12 A That's right. That's right.

13 Q Cement plant was in --

14 A Was in --

15 Q New Orleans.

16 A You corrected me on that.

17 Q I know my neighborhood.

18 A I know. That was a textile plant here. But this  
19 was the actual data. And then when they drew the  
20 regulatory curve, this is the curve right there. It's  
21 a straight line, actually. You can see what it does.  
22 They took the average of all of these. They ignored  
23 that some were chrysotile and some were primarily  
24 amphibole. And the regulatory thing is drawn straight  
25 into zero, which means it predicts that there's disease

1 down here, but there's no data down there.

2 Q That was going to be my question. Is there any  
3 data to support that at all?

4 A No, no. The reason for doing it is that it's  
5 protective of the human health. They use that to  
6 gradually lower the standard to the current standard  
7 down about here. But their goal is to regulate and  
8 protect human health; their goal is not to tell you  
9 what happens at low levels.

10 Q What does the data support?

11 A The data supports that amphiboles cause  
12 substantial risk at high exposures, and there may be a  
13 chrysotile risk at high exposure. It does support  
14 that. There's no question it supports that. But it  
15 doesn't tell us -- if you look at that curve, at this  
16 line, it's really hard to say what the data would be  
17 down here from that line.

18 Q Are there additional data points that you could  
19 put to actually --

20 A Well, this is what's used regulatory by every  
21 agency in the world, and they make all their statements  
22 about this data. That's standard across the world.  
23 But this is -- this doesn't make a difference between  
24 chrysotile and amphibole, which we know -- I've shown  
25 you data that shows the chrysotile has a much lower

1 risk than amphibole.

2       So I ask, what would happen if you started looking  
3 at chrysotile, if you made a curve. So first of all,  
4 we have the Canadian miners in Canada. I showed you  
5 that data a minute ago that had 30-some mesos out of  
6 8,000 deaths. Then they have about close to a thousand  
7 fiber cc years of exposure. That would put them about  
8 right there on this curve.

9       Then there is a published paper about women who  
10 live next to the mine, and they had seven -- they had  
11 about 225 fiber cc years of exposure. And there was a  
12 few mesotheliomas, about seven, found in the report of  
13 those Canadian women. And they would be right there on  
14 this curve.

15       And then you have all the ambient work that I've  
16 talked about. The low-level chrysotile and the  
17 ambients are down here with zero. So if I were to draw  
18 a curve for chrysotile, I would draw it like this. I  
19 think the red curve is a regulatory curve for all  
20 asbestos without trying to separate fiber type. The  
21 black curve I just drew is a curve that would reflect  
22 what we know about chrysotile. And it may cause me to  
23 fill in a little bit and doses that exceed a hundred  
24 fiber cc years.

25 Q       Okay. Doctor, I'll hand you what has been marked

1    as Exhibit 70. Can you identify this?

2    A        Yes. This is my report in Mr. Jolly's case.

3    Q        And what is your opinion concerning the cause of  
4    Mr. Jolly's mesothelioma?

5    A        I think Mr. Jolly's mesothelioma was caused by his  
6    work at the Duke Power Company where he was exposed to  
7    thermal insulation containing amosite.

8    Q        Okay. And is that based upon your review of  
9    Mr. Jolly's information that's been presented to you?

10   A        Yes.

11   Q        Okay. And does that reflect the questions that  
12   were asked you by the plaintiffs' lawyer when your  
13   deposition was taken?

14   A        Yes.

15   Q        Do you have an opinion to a reasonable degree of  
16   medical certainty whether exposure to packing and  
17   gaskets had any role in the cause of Mr. Jolly's  
18   mesothelioma?

19   A        I do have an opinion.

20   Q        And what is that opinion?

21   A        His work or his exposure to gaskets and packings  
22   from valves would have had no impact or risk factor in  
23   his development of mesothelioma.

24   Q        Thank you, Doctor.

25            MR. BOUCH: Your Honor, I pass the witness.

1 THE COURT: All right. This is -- what are we  
2 doing with this exhibit?

3 MR. BOUCH: I'm sorry. I would move it into  
4 evidence, Your Honor.

5 THE COURT: All right.

6 Ms. Farrise, Crosby Exhibit 70?

7 MS. FARRISE: I object that it's hearsay.

8 THE COURT: Overruled.

9 (WHEREUPON, Defendant's Exhibit Number Crosby 70  
10 was admitted into evidence.)

11 THE COURT: Now, jury, are you peaceful at the  
12 present time? Very good. I'm mindful of the fact that  
13 we generally break around 11:00. Let's see how we go  
14 on cross-examination, but I won't leave you hanging.

15 Very good. Ms. Farrise.

16 MS. FARRISE: Thank you, Your Honor.

17 CROSS-EXAMINATION

18 BY MS. FARRISE:

19 Q Hello. Good morning, Dr. Crapo.

20 A Good morning.

21 Q Not that it matters, but we have never met before?

22 A That's correct.

23 Q I'm going to start by asking you some questions  
24 about your background. Okay?

25 A Sure.

1    Q      Dr. Crapo, we can agree that you last published a  
2    paper having anything to do -- a scientific paper --  
3    with asbestos about 25 years ago, since about 1990,  
4    correct?

5    A      Yes. I stopped doing work on asbestos in the  
6    early 1990s.

7    Q      And you have never, never in your career,  
8    published a scientific paper on the subject of  
9    mesothelioma, correct?

10   A      That's correct.

11   Q      Of the 300 published scientific articles that you  
12   have, not a single one of them addresses the effects of  
13   asbestos on humans?

14   A      That's correct.

15   Q      The word "mesothelioma" does not even appear in  
16   any of the 300 articles that you have published?

17   A      That's right. I have not done personal research  
18   on mesothelioma.

19   Q      Right. You have never conducted any clinical  
20   research on mesothelioma, correct?

21   A      That's correct.

22   Q      You have never done any laboratory research,  
23   including study laboratory animals, concerning  
24   mesothelioma, correct?

25   A      Well, I've never published on that, but the animal

1 work I did, all of the animals were evaluated for  
2 mesothelioma. Most of the -- I looked at the ones that  
3 I studied, and the pathologist at the National  
4 Institute of Environmental Science looked at other  
5 animals in the group. And I participated in the  
6 overall groups, but we didn't find any mesotheliomas,  
7 and there's nothing published on it.

8 Q Your qualifications have been reviewed when you've  
9 testified in court in other cases, correct?

10 A Yes.

11 Q I'm handing you a transcript of --

12 MR. BOUCH: May I have a copy, please?

13 Q -- testimony that you gave under oath in a  
14 courtroom.

15 MR. BOUCH: Your Honor, I believe this is improper  
16 impeachment.

17 THE COURT: I can't determine that at the present  
18 time. It's sworn testimony, and she will point to  
19 whatever she's going to point to, and I can then make  
20 an evaluation. So noted, but I'm not in a position to  
21 rule at this time.

22 MR. BOUCH: My objection goes to if he gives an  
23 answer that's inconsistent, of course, she can impeach  
24 him with it, but he hasn't given an answer --

25 THE COURT: Mr. Bouch, I don't think I need to say

1 more at this time. Noted, but I'm not in a position to  
2 make any determination until she asks him a question.

3 BY MS. FARRISE:

4 Q Hang on to that, Dr. Crapo. If I or anybody else  
5 wanted to find out your opinions about mesothelioma in  
6 human beings, and we went to a medical library or we  
7 did an Internet search of the medical and scientific  
8 library information, we would not find a single article  
9 that you have authored on that topic?

10 A That's correct. I've not done personal research  
11 on mesothelioma, other than screening the animals that  
12 we did pathology on.

13 Q If we wanted to leave the confines of this  
14 courtroom and find a book that relays your opinions  
15 about mesothelioma in human beings, we could find no  
16 book, correct?

17 A That's correct. I haven't written a book on this.

18 Q No book chapters?

19 A That's correct.

20 Q Not a paragraph?

21 A That's correct. I haven't written on  
22 mesothelioma.

23 Q And you have done no original research on  
24 mesothelioma?

25 A With the exception of screening my animals that



1 were exposed, that's correct.

2 Q More than 25 years ago?

3 A That's right.

4 Q Now, in terms of your medical training, Doctor,  
5 just to be clear, you are not board certified and don't  
6 hold any degrees in epidemiology?

7 A That's correct.

8 Q You're not an epidemiologist?

9 A Well, I'm not a board certified epidemiologist. I  
10 do direct the largest epidemiology study being done  
11 today in lung disease called COPD Gene, so I do  
12 epidemiology every day, but I don't have a degree. I  
13 have a degree, a medical degree.

14 Q And your largest study has nothing to do with  
15 asbestos disease?

16 A No. No. It deals with smoking-related chronic  
17 lung disease.

18 Q You're not -- you don't practice in the area of  
19 occupational medicine?

20 A That's correct.

21 Q You don't have any board certifications in  
22 oncology or practice in that area?

23 A I do not.

24 Q You're not -- you talked about the minerals  
25 here -- a geologist, a mineralogist, or material

1    scientist?

2    A        I don't have a degree in those areas.

3    Q        In your particular field, I think you mentioned  
4    that you were board certified in pulmonary medicine?

5    A        Yes.

6    Q        You failed the test the first time?

7    A        Actually, I failed it two times. I thought I  
8    could pass it without studying. I got humbled by that.

9    Q        Three times the charm?

10   A       Well, I studied the last time. I got pretty  
11   embarrassed by that, but, yes, I did fail the pulmonary  
12   boards.

13   Q        Doctor, we can agree that you stopped studying  
14   asbestos topics in the early 1990s when you left Duke  
15   University?

16   A        That's not true. I studied it consistently since  
17   that time. My research stopped, but my reading of the  
18   literature continued and actually increased because of  
19   the work I do, medical-legal consulting.

20   Q        I understand. Your work, not going and reading  
21   other people's work. Your work stopped?

22   A        My research on the topic stopped, that's correct.

23   Q        Right. And when your research on the topic  
24   stopped more than 25 years ago, that's when, about when  
25   you started becoming an expert witness in courtrooms,

1 correct?

2 A That's correct.

3 Q And your testimony in courtrooms has been  
4 exclusively for defendants who made or sold asbestos  
5 products?

6 A Yes. I've only been asked by defendants.

7 Q And in the 25 years that you have testified and  
8 been asked by defendants to testify on their behalf in  
9 courtrooms and after your own research stopped, you  
10 have not published any of the opinions that you have  
11 shared with juries like this to the scientific  
12 community outside of this courtroom, right?

13 A That's correct. All of my publications deal with  
14 research work that I did in my laboratory. So I would  
15 not have published a topic like this since that wasn't  
16 something I was actually doing research on in my  
17 laboratory. Every one of my articles deal with  
18 personal research in the laboratory, and that explains  
19 the difference.

20 Q So this your summary of your opinions and the  
21 things you told the jury about, how much chrysotile it  
22 takes and all of those sorts of things, has not been  
23 submitted to scientific review and sought to be  
24 published in a peer-reviewed scientific journal,  
25 correct?

1 A Well, yes. I haven't submitted mine. All the  
2 concepts that I give in there are based on data on  
3 scientific papers that were peer reviewed, so I'm  
4 simply describing what the literature tells you about  
5 it. But because I didn't do the original research on  
6 it, I didn't submit it as my own opinion for peer  
7 review.

8 Q To be clear, you read the original research that  
9 other people have done?

10 A That's correct, I have.

11 Q And then you formulated your opinions about what  
12 other people's research means?

13 A I integrated the whole thing. And I've seen a lot  
14 of patients. So the -- it's a totality of my  
15 experience, at least as to the basis of my opinions.

16 Q The opinions you shared with the jury is your  
17 opinion on what other people's research means, correct?

18 A Well, as well as my observation in many cases  
19 myself, yes. It includes a lot of personal  
20 observation.

21 Q And your opinions, Dr. Crapo, have never been  
22 subjected or submitted for scientific review by your  
23 peers in a peer-review process, correct?

24 A Well, as I told you, I have not -- this is not  
25 original -- it's not original research on my part, so I

1    have not submitted that for publication.

2    Q        So if another scientist wanted to review the  
3    opinions that you have given to this jury here, the  
4    only way to do that would be to get a copy of this  
5    transcript and see what you're saying to see whether or  
6    not what you're saying is scientifically valid, junk  
7    science, or something else, correct?

8            MR. BOUCH:  Objection to that qualification, Your  
9    Honor.  That's completely argumentative.

10          THE COURT:  Overruled.

11          THE WITNESS:  If they want a printed copy, they  
12    would have to get court transcripts or talk to me, yes.

13    BY MS. FARRISE:

14    Q        Right.  Now, Dr. Crapo, in terms of the hospital  
15    work that you mentioned, you don't -- the type of work  
16    you're doing here today, which is giving testimony to a  
17    jury on behalf of a company alleged to have sold an  
18    asbestos-containing product, you don't do that type of  
19    work in the hospital, do you?

20    A        No.  No.  Currently at the hospital, I manage the  
21    COPD Gene epidemiology study.

22    Q        And you mentioned that it's National Jewish  
23    Hospital, correct?

24    A        Yes.

25    Q        And you have a biography on the hospital's

1 website, right?

2 A Yes. There is a small biography that relates to  
3 things that I do relative to the hospital.

4 MS. FARRISE: Your Honor, may I have permission  
5 to --

6 MR. BOUCH: Can I see that?

7 THE COURT: Just a second. Let's be sure we're  
8 looking at something here first.

9 THE COURT: Let me see what you've got there. Do  
10 you need this?

11 MS. FARRISE: No.

12 Q We've marked your biography as Plaintiffs'  
13 Exhibit 6385 from National Jewish Health.

14 I would move it into evidence.

15 THE COURT: All right. Mr. Bouch?

16 MR. BOUCH: Your Honor, I have no objection. She  
17 might want to ask, for the record, if the doctor  
18 recognizes it.

19 THE COURT: I'm sure she'll do that. I'm just  
20 wondering whether you've got any objection, and if you  
21 don't have any objection, it's admitted.

22 All right.

23 (WHEREUPON, Plaintiffs' Exhibit Number 6385 was  
24 admitted into evidence.)

25 THE COURT: Ms. Farrise.

1    Q     Dr. Crapo, this is what appeared about an hour ago  
2     on the website of National Jewish Hospital. Can we  
3     agree that's your biography?

4    A     Yeah. That's the one I put -- each person can  
5     write their biography. I wrote one that was  
6     appropriate for what I do at National Jewish.

7    Q     And if you go to that hospital, there is a search  
8     option to find people who are in certain medical  
9     specialties; is that correct?

10   A     That's correct.

11   Q     And if you put in the search term "mesothelioma,"  
12     your name won't come up?

13   A     Yes. I don't do clinical practice, and I don't  
14     want people to search me because I don't do clinical  
15     practice. So I only list that I'm doing things in COPD  
16     and chronic lung disease.

17   Q     Right. There you are. And so if we went to the  
18     website where you actually work, we would find that  
19     your research area is COPD having to do with smoking  
20     and --

21   A     Yes.

22   Q     -- emphysema, correct?

23   A     Right.

24   Q     Now, speaking of Jewish Hospital, National Jewish  
25     Hospital, that's about 1,500 miles away from here?

1    A      About, yes.

2    Q      That's where you live and work?

3    A      Yes.

4    Q      There are well-respected pulmonologists at Duke  
5    University Medical Center?

6    A      Yes, there are.

7    Q      Well-respected pathologists at Duke University  
8    Medical Center?

9    A      Yes.

10   Q      Counsel mentioned that you will be charging for  
11   your time \$600 an hour, correct?

12   A      Yes.

13   Q      And that will include the time that you have spent  
14   sitting on an airplane?

15   A      Yes.

16   Q      Going 1,500 miles to and from Colorado, right?

17   A      Yes.

18   Q      Do you have to stop over in Charlotte or do they  
19   have a direct flight?

20   A      We stopped in Charlotte.

21   Q      So how many hours will you charge at \$600 just to  
22   be in travel on this case?

23   A      You know, I haven't done the full calculation, but  
24   it took about six hours to travel here.

25   Q      15 hours?



1 A About six hours.

2 Q \$9,000 just for the travel?

3 A Well, I said it was about six hours that I spent  
4 travelling.

5 Q But you're going to go back?

6 A What?

7 Q I wanted you to finish. Are you finished?

8 A I said six hours.

9 Q And you're not planning to stay, so you're going  
10 to return?

11 A Yes.

12 Q By the time all is said and done, there's at least  
13 15 hours at \$300 an hour or about \$9,000, 10,000 maybe,  
14 just to travel 1,500 miles from National Jewish  
15 Hospital?

16 A Well, I wouldn't calculate it exactly that way,  
17 but there will be a charge for travel and time to get  
18 ready for the case that will be like that, yes.

19 Q How would you calculate the travel?

20 A Well, I'm going to calculate the total, but you  
21 said \$300 an hour a minute ago, and you were  
22 calculating -- so I don't know how you did your  
23 calculation, but I'm not arguing I'm not going to be  
24 well paid. I'm just -- and I did travel from Denver,  
25 that's correct.

1    Q      Right. By the time this case is all said and  
2    done, having reviewed depositions, Mr. Jolly's medical  
3    records, come to court, testify, your bill in this case  
4    could easily be \$50,000?

5    A      No, it wouldn't be that high. I don't think I  
6    have ever had a bill that high.

7    Q      30,000?

8    A      That would be high, too. I would guess the total  
9    cost for everything is going to be between 10- and  
10   \$20,000.

11   Q      Dr. Crapo, let me get to -- I'll come back to  
12   that.

13           Patient care, you have not been involved in  
14   patient care involving a patient with mesothelioma in  
15   more than 25 years?

16   A      Yes. I stopped doing that kind of work when I  
17   left Duke, which was 1996.

18   Q      You have not treated any patients with any  
19   disease, including emphysema, in at least seven years?

20   A      As a treating physician, I stopped clinical  
21   practice. I still see friends and family, and a few  
22   people ask for my consulting time. But in terms of a  
23   practicing physician, I stopped about seven years ago.

24   Q      And in terms of your opinion that you gave about  
25   Mr. Jolly and whether or not his mesothelioma was

1 related to any exposure from gaskets and packing, you  
2 have given that exact opinion as to numerous people  
3 numerous times, correct?

4 A Well, Mr. Jolly's exposure characteristics are  
5 unique, so the exact opinion, that's not correct. But  
6 I have testified multiple times that low-level  
7 chrysotile does not cause disease and amphibole does,  
8 and I have identified amphibole products and  
9 manufacturers who would have created the risk.

10 So there's similarities in this case and many  
11 others, you're right. But my testimony has always been  
12 the same. I believe that low levels of chrysotile do  
13 not cause mesothelioma.

14 Q You've testified as an expert witness on behalf of  
15 a company that made gaskets, John Crane, correct?

16 A Yes.

17 Q John Crane and its lawyers have paid you more than  
18 a million-and-a-half dollars to work on asbestos  
19 litigation in the last 25 years, correct?

20 A I have never done that calculation, but I have  
21 seen reports from their office side that indicates they  
22 have paid me amounts like that, yes.

23 Q So a million-and-a-half dollars you don't  
24 dispute could be --

25 A Well I --

1 Q Excuse me -- in terms of what lawyers representing  
2 John Crane only have paid to you to serve as an expert  
3 witness?

4 A I think the correct answer is I can't dispute it.  
5 It's not my calculation, but I can't dispute it.

6 Q You don't dispute it?

7 A No, I don't dispute it.

8 Q Okay. John Crane, as the jury already knows, made  
9 and sold asbestos-containing gaskets and packing used  
10 in, among other things, valves?

11 A That's correct.

12 Q It's your understanding that the gaskets that John  
13 Crane made and sold, asbestos-containing gaskets that  
14 they made and sold, were used as part of valves on the  
15 flange side, correct?

16 A That was common, yes.

17 Q And, therefore, having looked at or having  
18 evaluated gasket and packing exposure, having never  
19 even heard of Beverly Dale Jolly in this case, it would  
20 have been your opinion that, as soon as anybody said he  
21 was exposed to gaskets and packing, that it would not  
22 have been a cause of his mesothelioma, whether it was  
23 Mr. Jolly or Mr. Happy or Mr. Smith or Mr. Jones or  
24 Mr. Barnes, right?

25 A Well, the essence of what you're saying is

1 correct. There is a lot of published literature  
2 showing that gaskets and packings do not result in  
3 significant exposure, and the type of gasket and  
4 packing we're talking about would have contained  
5 chrysotile. And the exposure levels would be really  
6 low and not a level that would create disease, so yes,  
7 I could reach that opinion about gaskets and packings  
8 without knowing Mr. Jolly's case.

9 In his case, my key question was what did cause  
10 his mesothelioma, and I needed to get his history to  
11 assess that.

12 Q And you worked as an expert witness on behalf of a  
13 company, Owens Corning Fiberglass and Owens Corning  
14 Illinois, companies that manufactured and sold an  
15 insulation product called Kaylo, correct?

16 A That's correct, but let me qualify it. I never  
17 testified for those companies that their product did  
18 not cause mesothelioma. In fact, I have testified  
19 many, many times that Kaylo was a cause for  
20 mesothelioma. So when I helped -- when I worked for  
21 them, I was not dealing with mesothelioma; I was  
22 dealing with a completely different issue, and I've  
23 always been of the opinion that amosite and things like  
24 Kaylo carry substantial risk of causing mesothelioma.

25 Q Given that you've worked as an expert witness for

1 those companies, you certainly are aware that there was  
2 a point in time when those companies took the asbestos  
3 out of the insulation formulation?

4 A Yes.

5 Q That was 1972, correct?

6 A It would vary. '72 is when a lot of regulation  
7 took place.

8 Q Certainly by 1975, there was no asbestos in Kaylo?

9 A I'm not the expert in industrial hygiene that  
10 would tell you exactly when each company took the  
11 asbestos out, so I defer that to someone qualified to  
12 give a correct answer.

13 Q So in this particular case, you have not looked at  
14 the issue of when this insulation that was installed at  
15 Mr. Jolly's worksites actually went asbestos-free?

16 A I -- the years that he was there, there was a lot  
17 of asbestos in place. And it's well known in cases and  
18 literature and industrial hygiene I've seen, that power  
19 plants like the ones he worked at had a lot of this  
20 thermal insulation that contained amphibole. I think  
21 that's very well established in the literature. I  
22 don't think there's any doubt that he had a substantial  
23 amphibole exposure.

24 Q Can you show me the literature where there has  
25 been an evaluation of Duke's Ocone plant and whether

1 or not the insulation there was asbestos?

2 A I don't have that literature, but I think that  
3 literature exists. I think it can be provided by the  
4 defense side.

5 Q We'll see.

6 A Okay.

7 Q There's no literature that you know of that looks  
8 at whether or not the insulation at Duke McGuire plant  
9 or Catawba plant contained asbestos?

10 A I have not personally researched those specific  
11 plants. I have seen lots of cases in working in  
12 similar kinds of nuclear power plants. And although  
13 asbestos regulation started pushing towards  
14 asbestos-free insulation in the '70s, there was lots of  
15 asbestos in place, and those plants had -- substantial  
16 abatement in those plants only took place in the '80s  
17 and '90s, and the period of time which he worked there  
18 would have been a period when there was lots of amosite  
19 asbestos in those power plants.

20 Q Mr. Jolly started working at the Duke Oconee plant  
21 after being a pipefitter doing metal work in a  
22 different location in 1980.

23 A At which plant -- yes -- I'm -- I didn't look at  
24 the exact dates that he worked there. It was the late  
25 '70s or early '80s that he worked there, about four and

1 a half years total, at multiple plants for Duke Power.

2 Q When did Mr. Jolly start working for Duke?

3 A Let me look at my report. I wrote down that he  
4 started working for Duke Power in 1979, and he  
5 continued working there, but he worked there formerly  
6 for 2003 and then became an independent contractor  
7 thereafter.

8 Q Right. And McGuire plant, when did he work there?

9 A Yes. I don't recall the exact dates he worked at  
10 the McGuire plant.

11 Q When was the McGuire plant built?

12 A I'm not the industrial hygienist that will give  
13 you the date on that plant. I can tell you that power  
14 plants of the type that he worked in contained lots of  
15 amosite through this period of time.

16 Q Well, Dr. Crapo, if there was a period in time in  
17 the '70s when the government banned the use of asbestos  
18 in insulation, and Mr. Jolly starts his job in 1979,  
19 before you came in here and jumped in and opined that  
20 he was exposed to asbestos from amosite, wouldn't you  
21 want to confirm, in fact, that there was amosite at his  
22 worksite?

23 A I don't think that's necessary. I've seen lots  
24 and lots of cases. And even though you're saying that  
25 the bans on asbestos started in the 1970s, asbestos



1 abatement to remove the old asbestos did not take place  
2 quickly. In fact, in some places, it's still taking  
3 place.

4 The -- certainly there was no significant asbestos  
5 abatement in nuclear power plants between early '70s  
6 and early '80s. New asbestos put down may have been  
7 asbestos-free. New insulation put down may have been  
8 asbestos-free, but the workers would have been exposed  
9 to massive amounts of thermal insulation throughout a  
10 plant like that throughout the time period he worked.  
11 And I've seen multiple cases, other cases, of people  
12 with mesothelioma that had work exposures, not  
13 necessarily at those plants, but at power plants,  
14 during the '70s and the '80s, and so I -- I would defer  
15 to an industrial hygienist to tell you exactly what was  
16 there, but in my judgment, there's no -- it's without  
17 question this man was exposed to amosite.

18 Q I think you said something we probably agree on.  
19 As to new insulation material installed, let's just say  
20 in 1980, new insulation, that would be asbestos-free?

21 A You still want to have someone re-evaluate it, see  
22 where it came from, but the ban starting to demand  
23 asbestos-free products began in the '70s.

24 Q In 1980, the new insulation would have been  
25 asbestos-free, right?

1     A     I can't validate that for you because I don't know  
2     for a fact. They may have used old insulation to  
3     install. I'm only saying I agree that the bans were in  
4     place at that time, but what they used, I'm not the  
5     expert that can answer that question for you.

6     Q     I think I understand what you're saying. Although  
7     in the 1970s there was a ban, you can't make or sell  
8     these products, you are not hypothesizing that maybe  
9     there was like an inventory or stockpile somewhere that  
10    Duke went and got the insulation from, so that by 1980,  
11    after it was banned, they didn't put on what was being  
12    made and sold, they put on the old product, which was  
13    no longer legal; is that what you're saying?

14    A     No, actually, I didn't say that. You're taking it  
15    further than what I said. I said I didn't know what  
16    they put on, and I stopped there.

17            One possible way they could have used it was they  
18    used stockpiled asbestos, but I did decline to answer  
19    the question that I knew that it was asbestos-free that  
20    they installed in 1980. I don't know that.

21    Q     And so as part of the work that you did in the  
22    case after you traveled here, sitting on an airplane  
23    from Colorado, certainly you had a chance to talk to  
24    the lawyers representing Crosby and Fisher?

25    A     I did.

1    Q      And when you talked to the lawyers representing  
2 Crosby and Fisher, did they say to you, "Here,  
3 Dr. Crapo, before we let you go into court and say  
4 Mr. Jolly was exposed to asbestos from insulation 1980  
5 and after, here is the actual evidence that we have  
6 that those products were not asbestos-free by that time  
7 period," right?

8    A      I didn't have that conversation with them.

9    Q      You didn't ask, and they didn't volunteer?

10   A      I didn't have that conversation with them, no.

11        MS. FARRISE: Your Honor, it's 11:15.

12        THE COURT: Very good. I think this is a good  
13 stopping point, so ladies and gentlemen of the jury,  
14 I'm going to let you go to your jury room. Let's take  
15 15 minutes so everyone can be refreshed. I'll call you  
16 back at 11:30.

17        (WHEREUPON, the jury exited open court at  
18 11:15 a.m.)

19        THE COURT: Counsel, keep your seat for a second.

20        I've just got one thing I want to remind -- I'm  
21 going to be reminding you, too, of something, Doctor.  
22 Keep your seat for a minute.

23        I noticed two things, and they're very minor, but  
24 I just don't want them repeated.

25        When Dr. Crapo was on direct examination and

1 talking about how the lungs work and how mucous, you  
2 make a quart of mucous a day and so forth, he turned to  
3 the jury and asked the jury to swallow. Don't do that.  
4 We don't want to put the jury in any kind of position  
5 that they're being put in the position of doing  
6 anything but listening.

7 THE WITNESS: Don't address them directly, I  
8 agree.

9 THE COURT: That's a no-no. It wasn't objected  
10 to. I'm not trying to be harsh, but that's a no-no.  
11 We don't do that.

12 The second thing is and just, again, kind of  
13 inadvertent, but I want to be sure we don't do that.

14 Mr. Bouch, when you were on your direct  
15 examination and Dr. Crapo had gone through a lot of  
16 things, and you were now into gaskets and packing and  
17 the level of exposure and had some documents, and you  
18 turned to the jury and said -- apparently a juror was  
19 reacting to some extent, and you said, "Well, I'm  
20 almost through." Let's not address the jury in that  
21 way. I just think it's real important to let the jury  
22 function as the listeners and not being kind of golden  
23 ruled into putting themselves in the position of being  
24 anything other than an observer.

25 MR. BOUCH: I agree. While I looked at the jury,

1 it was really directed to Dr. Crapo.

2 THE COURT: That's what I thought. And, again,  
3 I'm not trying to take anybody to task. I'm just  
4 reminding you of how we need to function with our jury.

5 All right. We'll be at ease until 11:30.

6 (WHEREUPON, a recess was taken from 11:18 a.m. to  
7 11:32 a.m.)

8 THE COURT: Counsel, any dilemmas, any issues?

9 MS. McVEY: No, ma'am.

10 THE COURT: Bring me the jury, please.

11 (WHEREUPON, the jury entered open court at  
12 11:33 a.m.)

13 THE COURT: Please be seated, ladies and gentlemen  
14 of the jury.

15 All right. Cross-examination continues.

16 Ms. Farrise.

17 MS. FARRISE: Thank you, Your Honor.

18 Q Dr. Crapo, we were discussing insulation, right?  
19 Do you recall that?

20 A Yes.

21 Q And at deposition in this case, you agreed that  
22 valves are typically insulated, correct?

23 A I think that's correct for some types of valves.

24 Q Okay. Well, you mentioned beforehand that you  
25 reviewed all these studies and power plants and all

1    this such thing and so forth and so on, and it's your  
2    understanding that valves also are insulated, right?

3    A        I think that that's true for some valves.    Some  
4    valves are designed so they would not be insulated.

5    Q        But it would not be unanticipated that a valve  
6    might be insulated in the field, along with the piping  
7    and the insulation that goes on that?

8    A        I'm going to defer that to the industrial  
9    hygienist that would tell you exactly, but it's typical  
10   that the lines are insulated.    And to the extent the  
11   valve was in the line, it may have insulation on it,  
12   but I'm not the expert in that area.

13   Q        Dr. Crapo, this is not the first time you have  
14   been hired to be an expert witness on behalf of Fisher  
15   valves in a case where someone was claiming asbestos  
16   injury; is that correct?

17   A        That's correct.

18   Q        You testified on Fisher's behalf on more than, I  
19   think it was possible, ten occasions, but you weren't  
20   sure?

21   A        I don't know -- it's not a large number, but I  
22   have testified before for Fisher.

23   Q        And the cases all involved claims of asbestos  
24   injury?

25   A        Yeah.    The issues would have been asbestos injury

1 similar to the claim today.

2 Q Right. It wasn't that somebody got burned by a  
3 valve or fell on their head; it was the same kind of  
4 thing that Mr. Jolly is claiming, that, "I was exposed  
5 to asbestos having to do with a Fisher product"?

6 A Yes. That would be a situation in which I might  
7 be asked to testify.

8 Q Okay. And so we also mentioned your fees. Can we  
9 agree that by 2015, in your sworn testimony, you agreed  
10 that you wouldn't dispute that to that time period,  
11 your billing for your work had been \$8.5 million to  
12 lawyers representing companies who made or sold  
13 asbestos products in terms of your expert work?

14 A I think that I would have testified that I -- I've  
15 never made that calculation, but that I couldn't  
16 dispute it.

17 Q Might be more?

18 A Well, I don't know the number because I have never  
19 calculated it.

20 Q Okay. But you didn't dispute and you don't  
21 dispute now that eight-and-a-half million by 2015 in  
22 terms of your billings to lawyers for companies for  
23 your expert work was eight-and-a-half-million dollars?

24 A That's correct. Again, it's not my calculation,  
25 but I have no reason to dispute it.

1 Q And unlike some of the others we've heard from,  
2 the money is paid to you?

3 A That's correct.

4 Q It doesn't go to your hospital, right?

5 A That's correct.

6 Q It goes in your pocket?

7 A Yes.

8 Q And you told us on direct, I think, that nowadays  
9 it's about 800,000 a year, right? That's what I wrote  
10 down.

11 A Yes.

12 Q So we are more than halfway through 2017, so I'll  
13 half the 800,000, and now I've got to do the math  
14 again, which is where bad things start to happen.  
15 9.7 million, approximately, in terms of your billings  
16 that you have been paid by lawyers representing  
17 companies that made and sold asbestos?

18 A Again, I've calculated on an annual basis. I have  
19 never done totals, but I don't have any reason to  
20 dispute that.

21 Q It might be ten million. We might be a couple  
22 million short?

23 A I don't know the number exactly.

24 Q Okay. And in addition to your work for the  
25 lawyers coming into court and giving these opinions,



1 which are not submitted outside of court, you have also  
2 trained lawyers representing companies who made and  
3 sold asbestos about these asbestos topics over the last  
4 20 years, correct?

5 A I don't know what you mean by training. I have  
6 given a small number, two, three, four seminars, to  
7 some in-house lawyers that wanted to understand the  
8 issues their company was addressing. And that's  
9 nothing in the last decade, but -- and I have given two  
10 or three lectures to the -- what do you call it?

11 Q The company executives?

12 A No, no. To the -- I've never done that, that I  
13 remember. I've lectured at one of their meetings. I'm  
14 sure you'll ask me that question.

15 MR. BOUCH: DRI.

16 THE WITNESS: I've lectured three times to the  
17 DRI.

18 BY MS. FARRISE:

19 Q And that's a group of lawyers representing  
20 defendants in asbestos litigation?

21 A It's sponsored by defense lawyers, but when I gave  
22 my lectures, there were plaintiff lawyers in the  
23 audience as well.

24 Q But I'm asking about your lawyer classes. You  
25 have given, in your career as an expert witness,

1 classes, lectures, whatever you want to call them, to  
2 lawyers who will then go into court and represent  
3 asbestos companies, right?

4 A No. I wouldn't characterize that it way.  
5 Probably two or three times, probably more than ten or  
6 fifteen years ago I -- I met with some corporate  
7 lawyers that were trying to address -- trying to  
8 understand what their company -- what their company  
9 should do, and they asked me to come and talk to them  
10 for a couple of hours. It wasn't a class, and it  
11 wasn't -- but it was a situation where a company was  
12 trying to decide how they should handle asbestos  
13 litigation that was coming in their direction.

14 Q And they called you in?

15 A They asked me to come and -- and answer their  
16 questions and talk to them for an hour or two.

17 Q And you're not a lawyer?

18 A I'm not a lawyer.

19 Q I'm guessing they weren't talking to you about  
20 legal strategy?

21 A They were talking to me about my opinions on  
22 asbestos and its ability to cause disease.

23 Q And thereafter, after you gave them what your  
24 opinions were about the propensity of asbestos to cause  
25 disease, did those same lawyers or their group hire you

1 as an expert witness to come into court on behalf of  
2 the companies that they represented?

3 A It's been so long, and I don't remember which  
4 companies it was, and I don't remember any specific  
5 work for them. It could be. The company could have  
6 hired me later, but I don't recall any connection  
7 between the two.

8 Q Dr. Crapo, in this case, you have not been shown  
9 any of the companies' documents, correct?

10 A That's correct.

11 Q In evidence --

12 Your Honor, may I display a document in evidence?

13 THE COURT: All right. Certainly.

14 MS. FARRISE: 1008.10670.

15 BY MS. FARRISE:

16 Q Anyway, Dr. Crapo, while we're figuring those  
17 things out, you're probably the only one who has not  
18 seen it, so why don't you take a look. I'm displaying  
19 that document.

20 It is a letter dated July 11, 1980, from a  
21 Mr. Paul Adams at Fisher Controls to University  
22 Hygienic Laboratory, and it says, "Enclosed are two  
23 gaskets for your use as a bulk sample."

24 First of all, a bulk sample in the context of a  
25 product, you the know what that is, right?

1 A Yes.

2 Q That's like where they take a gasket, let's say,  
3 and a little piece from the specimen of the body and  
4 take it into the lab and analyze what it's made out of?

5 A That's correct.

6 Q "And as I stated in our recent telephone  
7 conversation, I mailed four asbestos samples to you for  
8 analysis. Sample Number 3 was taken while flat black  
9 gaskets were being packed and Number 4 while  
10 spiral-wound, parenthesis, blue gaskets were being  
11 packed. Both gasket types are being handled when  
12 Sample Number 1 and 2 was taken."

13 So let me stop there. When there is a reference  
14 to blue in the context of asbestos, that's crocidolite?

15 A Well, we know that crocidolite has a blue tint to  
16 it, so it could mean that. But I don't know that for a  
17 fact in this case.

18 Q Okay. Let's read on. "The asbestos types used on  
19 the gaskets are probably chrysotile and crocidolite."

20 Does that suggest to you that the blue is a  
21 crocidolite gasket?

22 A Well, he says that it's "are probably." I can  
23 only read this, but you're correct, that person thinks  
24 that he may have sent a crocidolite asbestos to them.

25 Q Right. So this person thinks that what they were

1 sent from Fisher Controls to do a bulk sample on and  
2 analyze what it's made out of was crocidolite?

3 A He's saying "are probably" is what he said,, yes.

4 Q And you talked a lot on direct examination in  
5 terms of your views about chrysotile variety of  
6 asbestos, correct?

7 A Yes.

8 Q We can agree, however, that as to the blue  
9 crocidolite, it is your opinion that even at low  
10 levels, crocidolite can contribute to the causation of  
11 mesothelioma because it is the most potent form of  
12 asbestos to be exposed to, right?

13 A That's correct. You still have to have a  
14 sufficient dose, but it's a very low number.

15 Q A very low number?

16 A Yeah, but not as low as one gasket is. It's low,  
17 but you have to define low and very low, I guess.

18 Q I just think we agree that if Mr. Jolly was  
19 exposed to crocidolite gaskets from Fisher, the blue  
20 ones, that it would be your opinion, Dr. Crapo, that it  
21 would be a very low dose would put him at risk for  
22 mesothelioma, right?

23 A You're taking me a little bit out of context here.  
24 The crocidolite, I've told you that chrysotile takes  
25 like a hundred or more fiber cc years to possibly

1 create risk for mesothelioma. Crocidolite may do that  
2 at one hundred or a thousand times less dose.

3 So it's a very potent fiber. But it doesn't do it  
4 at extremely low levels. You still have to have some  
5 dose. Working with one or two gaskets that were  
6 crocidolite would not create enough dose to do  
7 anything. It would be a million times less than I'm  
8 talking about. It's just a really low level. So you  
9 still take a certain amount.

10 And, finally, crocidolite gaskets were more  
11 expensive and for use on acid lines like in a chemical  
12 factory. If a Fisher Control valve was used in a  
13 chemical factory, they may put a crocidolite gasket on  
14 it. It's possible. But in a nuclear power plant, I'm  
15 not aware of any appropriate use for a crocidolite  
16 gasket.

17 Q I thought that wasn't your area.

18 A Well, I do read a lot about this, yes.

19 Q So as it relates to gaskets, it is your area, but  
20 insulation is not your area?

21 A You asked me what I knew about it. I still would  
22 defer to an industrial hygienist whose field this is,  
23 actually, but I've read the reports, and I've read the  
24 work on it, so I do have opinions on it. I'm just not  
25 putting myself out as an expert for when gaskets are

1 used of certain types and certain not. I understand  
2 their field, but I'm not the industrial hygienist.

3 Q How much asbestos in terms of a percentage is  
4 contained in gaskets?

5 A Well, it would vary. Again, I'll defer to people  
6 who do it. To me, the important issue is what the  
7 exposure is, not what the content of the gasket was.  
8 Because if it's sealed in a resin base, you have very  
9 little release. That's very different from a fluffy  
10 insulation that has a lot of release. It's not the  
11 percent chrysotile or asbestos; it's the release that  
12 creates risk for disease.

13 Q 80 to 85 percent of gaskets are asbestos, right?

14 A Well, again, I'm not the expert on the content,  
15 but what I do know is the release factors. So I'm not  
16 going to say that some gaskets couldn't have been made  
17 with a lot or a little, but because when you make a  
18 gasket, you put it in a resin base, it changes the  
19 release of the fibers when it's worked with. And what  
20 you need to study is the release.

21 An insulation typically has very loose asbestos in  
22 it, and typically has much higher release than a gasket  
23 would.

24 Q People have studied the release and they have  
25 published their work for other folks to see. That's,

1    in part, how you have this information?

2    A        Yes. It's industrial hygiene reports.

3    Q        Let me hand you what we've marked as Plaintiffs'  
4    Exhibit 546, which is a paper that evaluated and  
5    measured how much asbestos is released when certain  
6    things are done to the gasket, like taking it out of  
7    the package, using a wire brush, a scraper, those sorts  
8    of routine activities, right?

9    A        That's what industrial hygienists measure, yes.

10   Q        This is a paper that was published in the  
11   peer-reviewed literature. You have seen this?

12   A        I have.

13   Q        You're familiar with it, aren't you?

14   A        I am.

15            MS. FARRISE: Your Honor, permission to display  
16   it.

17            THE COURT: Any objection? No objection? It's  
18   displayed.

19            MR. BOUCH: Well, wait. Excuse me, Your Honor.

20            THE COURT: This is a document that's in evidence  
21   now, correct?

22            MR. BOUCH: No, ma'am.

23            THE COURT: 546 is not in evidence?

24            MS. FARRISE: No, Your Honor.

25            THE COURT: He's identified it as something he's



1 familiar with, so she's offering it into evidence now.  
2 Let's get that straight.

3 MS. FARRISE: Yes, Your Honor.

4 THE COURT: You object to it, Mr. Bouch?

5 MR. BOUCH: That's correct.

6 THE COURT: What's the grounds of the objection?

7 MR. BOUCH: Number one, I think the doctor has to  
8 admit it's authoritative; and number two, it can only  
9 be admitted under the learned treatise rule as a  
10 demonstrative exhibit.

11 THE COURT: I think she's offering it as an  
12 demonstrative exhibit.

13 And, Doctor, is this an authoritative article?

14 THE WITNESS: No.

15 THE COURT: It's not an authoritative article?

16 THE WITNESS: No. I would not consider this  
17 article authoritative.

18 THE COURT: Sir?

19 THE WITNESS: I would not consider this article to  
20 be authoritative.

21 MS. FARRISE: I'm offering it to impeach his views  
22 about the release of gaskets. He's familiar with it,  
23 and he's seen it.

24 THE COURT: All right. Then if she's offering it  
25 to impeach, does that change your objection, Mr. Bouch?

1            MR. BOUCH: She can impeach him all she wants, but  
2 it can't be in evidence. That's the demonstrative  
3 evidence rule, the learned treatise rule.

4            THE COURT: We are going to allow her to examine  
5 him on this learned treatise, and it's not going to be  
6 going to the jury as evidence. She's going to examine  
7 him on this treatise, and she's going to put it up --

8            MR. BOUCH: That's what I object to. It can't be  
9 shown to the jury unless it's in evidence in some way,  
10 shape, or form. And the learned treatise rule requires  
11 it to be acknowledged as a learned treatise, much as I  
12 did with Dr. Frank on Dr. Roggli's book and  
13 Dr. Selikoff's book. He acknowledged that he didn't  
14 agree with a lot of it, but it was authoritative,  
15 written by respected scientists. That's what the rule  
16 requires.

17            THE COURT: Very good. All right.

18            Ms. Farrise, have you got any other examination of  
19 Dr. Crapo on this article?

20            MS. FARRISE: Yes, Your Honor.

21            THE COURT: Well, first examine him on why he does  
22 not acknowledge it as a learned treatise because we  
23 have got to jump that hurdle before you can examine him  
24 on the content of it.

25 BY MS. FARRISE:

1 Q Well, Dr. Crapo, this is an article that's peer  
2 reviewed in the scientific literature, available for  
3 anyone outside of court to see -- let's start there --  
4 correct?

5 A That's correct.

6 Q You have, it was your testimony, reviewed  
7 literature extensively about the types of situations in  
8 which people are exposed to asbestos, correct?

9 A I have, yes.

10 Q You have worked for John Crane, the maker of  
11 gaskets that were used in a variety of circumstances  
12 including in valves, correct?

13 A Yes.

14 Q I think we've talked about the fact that over the  
15 course of your ten years as an expert witness, John  
16 Crane and its lawyers have paid you a  
17 million-and-a-half dollars, or at least you don't  
18 dispute that, correct?

19 A Yes.

20 Q And, certainly, therefore, you have combed and  
21 reviewed the literature, the published literature  
22 that's available, as to what scientists and folks who  
23 have analyzed how much asbestos is being released from  
24 a gasket under just ordinary handling would create,  
25 correct?

1 A That's correct.

2 Q And I understand it sounds like you don't agree  
3 with perhaps what other researchers who have published  
4 their work have indicated, but you certainly have read  
5 this article, right?

6 A I have read it.

7 Q You have reviewed it, correct?

8 A Yes.

9 Q You have been questioned about it in courts of law  
10 on numerous occasions, correct?

11 A Yes.

12 Q And it's, I guess, your opinion that this article,  
13 which does not support your view, is not a learned  
14 treatise, correct?

15 A I don't consider this article authoritative.

16 Would you like to know why?

17 Q Well, I'm asking right now, the article that  
18 doesn't support your view, you just don't consider it a  
19 learned treatise?

20 A That's not the reason why I don't consider it --

21 Q I'm just asking you if you did or you don't.

22 A I don't consider this to be an authoritative  
23 article.

24 Q And it's published in a scientific journal called  
25 *Applied Occupational and Environmental Hygiene*?

1 A Yes.

2 Q And it specifically goes through scientific  
3 techniques and the like of people simulating the use of  
4 gaskets and actually with scientific tools measuring  
5 the airborne release level from those gaskets, correct?

6 A That's what it alleges in the methods, yes.

7 Q That is what it alleges. And that what it finds  
8 is at odds with what you have testified to, which is  
9 that these gaskets are bound in a rubber or whatever  
10 the testimony was, correct?

11 A No, that's not the basis. I can explain the  
12 basis, but that's not it.

13 THE COURT: Here's what we're going to do.

14 Jury, I'm going to ask you to go to your jury room  
15 for a minute.

16 (WHEREUPON, the jury exited open court at  
17 11:53 a.m.)

18 THE COURT: All right. Dr. Crapo, have a seat. I  
19 want to understand from you why you don't acknowledge  
20 that this is a learned treatise. This doesn't have  
21 anything to do with whether you agree with the  
22 conclusions expressed therein; it has to do with  
23 whether this is a peer-reviewed scientific treatise  
24 that can be regarded as a learned treatise for the  
25 purpose of discussing opinions, scientific opinions,

1     here, and I want to understand why you don't --

2             THE WITNESS:    Okay.    I don't really understand  
3     fully what you mean by "learned treatise."    I'm  
4     answering the question about whether I consider it  
5     authoritative.

6             One of the common principles in science is work  
7     has to be reproducible, and it has to be validated and  
8     consistent across other people's ability to reproduce  
9     the results.    And Dr. Longo's results are a major  
10    outlier in this field.    There are literally hundreds of  
11    studies done in this field, and they establish very  
12    clearly a range that is appropriate for this kind of  
13    work.

14            Now, it's well known when you do a study on a  
15    gasket, you can abuse it.    I mean, you can do a  
16    standard work on it like a workman does, or you can  
17    actually just grind it all the way up and turn it into  
18    dust.    So it's possible to implement the procedure in  
19    ways that produces extraordinary amounts that wouldn't  
20    occur under normal conditions, which is the reason why  
21    you look at a study to see if it's in the range of what  
22    other people are able to reproduce.

23            In my opinion -- it's my opinion been being  
24    asked -- it's an outlier way outside the range, so I  
25    don't consider it authoritative.    Now, if there is a

1 definition of learned treatise that means it was  
2 published in the right place, I don't have any argument  
3 with that. I don't think the data is authoritative,  
4 and it's not because it disagrees with me. I would --  
5 I'm interested in data from every side to understand  
6 the field. It's because it was not consistent with the  
7 rest of the field.

8 THE COURT: All right. Are you aware of the  
9 testimony that's been given by Mr. Jolly and Mr. Taylor  
10 in this case regarding how these flange gaskets were  
11 removed when the pipes were broken apart and they were  
12 removing flange gaskets and putting in new ones?

13 THE WITNESS: Yes, I'm aware of that.

14 THE COURT: And are you aware of the testimony  
15 that these gaskets were grinded with mechanical  
16 grinding equipment and then brushes, metal brushes,  
17 were used to brush them off so they were ground and  
18 crushed during the process of the removal of these  
19 gaskets at Duke when he worked there?

20 THE WITNESS: Yeah. The part of it is they scrape  
21 it off and they grind and do that to the residual to  
22 get it clear. I'm aware of that technique. I'm just  
23 saying when other people have done that technique, they  
24 get levels that are tens of hundreds times lower than  
25 what Longo gets, so I don't consider Longo

1 authoritative. Nothing more than that.

2 THE COURT: Ms. Farrise, anything further from  
3 you?

4 MS. FARRISE: Yes, Your Honor. I believe that an  
5 expert witness, although an expert under any state's  
6 rules including South Carolina, can be cross-examined  
7 for impeachment purposes. And here it would make no  
8 sense that an expert witness, who has come on direct  
9 examination and said something that the other side in  
10 this case believes is inaccurate, that the other side  
11 on cross-examination not be able to challenge the  
12 expert simply because that expert has closed the door  
13 by saying, "I don't consider it a learned treatise."

14 So when I look at the learned treatise rule, it's  
15 one that is consistent really in this jurisdiction and  
16 many others, which goes to basically reliability and  
17 fairness. It's not fair that someone be cross-examined  
18 with something they have not seen before, they have not  
19 read. If they have read it and rejected it, which is  
20 what he is saying, then he can say that and on redirect  
21 say all the reasons why.

22 But there's no unfairness in cross-examining  
23 someone with something that they have read and  
24 considered in formulating their opinions, and the  
25 things that they have rejected are more important in



1 terms of cross-examination than the things that they  
2 agree with. Otherwise, I would just be standing up  
3 here cross-examining him with things that he agrees  
4 with, which is not a challenge and does not fulfill the  
5 purpose of cross-examination.

6 THE COURT: All right. Mr. Bouch.

7 MR. BOUCH: Your Honor, I will rely on my earlier  
8 objection supplemented by Your Honor's opinion in  
9 *Watson vs. Ford*. In addition, the opinion of the  
10 Honorable George Hodges, bankruptcy judge for the  
11 Western District of North Carolina, *In Re Garlock*, I'll  
12 be glad to pass up a copy of that opinion. He  
13 discusses Dr. Longo extensively beginning on Page 17  
14 through 21, I believe, and he finds that Dr. Longo's  
15 studies are neither probative nor reliable.

16 MS. FARRISE: Your Honor, I see you're reading.  
17 It occurs to me that we, in part, treaded this ground  
18 in motions in limine because one of the companies  
19 wanted to exclude Dr. Longo's unpublished work, and the  
20 ultimate ruling of the court was the unpublished work,  
21 if the witnesses had seen it, could be discussed. This  
22 was actually scientifically published work out in the  
23 general domain.

24 MR. BOUCH: I think Your Honor ruled that you  
25 weren't going to keep it out in limine; you were going

1 to wait until a foundation was laid.

2 THE COURT: Tell you what I'm wrestling with here.  
3 I rather precipitously declared Dr. Crapo as an expert  
4 on asbestos. Certainly, there are some limitations on  
5 his knowledge about asbestos, as has now been brought  
6 out in examination. He hasn't done any research in the  
7 area; he's not done anything with it except testify in  
8 court for 25 years; he's not treated patients, et  
9 cetera, et cetera. That's what got me a little bit  
10 concerned about him opining on the authoritative nature  
11 of a 2002 article in a mainstream industrial hygiene  
12 publication. So that's what I'm wrestling with.

13 MR. BOUCH: Your Honor, I don't think there's been  
14 a foundation that this is a mainstream publication. I  
15 think Your Honor's characterization that all Dr. Crapo  
16 has been doing for 25 years is testifying is --

17 THE COURT: No. I'm saying with respect --  
18 Mr. Bouch, there's no sense in being impolite to me.

19 MR. BOUCH: I didn't mean it to be impolite.

20 THE COURT: I'm picking that up. I'm not  
21 suggesting that he hadn't done anything for 25 years  
22 except testify in court. I am simply saying that with  
23 respect to asbestos, he has conducted no research,  
24 written no articles, treated no patients for 25 years  
25 in this area; and, therefore, what he has done is

1 related to testifying in court in terms of asbestos.  
2 That's all I'm saying.

3 That gives me a little bit of pause in terms of  
4 his ability to be authoritative about more recent  
5 research in the area of asbestos, and particularly by  
6 industrial hygienists, because he has qualified his  
7 answers consistently here by saying that there are  
8 certain things he can't testify to because he's not an  
9 industrial hygienist, and he is not familiar with that.  
10 He's said that a good many times so far.

11 I am concerned, now that the testimony has been  
12 elucidated, about him making such a blanket statement  
13 about what is in Duke Power. She's asked him many  
14 times to talk specifically about what he knows about  
15 what is in the Duke power plant with respect to  
16 insulation, and every single time he dodges the ball  
17 and goes off on, you know, kind of what should be in  
18 there and so forth. He hasn't demonstrated any direct  
19 knowledge about how gaskets are used in the Duke, what  
20 kind they are, how they were ground off or anything  
21 like that. And she's now trying to test his expertise  
22 with something that at least appears to me to be a  
23 pretty mainstream article that's been jumped on by --  
24 and I see this case that you've given me -- it had been  
25 jumped on as not reliable by one judge.

1 MR. BOUCH: Your Honor, again, I have cited the  
2 *Watson* case which stands for the same proposition --

3 THE COURT: *Watson* is a very different thing. It  
4 doesn't talk about this thing at all. I couldn't be  
5 more familiar. It was the guy that was going to opine  
6 on cruise control when he never even looked at the  
7 cruise control mechanism, so I'm very familiar with  
8 that.

9 MR. BOUCH: Your Honor, if I may be heard on it,  
10 the rule provides it can be impeached if established as  
11 reliable authority by the testimony or admission of the  
12 witness or by other expert testimony or by judicial  
13 notice.

14 There's no indication what kind of publication  
15 this is, number one. There's no indication any other  
16 expert relied upon it, and to the extent -- and Your  
17 Honor is correct. He's not an industrial hygienist.  
18 Ms. Sahmel, our next witness, is an industrial  
19 hygienist, and she'll be happy to address these issues.  
20 But to take a medical doctor through something by --  
21 and Dr. Longo is a material scientist. He's not even  
22 an industrial hygienist himself.

23 So our point is they can't lay a foundation for  
24 this document with this witness to show the jury. She  
25 can ask him questions about it. He can explain it, but

1 I think it's incredibly prejudicial to put something  
2 like this on the screen that can't be admitted as  
3 evidence through this witness.

4 THE COURT: All right. He's made some -- he has  
5 offered some strong opinions that say it's not possible  
6 for Mr. Jolly to have contracted the mesothelioma that  
7 he undoubtedly has -- that's not disputed -- from these  
8 gaskets. He said that point-blank. And she is  
9 attempting to test his opinion, not only by discussing  
10 the foundation for it, which is in terms of his direct  
11 experience is not strong. His experience is only by  
12 reading a bunch of articles to make that opinion.  
13 That's what he says. And his general understanding of  
14 the pulmonary system and so forth. It is not based on  
15 his direct experience with Duke's plant or with  
16 asbestos or with Mr. Jolly.

17 MR. BOUCH: No question.

18 THE COURT: But he has made a very blanket  
19 statement about the fact that, in his mind, Mr. Jolly  
20 cannot have contracted mesothelioma from these gaskets,  
21 so that's what she's attempting to test.

22 MR. BOUCH: Your Honor, I agree, and she can do  
23 that. My objection goes to this document being  
24 admitted into evidence for any purpose, including  
25 demonstrative. That's my focus.

1            She can ask him all these questions, and she can  
2 probe into it, and she can kick him around from now  
3 till suppertime, but my objection goes to this  
4 document. It fails to have the foundation required  
5 under the rule. I've given you authority on it.

6            THE COURT: That's fine. You have done everything  
7 you need to do. But your opinion is that -- your  
8 objection is to putting it up on the screen.

9            MR. BOUCH: Right.

10           THE COURT: Now, is your objection also going to  
11 asking him anything about this article.

12           MR. BOUCH: No. She can ask him all she wants.

13           THE COURT: That I understand.

14           Ms. Farrise, I'm not going to delay this process  
15 any longer. You can ask him about it, but you can't  
16 display it.

17           MS. FARRISE: May I have just two things, Your  
18 Honor? First of all, his testimony went further than  
19 the court described. He said that the makeup of these  
20 gaskets were such that they were in a rubber or how  
21 they were made, and there would not be release of  
22 fiber. And, therefore, he said one gasket wouldn't do  
23 it or two gaskets wouldn't do it, suggesting to the  
24 jury there's no fiber release. That's how we got into  
25 it. That's the first thing.

1           The second thing is Ms. Sahmel, who is coming  
2 next, in terms of this being authoritative and  
3 reliable, cites this particular paper. She prepared a  
4 written report. She has an extensive reference list,  
5 and this particular paper is on that reference list.

6           So for counsel to stand here and say that it's not  
7 a learned treatise and if there's any dispute about  
8 that among, in this case, industrial hygienists --

9           THE COURT: No, no. I don't think he's saying  
10 that, although he doesn't like it and he's given me an  
11 opinion that one judge didn't like it.

12          MR. BOUCH: If you want to read about Dr. Brody,  
13 he's in there, too.

14          THE COURT: I flipped through it. He doesn't like  
15 anybody. He's not even saying it's not authoritative.  
16 He's saying one thing and one thing only, that  
17 Dr. Crapo refuses to acknowledge that it's  
18 authoritative. That's fine. We're going to move on.

19          You can -- when the other witness gets on, you can  
20 certainly ask the other witness about its  
21 authoritativeness and contrast that with what he says.  
22 And you can certainly ask him about fiber release as  
23 has been discussed in this thing. All you can't do is  
24 put it up on the screen.

25          Do you understand the boundaries of what we're

1    doing here?

2            MS. FARRISE:    I believe so, Your Honor.

3            THE COURT:    Very good.

4            Bring the jury in, please, sir.

5            (WHEREUPON, the jury entered open court at  
6    12:12 p.m.)

7            THE COURT:    Have a seat.    We have had some  
8    discussions about how to use a document.    I'm not  
9    admitting that document into evidence or putting it on  
10   the screen.    She may question him about this particular  
11   article.    So that is what will happen now.

12           Thank you very much.

13           All right.    Ms. Farrise.

14    BY MS. FARRISE:

15    Q       Dr. Crapo, do you have the paper that's marked as  
16    Exhibit 546 entitled *Fiber Release During the Removal*  
17    *of Asbestos-Containing Gaskets, a Work Practice*  
18    *Simulation?*

19    A       Yes.

20    Q       And this was performed, the study, in a  
21    laboratory?

22    A       Yes.

23    Q       There were participating in this study a material  
24    scientist, a certified industrial hygienist -- actually  
25    two certified industrial hygienists, Mr. Hatfield and



1 Mr. Newton?

2 A Yes, that's what I understand.

3 Q And industrial hygienists, in part, may be  
4 retained to study products, to study a workplace and  
5 determine whether or not there's any risk or hazards  
6 that might -- workers might suffer, correct?

7 A That's correct.

8 Q And their job, if they're doing it, is to identify  
9 hazards that workers might be unaware of because they  
10 don't have the background and training and for them to  
11 then put methods in place to protect them, protect the  
12 workers from whatever those hazards are; that's what  
13 you understand that field of industrial hygiene to be?

14 A That's certainly a portion of that field, yes.

15 Q And these authors also engaged, after they  
16 performed certain activities with the gaskets, they did  
17 microscopic evaluation of the air and also of the  
18 products that they were using, correct?

19 A Yes.

20 Q And you mentioned earlier in your qualifications  
21 that, even though you're not a board certified  
22 pathologist, you do do some part of your work, some  
23 aspect involves pathology; is that correct?

24 A That's correct.

25 Q So I'm sure you know what I mean when I say PCM

1 and TEM, right?

2 A I do, yes.

3 Q And then there is a whole other thing. So PCM,  
4 the jury has heard a little bit about this, is  
5 shorthand for a microscopic technique based on contrast  
6 microscopy?

7 A Yes.

8 Q That's utilizing a light microscope?

9 A Yes.

10 Q TEM is transmission electron microscopy, which  
11 uses an electron beam and an electron microscope,  
12 correct?

13 A Yes.

14 Q And as to the evaluation that these folks  
15 undertook, they found that hand wire brushing a small  
16 valve -- I'm sorry, a small flange -- let me back up.  
17 Strike that.

18 Part of what they evaluated is or what they  
19 simulated was removing a gasket from a valve assembly  
20 and a flanged end, correct?

21 A Yes.

22 Q And they looked at both what the fiber release  
23 would be from a very small valve that had a small  
24 flange, correct?

25 A I believe so yes.

1    Q      And a big valve that had a big flange, correct?

2    A      I think that's correct, yes.

3    Q      And they took -- they put on protective suits, and  
4 they put a filter, collector, near the breathing zone  
5 of the persons who were conducting this experiment,  
6 correct?

7    A      That's what I understand, yes.

8    Q      And they took the air into the filter, and then  
9 they took the filter into the lab and utilized these  
10 microscopic techniques; they report what they found in  
11 terms of the asbestos that was actually in the air from  
12 the work that they had simulated, correct?

13   A      Yeah. That's what I understand.

14   Q      That's what they report in this paper, right?

15   A      That's -- that's the method they describe, yes.

16   Q      And they also looked at not just the worker,  
17 meaning the person who was doing the actual work on the  
18 smaller and the large flange to remove the gasket, they  
19 had a filter to collect how much asbestos was in the  
20 air from the person who was not doing the work but  
21 standing at the ready and assisting the person who was  
22 doing the work?

23   A      That's correct, I think, yes.

24   Q      And they report values for both, correct?

25   A      Yes.

1    Q      And so the difference between the PCM, the light  
2    microscope, and the electron microscope on the same  
3    sample is that the electron microscope, by virtue of  
4    its higher ability of magnification, is going to be  
5    able to, number one, specifically identify if what  
6    you're looking at is asbestos versus something else,  
7    right?

8    A      Yes. It will do that.

9    Q      It's going to be able to very precisely tell you  
10   that it's asbestos and how much, and there are some  
11   limitations with the light microscope?

12   A      That's correct.

13   Q      So, for instance, if we pulled in some air that  
14   had cotton fibers and asbestos fibers, a PCM would only  
15   be able to count fibers and maybe not make the  
16   distinction between what kind of fibers?

17   A      That's correct.

18   Q      Okay. And so these folks, that's the reason that  
19   they went through and did the higher power electron  
20   evaluation on the same sample. And they found that  
21   when a worker was scraping and hand wire brushing a  
22   gasket off of a small flange, that by TEM -- and they  
23   took numerous samples -- they reported finding a range  
24   of 29.9 to 144.2 fibers per cc of asbestos liberated  
25   from that activity?

1 A That's what they report in this paper.

2 Q And you were talking about it is the fiber per cc,  
3 the sugar cube thing, right?

4 A Yes.

5 Q Correct. So like today, the level is .1 fiber per  
6 cc, so you would need ten sugar cubes to have one  
7 fiber?

8 A Yeah.

9 Q They reported that hand scraping and hand wire  
10 brushing of a small flange as measured by TEM had 144  
11 asbestos fibers in one sugar cube of air, right.

12 A Yeah. That's what this reports for the time that  
13 they did the analysis.

14 Q For the worker. And for the assistant, the person  
15 who is just standing there, the assistant to the  
16 worker, I'll call it the AW, that person's asbestos  
17 exposure from the hand scraping and hand wire brushing  
18 of the small flange was 2.2 fibers per cc to 29.5  
19 fibers per cc, correct?

20 A Yes. That's what's reported here.

21 Q And then when they went over and looked at a big  
22 flange on a big valve assembly with a bigger gasket,  
23 they made measurements of that both by PCM and TCM as  
24 well, correct?

25 A Yes.

1 Q Table 5. One of the things they reported,  
2 however, was that some of the filters got so overloaded  
3 with asbestos that they couldn't even make an  
4 estimation, right?

5 A I don't recall those exact words, but -- so I  
6 can't comment on it.

7 Q Okay. Well, moving on, the large flange, the  
8 worker who they measured on the larger flange, they  
9 report that that person's exposure to asbestos from  
10 hand scraping and hand wire brushing was 199.6 to 842.7  
11 asbestos fibers per cc of air, correct?

12 A That's what they report there, yes.

13 Q And that's for the worker. And, again, they  
14 looked at the person not doing the work, just standing  
15 in the area when someone is hand removing a gasket from  
16 the large flange, the assistant, and they measured that  
17 person's asbestos, airborne asbestos exposure, to be a  
18 range of 13.6 fibers per cc to 101 asbestos fibers in a  
19 sugar cube of air?

20 A That's what they report. And these are peak  
21 levels, yes.

22 Q Right. When the work is occurring, right?

23 A Yes. It's a peak, not a time-weighted average.

24 Q Actually, they say they sample for 113 minutes,  
25 right?

1 A Well, they say they sampled that, but if you read  
2 the methods, they say they took samples, they changed  
3 every 15 to 30 minutes, and you're not sure how they  
4 combined those. So we don't know the length of  
5 sampling time on this. We know it's a peak level and  
6 not a time-weighted average.

7 Q If you did a time-weighted average calculation on  
8 108 fibers per cc, it would still blow out any legal  
9 limit, wouldn't it?

10 A Yes, it would.

11 Q 842 fibers per cc on a time-weighted average would  
12 blow out any legal limit at any time?

13 A I believe so.

14 Q Yes. So the calculation would you be take 842.7  
15 fibers per cc divided by 480 minutes of time -- that's  
16 eight hours, right?

17 A You have to multiply by the time in which that was  
18 collected, but yes, then divide by the number of  
19 minutes in eight hours, yes.

20 Q And so what would it be on a time-weighted average  
21 basis?

22 A I don't know the number of minutes for the sample,  
23 but it would still be a substantial number, I agree.

24 Q And you mentioned that, to some extent, you found  
25 that these numbers as reported in this particular study

1 were higher than some of the other papers that have  
2 tried to -- or published and have tried to report on  
3 it, right?

4 A Yeah. You're asking my opinion about that?

5 Q No. I'm saying that one of the things that I  
6 understand is a concern to you is that these numbers  
7 are high; some other folks have also done some  
8 evaluations of gasket work, and their numbers were  
9 lower?

10 A That's correct. This study is an outlier, in my  
11 opinion, and not reproducible.

12 Q The other studies, however, in one instance, they  
13 use wetting techniques, and they were wetting the  
14 gasket the whole time. That was the Spence study,  
15 correct?

16 A Yes. Some people used wetting.

17 Q And with wetting, they got lower numbers, right?

18 A That's correct.

19 Q The other papers, for instance, one by an author  
20 Chang with the Chevron Company, didn't verify ahead of  
21 time that the gaskets that were being removed were  
22 actually asbestos-containing gaskets, right?

23 A You're going to need to provide these reports to  
24 me if you want me to talk about specific studies.

25 Q We have an industrial hygienist coming --



1    A        I think you should have the industrial hygienists  
2    address these issues.

3    Q        In terms of what you do understand from your  
4    25 years of work as an expert witness and including on  
5    behalf of valve companies and companies that made and  
6    sold asbestos-containing gaskets, and I think there's  
7    some information about it here, the EPA, the  
8    Environmental Protection Agency, who you indicated that  
9    you had some association with?

10   A        Yes.

11   Q        Okay. And by the way, let's clarify that. The  
12   EPA did not hire you to sit in a meeting with Berman  
13   and Crump. You were hired by those authors who put  
14   together a group, correct?

15   A        That's not correct. The EPA contracted with  
16   Eastern Research Group to put together the review  
17   session, and I was asked to serve by Eastern Research  
18   Group, which is a contract agency that arranges  
19   conferences and manages it, sets it up, does the  
20   minutes. But they did it on behalf of the EPA.

21   Q        So between you and the EPA was this Eastern  
22   Research Group?

23   A        Well, between me. It's like a secretarial service  
24   that sets the meeting up. They arrange the meeting  
25   space, they take the minutes, they have the -- you

1 know, they arrange the meeting, but they don't actually  
2 conduct any of the science, and they're not responsible  
3 for the science as discussed.

4 Q The EPA in 1989 announced a ban on the  
5 manufacture, importation, processing and distribution  
6 of asbestos-containing gaskets, and they were sued in  
7 court, correct?

8 A That's my understanding, yes.

9 Q So it's not as though the EPA has not taken action  
10 to try and ban these products; the courts have said  
11 they could not?

12 A That's what I understand, yes.

13 Q And there was a loophole that if you were  
14 importing asbestos gaskets during the time period that  
15 the lawsuit was occurring, 1989 to 1991, that because  
16 of the loophole, you could keep importing and selling  
17 and making asbestos gaskets?

18 MR. BOUCH: Your Honor, I object to that  
19 characterization. I object to the impeachment of the  
20 doctor by a decision of the United States Court of  
21 Appeals.

22 THE COURT: Sustained.

23 BY MS. FARRISE:

24 Q Doctor, in terms of the various government  
25 agencies that put out regulations aimed at protecting

1 worker and citizen health, they don't agree with the  
2 opinions that you have expressed in this courtroom  
3 about the safety or not of asbestos, correct?

4 A I think you're asking me in my presentation, I  
5 talked about the regulatory pathway that was set up.  
6 That's the one that was used by all the government  
7 agencies.

8 Q No. The opinions that you have expressed here  
9 that it takes a high dose of chrysotile asbestos to  
10 cause mesothelioma, OSHA doesn't agree with that,  
11 correct?

12 A First of all, I said it takes a high dose of  
13 chrysotile. And OSHA hasn't separated the two fiber  
14 types in making their opinions, so OSHA hasn't  
15 addressed the question the way I have formed it. They  
16 have simply combined all asbestos together as a single  
17 thing and done a single regulation on it. And that's  
18 what I illustrated with the regulatory curve. That's  
19 exactly how it was done by OSHA.

20 Q So in terms of OSHA, trying to take them all  
21 together, the Environmental Protection Agency, the  
22 World Health Organization, the International Agency for  
23 Research on Cancer, state governments, and any other  
24 government agency that is charged with protecting  
25 worker and citizen health, the position of those

1 agencies is there is no safe level, no recognized safe  
2 level below which people are not at risk for  
3 mesothelioma?

4 A I would agree. That's the position of all  
5 regulatory agencies, virtually all, and it follows the  
6 regulatory curve that I explained. They don't separate  
7 the fiber types, and they use a straight line  
8 regulatory curve to extrapolate risks to low levels and  
9 don't look at data on low levels, so I agree with that.

10 I'm explaining why it's not my scientific opinion  
11 about risk for chrysotile, but it is the regulatory  
12 position.

13 Q Which is in disagreement with your courtroom  
14 opinion?

15 A Well, I don't think they have addressed the same  
16 questions, so I don't think that's a correct way to  
17 state it. I understand the regulatory position. I  
18 have explained it. And I have explained why my opinion  
19 about chrysotile wouldn't follow the exact regulatory  
20 pattern.

21 In fact, there is no reported data of a  
22 mesothelioma occurring at really, really low levels for  
23 even amphiboles, but the regulatory curve would predict  
24 a risk at low levels. They would predict that ambient  
25 levels carry risk.

1           In fact, if you ask any of these agencies if  
2 ambient causes it, they say no. But their model would  
3 predict that. And I'm just pointing out that flaw in  
4 that model, and that's very important for this case.

5 Q       One of the reasons we know what the regulatory  
6 position is because we can go to the Internet or call  
7 them up and it's printed, correct?

8 A       Yes.

9 Q       We can look at the studies that they have looked  
10 at. They have big documents, for lack of a better  
11 word. Where is my OSHA binder? We'll get it out  
12 later.

13       Anyway, OSHA, for instance, doesn't just put out  
14 regulations and say, "Here. Take our word for it."  
15 Typically, as part of the rule-making or regulatory  
16 process, they, number one, evaluate the same studies  
17 that you have evaluated, correct?

18 A       I think they evaluate only a very small number,  
19 actually. If you look through their regulations -- in  
20 fact, when they formed their first regulation, they  
21 only considered six, and I put them on the slide and  
22 showed you.

23 Q       This is a 1994 regulation and the supporting  
24 information having to do with asbestos. Do you want to  
25 take a look at it?

1 A I've seen it before.

2 Q They report on evaluating the data of risk from  
3 animal studies?

4 A That's correct.

5 Q Epidemiological studies?

6 A Yes.

7 Q They have a companion called NIOSH, National  
8 Institute for Occupational Safety and Health?

9 A Yes.

10 Q That part of the government employs scientists,  
11 medical doctors, epidemiologists, toxicologists, et  
12 cetera, correct?

13 A Yes.

14 Q And those folks do risk assessments on whether or  
15 not there's going to be a disease incidence from  
16 exposures to toxins, in this case asbestos, right?

17 A Yes.

18 Q And in the final analysis, at least let's just  
19 take OSHA, even at .1 fiber per cc on a time-weighted  
20 average basis, their risk estimates are that about  
21 three workers in every 1,000 workers exposed only at  
22 that level will develop cancer from that exposure,  
23 right?

24 A I don't remember that exact comment, but seeing  
25 somewhere in there, that takes from the regulatory

1 curve. Experience shows that that's not correct. But  
2 if you take that red line curve and take it to zero, it  
3 will predict a disease at the very, very lowest level.  
4 There's no question about that.

5 And I think the amazing thing on that document is  
6 that they do all this work, but in no place in that  
7 document do they separately analyze chrysotile and  
8 amphibole and talk about the difference in the risk.  
9 That's not in the document. From a regulatory point of  
10 view, it's fine to combine them together and provide a  
11 document that protects the human health, but it doesn't  
12 address the science correctly.

13 Q Dr. Crapo, would you mind showing to this jury  
14 your report and your assessment and evaluation that you  
15 have prepared in writing on this topic?

16 A I haven't done one, but I would refer you to  
17 Berman and Crump who did do it.

18 Q And Berman and Crump, by the way, was rejected by  
19 the EPA --

20 A It was not --

21 Q -- excuse me. It's not the EPA policy, correct?

22 A Yeah. EPA never adopted their policy, but they  
23 never rejected Berman and Crump.

24 Q Okay. So rejected or not adopted, whatever the  
25 language is, the meeting that you participated in and

1 the work that came out of it was not adopted by the EPA  
2 as something it would put its name on, right?

3 A Well, it was never adopted as policy, you're  
4 correct.

5 Q And your paper that is at odds with all of the  
6 scientists at OSHA and at NIOSH and at EPA and the rest  
7 of the world, have you sent it in to OSHA saying,  
8 "Look, we're spending all this money protecting people,  
9 giving them respirators, putting in ventilation, doing  
10 wet-down, doing a lot of things that actually interfere  
11 with people getting work done on a daily basis, and you  
12 know what, you don't have to because here is my expert  
13 analysis that shows you that you are wrong"? Have you  
14 done that, Dr. Crapo?

15 A You're completely misstating my testimony.

16 Q Have you written to them a single letter --

17 A I told you that --

18 Q -- excuse me -- that says you got it wrong; your  
19 linear model is wrong, and here is what my opinion is?

20 A I have already told you many times that I've not  
21 done original research in this area, and, therefore,  
22 would not publish in this area.

23 But you're not correct when you say that -- when I  
24 tell you that -- to put words in my mouth that say that  
25 the regulatory model is wrong. It's right for the



1 purpose it serves. If I were on that regulatory  
2 committee, I would have also voted for the same set of  
3 standards, and I would have used the regulatory curve  
4 to do estimates, and I would say that would be  
5 protective of human health. That doesn't mean that I  
6 would believe that three out of every thousand people  
7 exposed to really low levels of asbestos are going to  
8 get a disease like mesothelioma. There's no data. In  
9 fact, there is lots of data to say that's not true.

10 But the regulatory model serves an important  
11 purpose. And when I served on KASAK (phonetic), we had  
12 to do regulatory elements for all the major air  
13 pollutants, air pollution criteria -- ozone, CO<sub>2</sub>, things  
14 like that. And we used the regulatory model for that,  
15 and we all discussed the fact that we knew it was  
16 linear, and we knew it overestimated risk at low  
17 levels, but we thought it was important to use such a  
18 model to adequately protect human health and avoid --  
19 err on the side of protecting health as opposed to  
20 missing something.

21 So I'm trying to say that I'm not there in a  
22 position of saying the governments are wrong. They're  
23 right to set standards, and they set the standard of a  
24 PEL of 1, which I agree with. So I just would like to  
25 have my testimony be straight on what I think the

1 correct answer is.

2 Q Sir, can we agree that in 1972, the very first  
3 OSHA standard, it was not enacted or designed to  
4 prevent cancer?

5 A I think when they first started out, they hadn't  
6 really done adequate evaluation of that. The later  
7 ones were designed to protect against cancer.

8 Q They write in 1972 that, "This standard hopefully  
9 will reduce the cases of asbestosis, but it will not  
10 protect against mesothelioma"?

11 A Well, they didn't really have the data at the time  
12 to do that.

13 Q I'm asking you what they printed --

14 A Yes --

15 Q -- excuse me -- in the Federal Register for all of  
16 the companies to see?

17 A Yeah. I agree that's what's in the Federal  
18 Register, yes.

19 Q So in 1972, Crosby and Fisher Valve, if they did  
20 nothing but read the words on the page, the federal  
21 government said this standard for asbestos will not  
22 protect against mesothelioma, right?

23 A That's what they would have read, yes.

24 Q Sir, I want to just see -- I think we agree about  
25 a couple of things having to do with Mr. Jolly. You

1 certainly agree that he has mesothelioma?

2 A I agree.

3 Q You certainly agree that it's caused by asbestos?

4 A I agree it was caused by asbestos, and I believe  
5 it was the amphibole form.

6 Q As a typical clinical course, mesothelioma is  
7 characterized by significant pain?

8 A It's common, yes. The two have bad pain.

9 Q And the closer one gets as the disease progresses,  
10 the pain is such that narcotic, heavy doses of narcotic  
11 medication, is necessary to try to control that pain?

12 A Yes. That's a very common experience.

13 Q A very common experience with mesothelioma is  
14 significant breathlessness, correct?

15 A That's also correct.

16 Q You wrote in your report that you reviewed  
17 Mr. Jolly's PFTs, which are pulmonary function tests,  
18 right?

19 A Yes.

20 Q And that was the ones that were taken in January  
21 of 2016, correct?

22 A Right. I think so. Let me check. Yes.

23 Q And that's kind of a test which, in simplified  
24 form, says how are your lungs working. Try and blow as  
25 hard as you can, and let's see how much air is going in

1 and out, generally speaking?

2 A Yes.

3 Q And in Mr. Jolly's case, you noted in your report  
4 that by January of 2016, his pulmonary function tests  
5 indicated significant inability to breathe and  
6 shortness of breath, correct?

7 A Well, what I said literally was they show mild  
8 restriction in a low lung diffusing capacity.

9 Q Mesothelioma, as the disease progresses, the tumor  
10 characteristically grows into what should be airspace?

11 A That's common that it does extend into the lung,  
12 yes.

13 Q And death by suffocation is characteristic for  
14 some people if something else doesn't kill them first,  
15 correct?

16 A It's actually not the usual cause. There are many  
17 causes of death, but usually it's one side, and they  
18 have adequate ventilation on the other side. But in no  
19 way do I want you to think it's a comfortable death.  
20 It's a very bad tumor.

21 Q And in the case of Mr. Jolly, the tumor has  
22 already spread to the pericardium, to the heart?

23 A Yeah. He has evidence of involvement of  
24 pericardial diffusion and pelvic-abdominal involvement.

25 Q That one reasonable guess is he may go into

1 cardiac failure because of the mesothelioma invading  
2 his heart?

3 A I can't say -- I can't predict that far, but I  
4 mean, it's possible. Mesothelioma can involve the  
5 pericardium and cause cardiac restriction. It can also  
6 involve the abdomen.

7 Q And a typical course in terms of the ways and the  
8 complications that people expire is what?

9 A Usually, it's a very severe disease involving  
10 lungs, the inability to breathe, and typical of most  
11 cancers, it's a process that causes a wasting. A  
12 classic cancer death. It's not a very good death.

13 Q But mesothelioma in particular is a particularly  
14 ravaging cancer death; isn't that true?

15 A I hate to tell you, I've seen a lot of cancer  
16 deaths, and they're all bad. Mesothelioma is not a  
17 good one, but breast cancer can do the same thing.  
18 Lung cancer does terrible things. Cancer is not -- a  
19 bad, lethal cancer is a very bad experience. I -- I  
20 would only say that mesothelioma is one of the more  
21 aggressive cancers.

22 Q And you don't dispute the medical evidence that  
23 before Mr. Jolly passes away, it would be highly  
24 reasonable that he have more hospitalizations, correct?

25 A That's very likely.

1    Q      Become completely incapacitated and unable to care  
2    for himself, even as to a basic of daily living?

3    A      That's a likely outcome.

4    Q      He will need supplemental oxygen?

5    A      That's likely.

6    Q      He will be in hospice, which will require  
7    24-hour-a-day round-the-clock nursing care?

8    A      I would say that's likely, too.

9    Q      Among other things, right?

10   A      It's a bad death, yes.

11           MS. FARRISE: That's all I have right now, Your  
12   Honor.

13           THE COURT: All right.

14           Redirect.

15           MR. BOUCH: Just briefly, Your Honor.

16                       REDIRECT EXAMINATION

17   BY MR. BOUCH:

18   Q      Dr. Crapo, is it your opinion that you have  
19   received evidence from the American Cancer Society that  
20   one in three Americans will be touched by cancer?

21   A      Yes.

22   Q      So regardless of it, cancer is a hard hand to be  
23   dealt?

24   A      It is. It's a huge tragedy. I have had several  
25   in my family, and I appreciate how tragic it is for the

1 individual who experiences it.

2 Q You have been asked a lot of opinions about  
3 abatements and gaskets. Is that a role of an  
4 industrial hygienist?

5 A It is, yes.

6 Q That's not medical?

7 A I read their literature. I understand it, but I  
8 think that the industrial hygienist is in the best  
9 position to describe the work and to answer those  
10 questions.

11 Q Is your opinion for sale?

12 A No.

13 Q Is Dr. Brody's opinion for sale?

14 A I don't believe so.

15 Q Dr. Frank's opinion for sale?

16 A I don't believe so.

17 Q Kind of insulting, isn't it?

18 A I would say so.

19 Q The regulatory curve that you put up there, is  
20 that supported by science or data?

21 A At the high end, it is. It's --

22 Q Can we put it back up there?

23 A I mean, there's data. There is a reason -- the  
24 data allows you to put that curve on, but this is not a  
25 curve. It's -- a straight line is a version of a curve

1 with no bend. But there's no data at the low end, but  
2 there is data to show you what's happening at higher  
3 levels.

4 Q The left side of the Seidman study, is there any  
5 data to support that line?

6 A No. At low levels there's no data to support  
7 that.

8 Q Are your opinions supported by science and data?

9 A Yes.

10 Q Is it your opinion that Mr. Jolly's exposure to  
11 gaskets and packing of chrysotile was not a substantial  
12 cause of his mesothelioma?

13 A That is my opinion.

14 MR. BOUCH: That's all the questions I've got.

15 MS. FARRISE: Your Honor, may I have just three  
16 minutes, please?

17 THE COURT: All right.

18 RECROSS-EXAMINATION

19 MS. FARRISE:

20 Q Dr. Crapo, cancer is a bad death?

21 A It is.

22 Q People who have mesothelioma, like many other  
23 cancers, suffer extreme depression as they move toward  
24 the end of their life?

25 A That's common.



1    Q      Can we agree, Dr. Crapo, that it's insulting to  
2    move towards the end of your life and understand that  
3    your death could have been prevented if people had  
4    simply put a warning on a product?

5           MR. BOUCH: I object to that, Your Honor. That's  
6    completely argumentative and improper.

7           THE COURT: Sustained.

8           MR. BOUCH: Thank you.

9    BY MS. FARRISE:

10   Q      By the way, industrial hygienists, you work with  
11   industrial hygiene data?

12   A      Do I work with it?

13   Q      Yes.

14   A      Yes.

15   Q      You rely on it?

16   A      Yes.

17   Q      You have been provided zero industrial hygiene  
18   data from the industrial hygienist for the defendants,  
19   Jennifer Sahmel, in this case, correct?

20   A      I've seen her report.

21   Q      Other than her report, is there any air sampling,  
22   bulk sampling testing at Duke, anything?

23   A      I think her work was done after this period of  
24   time, like decades after, so it wouldn't be appropriate  
25   to expect it to have data about his exposures in the

1 early 1980s.

2 Q As I understand Ms. Sahmel's background, she was  
3 born in 1970 and became a scientist seven years ago?

4 MR. BOUCH: Objection, Your Honor. This is  
5 cross-examining -- pitting one witness against the  
6 other. Ms. Sahmel will testify this afternoon.

7 THE COURT: I think you have brought out what you  
8 need to, Ms. Farrise.

9 MS. FARRISE: Thanks so much, Your Honor.

10 THE COURT: Very good.

11 Ladies and gentlemen of the jury, that completes  
12 Dr. Crapo's testimony.

13 Thank you, sir, very much.

14 Let's just be sure we know where we are. I think  
15 we want to break for lunch now. Do we agree?

16 MR. BOUCH: Perfectly fine, Your Honor. We have  
17 got about a 30-minute video.

18 THE COURT: I think it would be well to go on and  
19 go to lunch now. It's a quarter of 1:00. Let's be  
20 prepared to get started at 2 o'clock. Very good.

21 (WHEREUPON, the jury exited open court at  
22 12:46 p.m.)

23 THE COURT: Coming back at 2:00 to begin the rest  
24 of defendant's case. You've got your industrial  
25 hygienists, and then you've got a video or you've got a

1 video and then your industrial hygienist, whatever.

2 MR. BOUCH: I've got an industrial hygienist with  
3 children at camp, so I may start with her.

4 THE COURT: All right.

5 (WHEREUPON, lunch recess was taken from 12:45 p.m.  
6 to 2:01 p.m.)

7 MS. FARRISE: Your Honor, as you know, before we  
8 took our lunch break, we asked to receive whatever was  
9 going to be used with this expert, Ms. Sahmel.

10 I received Crosby Exhibit 1510, and I would move  
11 to strike any use of 1510. It was, A, not on the  
12 exhibit list, and, B, never provided to us until about  
13 45 minutes ago, and I don't believe trial by surprise  
14 is allowed.

15 THE COURT: Let me see it, and then I'll hear from  
16 Mr. Bouch.

17 MR. BOUCH: It's demonstrative only. It's to  
18 illustrate her testimony, prepared, just like  
19 Dr. Brody's, which I didn't get and Dr. Frank, which I  
20 didn't get.

21 MS. FARRISE: Okay. It was on the exhibit list --

22 THE COURT: Just a second.

23 MS. FARRISE: And you did get it.

24 MR. BOUCH: Well --

25 THE COURT: This may be late in the game to do

1    this, but this kind of thing you have had for a while.  
2    It needs to be given to them when you cook it up.

3            MR. BOUCH: She brought it last night.

4            THE COURT: Well, that should have been given to  
5    them last night. This -- this is a lengthy thing. You  
6    going to put up all this?

7            MR. BOUCH: Your Honor, I'm going to go  
8    click-click-click as fast as I can. There's no  
9    substance. It's purely demonstrative.

10           MS. FARRISE: I'm sorry, I can't hear what you're  
11   saying up there.

12           THE COURT: Come on up here, then. What he's  
13   saying is that it's purely demonstrative. It is her  
14   qualifications and then her opinions displayed in a  
15   PowerPoint fashion. I castigated him about not giving  
16   it to you earlier. He says he just received it from  
17   her last night.

18           I am, unless you can persuade me otherwise, I'm  
19   going to allow him to use it.

20           MS. FARRISE: Well, it is a 104-slide PowerPoint.

21           THE COURT: I know. That's very excessive, in my  
22   view.

23           MS. FARRISE: And it is more than just her  
24   qualification. And like every other witness, she can  
25   testify to what her qualifications are. To put up the

1 document, which is not demonstrative of anything, she's  
2 going to say what her qualifications are, and then  
3 they're going to put something up. It's actually, I  
4 guess, hearsay. I wasn't allowed to put up an actual  
5 learned treatise, but he wants to put up what is  
6 essentially her opinion. And if you go through and you  
7 look at it, there's charts, there's documents, there's  
8 regulations, there's internal documents. It's  
9 basically his closing argument. And I think to get it  
10 45 minutes before when it was not on the exhibit list,  
11 when they knew it wasn't on the exhibit list, and when  
12 it was never provided, so, to me, somebody put it  
13 together, and the moment they put it together, they  
14 said, "Aha, this is not on our exhibit list," and  
15 e-mail, and here it is for basic fundamental fairness.

16 I can't deal with this. This basically contains,  
17 I don't know, 50 documents, studies. It has citations.  
18 I can't -- so my request then will be if they're going  
19 to be allowed to use it, that we be allowed to have a  
20 recess overnight. Ms. Sahmel can come back, and we'll  
21 cross-examination her tomorrow.

22 MR. BOUCH: Half of it is already in evidence,  
23 Your Honor.

24 MS. FARRISE: I don't know because I just got it.

25 MR. BOUCH: Well, Your Honor --

1            THE COURT: Here is one thing I do think. This is  
2 awfully lengthy.

3            MR. BOUCH: I agree, Your Honor.

4            THE COURT: And I'm not a fan of having --

5            MR. BOUCH: I'm going to go through it, believe  
6 me, Your Honor, and as my conduct in this trial has  
7 demonstrated, I am going to do this very quickly.  
8 She's not going to be up there on direct more than  
9 45 minutes.

10           MS. FARRISE: Based on our existing plan, I just  
11 will give the court a heads-up. There's no way we can  
12 finish with her today. She has, as you can see from  
13 the first slide, four distinct substantive areas, each  
14 of which have a whole body of literature, statutes,  
15 regulations, and the like. So there's no way --

16           MR. BOUCH: If she wants to come back tomorrow,  
17 she can come back tomorrow.

18           MS. FARRISE: But we need overnight. I just think  
19 fundamental fairness requires that he either not use it  
20 and she testify like everybody else, or if he's going  
21 to put up PowerPoints, that I have an opportunity to  
22 study them, not 45 minutes before this expert witness  
23 takes the stand who was deposed and did not disclose  
24 that she had a PowerPoint presentation, that she was  
25 going to prepare a PowerPoint presentation, and I'm

1    sure the notice in discovery asked for her to produce  
2    everything she was going to bring to trial including --

3            THE COURT:    Wait.    Wait one minute.    We're going  
4    to behave with civility to each other.    When  
5    Ms. Farrise is presenting her argument, we're not going  
6    to be striding back and forth, pretending as if what  
7    she has to say is of no value and we're going to  
8    consult with our people.    We're going to behave, now.

9            MS. FARRISE:    And Crosby brought Motion in Limine  
10   Number 9, which we stipulated to.    I guess Number 9 is  
11   they shouldn't be present in court.    That's our second  
12   thing.    Ms. Sahmel, as I understand it, sat here during  
13   Dr. Crapo's testimony.    And that, too, based on a  
14   motion brought by defendants, was improper, and they  
15   should have instructed her that she was not to do that.

16            So we have -- we want the rules to apply to  
17   everybody, and we are prejudiced by it.    Certainly by  
18   this we are prejudiced.

19            THE COURT:    Let me --

20            MR. BOUCH:    Your Honor?

21            THE COURT:    Yes.

22            MR. BOUCH:    The fact that she was going to have a  
23   PowerPoint was disclosed to them a week ago Monday.  
24   It's Exhibit 37.    It's on our list produced to them.

25            THE COURT:    This document here?

1           MR. BOUCH: I don't think this document.

2           THE COURT: I don't believe this document was  
3 produced.

4           MR. BOUCH: The exhibit list was produced, just  
5 like they did. And all I'm saying, Your Honor, and  
6 it's been true in every trial I've been in, if you want  
7 to see an individual exhibit, ask. They never asked.

8           THE COURT: Well, you wouldn't have been able to  
9 give it to her anyway because you didn't get it until  
10 yesterday.

11          MR. BOUCH: Then, her argument may have had  
12 validity, but now, it doesn't.

13          MS. FARRISE: As I understand the order, it was  
14 not just to put it on a list, but to exchange exhibits.  
15 That was your beef earlier in the week. So we just got  
16 it 45 minutes ago.

17          THE COURT: I'm not happy about something of this  
18 length being sprung on somebody. That's the first  
19 thing. The second thing is I noticed the references  
20 being made to this witness while this other testimony  
21 was going on. And, of course, you know, I don't  
22 interpose objections; I rule on objections, but I  
23 really wondered about her being in the courtroom.

24          MS. FARRISE: I don't know her. I have never/ seen  
25 her. I just actually realized now.



1 THE COURT: I knew who she was because Dr. Crapo  
2 referred to her a couple of times and so did Mr. Bouch,  
3 "Hey, we've got this industrial hygienist and so on and  
4 so forth." And I don't understand why that was done  
5 either, Mr. Bouch.

6 MR. BOUCH: Your Honor, if I made an error, I  
7 apologize. The typical motion in that regard typically  
8 refers to the fact that -- I realize the motion is not  
9 specific to that.

10 THE COURT: We agreed to sequester everybody, and  
11 I ruled on that.

12 MR. BOUCH: And all I can say is I asked  
13 Ms. Sahmel to come earlier, and I think Ms. McVey can  
14 testify or recite I asked how long she would be with  
15 Dr. Crapo because I did not want to interrupt court and  
16 say, "We have no witness. We have to go back to the  
17 hotel and get her."

18 Same sort of thing. It's a different discipline  
19 than Dr. Crapo. If they -- I haven't heard any  
20 prejudice. If there is, they certainly can ask her  
21 about it. "Anything Dr. Crapo say change your mind,  
22 change your opinion, add to what you got to say," fair  
23 game. But, you know, she was in here for the last  
24 30 minutes or so and that was it, principally. And the  
25 same thing. Dr. Brody was here when Dr. Frank was

1    here.

2            MS. FARRISE: Your Honor, excuse me.

3            THE COURT: Wait a minute. I am not just going to  
4 have a back-and-forth conversation that lasts forever.

5            MS. FARRISE: I was waiting for Mr. Bouch.

6            THE COURT: Ms. Farrise.

7            MS. FARRISE: Thank you, Your Honor. I don't know  
8 Ms. Sahmel. I've never met her.

9            THE COURT: You've said that once. I'm not going  
10 to have a repetitive argument.

11           MS. FARRISE: Crosby brought this motion, and they  
12 said prejudice is presumed to have these nonparties.  
13 We stipulated to that motion, and the court made a  
14 court order. The fact that now Ms. Sahmel was here,  
15 number one, which violates the court order; number two,  
16 the fact that there were two different references to  
17 her by Dr. Crapo as well as Mr. Bouch when, prior to  
18 that, at the morning break, you had admonished both  
19 Dr. Crapo as well as Mr. Bouch not to make those sort  
20 of overtures -- for instance, your example was don't  
21 say hold your breath and whatever happens to be,  
22 following that, they both did it. Our motion, coupled  
23 with the prejudice of having a 104-slide PowerPoint, is  
24 that Ms. Sahmel be excluded in her entirety.

25           MR. BOUCH: Your Honor, Mr. Reid informed me that

1 during the motion, in limine hearing, discussions had  
2 with plaintiffs' counsel -- Ms. Farrise was not  
3 there -- the motion to sequester did not deal with  
4 experts.

5 MS. FARRISE: Yes, I was.

6 THE COURT: That's not the way I remember it,  
7 Mr. Reid.

8 MR. REID: We're looking at the transcript.

9 MR. BOUCH: I wasn't there, Your Honor.

10 THE COURT: Well, I was there.

11 MS. FARRISE: I was there, Your Honor.

12 MR. BOUCH: I'm not saying it was before the  
13 court. I'm just reciting what counsel, in all good  
14 faith, was reciting to me.

15 Ms. Sahmel was here for 30 minutes, and if it  
16 violates the court order, I assert there has been  
17 absolutely no prejudice.

18 THE COURT: There is prejudice from using this big  
19 thing without having the other side see it, and that is  
20 what I am weighing and worrying about, Mr. Bouch.

21 MR. BOUCH: Your Honor, everything in there is in  
22 her report.

23 THE COURT: That's not the point. It's very, very  
24 effective presentation. She's got things, questions  
25 that should be asked, so forth and so on. It's not all

1 just exhibits. It's her opinion, questions answered.

2 MS. FARRISE: It's closing argument, Your Honor.

3 MR. BOUCH: Your Honor, it is no different than  
4 what Dr. Crapo put up. It's no different than what any  
5 other expert has put up. This is summarily  
6 demonstrative.

7 THE COURT: It's different in quantity by a very,  
8 very big factor. It is an enormous document. It is  
9 going to take a long time -- I don't care how quickly  
10 you click through these exhibits, it's going to take a  
11 long time to present it to the jury. It is going to  
12 take a long time to cross-examine about it, and it  
13 just --

14 MR. BOUCH: I will be shorter with Ms. Sahmel than  
15 I was with Dr. Crapo, Your Honor. And if I'm delaying,  
16 I'm happy to have the court admonishing, but I assure  
17 you that this is going to be very quickly done. And  
18 the idea that any of this is controversial, like I say,  
19 there's probably 15 of these exhibits in here that are  
20 already in evidence.

21 THE COURT: Yeah, but there are a lot of them that  
22 are analogy use, including the development of the  
23 seatbelt, the development of automobiles and all that  
24 kind of thing that --

25 MR. BOUCH: That's state of the art, Your Honor.

1 That's fair game.

2 THE COURT: I understand that's state of the art,  
3 but we haven't had any discussion about whether state  
4 of the art can include examples from a completely  
5 different situation --

6 MR. BOUCH: Your Honor --

7 THE COURT: Mr. Bouch --

8 MR. BOUCH: I'm sorry. I thought you were  
9 finished, Your Honor.

10 THE COURT: Well, I'm not finished yet.

11 MR. BOUCH: I thought you were finished, Your  
12 Honor. I apologize.

13 THE COURT: I mean, I cannot fully evaluate this  
14 thing without sitting down and looking at it myself a  
15 little bit, but this is a lot of material, some of  
16 which may be pertinent and some of which may not be  
17 pertinent. It may not be proper.

18 And while you had the ability to thing by thing,  
19 paper by paper assert your objections when they have  
20 shown things to a witness, and now you're asking to  
21 just have this all come in without further ado, and  
22 it's not simply stuff that is in evidence, it's all  
23 kind of other information in here.

24 MR. BOUCH: Can I do it this way, Your Honor?

25 I'll do it individually. I will lay the foundation. I

1 will have the witness testify as to each slide  
2 individually before it goes up on the screen, identify  
3 it, lay the foundation. If Ms. Farrise has an  
4 objection, she can make it, and the court can rule on  
5 it.

6        THE COURT: Well, the point of the big exercise we  
7 have been about is not to have to do that with a  
8 100-plus page document midway through the trial and  
9 having to send the jury in and out and all that kind of  
10 thing. I don't think that's a good solution at all to  
11 what we're facing.

12        MR. BOUCH: Your Honor, that's going to be the  
13 testimony. And I believe I have a right to elicit the  
14 testimony --

15        THE COURT: You can elicit the testimony from this  
16 stand. The question is whether you're going to be able  
17 to use this PowerPoint to do her testimony, and that's  
18 what I'm trying to cogitate about.

19        MR. BOUCH: I'll be happy to do it, Your Honor.  
20 You can rule on each and every one --

21        THE COURT: Or you can elicit her testimony  
22 without using the PowerPoint, which is what I'm  
23 considering right now.

24        MR. BOUCH: Again, we object. We think we have a  
25 perfect right to use demonstrative exhibits, regardless

1 of what, and I believe if I lay a proper foundation,  
2 they can make an objection or not, and we can go  
3 forward, but --

4 THE COURT: Enough. That's not the point. The  
5 point is you people agreed to exchange exhibits. And  
6 this exhibit was simply listed as a shell exhibit and  
7 was not exchanged.

8 Then it came to yesterday when you knew that this  
9 witness was going to testify today, and still you did  
10 not supply this or the PowerPoint for the previous  
11 witness' testimony.

12 I decided to let Dr. Crapo's go, but I am deeply  
13 concerned about prejudice that emanates from something  
14 of this length being suddenly projected into this  
15 thing. And you give me some very unappealing choices  
16 in terms of the timing of this trial, and I am very  
17 mindful of that. This is not a three-week trial. This  
18 is a two-week trial, and any delay in it is going to be  
19 the result of this very untimely exchange of  
20 information.

21 There may be information in here that won't be  
22 proper to be put up, even as demonstrative evidence. I  
23 don't know that without taking a look at this thing.

24 MR. BOUCH: I'll be happy to lay that foundation.

25 THE COURT: It's just not timely.

1           MR. BOUCH: Your Honor --

2           THE COURT: If I had had the chance and if they  
3 had had the chance to take a look at this material,  
4 that would be one thing. But to suddenly throw that  
5 out here in the middle of a trial with a jury waiting  
6 and with the huge effort we have made to come in here  
7 early and deal with exhibits so we have a trial that  
8 flows with some sort of smoothness is a very, very  
9 concerning thing to me.

10          MR. BOUCH: Your Honor, may I be heard?

11          THE COURT: Yes, sir.

12          MR. BOUCH: Plaintiffs have taken six trial days  
13 to put on their case. I'm going to do it in one day.  
14 If they wish to have the witness come back, we'll do it  
15 in a day and a half. I think the idea that I am trying  
16 to delay this trial --

17          THE COURT: No. It's hiding the ball. It's not  
18 delaying the trial; it's hiding the ball. That's what  
19 got me concerned. It's violating the terms of the  
20 order we had about exchanging these exhibits. That's  
21 what's got me concerned. It has nothing to do with  
22 whether you're delaying the trial or not, but the  
23 effect of it is because it wasn't given in advance, is  
24 that it has to be examined not just by plaintiff but by  
25 me to be sure that I'm prepared to make any rulings



1 that need to be made about it.

2 MR. BOUCH: I am prepared to go forward with the  
3 direct examination of Ms. Sahmel. If I need to use the  
4 demonstrative evidence, I will lay the foundation, and  
5 the court can rule on it if objected to. If it comes  
6 in, fine. If it doesn't come in, I can proceed  
7 accordingly, Your Honor. That's all I'm asking.

8 MS. FARRISE: Your Honor, I would just like to say  
9 the issue, as I know the court knows, is not just  
10 foundation. It's the argumentative nature. It's the  
11 direct examination. There are things that are  
12 irrelevant. There is a whole host of legal objections  
13 that of which trying to do it on the fly bells cannot  
14 be unrung, and defendants created this prejudice, so  
15 they can sit here and hem and haw and ooh and aah.  
16 They created this prejudice. So we are standing here,  
17 and they should not be rewarded for that. She can  
18 testify just like every other expert witness. "Here is  
19 where I went to school. Where is what degrees I have,"  
20 or not. "Here is what I looked at," or not, and she  
21 can be cross-examined just like everybody else. The  
22 law does not require that people have a PowerPoint to  
23 go with their words in case people, I guess, need to  
24 look at it visually as well as audibly.

25 MR. BOUCH: And again, Your Honor, I'm prepared to

1 do it one at a time, and if the court finds that  
2 something is proper, it can come in after objection; if  
3 the court finds as not, we can go on.

4 MS. FARRISE: And that will unduly consume time.

5 THE COURT: I've just got to think about this for  
6 a minute. I think I've heard your positions very  
7 completely.

8 MS. FARRISE: Thank you, Your Honor.

9 (Pause in proceedings from 2:19 p.m. to 2:29 p.m.  
10 while the court reviews PowerPoint sides.)

11 THE COURT: All right. Here's what I'm going to  
12 do. What I do will please no one, but this is what I'm  
13 going to do.

14 I've gone through these PowerPoints, and I have  
15 pulled out a bunch of them that I think are either not  
16 reflected in the testimony or incorrectly reflect what  
17 the testimony is, and I'm going to go through the  
18 PowerPoint, the numbers I have excluded.

19 Have you got a copy of them, Ms. Farrise?

20 MS. FARRISE: No, Your Honor. You have my copy.

21 THE COURT: Well, then, get another one.

22 The pages that I have eliminated from this  
23 PowerPoint because I think they are, given the lateness  
24 of the exchange, either not reflective of the testimony  
25 or too prejudicial: Page Number 3 is an example of

1 several slides that are in here where, before she gives  
2 the testimony, she outlines what her opinions are or  
3 projects what her opinions are going to be. I think  
4 that's too prejudicial at the beginning of her  
5 testimony.

6        This Number 3 is "Questions: What did industrial  
7 hygienists know about asbestos over time, especially  
8 for end-user products for gaskets and packaging? When  
9 and where and how much could Mr. Jolly could have been  
10 exposed to asbestos from Fisher and Crosby?" We're  
11 going to have to know a lot more than we know now to  
12 cause her to even be able to opine about that.

13        "What was Mr. Jolly's exposure potential to  
14 products known historically to contain amphibole  
15 asbestos?" We're going to have to get from her what  
16 she knows about that before she can testify to it.  
17 "How do Mr. Jolly's exposures compare to known exposure  
18 benchmarks?" Again, I know nothing about what she  
19 knows about Mr. Jolly. That's way too suggestive on  
20 the front end.

21        A couple of them are so repetitive that I'm  
22 pulling them out in interest of time. 9 is one of  
23 them. FMC agricultural products group is already  
24 mentioned in another slide. NASA guided flight center,  
25 Number 10. Environmental Protection Agency with this

1 picture on it in Washington, D.C., Number 11. Number  
2 12, the witness at some place out in a cabin or some  
3 place doing some professional experience.

4        Number 13, evaluation of worker exposures. I  
5 don't know where these things come from and what kind  
6 of situation it is or what kind of pertinence it has,  
7 but these pictures are not in evidence, and, therefore,  
8 would be too prejudicial. 13 out.

9        Number 15, the AIH board of directors. She can  
10 recite her board of director status without also having  
11 this quote in here that discusses the opinion of  
12 somebody else about Ms. Sahmel's professional status.

13        Number 23, questions answered. This is, again,  
14 this series of questions that was put forth on Page 3  
15 that suggests some knowledge that she may or may not  
16 have. I wouldn't let it be put up on the front end.

17        Number 26, examples of paradigm shifts in science:  
18 Seat belts, no seat belts, car seats, car seats  
19 required. Number 27, improvements and safety standards  
20 over time. How to harness a jack-in-the-box child,  
21 1893 gasoline-powered car road tested by Duryea  
22 brothers, Massachusetts, when Ford sold over a million  
23 seat belts.

24        1930s and 1940s asbestos artificial snow with a  
25 picture of Dorothy and the Cowardly Lion.

1 MS. McVEY: What number?

2 THE COURT: Number 31. Article in the newspaper  
3 about --

4 MR. McLEOD: Your Honor, just to be clear, we went  
5 from 27 to 31? What was the page just before 31?

6 THE COURT: 27.

7 MR. McLEOD: Okay. Thank you.

8 THE COURT: 34, 1950s asbestos: The miracle  
9 mineral, with some kind of -- you can't read the  
10 article very well, but it's some kind of article about  
11 the miracle mineral.

12 Evolution of knowledge and regulations concerning  
13 asbestos, big chart. She's already been over that  
14 once. I don't think you need the chart. That's  
15 number -- it doesn't have a number on it, but it's  
16 unnumbered on my version.

17 MR. BOUCH: Can I see it so I take it out?

18 THE COURT: What number is that?

19 MS. McVEY: Hold on.

20 THE COURT: It's evolution of knowledge and  
21 regulations regarding asbestos. What number is that?

22 MR. BOUCH: I don't think it has a number.

23 MS. McVEY: Here's the problem. The slideshow  
24 starts over numbered again.

25 MR. BOUCH: 61, corresponding cumulative exposures

1 over time. I don't know what foundation there is for  
2 it, but putting all that up without any kind of  
3 foundation, prejudicial.

4 MR. BOUCH: I, of course, am going to lay a  
5 foundation for every one of them, Your Honor.

6 THE COURT: I understand that.

7 63, the dose makes the poison. Way too  
8 prejudicial a way to talk about all of that with  
9 Paracelsus, 63.

10 One that says dose response for sun exposure:  
11 Risk of cancer with sufficient sun exposure with a lady  
12 and her child. Doesn't have a numbered page on it.

13 73, this is questions answered again. This is --  
14 again, I don't know what she knows about Mr. Jolly and  
15 his exposure, but I'm not going to let that be put up  
16 on the front end to suggest she does know.

17 76, AIH exposure assessment strategy. This thing  
18 is a chart that's in here several times. This one is  
19 what are the products Mr. Jolly was exposed to. I  
20 don't know what she knows about that, but that's not  
21 going to come in like that.

22 81, caution labeling exemptions. Encapsulated  
23 asbestos products were and still are exempt from OSHA  
24 labeling requirement. It was reasonable for Fisher  
25 Controls and Crosby Valve not to provide any warnings.

1 I'm not going to let that be put up on a slide. If she  
2 wants to testify to something about that, we'll see.

3 83, same AIHA exposure assessment strategy thing.

4 84, exposure assessment key factors: Duration,  
5 frequency, intensity, how long, how often, at what  
6 level.

7 85, Mr. Jolly pipefitter inspector. Urban and  
8 rural classifications. Mr. Jolly, a pipefitter  
9 inspector, did not personally work with any internal  
10 valve gaskets or packing. She doesn't know that and --

11 MR. BOUCH: Your Honor, that's in evidence through  
12 his testimony that she has reviewed.

13 THE COURT: I see the testimony citations, but I  
14 don't know what she knows about that, and I'm not going  
15 to let it be put up on a PowerPoint.

16 MS. McVEY: And this is his deposition testimony,  
17 not trial testimony.

18 THE COURT: I understand all that.

19 Mr. Jolly, duration and frequency. There are  
20 several like this I'm just not going to let it be done  
21 like this. Mr. Jolly was a bystander working on Fisher  
22 and Crosby valves. That's not what he said at all. He  
23 was a worker bee right there. He was an inspector. He  
24 was hip to hip with the people doing the grinding, and  
25 his inspection work was just as important to getting

1 these flanges off and getting the flanges cleaned up as  
2 the grinding of the flanges was.

3 MR. BOUCH: What is the number?

4 THE COURT: The term "bystander" is a work of art  
5 kind of term; it doesn't include Mr. Jolly, and *Lawing*  
6 *vs. Univar* certainly indicates that a coworker like  
7 this is not a bystander.

8 MR. BOUCH: What's the number, Your Honor?

9 THE COURT: 86.

10 87, types and total number of valves worked at  
11 Duke. This has got a whole bunch of people we haven't  
12 heard from yet. It's got Mr. Jolly, Mr. Rogers,  
13 Mr. Taylor, Mr. Simpson, and all the recalls for  
14 manufacturers and so forth, some other people we  
15 haven't heard anything about, so this is possible other  
16 involved folks involved with other defendants -- I mean  
17 other plaintiffs that we don't know about.

18 MR. BOUCH: What is it?

19 THE COURT: 87, out.

20 92, gasket packing cumulative exposure potential.  
21 Mr. Jolly's bystander exposure potential. Just not  
22 going to let that be up there for the reasons I've  
23 already stated.

24 MR. BOUCH: What's that number?

25 THE COURT: 92.



1            93, gasket packing cumulative exposure potential.  
2 A portion of Mr. Jolly's work with valves was related  
3 to Fisher and Crosby specifically out of 17 different  
4 manufacturers. I don't know what the testimony  
5 reflects in that regard, but I'm not going to let it be  
6 validated in that way.

7            94, questions asked. Same. We have commented on  
8 that before.

9            95, bystander to insulation work. I'm not going  
10 to let that bystander-type labeling be used here.

11            An unnumbered one that says, "Comparison of  
12 insulation versus gasket packing exposures, full-shift  
13 exposures, current OSHA direct." I don't know what  
14 date we're talking about. It's a citation to a bunch  
15 of people's studies. Too confusing for the jury.

16            99, Duke Power Company ongoing asbestos abatement.  
17 I can hardly read it, but I haven't heard anything  
18 about ongoing asbestos abatement. I don't know what  
19 periods of time this covers.

20            MS. McVEY: I don't have 99.

21            THE COURT: Duke Power Company, ongoing abatement.

22            MS. McVEY: Mine says 100.

23            THE COURT: Mine says 99. 100 is questions asked  
24 on mine.

25            MS. McVEY: That's 101 on mine. Okay.

1           THE COURT: Well, you got it. Another one that  
2 slipped in on me, maybe. Let me see it. I have 99, so  
3 what's 98 in your book?

4           MS. McVEY: I don't have 98 or 99.

5           MR. BOUCH: We're not going to show either one,  
6 98, 99.

7           MS. McVEY: But I don't have 98 or 99, I'm just  
8 telling you.

9           THE COURT: 100, questions answered. That's that  
10 same slide.

11           AIH exposure assessment strategy, same slide.

12           Gasket and packing comparative background  
13 exposures. Don't know what that means or what it's  
14 tied to, but not going to allow that.

15           MR. BOUCH: What's the number, Your Honor?

16           THE COURT: Number 105.

17           MS. McVEY: Mine is 103.

18           THE COURT: Well, you know what I got.

19           Weight of scientific evidence indicates no  
20 increased risk of mesothelioma at background exposure  
21 levels of asbestos with some names here. That's not  
22 consistent with what we've heard from other people.  
23 I'm not going to let a slide like that go up. If she  
24 wants to say that based on her research, she should be  
25 cross-examined about that, but I'm not going to let

1 that slide up.

2 MS. FARRISE: Your Honor, I think the other issue  
3 with that is she's not a medical doctor.

4 THE COURT: I get all that. Don't argue with  
5 somebody who's ruling for you.

6 MS. McVEY: I'm so sorry, but I'm confused. I  
7 want to make sure I've got it. Background,  
8 concentration estimates, that comes in?

9 THE COURT: Let's see. I haven't seen that.  
10 Bring it up here.

11 MS. McVEY: This is the issue. I think we have  
12 got two different slides.

13 THE COURT: Bring that up here. Stand here by me  
14 and be sure I'm getting them all.

15 Okay. I got background concentration estimates.  
16 I think that one is further on in mine. 104.

17 Okay. 104, weight of scientific evidence --  
18 excuse me. 104, background exposure to asbestos.

19 Then 105 is gasket packing and comparative  
20 background exposure, and then 106 is the weight of  
21 scientific evidence. I have them out of order.

22 MS. McVEY: So these are out?

23 THE COURT: That one is out.

24 Now, I don't have that one with the map on it.

25 Oh, yeah, I do, and I don't think I pulled that. 108.

1 It isn't in my pile, but 108 is okay as far as I'm  
2 concerned.

3 The OSHA, 109, is okay.

4 These numbers are different. The next one I've  
5 got, 111 on this one and 109, employer responsibility  
6 for testing with the Duke Power logo on it. I don't  
7 know who's saying that or what that is, whether that's  
8 OSHA, Duke Power or whatnot, but that's out.

9 MR. BOUCH: Your Honor, when you say these are  
10 out, and I understand your ruling, if I lay the  
11 foundation when I say, you know, "Whose is this?"

12 THE COURT: I'm not going to let you put these  
13 slides up, period. She can testify --

14 MR. BOUCH: Even after she testifies?

15 MR. BOUCH: That is correct.

16 MR. BOUCH: Well, Your Honor and our --

17 THE COURT: That is partially because of the late  
18 exchange of this information and partially because I  
19 think they're too prejudicial, particularly when  
20 they're put up there as fact before there's any  
21 testimony, and I'm not going to at this point, because  
22 of the late exchange, I'm not going to delay this trial  
23 to have foundation laid for everything.

24 So for all those reasons, that's what I'm doing  
25 here.

1 MR. BOUCH: Your Honor, for the record, we accept  
2 your ruling.

3 THE COURT: I got it.

4 MR. BOUCH: And we believe that the predicate for  
5 it is incorrect.

6 THE COURT: I understand all that.

7 Then conclusions, no quantitative evidence in either  
8 upper bound exposures associated with four and a half  
9 years of daily personal gasket and packing work would  
10 be associated with increased risk of mesothelioma; and,  
11 conversely, Mr. Jolly and his coworkers describe  
12 regular opportunities for exposure to  
13 amphibole-containing insulation. I haven't heard any  
14 testimony that there's amphibole in Duke's insulation  
15 or anything like that, so that one is out.

16 Conclusions, 112. Again, that one is out as well.

17 And 114, which is not on my thing, but OSHA and  
18 peak exposures, 1986. I'm not going to exclude that.

19 MS. McVEY: And the Duke Power employees?

20 THE COURT: That one is out.

21 MS. McVEY: Okay.

22 THE COURT: And did I -- am I sure that I've said  
23 102 is gasket packing compared with OSHA PEL,  
24 Mr. Jolly's bystander exposure potential.

25 MS. McVEY: That one's out.

1 THE COURT: That one is out.

2 That is not a satisfactory way to do this, but  
3 it's the only way to keep this trial on track, so  
4 that's what I've done, probably with the satisfaction  
5 of no one, but nevertheless.

6 (WHEREUPON, the jury entered open court at  
7 2:47 p.m.)

8 THE COURT: Ladies and gentlemen of the jury,  
9 please have a seat. We had some things that came up,  
10 and I had to resolve the matters in an individual way,  
11 so that's what we've been doing. But we're ready to go  
12 now, and this will be defendant's next expert,  
13 industrial hygienist.

14 Mr. Bouch.

15 MR. BOUCH: Thank you, Your Honor.

16 Fisher Controls and Crosby Valve calls to the  
17 stand Ms. Jennifer Sahmel.

18 THE COURT: Please come on up here, and we'll  
19 administer the oath.

20 THE WITNESS: Thank you, Your Honor.

21 JENNIFER SAHMEI, MPH, CIH, CSP,

22 BEING FIRST DULY SWORN, TESTIFIED AS FOLLOWS:

23 DIRECT EXAMINATION

24 BY MR. BOUCH:

25 Q Ms. Sahmel, I'm guilty of butchering everyone's

1 last name but my own. So tell me exactly how you  
2 pronounce it.

3 A Oh, no problem. It's Sahmel. I sometimes tell  
4 people it's like saw mill. Sahmel.

5 Q Ms. Sahmel, what do you do for a living?

6 A I am an exposure scientist and industrial  
7 hygienist.

8 Q Now, we haven't had an industrial hygienist here  
9 before. Tell me, what is an industrial hygienist?

10 A It's an important question. It's not a very  
11 commonly heard term. There's not a whole lot of us  
12 around using that traditional terminology anymore, but  
13 what an industrial hygienist does essentially is to  
14 create safe work environments and safe environments for  
15 people. So we test the air, we monitor for  
16 radiological hazards, we monitor for safety issues,  
17 physical hazards like noise to determine the  
18 healthfulness and safety of environments where people  
19 are.

20 Q We've heard a lot about dust counts. Are you the  
21 guy that goes out and counts the dust?

22 A Yes, I certainly can do that.

23 Q That's part of what you do?

24 A That is a part of the practice of industrial  
25 hygiene and exposure assessment.

1 Q And that's exactly what -- that's what an  
2 industrial hygienist does?

3 MS. FARRISE: Your Honor, I'm sorry, just because  
4 if counsel could make the record reflect that something  
5 is being displayed to the jury and the PowerPoint  
6 slide, given our prior conversation.

7 THE COURT: Slide Number 4 is being displayed now.  
8 BY MR. BOUCH:

9 Q As she said -- well, how did you get into this  
10 line of work?

11 A Yeah. It's a field that a lot of people sort of  
12 come into through various routes. I was personally  
13 very interested in public health and environmental  
14 health, and through that, through some research that I  
15 was doing, I was working at the time for a company that  
16 did work for the CDC, and I learned about the field of  
17 exposure assessment --

18 Q Whoa, whoa, whoa. What's the CDC?

19 A I'm sorry. The Centers for Disease Control and  
20 Prevention.

21 Q Okay.

22 A And so through that work that I was doing, some  
23 research work, I found out about the field of exposure  
24 science and toxicology and applied to some graduate  
25 programs after my undergraduate degree.



1    Q      Could you put up Slide Number 5, please.

2            Is this your educational background?

3    A      Yes, that's right. I, in fact, didn't study  
4 science in my undergraduate degree. I was an  
5 international studies major, which included a lot of  
6 history, also economics, and then I really became  
7 interested in some of the environmental health and  
8 public health issues related to public and environment,  
9 and from there went to the University of California at  
10 Berkeley to get my graduate degree in environmental  
11 health. And I'm currently working on my Ph.D. at the  
12 University of Minnesota.

13   Q      Says "estimated completion 2017." Are we close?

14   A      I hope so. It's hard to rush research. It will  
15 take the time it takes.

16   Q      Okay.

17            Would you put up Slide Number 6, please.

18            You indicated before that an industrial hygienist  
19 studies a safe environment. What is that?

20   A      It's important to understand the terminology. The  
21 word "safe," for example. In the context of risk  
22 assessment and exposure -- and this definition appears  
23 in a very standard, classic industrial hygiene  
24 textbook. And the notion of safe, as it applies to  
25 industrial hygiene and to exposure assessment, is not

1 necessarily that something is free from all risk. And  
2 I think we all kind of sense that that's really kind of  
3 an impossibility, to be free from -- you know, zero  
4 risk is very difficult to achieve. But free from  
5 unacceptable risk is very important, and those risks  
6 can be estimated and understood, and that is the  
7 science of risk assessment.

8 Q Okay. Now, in the course of your work, have you  
9 developed any industrial hygiene specialties?

10 A Yes. I personally focus on the science of  
11 quantifying exposures. I do exposure assessments for  
12 all types of different chemicals, whether they're gases  
13 or particulates. And I have also developed a  
14 specialty, as you noted from my undergraduate degree in  
15 history and international studies, I have a special  
16 interest in the history of industrial hygiene, so I  
17 have studied that quite a bit as well, so those are  
18 some of my specialties.

19 Q Put up Slide 7, please.

20 Does this reflect your work, your professional  
21 work, currently?

22 A Yes, this does.

23 Q Okay. You identify a hazard, you assess risk, you  
24 apply controls, and you review the effect, correct?

25 A That is the process of risk assessment, that's

1 right.

2 Q Okay. Now, in addition to having a master's in  
3 this and pursuing a Ph.D., what is your professional  
4 experience in the field?

5 A So I've been fortunate to have the experience to  
6 work in a number of different environments as an  
7 industrial hygienist. I started off my career working  
8 as a contractor for NASA's Goddard Space Flight Center,  
9 and while I was there, I was a field industrial  
10 hygienist. I went around to many different sites and  
11 performed sampling for many different types of  
12 hazards -- everything from noise hazards, welding and  
13 sheet metal shops, to fairly complicated technical  
14 operations like plating shops, and they even made their  
15 own semiconductor chips at this facility, so we had an  
16 semiconductor fabrication area where we performed  
17 sampling where there are actually some pretty  
18 potentially concerning hazards such as solvents  
19 exposures and other things.

20 Q How long were you at NASA?

21 A I was there for about four years.

22 Q Then what did you do?

23 A Then after that, I took a position as a government  
24 employee with the U.S. EPA. I was working at the EPA  
25 in their office of pollution prevention and toxics in

1 Washington, D.C. I was very fortunate to be able to  
2 work on looking at national issues with respect to  
3 exposure assessment, protecting the public.

4 While I was there, I really gained a significant  
5 appreciation for the difficulty that regulatory  
6 agencies can have in ensuring the protection of the  
7 public from a whole host of hazards.

8 Q How long were you at the EPA?

9 A I was at the EPA for about three and a half years.

10 Q It's a long time in Washington. What did you do  
11 then?

12 A After the EPA -- and, actually, I really did enjoy  
13 Washington, although I was ready for a change and  
14 decided to move out to Denver, I was fortunate to be  
15 offered a job at the National Park Service. And at the  
16 National Park Service --

17 Q Whoa, whoa, whoa. What does industrial hygiene  
18 have to do with the National Park Service?

19 A We actually had a surprising number of pretty  
20 concerning exposure questions that came up while I was  
21 there. One, for example, that I was very surprised to  
22 learn about is we had this wonderful trails crew who  
23 builds the trails that we all go out to and hike on in  
24 the parks. But in the Rocky Mountains, a lot of those  
25 trails have, of course, granite rocks, and those

1 granite rocks have a very high silica content.

2        So when the trails crew needs to either drill them  
3 to blow them up -- they actually blow them up to get  
4 them off the trail -- or to saw them up to move them  
5 and make the trails, there is a significant silica  
6 hazard for some areas for some workers. And being  
7 outdoors, a lot of times they didn't necessarily think  
8 about that until we did some sampling.

9 Q        After the parks service, where did you go?

10 A        After the National Park Service, I was traveling a  
11 lot, and for family reasons, decided to take a position  
12 doing some more research-based work. I also was very  
13 interested at that point in more of the science and  
14 research related to exposure assessment, and I started  
15 doing some work with the American Industrial Hygiene  
16 Association, which is the national professional  
17 association for industrial hygiene.

18        Through that group, I was very fortunate to get  
19 involved in a committee on exposure assessment, met a  
20 lot of the luminaries of the profession and decided to  
21 take my career in a little bit more of a research  
22 focus.

23 Q        Okay. Who did you go to work with?

24 A        So at that point I was working for a company  
25 called ChemRisk, which later became Cardno ChemRisk,

1 and they are a consulting firm that works in exposure  
2 assessment and public health and risk assessment.

3 Q And, most recently, you have done what?

4 A And most recently I have now left a larger firm  
5 and work just on my own, mainly because I, of course,  
6 need to finish my Ph.D., so I want to focus on that,  
7 but also to have a little more control over my  
8 schedule, so I work on my own on projects as they come  
9 up, as I'm able to take them or as I think they're  
10 appropriate projects, and work on my research for my  
11 dissertation.

12 Q What is that venture called?

13 A Excuse me. That's called Insight Exposure and  
14 Risk Sciences, but that's just me.

15 Q After your name, I notice on your résumé there are  
16 certain initials. Can you tell us what those are?

17 That would be Slide Number 2, please.

18 A Oh, sure. So there are two certifications in the  
19 field of human health and worker health protection.  
20 One is called the CIH, which is the Certified  
21 Industrial Hygienist. And that's someone who has  
22 demonstrated, through both experience and examination,  
23 a level of ability in industrial hygiene that requires  
24 a pretty significant examination. At the time, it was  
25 a two-day, so it's 16 hours of testing, as well as

1 either four or five years of work experience, depending  
2 on your educational background.

3 Q Okay. What is a CSP?

4 A And, similarly, a CSP is a Certified Safety  
5 Professional. Similar in many ways, but focuses more  
6 on some of the physical hazards in the work  
7 environment. For example, the physics of fall  
8 protection, walking and working surfaces, looking at  
9 some more of the things we think of sort of an  
10 immediate hazard, a tripping hazard or a falling hazard  
11 in the, for example, in the work environment.

12 Q Okay. And then the American Industrial Hygiene  
13 Association, what is that?

14 A The American Industrial Hygiene Association I  
15 mentioned earlier is about, I think, a little under now  
16 a 10,000-member national organization that's been  
17 around since 1939 in the United States, and many  
18 industrial hygienists are professional members of that  
19 group. I was fortunate to be elected to the board of  
20 directors for that group. Actually, I just rolled off.  
21 This still says member. That's not quite correct. I  
22 actually just finished my term in May of this year,  
23 so -- but that was a very fortunate experience to have  
24 to work with the organization at a national level.

25 Q In the practice of industrial hygiene, have you

1 belonged to certain professional organization?

2 A Absolutely. I am a member of a number of  
3 professional associations outside of the AIHA,  
4 including the Society for Risk Analysis, the  
5 International Society for Exposure Science, and, let's  
6 see. There is a couple others as well, but I just  
7 can't --

8 Q Number 14.

9 Let me ask you if this slide reflects your  
10 current, Number 14, professional memberships of which  
11 you are affiliated.

12 A Oh, yes. Thank you. Actually, an important one  
13 that I didn't mention is the American Conference of  
14 Governmental Industrial Hygienists. Now, that's  
15 definitely a mouthful, but this group is very  
16 important. They have been around for a long time.  
17 They were started the year before the AIHA, and this  
18 group has, over time historically in the United States  
19 and also used around the world, developed recommended  
20 exposure limits for chemicals for use in work  
21 environments. And so this has been a very important  
22 group in terms of helping industrial hygienists to  
23 properly assess workplace exposures.

24 Q Do you serve on advisory panels?

25 A I have in the past, and I do still today.



1    Q      Number 16, please.

2            Would this be a representative sampling of some of  
3 your work on these advisory panels?

4    A      Yes. These are all some advisory panels that I've  
5 served on. The NIOSH is the National Institute for  
6 Occupational Safety and Health, and that is a group  
7 that works very -- it's actually an arm of CDC that I  
8 mentioned earlier, but they work very closely with OSHA  
9 to make recommendations about health exposures and  
10 other health and safety issues in the work environment.

11           So I've worked on a dermal exposure issues group  
12 with them or have in the past. I'm currently on a --  
13 the co-chair of a national group to establish -- help  
14 establish or make recommendations for a research agenda  
15 to improve our understanding and knowledge of certain  
16 areas of occupational health like skin exposures,  
17 immune exposures, and also infectious disease.

18    Q      During your career, have you received honors and  
19 awards?

20    A      I have. I have been fortunate to be in some  
21 places and do some really interesting projects.

22    Q      Such as?

23    A      Well, when I was at the EPA, I worked on several  
24 really interesting projects that our groups were  
25 fortunate to receive awards from the agency about.

1 Looking at this voluntary children's chemical  
2 evaluation program, so looking at exposures to children  
3 and how we assess those, which was, in my opinion, a  
4 very important effort. Also looking at at the time  
5 that I was at EPA was right around 9/11, and we were  
6 looking at developing a strategic plan for the Agency  
7 on Homeland Security and Chemical Safety for the public  
8 and around the country. And then also an interesting  
9 project that we did which was called the Design for  
10 Environment, which is to help small-scale solvent  
11 workers, in this case it was automotive refinishing  
12 shops, to make sure they're protected from some of the  
13 products that can be of concern. For example, paints  
14 that contain diisocyanates which can, through skin  
15 exposure, can cause asthma, for example.

16 Q Okay. And have you been invited to present  
17 material at conferences and other presentations?

18 A I have. On quite a number of occasions, I've been  
19 invited to present my work around the world in various  
20 places. I'll be going to Columbia in a few months to  
21 present. I will -- you know, I get asked to present at  
22 all sorts of conferences but always about the science.

23 So, for example, if I'm asked to present at a  
24 legal conference, I may do that if I have time, but  
25 it's always about the science and the research that I'm

1    doing.

2    Q      During your work, have you ever performed in the  
3    role of training and instructing on exposure  
4    assessment?

5    A      I have done some training for a number of groups  
6    on industrial hygiene and exposure assessment issues.  
7    I have been invited to speak at NASA, at NIOSH, at the  
8    United States Marine Corps as well, and some others,  
9    too.

10   Q      Have you published in the scientific literature?

11   A      I have.

12   Q      Have you authored scientific texts and articles in  
13   journals?

14   A      Yes. I have published, I think, over 20 articles  
15   in the peer-reviewed literature on exposure assessment  
16   topics.

17   Q      Book chapters?

18   A      And also book chapters on industrial hygiene and  
19   exposure assessment.

20   Q      Have you authored scientific pieces in the  
21   literature on asbestos?

22   A      Yes.

23   Q      Are these peer reviewed?

24   A      Yes. All of these were peer reviewed.

25   Q      Can you give the jury an example of some of the

1 publications on asbestos that you have authored?

2 A Sure. So I had published on a number of different  
3 topics related to asbestos exposure in the  
4 peer-reviewed literature. I have looked at the issue  
5 of bystander exposure specifically and was a coauthor  
6 on a peer-reviewed publication on that topic, which is  
7 somebody who's not directly performing the work but may  
8 be in the vicinity. I've looked at the issue of  
9 take-home exposure potential, so in this case asbestos  
10 that can get onto your clothing and be taken home to  
11 your house and your household, and measured what those  
12 exposures might be for certain situations. I've also  
13 looked specifically at the history of industrial  
14 hygiene knowledge about asbestos and how that played  
15 into our role of developing the risk assessment process  
16 for industrial hygiene.

17 Q You used a term in the title of one of your works,  
18 "bystander."

19 A That's right.

20 Q Is "bystander" a term of art in the practice of  
21 industrial hygiene?

22 A I would consider it to be. There are other terms  
23 that may mean the same thing, which could be, I think,  
24 a little more scientific in sort of name, but,  
25 technically, a bystander will mean somebody who is not

1 directly performing the work but is in the vicinity of  
2 that work, whether that's adjacent to the person or  
3 maybe 5, 10 feet, maybe 15, maybe 30 feet away.

4 Q Have you authored scientific articles on those  
5 exposed to asbestos not directly hands-on changing the  
6 gasket, for example?

7 A I have looked at hands-on exposures absolutely, so  
8 in terms -- you mean in terms of actually measuring  
9 exposures to somebody working with asbestos?

10 Q Yes, ma'am.

11 A Yes, absolutely. And so that, for example, the  
12 studies we did on take-home exposures, we used actual  
13 chrysotile asbestos in those studies to measure the  
14 amount of exposure that the individual who was working  
15 with it was exposed to and then shaking out the  
16 clothing, what that corresponding exposure would be.

17 MR. BOUCH: Your Honor, we offer Ms. Sahmel as an  
18 expert in industrial hygiene.

19 THE COURT: All right.

20 Ms. Farrise.

21 MS. FARRISE: I would object as it relates to  
22 asbestos, Your Honor.

23 THE COURT: All right. Overruled. I find that by  
24 reason of her training, education, and experience,  
25 Ms. Sahmel is recognized in this trial as an expert on

1 industrial hygiene and on matters related to asbestos  
2 in connection with her specialty of industrial hygiene.

3 THE WITNESS: Thank you, Your Honor.

4 THE COURT: And, of course, members of the jury,  
5 you remember my instruction about how we use our  
6 experts, and this is yet another expert.

7 BY MR. BOUCH:

8 Q Ms. Sahmel, I've given you what has been marked as  
9 Exhibit 66. Can you tell the jury what that is?

10 A Sure. This is my résumé or CV.

11 Q Is it current and accurate?

12 A Yes, it should be. I believe it to be. I  
13 mentioned earlier that I have just recently rolled off  
14 the board of directors for AIH, but I think otherwise  
15 it should be complete.

16 Q Does that reflect your training, education,  
17 experience, and publications?

18 A Yes, to the best of my ability, it should.

19 MR. BOUCH: Move Exhibit 66 into evidence.

20 THE COURT: That would be Crosby Exhibit 66.

21 Ms. Farrise?

22 MS. FARRISE: Yes, Your Honor. I would just  
23 object it's a hearsay document, and at this point it's  
24 cumulative, given that we just heard the whole  
25 recitation, and we have the PowerPoints.

1           THE COURT: Very good. Overruled. It's admitted.  
2           (WHEREUPON, Defendant's Exhibit Number Crosby 66  
3 was admitted into evidence.)

4           MR. BOUCH: Thank you, Your Honor.

5 Q       What does an industrial hygienist do, the core  
6 disciplines of IH, what is that?

7 A       So there are several scientific disciplines that  
8 make up industrial hygiene. It is a multidisciplinary  
9 practice, and so it includes the understanding, of  
10 course, of exposure assessment, how to measure  
11 exposures, and how to assess exposures, whether  
12 qualitatively or quantitatively, depending on the need  
13 and the situation, but it also includes an  
14 understanding and knowledge, working knowledge, of  
15 toxicology, epidemiology, and certainly risk assessment  
16 as well. So understanding those multidisciplinary  
17 fields and how they come together to protect workers in  
18 the field.

19 Q       And is that reflected accurately on Slide 22?

20 A       I think more or less, yes.

21 Q       Okay. Now, I asked you to do certain things in  
22 this case, and are you prepared to answer these  
23 questions and give opinions in support for your  
24 opinions?

25 A       Absolutely, based on the questions you originally

1 asked me to evaluate.

2 Q Okay. Did I ask you to tell us what industrial  
3 hygienists know about asbestos over time, especially  
4 for end user products like gaskets and packing?

5 A Yes.

6 Q Did I ask you when, where, and how much could  
7 Mr. Jolly have been exposed to asbestos from Fisher and  
8 Crosby valves?

9 A Yes, you did.

10 Q Did I ask you what was Mr. Jolly's exposure  
11 potential to products that were known to historically  
12 contain amphibole asbestos?

13 A Yes, you did.

14 Q And did I ask you to compare Mr. Jolly's potential  
15 exposures and how they compare with known exposure  
16 benchmarks?

17 A Yes, that's correct.

18 Q Okay. Now, what is the term -- what is state of  
19 the art?

20 A State of the art is a term that really applies to  
21 the historic progression of knowledge or the current  
22 state of knowledge. So an example I often will give is  
23 the evolution, for example, of transportation. So when  
24 we -- obviously, early humans walked everywhere, then  
25 we were fortunate to have animals to use for



1 transportation. Over time, we have developed the  
2 automobile from a very kind of basic machine into a  
3 very sophisticated piece of equipment and airplanes,  
4 rockets. So it's understanding that process of a  
5 particular area and the evolution over time.

6 Q And how -- give us an example of the evolution of  
7 the car.

8 A Well, in cars, for example, one that I think is  
9 helpful, especially from a safety perspective, is the  
10 use of seat belts and car seats. You'll see pictures  
11 from the early 1950s and into the '60s of people  
12 riding -- the baby in the front seat, either with a  
13 little harness or just lying on a pillow in the front  
14 seat, and, certainly, we would never do that today. So  
15 it's an evolution of the understanding of those issues.

16 Q Do you have any idea when seat belts first came  
17 into common use?

18 A I think it was in the late 1960s. I think there  
19 was, again, an evolution where some companies were  
20 starting to use them, but I think it was into the late  
21 1960s which was certainly much after the car was  
22 invented.

23 Q Have you published a review of the history and  
24 evolution of knowledge of asbestos?

25 A I have, yes.

1 Q That would be Number 24; please.

2 Is this Slide 24 a picture of the cover of that  
3 article?

4 A Yes. This is the front page of that article which  
5 is in the peer-reviewed literature in which we really  
6 tried to focus on -- there have been, certainly, other  
7 reviews that have been done understanding the  
8 toxicology and hazards of asbestos over time, but  
9 really what was understood by the industrial hygiene  
10 field with respect to exposure and risk and how those  
11 played into the hazard and knowledge about asbestos,  
12 issues like how we measure for it over time.

13 Q Let's go through the next, very quickly, because  
14 the jury has heard what is asbestos. I'd like to get  
15 it since we haven't heard from an industrial hygienist.

16 Tell us very briefly what is asbestos, the types  
17 of fibers, and the asbestos product manufacturing in  
18 mining exposures?

19 A Sure. Well, at its simplest term, asbestos is a  
20 rock. It's a mineral silicate, and it occurs in a  
21 number of different types of forms. There are several  
22 that are kind of commercially significant that we see.  
23 Those most common ones tend to be chrysotile, amosite  
24 and crocidolite.

25 Q And would that be reflected on Slide 29?

1 A Yeah, those are -- exactly. Those are pictures of  
2 those. I think the most important distinction is that  
3 chrysotile has a different chemical makeup. For  
4 example, it does not contain iron, whereas the  
5 crocidolite and amosite fibers do, and that causes the  
6 physical properties to be different of those fibers.

7 So the chrysotile fibers are soft and curly,  
8 whereas the amosite or crocidolite fibers are more  
9 rod-like and spiky and a little bit harder.

10 Q In the early 1900s up through maybe about 1950,  
11 were studies done concerning exposures to raw asbestos?

12 A Yes. There were studies done, essentially.

13 Q And this slide, Number 30, reflects -- well, it's  
14 an asbestos textile card room?

15 A Yes, exactly. And early on, as asbestos began to  
16 be used commercially, it was relatively quickly  
17 understood that it was certainly a significant hazard  
18 with respect to these large dust clouds and the fibers  
19 which could cause a scarring of the lungs over time,  
20 which came to be known as asbestosis.

21 Q And about mid century, maybe in the 1940s, were  
22 there standards attempted to be set to prevent the  
23 disease asbestosis from occurring in workers that were  
24 exposed to raw asbestos?

25 A Yes, absolutely. The hazard was understood early

1 on that there was for these very dusty environments,  
2 and the American Conference of Governmental Industrial  
3 Hygienists I mentioned earlier, the ACGIH, did  
4 recommend a limit for asbestos exposure in the work  
5 environment of five million particles per cubic foot in  
6 the 1940s.

7 Q Now, you say ACGIH. Was that the government?

8 A They were not the government. As the name  
9 suggests, they were a number of industrial hygienists  
10 who worked in the government who are part of this  
11 group, but it was really a volunteer group that was  
12 working to try to help protect the workers in the  
13 environments.

14 Q So they set it at five million particles per cubic  
15 foot, and it remained in existence how long?

16 A A very long time. That particular level was in  
17 place from 1946 all the way to 1968.

18 Q About this time, was there any study undertaken of  
19 not just factory workers and miners making asbestos  
20 products but those end users, the people who actually  
21 used the products out in the field?

22 A There was an important distinction that a lot of  
23 folks made from the visible dustiness of using or  
24 working with raw asbestos, and the dusty material  
25 versus a product that's already made or put together

1 like insulation. And, yes, there was one study that  
2 was done on insulation workers in the 1940s.

3 Q And would that be the Fleischer-Drinker study?

4 A I should clarify, that was published. Yes. This  
5 was a study by Dr. Drinker and also Fleischer and  
6 several other individuals who looked at the use of  
7 insulation in a number of different environments and  
8 measured the exposures to see what they were.

9 Q Study was primarily done in U.S. Navy shipyards  
10 during the war, wasn't it?

11 A That's right.

12 Q And what was their conclusion on the use of  
13 asbestos by insulation workers in 1946?

14 A So, interestingly, based on the work that they  
15 did, they found that -- they believed that insulation  
16 based on the their measurements did not pose an  
17 exposure hazard to the workers because the levels were  
18 below this level of five mppcf that had been set by  
19 NIOSH in the great majority of instances that they  
20 measured.

21 They did an assessment both of total dust and then  
22 the percent asbestos found in the products, and they  
23 hypothesized or they surmised that it was because of  
24 the fact that the workers were not sitting, for  
25 example, at a carding machine all day, but they were

1 walking around doing other things. They would spend  
2 some time cutting the insulation which could result in  
3 an exposure, but then they would go and do other  
4 things.

5 So at the time, based on that study, it was  
6 believed that end user products did not pose a hazard  
7 to workers and certainly not in the same way that the  
8 mining, milling, and end user -- excuse me  
9 manufacturing with raw asbestos would.

10 MR. BOUCH: Your Honor, just two seconds. Nothing  
11 controversial.

12 (WHEREUPON, Mr. Bouch approached the bench.)

13 THE COURT: Yes, I'll let that in.

14 MR. BOUCH: Thank you.

15 MS. FARRISE: Can I see?

16 MR. BOUCH: I just asked if that was in or not.

17 Q It would be Exhibit 35.

18 Now, as of pre-1960, is this kind of the state of  
19 the literature?

20 A I think this just shows -- it's really a diagram  
21 to show where the industrial hygienists were focused in  
22 their efforts on measuring worker exposure. You can  
23 see for mining and manufacturing using raw asbestos, we  
24 had a pretty significant number of studies that were  
25 published, whereas those on end users were

1 correspondingly a very small number, so there was not a  
2 focus at this time partly because of the results of the  
3 Fleischer study but also a belief that if this five  
4 mppcf standard were met, which was quite a dusty  
5 standard by today's standards, that there was not a  
6 hazard to workers was the belief at that time.

7 Q Now, as an industrial hygienist, when someone says  
8 they see visible dust in the air, does that reflect a  
9 hazard of asbestos?

10 A So that does not necessarily reflect a hazard. I  
11 think at the time there was a lot of discussion and  
12 belief that it did. Now we know that the concerning or  
13 hazardous elements of like a cloud of asbestos dust  
14 are, in fact, those fibers that we cannot see. They  
15 are too small to be seen by the human eye.

16 Q So the dust you see is not hazardous because you  
17 can't breathe it in?

18 A Well, it's not quite that simple. So it depends  
19 on how many of these very small fibers are present. So  
20 because one sees a dust cloud doesn't automatically  
21 mean that there is a hazard, and, conversely, because  
22 one cannot see it, doesn't mean there's not a hazard.  
23 It would have to be measured because it cannot be seen.

24 Q Going forward from 1960, there was a disease  
25 called mesothelioma. Are you familiar with the

1 development of asbestos knowledge and mesothelioma?

2 A Absolutely.

3 Q Slide 36, please.

4 And I believe the jury has heard this before, an  
5 article by Dr. Wagner in 1960. What's the significance  
6 of that?

7 A This was a very important study because it's the  
8 first study that was published in the peer-reviewed  
9 literature to demonstrate a number of cases of what was  
10 at the time believed to be an almost nonexistent  
11 disease, which was pleural mesothelioma. It was  
12 observed in this study in South Africa amongst miners  
13 and people who lived in and around and near these  
14 mines, and it was specifically associated with the  
15 crocidolite fiber that I mentioned.

16 Q Did Dr. Wagner later study not only just the  
17 crocidolite miners on this but chrysotile miners?

18 A He did. He followed up -- I think this was a  
19 pretty striking result at the time, and he followed up  
20 with a second study in 1965 and found, interestingly,  
21 that while he had seen these cases of mesothelioma with  
22 crocidolite, at other mines in and around Africa, he  
23 did not find the same -- in fact, he found no cases of  
24 mesothelioma for either amosite or chrysotile mines.

25 Q Now, we looked at earlier the ACGIH, a voluntary



1 group, set a five million particle limit, permissible  
2 exposure limit, in 1946?

3 A That's right.

4 Q Did that subsequently change?

5 A It did. But as we saw earlier, not until much  
6 later, until 1968, and there were some important  
7 reasons for that.

8 Q Slide 43.

9 What were those reasons?

10 A So one of the most important reasons was that  
11 until the discussion of mesothelioma became an  
12 important part of the concern about the risk of  
13 asbestos, it was believed still to that time that very  
14 dusty environments, raw fibers, mining and milling were  
15 where the hazards existed with respect to asbestos  
16 exposure.

17 But in the 19- -- then with that, with that  
18 development and then additional work by industrial  
19 hygienists then to want to do more testing of asbestos  
20 exposures, a new method was developed to measure the  
21 exposures to asbestos. This was very significant  
22 because, as I mentioned before, the five mppcf standard  
23 was just measuring all particles in the environment,  
24 whether they were asbestos or not, whether they were  
25 fibers or not.

1 And now for the first time, in 1968, a method was  
2 published to allow industrial hygienists to collect  
3 just the fibers which we now know are what we really  
4 are concerned about when we talk about exposure to  
5 asbestos.

6 Q Now, we talked a little bit about end users versus  
7 miners. How did we get there?

8 I'm not there yet. Okay.

9 (Slide 43 is being viewed.)

10 Okay. How did you measure this asbestos exposure?  
11 Let's do it this way.

12 A So asbestos exposure with this new method that was  
13 developed, which I think you have heard a little bit  
14 about before is fibers per cubic centimeter of air -- a  
15 cubic centimeter is a pretty small volume of air -- and  
16 how many fibers are present in that. And we test that  
17 by collecting air onto a filter. We pull air through a  
18 filter, it's a specially made filter that allows the  
19 air to pull through without bunching up the filter.  
20 Today we do that by having a little hand-held or  
21 belt-held pump that can attach to the worker that has a  
22 battery in it and pulls a constant stream of flow of  
23 air through that filter. And we know how much air that  
24 is, so that allows us to calculate how many fibers are  
25 on the filter surface in a volume of air so that we can

1    measure and report the airborne concentration of  
2    fibers.

3    Q      In reporting these concentrations, do you use a  
4    term called TWA or time-weighted average?

5    A      That is a very important term with respect to  
6    understanding exposures because we, of course, could  
7    measure an exposure instantaneously, which be could be  
8    a second or a snapshot in time. What is the  
9    concentration of air at this moment, right? But for  
10   workers, what we really are most concerned about is  
11   what happens over the workday. They're working  
12   typically for eight hours. And, certainly, some people  
13   work longer, and we can adjust our standards for those  
14   longer work shifts or shorter work shifts, but the  
15   eight-hour time is the most important time in terms of  
16   characterizing exposure. And the reason for that is,  
17   when you think about it, somebody might be working  
18   doing something, and they might manipulate something  
19   and create some exposure, but then they may need to  
20   walk away and do something else associated with their  
21   job, and then they come back and continue to do that,  
22   so they may not have a continuous exposure associated  
23   with a particular activity, and so we want to  
24   understand how those peaks and valleys look over the  
25   whole day.

1    Q      And is that illustrated on exhibit -- or, I'm  
2    sorry, Slide Number 44?

3    A      Yes, more or less. This is -- I think maybe a  
4    better way to think about it would be if you're running  
5    maybe like a 5k, a race, you might run the first  
6    kilometer at a nine-minute mile, you might run the  
7    second kilometer an eight-minute mile, and your average  
8    might be an eight-and-a-half-minute mile throughout the  
9    race. So that's what we're talking about is  
10   understanding the average exposure over that eight-hour  
11   period. We call that a time-weighted average or TWA.

12   Q      Let's do an example that folks my age could  
13   understand; you go on I-26 and you hit Spartanburg at  
14   rush hour. You're only going 20 miles an hour.

15   A      Right.

16   Q      And after you get through that, as you go to  
17   Clinton, you can go up to 70 miles an hour, right?

18   A      Right. So your average speed over that time may  
19   be 35 miles an hour. I didn't calculate that. It  
20   depends on how long you're driving.

21   Q      Have the permissible levels changed through the  
22   years for asbestos?

23   A      Absolutely, they have.

24   Q      Is it illustrated on this slide, Number 45?

25   A      Yes. This is just a graph to show, as we have

1 learned more about asbestos over time and the hazards  
2 of asbestos, those exposure limits have changed, as you  
3 can see, dramatically. Up until 1960, '71, you can see  
4 in the late 1960s, I talked about there is a lot of  
5 development with a new sampling method. So in 1970,  
6 OSHA is established, and in '71 they establish the  
7 first legal work environment exposure limit which is  
8 called a PEL or permissible exposure limit. And you  
9 can see that with ongoing research at that time, the  
10 additional focus, the exposure limits start to drop  
11 precipitously through the 1970s. And today, of course,  
12 we have an exposure limit, a TWA, eight-hour TWA, of .1  
13 fibers per cubic centimeter over the eight-hour day.

14 Q So it started out at, basically, 12, dropped to  
15 five, dropped to two, dropped to one, dropped to .1?

16 A Actually, it started out at 30. The equivalent,  
17 the five mppcf through testing and peer-reviewed  
18 publications that were done in the '60s, showed that  
19 the belief at the time and is still used as a rough  
20 conversion factor today depending on the situation was  
21 as much as 30 fibers per cubic centimeter historically.

22 Q Now, I believe the jury has heard the term OSHA  
23 was enacted in the very end of 1971?

24 A End of 1970.

25 Q '70, okay. And they came out with regulations in

1 1972 regarding asbestos exposure?

2 A Actually, in '71 was their first asbestos  
3 regulation.

4 Q Okay. Well, what's been marked as Exhibit 152,  
5 I'll hand you up this exhibit. Did those regulations  
6 apply to companies like manufacturing companies, or did  
7 they apply to employers or who did it apply to?

8 A So what you've shown me here is the 1972 standard,  
9 which was also a standard. There was an emergency  
10 temporary standard in 1971 and then followed up with a  
11 more robust standard in 1972. And, yes, that's  
12 correct. This was a standard that applied to the  
13 majority of workplaces in the country and outlined the  
14 requirements for working with asbestos in those work  
15 environments.

16 Q So if Duke Power Company were building and running  
17 power companies, would this apply to them?

18 A Yes.

19 Q And what were they required to do?

20 A Well, you can see here that, in addition to the  
21 permissible exposure limit, so keeping exposures below  
22 a specific concentration in the workplace, there were  
23 also requirements for other protection and protective  
24 measures, and some of those had to do with if you did  
25 exceed the exposure limits they had to go in place, and

1 those included requiring the use of respiratory  
2 protection or respirators that we sometimes see that  
3 will cover your face and have filters to protect your  
4 breathing; warning signs could be necessary with  
5 certain requirements; dust samples would need to be  
6 collected to show that exposures were below the  
7 established permissible exposure limits; and also  
8 making medical evaluations available for those who were  
9 exposed above the exposure limit, and also maintaining  
10 records.

11 Q Were these regulations amended and strengthened in  
12 1976?

13 A They were.

14 Q And I think if you would flip the page, you will  
15 see -- I think it's Slide Number 4 in that. There you  
16 go. Okay -- and it reiterated the eight-hour  
17 time-weighted average, did it not?

18 A Yes.

19 Q Five fibers -- no longer than five micrometers per  
20 cubic centimeter, correct?

21 A Yes, that's correct.

22 Q And what were the methods of compliance? I  
23 believe that's on the next slide.

24 A So, in this case you can see the methods of  
25 compliance that were specified in the standard,

1 included what's called engineering controls. What an  
2 engineering control means is either a ventilation or  
3 some other physical control, mechanical control that  
4 can reduce the exposure or remove the exposure from the  
5 worker. And ventilation is a great way to do that. If  
6 we can suck away the air that has the dust in it from  
7 the worker so they can't breathe it, that's preferable  
8 to making our workers wear a bulky at the time, bulky  
9 respirator that would be hot, depending on the  
10 environment, and potentially less protective.

11 Q And they also enacted regulations on ventilation,  
12 did they not?

13 A Well, there were some specifics about local  
14 exhaust ventilation in the standard, and this is now a  
15 1976, the update standard, in which there was a  
16 requirement that where local exhaust ventilation was  
17 required or needed, that it would be designed in  
18 accordance with the American National Standards  
19 fundamental governing exhaust, which was an ANSI,  
20 American National Standards Institute, so that there  
21 would be some specifications and minimum standards for  
22 the proper design and use of those ventilation systems.

23 Q In 1976, were the regulations written to address  
24 the use of tools in -- regarding asbestos work?

25 A In '76, yes, the tools were also addressed. So,



1    for example, if power tools were going to be used and  
2    it was known or demonstrated that exposures could  
3    exceed the limit with those power tools, then  
4    ventilation would be required on those tools to reduce  
5    the exposure potential.

6    Q      Okay. Did they adopt work methods involving  
7    working around asbestos?

8    A      There were certainly work methods as well that  
9    were implemented at that time. For example, using wet  
10   methods because wetting down materials is a great way  
11   to reduce the dust potential.

12   Q      Okay. And did they restrict the use of certain  
13   products in how they are handled or removed from bags  
14   and cartons and otherwise handled in the workplace?

15   A      Absolutely. It was known by this time that  
16   insulation materials, for example, were what we call  
17   friable or could be pulverized -- they were dusty  
18   materials -- so it was recognized that controls were  
19   needed for handling those types of materials.

20   Q      Now, in this case involving Mr. Jolly, have you  
21   been provided with Mr. Jolly's deposition?

22   A      Yes.

23   Q      And have you read it?

24   A      Yes.

25   Q      Have you been provided with the transcript of

1 Mr. Jolly's testimony here in this court last week?

2 A Yes, I have.

3 Q Have you had an opportunity to read it?

4 A Yes, I did.

5 Q Do you understand what plants Mr. Jolly may have  
6 been employed at by Duke Power?

7 A Yes.

8 Q And I believe --

9 A It's my understanding it was quite a number of  
10 different facilities where he described working for  
11 different lengths of time but a number of different  
12 places.

13 Q Is it your understanding he worked at the Catawba  
14 Nuclear Station?

15 A Yes.

16 Q McGuire?

17 A Yes.

18 Q Ocone?

19 A Yes.

20 Q Belews Creek?

21 A Yes.

22 Q Riverbend?

23 A Yes.

24 Q Marshall?

25 A Yes.

- 1 Q Buckstein?
- 2 A Yes.
- 3 Q Dan River?
- 4 A Yes.
- 5 Q Cliffside?
- 6 A Yes.
- 7 Q Okay. And I believe Lee?
- 8 A And Lee, I believe that was also mentioned.
- 9 Q Okay. I will hand you what has been marked
- 10 previously as Exhibit 134. Have you seen this document
- 11 before?
- 12 A Yes. This is a document from Duke Power with
- 13 their safety procedures for asbestos, and this one is
- 14 dated 1977.
- 15 Q I'm sorry. I get carried away. I talked over
- 16 you. What's the date?
- 17 A No problem. I apologize. It's June 14, 1977.
- 18 Q Okay. And what were they talking about?
- 19 A Well, what this letter talks about and then the
- 20 corresponding document is what safety practices were
- 21 needed and required at that time to work safety with
- 22 asbestos.
- 23 Q Okay. And this applied -- this was conforming
- 24 with the OSHA requirements in '76?
- 25 A It was, yes.

1 Q Okay. And it applied to Duke Power for their  
2 employees, correct?

3 A That's my understanding. And I should say that,  
4 you know, there may be instances where I note that what  
5 they have described here may not be identical with the  
6 OSHA language, but certainly it was an intent to comply  
7 with the OSHA standard at that time based on my  
8 reading.

9 Q And I'm going to show you what has been marked as  
10 Exhibit 135. Can you identify that for the jury?

11 A Yes. This is an updated version of the same  
12 document, the safe work practices, which they called  
13 "Safety Working Practice for Asbestos Exposure," and  
14 this is dated May 28, 1982.

15 Q Okay. And I'll ask you if you have seen  
16 Exhibit 136.

17 A This one, yes, I have.

18 Q And what is that?

19 A This is from September 1984, also looks like  
20 related to their asbestos program. It's entitled  
21 "Asbestos: How to Protect Yourself," and it looks like  
22 it's an instructor's guide -- and I have seen this --  
23 for an asbestos safety training program from Duke Power  
24 Company.

25 Q Okay. And, finally, Exhibit 137. Have you seen

1    this document?

2    A        Yes, I have.

3    Q        And what is it?

4    A        This is the safe working practices for asbestos  
5    exposure, the same policy or procedure document, and  
6    this one is revised with a date of January 1st, 1985.

7    Q        Okay. Now, what are these documents telling us?

8    A        These documents outline the definition and  
9    requirements for working with asbestos and what the  
10   safe work practices are considered to be at Duke Power  
11   and how they are going to manage exposure potential to  
12   asbestos in their power plants.

13   Q        Have you had an opportunity to review photographs  
14   of the Duke Power facilities?

15   A        Yes, I have.

16   Q        I'll ask you to comment on have you seen  
17   Exhibit 146?

18   A        Yes, I have seen this picture before.

19   Q        And what plant and what date is it talking about?

20   A        This particular photo is from Ocone, and it's  
21   from March of 1974.

22   Q        Okay. And what does it depict?

23   A        It seems to show two workers working on a large  
24   pipe, and in the foreground here, we can see what looks  
25   like a box of pipe insulation from 48, is the name of

1 the company.

2 Q Okay. Exhibit 147. Have you seen that before,  
3 ma'am?

4 A Yes, I have seen this picture as well.

5 Q Very similar to the document prior. I believe the  
6 date might be cut off on that, but it's Ocone?

7 A This one is also Ocone, that's right.

8 Q Okay. And I'll just to speed up, 148 and 149,  
9 what are those?

10 A These are also additional pictures of workers. In  
11 particular, 149 is a picture of individuals applying  
12 the insulation to a large pipe at the Ocone facility,  
13 and this is from 1973.

14 Q Going forward, have you been provided other Duke  
15 documents and pictures of plants?

16 A I have seen other pictures as well, that's right.

17 Q And can you describe this picture?

18 MS. FARRISE: Your Honor, I just have.

19 MR. BOUCH: Take it down. It's not been admitted  
20 yet. That one is. That one is okay.

21 MS. FARRISE: This one is lack of foundation and  
22 irrelevant to this case.

23 THE COURT: This is 149?

24 MR. BOUCH: No, no, no. We're not there.

25 MS. FARRISE: What he next has planned.

1           MR. BOUCH: I can explain at a sidebar in ten  
2 seconds, Your Honor.

3           THE COURT: Is this 1504?

4           MR. BOUCH: I'm going to offer that, Your Honor.

5           THE COURT: All right. Sure.

6           (WHEREUPON, a bench conference was held off the  
7 record in the presence of the jury, but out of the  
8 hearing of the jury.)

9 BY MR. BOUCH:

10 Q       Now, Ms. Sahmel, I'm going to ask if you had an  
11 opportunity to review Exhibits 140 through 143 that are  
12 in evidence.

13 A       Yes, I have seen these documents.

14 Q       And what do those documents reflect?

15 A       These documents have to do with correspondence  
16 between the Covil insulation company and Duke Power  
17 Company with respect to the purchase of insulation  
18 including Kaylo and fiberglass in one example here from  
19 1970 and --

20 Q       And Johns Manville?

21 A       And it looks like Johns Manville as well, that's  
22 right..

23 Q       And do you understand Covil was the insulation  
24 contractor for the Oconee plant?

25 A       That is my understanding.

1    Q      All right.

2            (Mr. Bouch approached the bench.)

3            MR. BOUCH:    Would you put up 63 on mine.

4            THE COURT:    60, is what I've got.    You've got 63?

5            MR. BOUCH:    Yeah.

6            THE COURT:    All right.

7            MR. BOUCH:    The only thing that's lacking is the  
8 decimal places to the right.

9    Q      Now, Ms. Sahmel, I've asked you, as an industrial  
10 hygienist, to talk about exposure, cumulative exposure,  
11 and dose.    What do those mean?

12    A      So dose is what we often refer to as the total  
13 exposure that somebody has received over some time  
14 period, and that could be over your lifetime, or it  
15 could be over your working lifetime, which we typically  
16 say is about 45 years.    So we want to understand the  
17 total amount, like if you could think about it in terms  
18 of each day contributes a little bit, but the total  
19 amount that somebody receives over a specified period.  
20 And for the case of workers, over about a 45-year  
21 period.

22    Q      A working life is 45 years?

23    A      Working life is -- at least that's how OSHA has  
24 defined it when I've even it in letters of  
25 interpretation.



1    Q      I was going to say, the judge and I should have  
2 quit 20 years ago.

3            I'm asking you at this time exposure, duration,  
4 cumulative dose. It's a fairly simple formula on the  
5 board. I think it's Slide Number 60. Is that what  
6 we're talking about?

7    A      That's right. This is a pretty standard metric in  
8 understanding and comparing cumulative exposures, so we  
9 want to know how many days and then how many years of  
10 exposure that an individual had for a chronic exposure  
11 hazard or concern. In this case, particularly with  
12 cancer, we want to understand the total dose that  
13 somebody received from day to day and year to year.

14   Q      Okay. So but -- and the fibers per cc years, how  
15 is that calculated?

16   A      So it's really a very simple calculation. It's  
17 multiplying the concentration, which often will be  
18 that, what I talked about, the eight-hour time-weighted  
19 average concentration, times the number of years of  
20 working time that that individual had doing whatever  
21 that activity was.

22   Q      So --

23   A      It's a quite simple calculation, although the  
24 units look a little strange, but it's really the total  
25 amount of asbestos exposure, for example, in this case.

1 Q The next slide, does that demonstrate -- have you  
2 done an example of, for example -- no. That's the  
3 wrong one.

4 (Slide 89 is being viewed.)

5 Q So let me ask you to come down and --

6 A Sure. Do I need to bring a marker over there?

7 Q Yes. Maybe we can show the jury how the  
8 permissible levels would go.

9 And so in 1971, the permissible exposure level was  
10 12 fibers per cc. Write that down.

11 A I apologize for my handwriting in advance.

12 Q And you multiply that by 45 years?

13 A Uh-huh.

14 Q And that comes up to 540. I've got a cheat sheet  
15 here.

16 A Yes.

17 Q Fiber per cc years.

18 A Right. So it's just 12 times 45, and this gives  
19 you a sense of then the total, the total dose, if this  
20 person were exposed every day for 45 years at 12 fibers  
21 per cc for eight hours a day.

22 Q Was that the prevailing belief in 1971 that 540  
23 fibers per cc years was okay?

24 A Well, that was the allowable exposure limit at the  
25 time.

1    Q      And in '72 it went to five fibers?

2    A      Correct.

3    Q      And five times 45?

4    A      I'll write smaller here. My first one is kind of  
5    big.

6    Q      And that equals 225?

7    A      Yes, it does.

8    Q      Okay. So in 1972, when OSHA did their emergency  
9    standard, 225 was okay?

10   A      So that was what was allowable then under the  
11   standard over a working lifetime was 225 fiber cc  
12   years.

13   Q      Did it subsequently drop from five?

14   A      Yes. As we saw in the chart, it's continued to  
15   decline with additional research and knowledge about  
16   asbestos and did get lower over time until today.

17   Q      Well, let's go to two fibers, which was the '76.

18   A      Sure.

19   Q      You don't even need my cheat sheet for that one.  
20   So 1976, it's 90 fiber years was the permissible limit?

21   A      Would be the equivalent allowable exposure limit  
22   at the eight-hour time-weighted average.

23   Q      And that is probably decreased by at least a  
24   factor of six from when they started?

25   A      That's right. It's a significant decline just

1 from 1971 down to 1976.

2 Q And now in 1986, it was .2 fibers, a change that  
3 was lowered even further?

4 A That's right.

5 Q Nine?

6 A Yeah, 0.9.

7 Q No, no. Nine, just nine.

8 A Oh, yeah. Sorry.

9 Q So in 1986, the permissible standard was nine  
10 fiber years. That was two years after Mr. Jolly went  
11 from being an inspector to an instructor, right?

12 A Again, the equivalent allowable cumulative working  
13 lifetime exposure based on the eight-hour time-weighted  
14 average would be equivalent to nine fiber cc years over  
15 a working lifetime.

16 Q And in 1994 -- this is the last one -- it was  
17 dropped to .1; is that correct?

18 A That's correct.

19 Q So today, four and a half fiber years is the  
20 permissible exposure limit?

21 A Well, it's the equivalent cumulative working  
22 lifetime dose at the allowable OSHA limit.

23 Q Right. Over a lifetime, four and a half years,  
24 fiber years, is the permissible limit?

25 A If one were to work for 45 years, which OSHA says

1 is the typical working lifetime for an individual, at  
2 their allowable limit of .1, it would be equivalent to  
3 4.5 fiber cc years, that's right.

4 Q What is -- can you tell the jury --

5 Your Honor, I don't know when you want to -- I  
6 know we were delayed starting, and I don't know the  
7 idea. I'm about ready to shift gears into something.

8 THE COURT: I brought you in at quarter of 3:00.  
9 Why don't we take a ten-minute break before we go to  
10 the next topic Mr. Bouch wants to cover.

11 You may go to your jury room.

12 (WHEREUPON, the jury exited open court at  
13 3:54 p.m.)

14 THE COURT: All right. We'll be at ease for a few  
15 minutes.

16 MR. BOUCH: Can I proffer these things for two  
17 seconds?

18 THE COURT: Certainly. I'm just telling the court  
19 reporter. Diane, he's going to proffer some  
20 photographs that are historical photographs from the  
21 '50s and so forth with respect to various Duke plants  
22 and piping situations and insulation situations. Is  
23 that fair?

24 MR. BOUCH: Your Honor, I mean, I'll describe the  
25 photographs.

1 THE COURT: Very good.

2 Mr. McLeod, you got something before he does this?

3 MR. McLEOD: No, Your Honor. I just want to make  
4 sure that the jury door was shut.

5 THE COURT: I think it is. I think we're good.

6 MR. BOUCH: We would proffer: Exhibit 1504  
7 purports to be a photograph of the dock steam  
8 generating plant dated October 2, 1953, illustrating  
9 boxes of Johns Manville 85-percent magnesium and debris  
10 on the factory floor.

11 We would proffer Exhibit 1505, a photograph of the  
12 Marshall Plant 1 and 2 dated February 15, 1965,  
13 describing insulation and debris scattered through the  
14 plant site.

15 We would proffer Exhibit 1506, another photograph  
16 of Marshall, February 3, 1966, showing insulation  
17 pieces on the floor and boxes of Kaylo insulation.

18 We also proffer Exhibit 1507 of the Marshall  
19 plant, March 1, 1966, with Kaylo insulation boxes  
20 displayed on the floor of the plant.

21 We would proffer Crosby -- or Exhibit 1508 of  
22 Belews, that's B-e-l-e-w-s -- pronouncing it wrong --  
23 Creek October 29, 1975, indicating an insulation worker  
24 and welder working on insulation in that plant.

25 And, finally, an undated photograph of the Allen

1 plant in Exhibit 1509, again indicating presence of  
2 Johns Manville pipe insulation and a picture of a steam  
3 generator.

4 THE COURT: Thank you. And the court's ruling on  
5 these proffered exhibits, the plaintiff has objected on  
6 the basis of 401 and 403. Their relevance has not been  
7 established, and to the extent they would be relevant,  
8 it has not been established as to what they would be  
9 probative of, and that would confuse the jury.

10 MR. BOUCH: Let me further indicate why they're  
11 important, Your Honor. I believe they depict the  
12 typical conditions of the power plant, both in  
13 operation and construction, that has been described  
14 through the years including the later years when  
15 Mr. Jolly was there.

16 Mr. Jolly described the disposal of the insulation  
17 on the floor of the plant. We have already in evidence  
18 the documents showing the Kaylo and Johns Manville were  
19 the insulation products used in Oconee, and, of course,  
20 we believe these photographs establish that they were  
21 the insulation installed in the other coal-fired steam  
22 plants that Mr. Jolly also admitted he worked at  
23 through the years. So that's why it's important.

24 THE COURT: Very good.

25 MS. McVEY: Can I just respond briefly to that?

1           The first point is that Mr. Jolly was here, and he  
2 was not asked whether or not these were fair and  
3 representative of the conditions we saw when he was at  
4 any of these plants to the extent he was at these  
5 plants, and so we object on that basis, not during the  
6 time periods he was there, and they're not fair and  
7 accurate representations of the conditions he  
8 experienced at the Duke power plants.

9           THE COURT: Very good.

10          MS. McVEY: Thank you, ma'am.

11          (WHEREUPON, a recess was taken from 3:59 p.m. to  
12 4:14 p.m.)

13          (WHEREUPON, the jury entered open court at  
14 4:14 p.m.)

15          THE COURT: Please be seated, ladies and  
16 gentlemen, and we will continue with the direct  
17 examination of Ms. Sahmel.

18 BY MR. BOUCH:

19 Q       I want to talk to you now about risk assessment,  
20 specifically human health risk assessment. Okay?

21 A       Okay.

22 Q       I have a slide up there. Could you describe the  
23 elements of what we're talking about, but first tell us  
24 what human health risk assessment is.

25 A       Certainly. So human health risk assessment, as I



1 alluded to earlier, is the process of determining and  
2 quantifying or characterizing risk to various  
3 situations, to chemical exposures, so that we have a  
4 way to talk about what that risk means, like when we  
5 say risk, what it means.

6 THE COURT: This is blocking the jury from  
7 completely seeing your questioning, Mr. Bouch.

8 MR. BOUCH: It shows that I am completely  
9 ineffective --

10 THE COURT: A lot of moving parts.

11 MR. BOUCH: Sorry about that.

12 Q Now, we heard an example earlier of water we  
13 drink.

14 A Okay.

15 Q We drink a quart of water a day. That's pretty  
16 good?

17 A Right.

18 Q We drink seven or eight gallons, we're stretched  
19 out on the floor, right?

20 A Absolutely. So there's --

21 Q Is that what you're talking about when you say  
22 risk assessment?

23 A That's certainly a risk assessment  
24 characterization in terms of understanding how much of  
25 an amount of something, whether it's water or salt or

1 aspirin, how much of that is a safe dose or a lethal  
2 dose, and there are lethal doses for many common  
3 substances like water, like salt, like aspirin.

4 Q Would be one for aspirin?

5 A What would be what?

6 Q One for aspirin?

7 A What would be a lethal dose?

8 Q Right.

9 A I'm not sure what a lethal dose of aspirin would  
10 be. It would be a pretty substantial dose. I think  
11 it's probably maybe like 30, 40, maybe more. I can't  
12 remember the exact amount, but it's enough that,  
13 obviously, you have a health, you know, a healthy dose  
14 or healthful, beneficial, potentially, dose at one  
15 level, but if you take too much, you can go into a coma  
16 and even die.

17 Water is the same thing. It seems like a crazy  
18 thing, but people have finished a race, for example, or  
19 some big event where they're very thirsty and drunk  
20 enough water to actually cause their death. I think  
21 that's about seven and a half gallons of water.

22 Q So if we take a couple aspirin, we're okay; if we  
23 take a couple of bottles in one sitting, we're in  
24 trouble?

25 A That's right.

1 Q And I believe, just to keep it simple, if a real  
2 scientist was going to photograph this, he would have a  
3 graph here and a graph here and maybe one aspirin right  
4 here and two bottles there, and this is the disease and  
5 it would go like that?

6 A Well, yes. So more or less, exactly. As the  
7 amount you take increases, the risk of having an effect  
8 increases or the noticeable symptoms and severity of  
9 those symptoms will increase with increased dose.

10 Q Okay. I think I've made my point. So you  
11 identify a hazard; you have a dose response, which is  
12 the aspirin thing?

13 A Right. So how much corresponds to what symptoms.  
14 So, for example, one aspirin might be no effect; two  
15 might be a beneficial pain reliever effect, and then  
16 some amount might result in putting you into a coma,  
17 and then there might be a fatal dose as well. I  
18 believe there is a fatal dose.

19 Q And then you do an exposure assessment. What's  
20 that?

21 A So as you can see here, the three kind of core  
22 disciplines or pieces that go into a risk assessment or  
23 risk characterization, which the risk characterization  
24 is part of the risk assessment process, are  
25 understanding is it a hazard, and if so, what kind of

1    hazard. For example, is it a breathing hazard; is it a  
2    skin exposure hazard. And then the dose response, how  
3    much of it causes whatever those effects or symptoms or  
4    outcomes is needed, and then, finally, how do we figure  
5    out how much people have. So we have to measure that,  
6    and that's called the exposure assessment.

7    Q      Okay. Now, both EPA and OSHA have done these risk  
8    assessments, have they not?

9    A      Absolutely.

10   Q      Could we put up 66.

11           It's similar to something we saw before where  
12   there are, I think, EPA used four studies?

13   A      OSHA used four studies in theirs, and EPA did as  
14   well and then later added a couple of additional -- I  
15   think the important thing to note about this particular  
16   risk assessment that OSHA and also EPA did for asbestos  
17   specifically, which was a very similar assessment, is  
18   that they collected data or used data, which not  
19   surprisingly, based on the studies that we talked about  
20   earlier, were for very relatively high exposures and  
21   very dusty environments, so manufacturing environments,  
22   textile manufacturing, insulation use.

23           But because there were no real data at the lower  
24   end, and they wanted to make sure that they protected  
25   workers at all exposures, they extrapolated down from

1 those high numbers where they had data down to an area  
2 where there was no data, but they needed to have  
3 something there in place because they didn't want to  
4 leave it open.

5        So as a policy, OSHA has determined that when the  
6 mode of action of a chemical is unknown or when  
7 insufficient information is available, they will use  
8 that approach, which is called a linear extrapolation,  
9 where you basically draw a line from the known data  
10 down to zero, and then that becomes your risk  
11 characterization, your risk assessment.

12        It's absolutely appropriate for OSHA to use this  
13 extrapolation approach because they want to protect the  
14 public and protect the workers, so they have also,  
15 based on their research, have understood that this is a  
16 way to -- it's more likely to overprotect workers and  
17 overprotect the public than underprotect, so it's a big  
18 reason why they use this approach, and I think it's  
19 appropriate.

20 Q        Okay. Can you go back one slide?

21        So this part down here is more an -- or is this an  
22 extrapolation for which there really is no data to  
23 support that part of the line?

24 A        That's right. When they first did their  
25 assessment, there was no data in that region. They

1 extrapolated from very high exposures, and those  
2 cumulative exposures that they extrapolated from were  
3 based on the chart we saw earlier. The ones that they  
4 used were studies from, I think, about 50 fibers per cc  
5 year up to 600 fiber per cc year, and they had nothing  
6 below 50. Of course, now we see there is lots of types  
7 of exposures and lots of questions about exposures at  
8 much lower levels, so they used this extrapolation  
9 model, extrapolated down, which gives a value for the  
10 risk, but it's not a real number. It's an estimate  
11 based on a model.

12 Q Number 71, please.

13 So the EPA's regulatory policy has been expressed  
14 how?

15 A Oh, well, they have expressed it in many different  
16 places. They have a chemical carcinogen policy, and  
17 it's available today on their website. Any of you  
18 could go and take a look at it, and they explain very  
19 clearly what their policy is and how they use it, and  
20 what the EPA says is when a mode of action of a  
21 chemical is unknown, that they will use this linear  
22 extrapolation approach because they believe that it  
23 will not underestimate the risk to the public.

24 Q And at least in 1986, how did they explain their  
25 use of linear extrapolation models?

1     A        In one of their '86 documents, they said, and I  
2     think this is a great way to understand it and  
3     characterize it, is that linear extrapolation models do  
4     not necessarily give a realistic prediction of the  
5     risk, and the true value of the risk is unknown and may  
6     be as low as zero in certain places on that line.

7     Q        Now, exposure assessment. There's some key  
8     factors you have to look at in that; is that not true?

9     A        In exposure assessment?

10    Q        Yes, ma'am.

11    A        Absolutely.

12    Q        Slide 74, please.

13            And would these be those key factors, Slide 74?

14    A        That's right. At its most basic level, when we do  
15    an exposure assessment, we want to know how long, how  
16    often, and how much, right, of the exposure that  
17    someone had, and that gets to that fiber per cc year  
18    estimate. So these are the three questions that I will  
19    ask if I'm doing an exposure assessment.

20    Q        There's been some terms, friable versus  
21    encapsulated or nonfriable. What are those?

22            Slide 77, please.

23    A        Yes. Friable is really just a fancy term for  
24    something that can be crumbled with your hands or  
25    pulverized with your hands. So it's something that's

1 crumbleable, if that's really a word -- probably not --  
2 but can be made into a dust or powder with just the  
3 pressure of a hand.

4 Q Have researchers commented on that through the  
5 years?

6 A It's become a term that's used in -- a term of  
7 art, I guess you would call it, in exposure assessment  
8 when we talk about asbestos.

9 Q Okay. And we talk about encapsulated. Likewise,  
10 have commentators written on that through the years as  
11 appreciative of a hazard?

12 A Yes. It's become a term that's used in the OSHA  
13 standard. For example, encapsulated material is  
14 defined as something that's bound into a matrix or a  
15 binder such that the fibers are not easily releasable.

16 Q For example, Dr. Selikoff in 1970?

17 A Yes. In 1970, for example, Dr. Selikoff did say  
18 that when the asbestos is locked into a product that's  
19 encapsulated, that he believed that there was no  
20 significant release of asbestos fibers from those types  
21 of materials.

22 Q And Dr. Ladell of the International Agency on  
23 Research on Cancer?

24 A Yes. IARC also commented on encapsulated  
25 products, and it specifically talked about gaskets, and



1 they said there was no conceivable health risk  
2 associated with gasket material, specifically  
3 asbestos-based gasket material.

4 Q And Dr. Nicholson, a partner of Dr. Selikoff, in  
5 1983?

6 A Yeah. I think this is an important quote here  
7 because Dr. Nicholson was one of the chief industrial  
8 hygienists at Mt. Sinai who worked with Dr. Selikoff  
9 for many years, and he stated directly as well that  
10 it's clear that the exposures from insulation or  
11 removal of gasket materials would not lead to any  
12 discernible disablement. He was talking about work  
13 with gaskets at that time.

14 Q And Slide 82.

15 Even the materials you reviewed from Duke Power  
16 Company appreciates the difference, do they not?

17 A They certainly did, according to their 1984  
18 training document. And here they stated that at that  
19 time, by '84, relatively little asbestos was used any  
20 longer, which makes sense with the regulation, but that  
21 they noted that it was still used in gasket material,  
22 but that even so, the asbestos in these jobs, in these  
23 using gaskets is bonded, which means it produces  
24 virtually no dust, is the terminology that they used.

25 Q Now, Mr. Jolly, what was his occupation?

1 A Mr. Jolly's occupation was an inspector.

2 Q Okay. Did he personally work with any internal  
3 valve, gaskets, or packing?

4 A Well, I should clarify. For early in his career,  
5 when he first started in '80 to '84, he described his  
6 work as an inspector during that time.

7 Q Right?

8 A It's my understanding from my review of his  
9 testimony, including when he was here at trial, that he  
10 did not personally do work with valves.

11 Q Okay. Did he work with gaskets or packing  
12 directly?

13 A He --

14 Q Personally.

15 A Based on my read of his testimony, he did not  
16 describe doing routine, direct work with any gaskets or  
17 packing that was hands-on himself.

18 Q Did Mr. Jolly himself describe himself as a  
19 bystander?

20 A I don't recall if he used that term or not.

21 Q Okay. But what was he doing when work on valves  
22 and pipes were being performed at the Duke Power  
23 facility?

24 A What he described was working very closely and  
25 regularly around individuals who were doing the work on

1 valves inspecting them, but, although he -- it's my  
2 understanding that his primary work had to do with the  
3 pipe lengths and the flanges that connected to those  
4 valves or connected to other piping, and that he was  
5 looking at often the flange gasket and ensuring that  
6 the work was done correctly because it's a very  
7 scientifically accurate requirement to perform that  
8 work and then that maintenance work.

9 Q In preparing for this case, Ms. Sahmel, were you  
10 provided with Mr. Jolly's trial and deposition  
11 testimony?

12 A Yes, I was.

13 Q Were you provided with the testimony of  
14 Mr. Taylor, whose deposition was taken in this case?

15 A Yes, I was.

16 Q Were you provided with the deposition testimony of  
17 Mr. Rogers that was taken in this case?

18 A Yes.

19 Q Were you provided the deposition of Mr. Simpson  
20 who was taken -- which was taken in this case?

21 A Yes.

22 Q And did you look at that testimony and try to  
23 identify the types and numbers of valves worked on at  
24 Duke by all those people?

25 A Absolutely. That was a very important question

1    for me to understand.

2    Q      And did you provide -- did you come up with a  
3    chart that would demonstrate what you found out of that  
4    testimony?

5    A      What I did, I did my best to try to take each  
6    witness and each coworker and their descriptions as  
7    they personally recalled and described the work and put  
8    together a list of the total number of valve  
9    manufacturers that they recalled at the Duke facilities  
10    and how many valves they recalled of different kinds.

11   Q      Okay. And there were a number of them, weren't  
12   there?

13   A      There were quite a few. As I recall, I believe 17  
14   different valve manufacturers' products were recalled  
15   by the four witnesses in total between their deposition  
16   and trial testimony, and thousands of valves total at  
17   the facility were recalled, I believe, by at least two  
18   witnesses.

19   Q      Okay. Now, at my request, have you reviewed the  
20   peer-reviewed gasket and packing studies?

21   A      Absolutely.

22   Q      And are they exhibited on Slide Number 88?

23   A      Yes. You can see here a list. This is a  
24   comprehensive list of all of the peer-reviewed papers  
25   that I was able to identify that had performed

1    measurements, airborne quantitative exposure

2    measurements, on gasket and/or packing products.

3            MS. FARRISE: Your Honor, I'm just going to object  
4    to the slide because it publishes inadmissible hearsay.

5            MR. BOUCH: I believe this is one you said was  
6    okay, Your Honor.

7            THE COURT: I did. Noted.

8            Overruled.

9            MR. BOUCH: Thank you.

10    Q      And had you drilled down -- have you gone through  
11    these carefully to try and distinguish the gasket and  
12    packing airborne concentration data involving the  
13    intensity over an eight-hour time-weighted average?

14    A      Yes, I have. It's very important when looking at  
15    this exposure data, as one would for any body of data,  
16    to understand important characteristics about that  
17    dataset. So in this case, I wanted to understand  
18    what's the range, what's the lowest measurement that's  
19    been reported in the literature, and what's the  
20    highest. I focused on the peer-reviewed literature.  
21    There are many other studies that have been performed  
22    on gaskets and packing because I wanted to look at  
23    those studies as a body that have been reviewed by  
24    other experts in the field and deemed appropriate for  
25    publication, but then I personally also performed my

1 own additional evaluation on those.

2 The kinds of things I am looking for are do all of  
3 the values come -- are they all in a similar range, do  
4 they make sense relative to each other, is there  
5 anything unusual going on in this body of numbers, body  
6 of data, about the exposures.

7 And then the other thing that was very important  
8 to me to understand was there's lots of data that have  
9 been collected over time on just the replacement, for  
10 example, the exposure you might experience replacing  
11 the gasket and packing in one valve. And while that's  
12 certainly important and I want to make sure that that  
13 data makes sense in the larger dataset, what is even  
14 more important is what would a person typically do over  
15 their day, and, for example, how many gaskets would  
16 somebody realistically change, how many valves, because  
17 that one that we talked about, the time-weighted  
18 average, that one little piece of the data, so  
19 30 minutes where you're in the valve actually the doing  
20 the work, you might have a slightly higher peak there,  
21 and then it might go back down while you're now putting  
22 the valve back together. No less important work, just  
23 different work with respect to exposure. So what  
24 became most important to me is identifying full-shift,  
25 eight-hour time-weighted average data in this body of

1 literature.

2 Q      Okay. Now, the articles listed on this slide, are  
3 they the articles typically relied upon by industrial  
4 hygienists in the field such as yourself?

5 A      Well, I -- my personal philosophy, and I certainly  
6 hope any well-qualified industrial hygienist, even if  
7 something is published in the peer-reviewed literature,  
8 would still look at the body of evidence and see, does  
9 all this data make sense; are there things that are  
10 missing.

11            For example, I might say, well, if somebody  
12 collected an exposure measurement, but they didn't  
13 report how long the sample was collected for, that data  
14 is hard for me to use because I don't know what it  
15 means. Was it a two-minute sample? Was it a 30-minute  
16 sample? Was it a 400-minute sample?

17            And, similarly, if the intensities are off, then I  
18 would want to drill into that to look. So I wouldn't  
19 necessarily take every document at its word and say  
20 that they're automatically reliable just because  
21 they're peer reviewed.

22 Q      But it's literature that experts such as yourself,  
23 at least, take into consideration in formulating their  
24 opinions?

25 A      I would certainly always consider and review all

1 of the peer-reviewed literature on the topic.

2 Q Could we go to Slide 89.

3 I asked you about eight-hour time-weighted average  
4 studies. Are these the subset, if you will, of those  
5 studies from the longer list that you looked at  
6 initially?

7 A This is the subset of data from the larger list  
8 that was shown on the previous slide. These ranges of  
9 exposures are most importantly specific to gasket and  
10 packing work. There were a couple of studies, for  
11 example, that noted that they believe that some  
12 insulation work may influenced the results, or that  
13 some other things may have happened that were  
14 unexpected in the study, or that they only collected  
15 those short-term samples I talked about, maybe just a  
16 30-minute or a 15-minute sample, which is very useful  
17 to understand your exposure to a particular piece of  
18 equipment, but not what your exposure might look like  
19 day-to-day as you do your job which involves some of  
20 that work but also some other important things.

21 Q Well, I notice that between this slide and the one  
22 prior -- could we go back one -- you did not include  
23 the Longo 2002 in your eight-hour time-weighted average  
24 analysis, correct?

25 A That is correct, I did not.



1    Q      Why not?

2    A      There are several specific reasons why I did not  
3 include that particular study. That particular study  
4 has, in my opinion, three major technical deficiencies.

5      The first of those deficiencies is that many of  
6 the sample cassettes -- I talked about the filters  
7 where we collect the fibers -- were overloaded. And  
8 what that means is the microscopist, who's going to  
9 take a microscope and look at that filter to count the  
10 fibers, can't see them. They're clumped on top of each  
11 other, and they're very difficult to see. So if  
12 there's too much material on a filter, it can't be read  
13 correctly. And there are very specific requirements  
14 for the methods from NIOSH, for example, about the  
15 loading of those filters.

16      The second major technical deficiency that I  
17 determined in that particular study is that before the  
18 study even started, the concentration in the chamber  
19 where the study was performed was already higher than  
20 the current OSHA PEL. It was over .1 fibers per cc,  
21 and to me, that's a concern. It indicates a lack of  
22 cleanliness, a lack of attention to detail, and a  
23 concern because I knew that much of the other data was  
24 below the current OSHA PEL, that it didn't seem to me  
25 that a realistic measurement could be collected under

1 those conditions.

2       The third major technical deficiency that I noted  
3 in the Longo study was that, because their filters were  
4 overloaded, they used what they called a modified  
5 method, but in fact, it was just an unaccepted method.  
6 It's a method to analyze the filter that was neither  
7 accepted by NIOSH nor EPA, in which they took -- it's  
8 called an indirect method. They took the fibers off  
9 the filter and spread them out to look at them. But  
10 what happens when you do that is you could artificially  
11 spread things out and make them smaller so that they're  
12 more easily breathable in in size when, in fact, they  
13 were originally clumped together, so it would lead to,  
14 in some cases, a much higher number of fibers than the  
15 accepted, approved methods of reading those filters  
16 would be.

17       So those were the three reasons why I did not  
18 consider that study in my final eight-hour  
19 time-weighted average list.

20 Q       Has Dr. Longo's study ever been duplicated or  
21 replicated?

22 A       Not to my knowledge.

23 Q       Why is replication or duplication important in  
24 scientific research such as what you do?

25 A       Oh, it's critically important. In fact, it's sort

1 of a tenet of research, right. If your research isn't  
2 replicatable, then it's really not an accepted  
3 approach. And, you know, there could be reasons for  
4 that. Maybe it's something very new, but in general,  
5 scientists are skeptical of a study that is not  
6 repeatable by somebody else.

7 Q So the five slides that you looked at or five  
8 studies you looked at, what are the results in regards  
9 to those studies as far as the current OSHA permissible  
10 exposure limit or PEL of .1 fiber?

11 A For the studies which I determined have  
12 appropriate data specific to gaskets and packing that  
13 were full shifts, so long enough to really understand  
14 the full workday, that's right. Those exposures ranged  
15 from nondetectable up to an upper bound of 0.062 fibers  
16 per cc as an eight-hour or a full-shift time-weighted  
17 average, and, in fact, in this case, all of those  
18 numbers were below the current OSHA PEL so it would be  
19 allowable today in the workplace.

20 Q Now, you have reviewed the Duke Power safe working  
21 practices, have you not?

22 A Yes, the ones we talked about earlier, yes.

23 Q And I'd like to ask you a couple questions.

24 And this would be Slide 96, please.

25 In 1982, what was Duke's opinion of the asbestos

1 insulation already in place in its plants?

2 A Yes. At the time, both in '82 and then in  
3 subsequent versions of that document that we've talked  
4 about earlier, Duke states very explicitly that their  
5 policy is to leave those materials like insulation in  
6 place unless there is some reason to disturb them, in  
7 which case then they would be appropriately dealt with  
8 in terms of limiting exposure and removing them safely.

9 But that was a very common policy at that time not  
10 to go in and create a big additional hazard by ripping  
11 out all of the insulation if it wasn't needed to be  
12 ripped out. I know in AHERA there was a similar  
13 approach that was followed in some cases, which would  
14 be in schools, for example.

15 Q AHERA dealt with schools?

16 A Yes.

17 Q And there was a formula, unless you were  
18 disturbing more than so many square feet or so many  
19 linear feet, you left it alone?

20 A I don't recall the exact policy, but there was  
21 certainly discussions in the standard about leaving  
22 some friable materials or insulation materials alone  
23 unless you really needed to disturb them.

24 Q Now, I believe you also looked at insulation  
25 airborne concentration studies such as Nicholson and

1 U.S. EPA.

2 Slide 97.

3 A Yes.

4 Q What does this slide tell us?

5 A So this study, as we talked about exposure  
6 assessments for gaskets and packing, this is a summary  
7 of some studies of full-shift again eight-hour  
8 time-weighted average exposures that have been reported  
9 in the literature for working with insulation. So this  
10 is insulation that would be considered friable that  
11 could generate dust pretty readily, and so not  
12 surprisingly, those numbers are higher. But I want to  
13 understand quantitatively the relative concentrations  
14 in intensity of exposure for insulation over a full  
15 shift when you have insulators working on insulation  
16 materials compared to, for example, in this case gasket  
17 and packing work.

18 Q And you also looked at background concentration  
19 estimates throughout the United States?

20 A I have. I've done -- I've performed a study of an  
21 analysis of the available literature on background  
22 airborne fiber concentration.

23 Q This is Slide 103.

24 What does this tell us?

25 A What this slide tells us is the general ranges in

1 the literature that have been reported for fibers that  
2 are big enough to be considered relevant by OSHA and  
3 EPA in their risk assessments, which is at least five  
4 microns in length or longer, and we do see different  
5 levels or different levels have been reported for  
6 indoor and outdoor areas, and that will vary depending  
7 upon the types of materials present. And so it's not a  
8 given that you will have higher indoor exposures,  
9 although that's suggested here, but you might in some  
10 scenarios. So these are really the results of the data  
11 that are reported by the U.S. Agency for Toxic  
12 Substances and Disease Registry in their very detailed  
13 review of this literature.

14 Q Have you also looked at the difference between  
15 urban and rural mesothelioma background rates?

16 Slide 107.

17 A I have. So as you can see, the ATSDR reported in  
18 their review of asbestos that they noted at least a  
19 tenfold difference in background rates between urban  
20 areas and rural areas. And that conceptually makes  
21 sense because we've got more equipment, more buildings  
22 and things in urban areas, so we might expect that that  
23 would be true.

24 ATSDR has said that that is what they have  
25 determined in their documents and their review. I was

1 interested in understanding, given that known tenfold  
2 difference in concentration just in the air that we're  
3 all breathing from day-to-day in urban areas and rural  
4 areas, does that also translate to a difference in  
5 number of mesothelioma, pleural mesothelioma, cases  
6 because if there is some evidence of a risk at  
7 background levels for mesothelioma, we would expect to  
8 see, based on that difference in ATSDR reports, more  
9 cases of mesothelioma among women potentially who are a  
10 background group who are less likely to be  
11 occupationally exposed. We would expect to see maybe  
12 more mesotheliomas in women who live in urban areas  
13 than rural areas if, in fact, those very low exposures  
14 are suggestive of an increased risk of disease.

15 So several colleagues and I have performed a study  
16 that looked at the numbers of mesotheliomas in women in  
17 urban areas and rural areas. And not only did we not  
18 find a difference between the urban and rural areas in  
19 terms of higher numbers in the urban, in fully half the  
20 years we looked at, the numbers were higher in the  
21 rural. And what that tells us, what it suggests is  
22 that there's no evidence for increased risk over this  
23 very large background concentration of asbestos that is  
24 in the air that we can measure today.

25 Q Okay. Would you go to Slide 91.

1           We've seen this one before. So here we go to  
2 cumulative exposure or dose, exposure duration and  
3 dose. Now, I'd ask you to come down and grab a pen.

4   A       Sure.

5   Q       Marker.

6   A       I apologize for my handwriting again.

7   Q       And I'll try to -- let's move this closer so they  
8 can see. I'll try to do it without tripping.

9   A       You and me both.

10   Q       Blind leading the blind.

11           Have you been able to calculate Mr. Jolly's  
12 theoretical exposure potential from gasket and packing  
13 work associated with Fisher or Crosby valves?

14   A       So, in order to understand quantitatively the  
15 potential for Mr. Jolly's exposure to gasket and  
16 packing work over this four-and-a-half-year period that  
17 he's described that he worked regularly and close to  
18 these valves, I wanted to look at -- it was difficult  
19 for me to understand how to break out Crosby and Fisher  
20 only from this large subset or large set of gaskets and  
21 packing-containing equipment like valves that were  
22 described in the testimony. So I decided to just look  
23 at the entirety of exposures that anybody might have  
24 experienced, and not just a bystander, but somebody who  
25 had direct work with gasket and packing exposure.



1            So as you saw from the literature that I reviewed,  
2 I thought it would be appropriate, in order to  
3 understand what the upper end of Mr. Jolly's exposure  
4 might have been, to say what if he himself did that  
5 work, and not only did he do it directly, but he did it  
6 every day for that whole four-and-a-half-year period  
7 that he was -- he described working as an inspector  
8 where often, I think from his testimony, he was close  
9 enough to be essentially almost a direct exposure,  
10 almost doing the work himself, which makes sense for an  
11 inspector.

12           If you take that number, if you take the highest  
13 reported eight-hour time-weighted average number from  
14 all those ranges of numbers that I looked at for the  
15 long-term data in the literature -- and again, that  
16 data is important because it tells us the  
17 representative expose over a full day as opposed to  
18 just a single job. If you take the highest number, and  
19 that number was 0.062 fibers per cc, and again, that's  
20 a direct exposure for somebody hands-on doing the work.

21 Q        Is that over an eight-hour time-weighted average?

22 A        This is an eight-hour time-weighted average. And  
23 then you multiply that times the four and a half years  
24 that Mr. Jolly described doing that work, then that  
25 equals 0.28 fibers per cc year.

1 Q And what is that in the universe of permissible  
2 exposure for a working lifetime?

3 A Well, so once a number is calculated, we have to  
4 do something with it, right. So there is a number.  
5 It's been calculated. It's important to then compare  
6 it to something meaningful with respect to risk or  
7 exposure.

8 The first place that I, as an industrial  
9 hygienist, will always go is to the OSHA exposures.  
10 And as we talked about earlier, if you calculate an  
11 equivalent cumulative exposure at the current OSHA PEL,  
12 it's 4.5 fibers per cc year. So in this case you can  
13 see that this number is well below 4.5 fibers per cc  
14 year, so --

15 Q Would you write that down, 4.5.

16 A Oh, sure. Of course.

17 Q That is the OSHA permissible exposure?

18 A It's not an official OSHA number. It's an  
19 equivalent, so if you were to work -- OSHA says  
20 45 years is a working lifetime. So if you were to take  
21 their exposure limit, which is a published number, and  
22 look at exposure for 45 years, this is the number you  
23 will get. So it wouldn't call it OSHA's number, but  
24 certainly this is what they're saying, essentially, is  
25 allowable under their standard. And, of course, here

1 is what I've calculated for four and a half years of  
2 gasket and packing work.

3 Q How does that compare with the indoor cumulative  
4 background exposures in the U.S.?

5 A So according to the ATSDR, and I showed you their  
6 numbers earlier, they also reported corresponding  
7 indoor cumulative exposure range for a lifetime of  
8 indoor -- basically indoor exposure to asbestos to  
9 anybody in the general population. That's any of us  
10 just walking around. And indoor is a good proxy for  
11 all exposure because most of us spend about 20 hours a  
12 day indoors, according to the EPA at least, the EPA  
13 exposure factors handbook.

14 So the indoor exposure -- in fact, I have gone  
15 back and done a validation of that range to see is it  
16 also effective or acceptable if you also consider  
17 outdoor exposure someone has. And based on the  
18 measured literature, it is very similar. It's because  
19 we spend so much time inside. So that range that the  
20 U.S. ATSDR has reported for indoor exposures over a  
21 70-year lifetime for anyone in the U.S. population is  
22 0.002 fiber cc years up to as high as 0.4 fiber cc  
23 years. This is just, you know, there's probably other  
24 ways to calculate this. This is just what the U.S.  
25 government is reporting as their number. You could

1 probably calculate a little bit lower; you could  
2 probably calculate it a little higher if you have  
3 specific data from a particular place.

4 Q But as far as the ATSDR, just indoor exposures  
5 over a 70-year life can be .4 fibers per cc?

6 A They're saying that that would be expected, that  
7 they would expect to see cumulative 70-year lifetime  
8 exposures in this range. So this is equivalent to  
9 anybody's background exposure over their lifetime.

10 Q And is there any evidence in the literature of any  
11 increased risk of disease on exposure to background  
12 indoor ambient air?

13 MS. FARRISE: Excuse me, Your Honor. I have to  
14 object on foundation because she is not a medical  
15 doctor, and the question asks about disease.

16 THE COURT: Well, I will admit it on the basis  
17 that she's speaking as an industrial hygienist, so  
18 she's speaking in the light of her speciality.

19 THE WITNESS: Thank you, Your Honor.

20 BY MR. BOUCH:

21 Q Not asking you to diagnose anybody, it's just does  
22 the literature reflect any increased disease as  
23 exposure to the ATSDR background levels as measured as  
24 you've indicated?

25 A Well, certainly I'm not a medical doctor, so

1 absolutely I'm not going to opine about causation, but  
2 I have reviewed the epidemiology literature with  
3 respect to risk or lack thereof, what's been reported  
4 by expert epidemiologists and published in the  
5 literature, and in looking at that set of evidence,  
6 those epidemiology studies, just broadly as a set, I am  
7 not aware of any epidemiology studies that have  
8 reported a statistically significant increased risk of  
9 asbestos-related disease at background levels in the  
10 United States.

11 Q Okay. Let's go back. One issue that's come up --  
12 you can return to your seat.

13 A Thank you.

14 THE COURT: You might want to pull that thing.

15 MR. BOUCH: Well, I won't fool with it.

16 Q Ms. Sahmel, I'm going to hand you what has been  
17 admitted into evidence as Exhibit 1008.10670. Can you  
18 tell the jury what that is.

19 A It's a letter from the medical -- excuse me, the  
20 University Hygienic Laboratory at the University of  
21 Iowa to the Fisher Controls Company.

22 Q And let's see if we can -- is it possible to put  
23 that up on the screen? Well let's do it this way.

24 MS. FARRISE: There is an AF which is auto focus  
25 and then give it a minute.

1 MR. BOUCH: Okay.. Still a little hard to read.

2 Okay.

3 Q Okay. Now, it looks like, "Enclosed are two  
4 gaskets for use as bulk samples," correct?

5 A Exactly. That's right.

6 Q And you jump down in the paragraph, and it says  
7 "Sample 3 was taken while flat black gaskets were being  
8 packed and Number 4 while spiral-wound blue gaskets  
9 were being packed." Is that what it says?

10 A Yes, I believe so.

11 Q I'd like to offer Fisher Exhibit Number 74. Can  
12 you identify this, Ms. Sample?

13 MS. FARRISE: Your Honor, I'm going to have to  
14 object that it lacks foundation, calls for speculation.  
15 I'm not sure how she could identify it. She's never  
16 worked for Fisher. And it's hearsay.

17 THE COURT: I can't really tell from this what  
18 samples -- was that the previous letter that gave the  
19 samples?

20 MR. BOUCH: Yes, ma'am.

21 THE COURT: Hadn't this thing been admitted?

22 MS. FARRISE: No, Your Honor.

23 THE COURT: It has not? I'll admit it.

24 (WHEREUPON, Defendant's Exhibit Number Fisher 74  
25 was admitted into evidence.)

1 BY MR. BOUCH:

2 Q Now, I'll direct your attention, Ms. Sahmel, in  
3 the previous letter, they talked about Sample Number 4  
4 being the asbestos spiral-wound blue gaskets. What is  
5 Sample Number 4? What is the result of the testing on  
6 Sample Number 4 by the University Hygienic Library  
7 (sic) at the University of Iowa?

8 A In those results, the Sample Number 4 is zero  
9 fibers per cc.

10 Q Thank you. Ms. Sahmel, have the opinions I've  
11 asked you today, have they all been to a reasonable  
12 degree of scientific certainty?

13 A Yes.

14 Q Okay. In this case, have I asked you to do a  
15 report both for Fisher and for Crosby on Mr. Jolly?

16 A Yes.

17 Q And are those copies marked Exhibits 66 and 67,  
18 copies of those reports?

19 A Yes, these are my two reports.

20 Q Okay. And are they to express to a reasonable  
21 degree of scientific certainty?

22 A Yes, they are.

23 Q Thank you so much. I have no further questions.

24 MR. BOUCH: I pass the witness, Your Honor.

25 THE COURT: One minute. Are these -- you are

1 identifying these. Are you asking these be admitted?

2 MR. BOUCH: Yes, ma'am.

3 THE COURT: All right. Well, I want to look at  
4 them for a minute before I make that determination.

5 Just hang on. Okay?

6 (Judge reviewing documents.)

7 THE COURT: Ms. Sahmel, I want to understand your  
8 report.

9 THE WITNESS: Certainly.

10 THE COURT: You gave an estimate of what you felt  
11 was Mr. Jolly's four-year exposure to asbestos in  
12 connection with the removal of gaskets and the  
13 replacement of gaskets at Duke, right?

14 THE WITNESS: So an estimate of what, based on all  
15 of the best available published literature, would be  
16 what one would expect somebody who did gasket and  
17 packing work routinely day after day would experience  
18 based on the measured peer-reviewed published data.

19 THE COURT: All right. And how many -- I take it  
20 that the Longo study was not one that you used in the  
21 peer-reviewed literature in making this calculation; am  
22 I right?

23 THE WITNESS: Ultimately I did not. For the  
24 reasons I explained, I did not use it.

25 THE COURT: Understood. How many of the other



1 studies you used attempted to measure what was in the  
2 air when employees dry removed asbestos-containing  
3 gaskets with no local ventilation?

4 THE WITNESS: Many of them did.

5 THE COURT: All right. And that is one thing that  
6 the Longo study also attempted to measure?

7 THE WITNESS: Yes, that's correct.

8 THE COURT: And when you say "many," I think it's  
9 a finite number because you put it up on a graph.  
10 Looks to me like it might have been nine or so?

11 THE WITNESS: Well, there are 11. That's the  
12 totality of the peer-reviewed literature.

13 THE COURT: Right. You knocked out Longo. Did  
14 you knock out any others?

15 THE WITNESS: I did. "Knock out" may not be the  
16 right term, but in terms -- some of them may have, for  
17 example, only reported in the short term.

18 THE COURT: Well .0062 you used as the driver of  
19 the equation that came up with the four years of  
20 exposure was from a smaller group than the total group  
21 of studies you looked at, right?

22 THE WITNESS: The .062 -- sorry. Just to make  
23 sure. It's not 00; it's 0, just so it's correct for  
24 the record, is based on the studies that reported a  
25 full shift or eight-hour exposure measurement. So

1 there were other studies that reported. I talk about  
2 the short-term or task-based measurements. I certainly  
3 looked at the studies that I did use to understand that  
4 their corresponding short-term exposures were  
5 consistent with those short-term studies, and they were  
6 in the vast majority of cases, but they just simply  
7 didn't report what one would typically be exposed to  
8 over a full day, full shift or eight hours. And I  
9 thought that was really important to be representative.

10 THE COURT: Right. And of the ones you used, how  
11 many of them measured the exposures based on this, the  
12 type of removal that Mr. Jolly testified was used  
13 there, which is dry removal, the use of grinding, the  
14 use of a vibrating as well as stationary wire brushes?

15 THE WITNESS: Three of the studies, the first  
16 three that I listed, all included power tool  
17 manipulation of the gaskets and packing -- and/or  
18 packing. Interestingly, though, the highest reported  
19 number came from a study which did not. It was a hand  
20 tool removal study. But encompassed in those five  
21 studies, three of the five did specifically cite the  
22 use of power tools.

23 THE COURT: All right. And you also -- you used  
24 as your multiplier a figure for the entire day rather  
25 than a figure for the period of time when the grinding

1 and removal was actually taking place. You were  
2 looking for an eight-hour figure and not a figure that  
3 represents what's happening when you're grinding away  
4 the asbestos?

5        THE WITNESS: That's correct. And the reason was  
6 I couldn't, from the testimony, elucidate for  
7 Mr. Jolly -- of course, it's been so long since he did  
8 this. It's understandable. He didn't remember, other  
9 folks didn't remember exactly what that number was, and  
10 because there was no number, then, to me, the next best  
11 representation is what a typical individual will with  
12 do, how many valves they could reasonably work on if  
13 they did that work regularly over a full-shift day.  
14 And, in fact, two of those studies did indicate that  
15 they calculated a worst case or upper bound, like the  
16 maximum number of gasket replacement jobs or valve  
17 replacement jobs that they believed could be reasonably  
18 performed in an eight-hour day.

19        THE COURT: And as I understand, when you use an  
20 entire eight-hour day, you diminish the amount of  
21 exposure when you're actually grinding by the periods  
22 of the day when you aren't grinding?

23        THE WITNESS: Absolutely. And that's very  
24 important because you aren't there with the grinder  
25 holding it for eight hours, right? In fact, that's

1 oftentimes just a few minutes of that actual grinding  
2 work. Sometimes it's 30 minutes, but it's not usually  
3 an eight full hour activity. I know Mr. Jolly in his  
4 testimony described the very large bolts that needed to  
5 be removed and reattached, and that's an important part  
6 of that work, and getting that very precisely  
7 reattached together, that would be a significant part  
8 of his workday that would not include an active  
9 grinding task, for example.

10 THE COURT: Right. But when you're grinding and  
11 that material is put into the atmosphere --

12 THE WITNESS: Absolutely.

13 THE COURT: -- you're receiving a great big dose  
14 of it during that time period.

15 THE WITNESS: No question. Well, depending on the  
16 material --

17 THE COURT: In this case the material is gasketing  
18 with asbestos that's somewhere between 65 percent and  
19 85 percent of the material.

20 THE WITNESS: Absolutely. So for that period of  
21 time, you would most likely, if it's an  
22 asbestos-containing gasket, you would measure asbestos  
23 in the air during that active time. For some period  
24 after as well.

25 THE COURT: But your report, this report where you

1 opine about what you consider to be the exposure to  
2 Mr. Jolly is driven by an attempt to put it in the  
3 context of an eight-hour day rather than measure the  
4 exposure during the time the grinding took place.

5 A That's correct, because it's just -- it would just  
6 overestimate what actually happened in the workplace  
7 for the vast majority of situations. I can't think of  
8 a situation where somebody would be grinding for eight  
9 straight hours for the whole day. It's -- it would be  
10 unusual, if not unprecedented, to have that direct  
11 exposure for that entire time. I mean, that would mean  
12 you didn't take a break, you didn't go to lunch.

13 THE COURT: Yes. I'm not asking that question.  
14 I'm asking about getting a measurement that reflects  
15 what the impact or what the volume of material was that  
16 was potentially inhaled during the time the grinding  
17 actually took place. When you put it over an  
18 eight-hour day, you diminish that figure, do you not?

19 THE WITNESS: You do because of the times it's  
20 going up and down, that's right. So it's still very  
21 much accounted for, and those short-term measurements  
22 were very consistent in those studies with the other  
23 short-term measurements in most of the other studies  
24 that I looked at, they just were not that high for the  
25 entire day.

1           THE COURT: All right. I think I understand.

2           All right. Ms. Farrise?

3           MS. FARRISE: Your Honor, it's ten after 5:00.

4           What's the court's pleasure?

5           THE COURT: No, no, no. I'm still trying to  
6           decide whether to admit her report, and that's why I  
7           asked her those questions.

8           MS. FARRISE: I still object that it's hearsay,  
9           that it may be inconsistent with her testimony, and  
10          that at this point, I guess, it would be duplicative  
11          and misleading because it's inconsistent with what she  
12          testified to here.

13          MR. BOUCH: Goes to the weight, not the  
14          admissibility, Your Honor, similar to the reports of  
15          every other expert that's been admitted in the case.

16          MS. FARRISE: It's hearsay. It's hearsay. It's  
17          an out-of-court statement that she wrote she's now  
18          offering for the truth of the matter, and there is no  
19          exception to the hearsay rule.

20          THE COURT: What do you say about that, Mr. Bouch?

21          MR. BOUCH: Well, Your Honor, let me look.

22          THE COURT: Tell you what we're going to do. All  
23          right. We are at a stopping point, and Ms. Farrise is  
24          going to commence her examination tomorrow. I'm not  
25          going to keep the jury here while we talk about these

1 fine points of evidence law.

2 Why don't we do this first. Let's allow the jury  
3 to go. And we're at -- you just stay right there,  
4 Ms. Sahmel.

5 THE WITNESS: Oh, certainly.

6 THE COURT: I'm going to stay with 9:30 again and  
7 see if we can get other things resolved before that  
8 time, so, again, this has been a long, long day, and  
9 y'all are just great. My hat's off to you. Thank you  
10 so much. God bless. Have a good evening. See you  
11 tomorrow morning.

12 (WHEREUPON, the jury exited open court at  
13 5:11 p.m.)

14 THE COURT: Mr. Bouch.

15 MR. BOUCH: Yes.

16 THE COURT: Have you cogitated the evidence rules  
17 enough to tell or would you prefer to say something  
18 about that tomorrow morning?

19 MR. BOUCH: I'll say it tomorrow morning, but it's  
20 not hearsay. She's here. She says she's uttered those  
21 opinions to a reasonable degree of medical certainty.  
22 I asked her. She's validated those opinions throughout  
23 her testimony today, and it reflects her articulation  
24 of those opinions. It's not an out-of-court statement.

25 MS. FARRISE: ) The writing is an out-of-court

1 statement.

2 THE COURT: I'm going to give it a little thought  
3 to that. I am worried about these charges and what  
4 we're going to do about a charge conference, so y'all  
5 help me with that.

6 MR. REID: We could be here at 8:30 in the  
7 morning.

8 THE COURT: Do you think we can do it in an hour?

9 MS. McVEY: Let me ask this question. You know  
10 when we gave you the --

11 THE COURT: I mean, frankly, I'm going to be able  
12 to resolve a lot of things, Josh and I are, by looking  
13 over these things and deciding what we're going to do.

14 MS. McVEY: I just want to make sure we're on the  
15 same kind of page, and maybe we can refocus instead of  
16 having the entire charge conference today. And we  
17 don't have to do it right now, but my thought is in  
18 handing you the *Garvin* charge, it was a negotiated  
19 charge between plaintiff --

20 THE COURT: That's correct. I'm going to be  
21 looking at that.

22 Yancey, I understand it's not negotiated in this  
23 case. Don't jump in before she --

24 MR. McLEOD: Your Honor, I was in *Garvin*. I  
25 remember having a long, long charge conference in



1 *Garvin*.

2 THE COURT: I am looking at it as the charge Judge  
3 Hill gave in that case, and that is what it impacts on  
4 me. Strike for a moment that you agreed to it all or  
5 you didn't agree to it all, negotiated. That was the  
6 charge that was used. It's a very helpful tool for me  
7 to have someone that has that kind of experience in  
8 asbestos cases and to look at his charge and see what  
9 was done.

10 So, naturally, that is a beginning point. It  
11 doesn't mean I'm going to ignore the many projections  
12 y'all have made about things you want that are  
13 different. But, yes, the *Garvin* charge is something  
14 that I'm aware of and going to be looking at very  
15 carefully.

16 MS. McVEY: And my only point of that is not that  
17 Mr. Bouch or Mr. McLeod agree with everything, nor did  
18 we in the *Garvin* charge. That's what I meant by  
19 negotiated, that there were things that both sides were  
20 unhappy about.

21 By handing you that charge, my hope was we could  
22 select out what the defendants disagreed with instead  
23 of arguing every single charge all over again.

24 THE COURT: I hope that's going to be so, and what  
25 I hope to say to you tomorrow kind of globally, what

1 I'm thinking of doing on the front end so we don't have  
2 to hassle over the same words. There are a lot of  
3 things that cover the same topics in a slightly  
4 different way. They rely very heavily on Anderson's  
5 charge book. The Anderson charge book has got some  
6 pluses and minuses in it in terms of how it's been  
7 reviewed over the years by the supreme court, and I'm  
8 going to take all of that into account as I look and  
9 see what I think is the best way to examine some of  
10 these topics that are common to both of you and are  
11 simply rephrasing.

12 The ones I think that are the most important are  
13 the ones that are a real clash on what ought to be  
14 charged rather than a different way of saying the same  
15 thing.

16 MS. McVEY: That's my point.

17 THE COURT: That's where I am. I think what we  
18 want to spend our time on is those substantive things  
19 where there is a very honest disagreement about things  
20 that ought to be covered or things that ought to be  
21 said. That's how I hope we would handle it.

22 MS. McVEY: There was one charge. They gave you a  
23 *Manchin* charge which, obviously, was not in *Garvin*  
24 because it's a new case. And there is a charge in that  
25 case, Justice Kittredge gives us the charge, and their

1 charge is not that charge. It changes the last two  
2 lines, so I just took the charge --

3 THE COURT: Ms. McVey, I am very aware of that.

4 MS. McVEY: Okay. I'm sorry. We're not arguing  
5 this now.

6 THE COURT: I try to do a little bit of studying,  
7 I'm not perfect, and I was flying without any copilot.  
8 I hope with Josh I'll do a little better job.

9 MS. McVEY: I didn't know if you wanted me to hand  
10 that up now. That was my only point.

11 THE COURT: You can hand up anything you would  
12 like right now.

13 Ms. Sahmel, you don't need to sit up here the  
14 whole time. You're under oath. You're in the middle  
15 of your testimony. You can socialize with these folks,  
16 but don't talk about your testimony.

17 I know you're an experienced witness so you know  
18 that.

19 All right. We've got that.

20 Anything else for the good of the order?

21 MS. McVEY: I was going to ask about timing.

22 MR. REID: I was going to ask about timing.

23 THE COURT: 8:30.

24 MS. McVEY: 8:30 for jury charge conference, and  
25 then cross of Ms. Sahmel, and then Dr. Oury's video,

1 and then directed verdict.

2 THE COURT: Right.

3 MS. McVEY: And then close.

4 THE COURT: Yes. I know that there's some  
5 discussion about people that wish we would charge  
6 before arguments are made, and I know that the supreme  
7 court has given some discussion to that, but I feel  
8 like it's above my pay grade to change the normal  
9 course of things, so, yes, close and then charge would  
10 be the way we would do it.

11 And on close, let's talk about timing.

12 MS. FARRISE: I need some.

13 THE COURT: Well, I understand all that. What are  
14 we talking about in terms of time?

15 MS. FARRISE: Two hours.

16 THE COURT: I'm going to give some cogitation to  
17 that. My feeling is an hour and a half and hour and a  
18 half. You can split it up like you want to. You have  
19 got the burden. You're going to want something in  
20 reply out of that, but that would be my current  
21 thinking of it.

22 MR. BOUCH: I will not need an hour and a half.

23 MS. FARRISE: Okay. I'll take a half an hour of  
24 his time.

25 THE COURT: Anything else for the good of the

1 order?

2 Mr. Reid?

3 MR. REID: No, ma'am. See you at 8:30.

4 THE COURT: Very good. See you at 8:30,

5 (WHEREUPON, proceedings adjourned at 5:18 p.m.)

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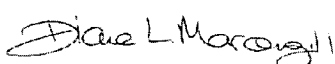
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3 I, Diane L. Marcengill, Official Court Reporter  
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8 in the trial of the captioned case, relative to appeal,  
9 in the Circuit Court for Spartanburg County, South  
10 Carolina, on the 1st day of August 2017.

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13 I do further certify that I am neither of kin, counsel,  
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15 November 4, 2017

16  
17   
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19 Diane L. Marcengill, RPR, CRR  
20 Circuit Court Reporter  
21  
22  
23  
24  
25

1 State of South Carolina  
2 County of Spartanburg  
3

In the Court of Common Pleas

4 Beverly Dale Jolly and  
5 Brenda Rice Jolly,

6 Plaintiffs,

7 -vs-

8 Crosby Valve, LLC and  
9 Fisher Controls  
International, LLC,

10 Defendants.

2016-CP-42-1593

August 2, 2017

Volume 8 of 9  
Pages 1659 - 1995

Transcript of Record

11

12

13 B E F O R E:

14 The Honorable Jean Hoefer Toal, Judge;  
15 and a jury.

16 A P P E A R A N C E S:

17 Theile McVey, Esquire  
Kassel McVey  
18 Jonathan M. Holder, Esquire  
Dean Omar Branham  
19 Simona A. Farrise, Esquire  
Farrise Law Firm  
20 Attorneys for Plaintiffs

21 Timothy W. Bouch, Esquire  
Yancey A. McLeod, Esquire  
22 Leath, Bouch & Seekings  
Philip C. Reid, Esquire  
23 Von Briesen & Roper  
Attorneys for Defendants

24

25

Diane L. Marcengill, RPR, CRR  
Circuit Court Reporter

I N D E X

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| JENNIFER SAHMEL, MPH, CIH, CSP (Resumed)  |             |
| Cross-Examination By Ms. Farrise          | 1701        |
| Redirect Examination By Mr. Bouch         | 1822        |
| Recross-Examination By Ms. Farrise        | 1828        |
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E x h i b i t s

## For the Plaintiffs:

| Marked | Description                                                                                          | I.D. | Admitted |
|--------|------------------------------------------------------------------------------------------------------|------|----------|
| 149    | Walsh-Healey Public Contracts Act                                                                    |      | 1814     |
| 155    | Federal Register Vol 37 No. 110 Rules and Regulations                                                |      | 1774     |
| 546    | Article: Fiber Release During the Removal of Asbestos-Containing Gaskets: A Work Practice Simulation |      | 1798     |

## For the Defendants:

| Marked | Description                                 | I.D. | Admitted |
|--------|---------------------------------------------|------|----------|
| 56     | CV of Tim Oury, M.D.                        |      | 1862     |
| 153    | Photo of microscopic image of asbestos body |      | 1862     |
| 154    | Photo of microscopic image of asbestos body |      | 1862     |



1 (WHEREUPON, court convened with all parties  
2 present and the following proceedings were had  
3 commencing at 8:42 a.m.)

4 THE COURT: I received a communication last night  
5 regarding designation of deposition materials for Jolly  
6 and two -- Mr. Holder, why don't you state the  
7 objections y'all have to those designations.

8 MR. HOLDER: Thank you, Your Honor.

9 MR. REID: Your Honor, if you don't mind me going  
10 first, I think it might shorten things up.

11 We have already decided not to use Simpson and  
12 kind of borderline about the other two. If the court  
13 is okay, we'll deal with it later.

14 THE COURT: I want to have it run smoothly. I  
15 don't think this is going to take a great length of  
16 time. Let's see if we can get to what we're getting  
17 to.

18 MR. HOLDER: I have prepared a document for Your  
19 Honor as well to follow along with the argument, but --  
20 Jonathan Holder for the plaintiff.

21 As Your Honor prefaced, we received an e-mail last  
22 night from defense counsel indicating three depositions  
23 that they intended to read in page/line designations  
24 from. This was the -- this was a change from what was  
25 stated on the record yesterday in court where they said

1 that the order of the witnesses was going to be finish  
2 Ms. Sahmel, play the Oury deposition, and they would be  
3 done.

4 So it was a bit of a surprise at 9:00 p.m. to get  
5 this. So I went back to see now were these parts of  
6 the designations that they had in this case or even the  
7 witnesses. I started with the witness list. Only  
8 Mr. Jolly, who has come and testified, is even  
9 mentioned on either Crosby or Fisher Controls witness  
10 list. There is no amended witness list that they have  
11 provided to us at this time.

12 Secondly, the standing CMO for asbestos cases in  
13 South Carolina, I have attached as a third document,  
14 states on the third page that seven days before trial,  
15 Part C, page and line designations to be exchanged.

16 The next document is the e-mail on the date of  
17 July 17, 2017, seven days before trial, in which it had  
18 the attachments of the page/line designations of  
19 defendant Crosby Valve and defendant Fisher Controls.  
20 The attachments listed there as well as the next three  
21 documents are Donald Rogers page/line designations,  
22 Dr. Oury page/line designations, and Beverly Dale Jolly  
23 page/line designations.

24 So it is plaintiffs' position that we have this  
25 setup in an order so all parties know what witnesses

1 the other party intends to bring to trial. Not only  
2 was it not on their witness list, not only was it not  
3 given to us in a page/line designation, these were  
4 witnesses that we believed we were going to use, and  
5 they did respond to our designations of Mr. Freeman and  
6 Mr. Rogers. Doing counter designations to someone's  
7 affirmative deposition that they claim to read is --  
8 does not count as one of your witnesses and does not  
9 provide you the ability to then call that witness in  
10 your case-in-chief.

11 THE COURT: All right.

12 Mr. Reid.

13 MR. REID: Your Honor, everything we designated  
14 last night, is -- well, if you have a list of what we  
15 designated, I'm not going to use Mr. Simpson.

16 THE COURT: Very good.

17 MR. REID: Designated portions of Freeman, those  
18 three were -- we did not designate those originally.  
19 We designated them as counter designations.

20 THE COURT: When was that?

21 MR. HOLDER: I believe it was the Friday before  
22 trial, on the 21st, Your Honor.

23 THE COURT: All right. And the counter  
24 designations were pursuant to?

25 MR. HOLDER: In response --

1 THE COURT: Whoa. He's making his presentation  
2 now, Mr. Holder.

3 MR. HOLDER: I'm sorry, Your Honor.

4 THE COURT: Judge Hill's order that, as we all  
5 know I'm going by, says seven days before trial,  
6 parties to exchange page and line designation. Three  
7 days before trial, parties to exchange any objections  
8 and counter page designations.

9 So what you're saying is that the counter page  
10 designations that you submitted on the Friday before  
11 trial are the same as the ones you're offering now?

12 MR. REID: That's correct. Except for the very  
13 last one, Volume 2 of Jolly, that was part of our  
14 original designations.

15 THE COURT: Let me see, the one seven days  
16 beforehand?

17 MR. REID: Yes, ma'am.

18 THE COURT: All right. I am looking at --

19 MR. HOLDER: I believe it's Document Number 6.  
20 I'm sorry.

21 THE COURT: All right. I see page and line  
22 designations, deposition two.

23 MR. REID: That would be the one 137 at 12 to 138  
24 at 17.

25 THE COURT: And that's not listed on here, is it?

1           It isn't.

2           MR. REID: Well, it was in our original  
3 designations. I'm not sure I have our --

4           THE COURT: I'm looking at what you're  
5 designating.

6           MR. REID: There were four volumes.

7           THE COURT: I'm looking at July 17th, right. That  
8 was your designation.

9           MR. REID: Right. Is there part of that that  
10 refers to Mr. Jolly, Your Honor?

11          THE COURT: It says, "Beverly Dale Jolly Trial  
12 Preservation Deposition Number 2, defendants offer  
13 these designations without waiving any objections they  
14 may have. And then it gives Page 117, Line 1 to 127,  
15 Line 12; 129 to 130; 131 to 149, and then 150 to 159.

16          MR. REID: So this would be within that but just a  
17 much shorter part of Pages 137 and 138.

18          THE COURT: Okay. But the other ones, 161, 240,  
19 248, those are not listed here.

20          MR. REID: Correct. Those were counter  
21 designations.

22          THE COURT: Well, you can't offer these counter  
23 designations this close to trial. You didn't offer  
24 those until last night, as I understand it; isn't that  
25 right?

1 MR. REID: Well --

2 THE COURT: The counter designations were supposed  
3 to be offered -- that's a designation. That's not a  
4 counter designation. That's a designation of what you  
5 want to put up in your case. You made that designation  
6 here.

7 MR. REID: On July --

8 THE COURT: 17th and it didn't include those.

9 MR. REID: Right. Everything else was on July  
10 21st in our counter designations.

11 THE COURT: Well, this is not in any counter  
12 designations I see. This is coming up for the first  
13 time yesterday evening.

14 LAW CLERK: Do you have a copy of the counter  
15 designations?

16 MR. HOLDER: I only provided affirmative  
17 designations, so I did not put the counters in your  
18 packet. I didn't think those were relevant. I just  
19 put the affirmative designations.

20 THE COURT: When you have already designated  
21 something, then what you have --

22 MR. McLEOD: Your Honor, there's nothing new. We  
23 counter designated all of this.

24 THE COURT: Please don't tell it to me like that.  
25 Let me see the document, and we'll see what we've got

1 here. There's no sense in just kind of arguing it like  
2 that. If this comes up for the first time last night,  
3 it's not coming in.

4 And, Matt, you're not arguing this; he is.

5 MR. REID: Your Honor, may I show you our  
6 paralegal's laptop?

7 THE COURT: No. You show me what you sent to the  
8 other side.

9 MR. REID: I don't have the piece of paper.

10 THE COURT: Let me just say this about all of this  
11 stuff: None of the material is going to come in that  
12 wasn't designated beforehand. The designations of what  
13 you were going to use were made July the 17th. And  
14 that's all I've got up here. And then I've got this  
15 thing that you sent last night. And, frankly, I don't  
16 know why you would have sent it last night if you had  
17 already sent it, but that's up to y'all. You say it's  
18 a cut-down of what you originally submitted. If all  
19 you submitted was something saying all volumes or in  
20 addition to this, all volumes, that's not going to cut  
21 it. It's page and line designations, and those page  
22 and line designations, there is a strict order of  
23 things, and it does not include being a week and a half  
24 into the trial before you designate material.

25 And so I'm just going to leave it there. We're

1 going to go on to these other things, but I can tell  
2 you, I'm not going to let anything be used out of  
3 Freeman, Simpson, Jolly, or Rogers that wasn't  
4 designated beforehand in the ordinary course of Judge  
5 Hill's ruling.

6 MR. REID: Your Honor, may I approach? I think we  
7 found the counter designations.

8 THE COURT: All right.

9 MR. REID: This is Volume 2, Your Honor, of  
10 Mr. Freeman. And last night's e-mail, by the way --

11 THE COURT: Why did you not tell me yesterday  
12 afternoon that you were going to do all this? We  
13 talked about what was going to happen today, and none  
14 of this was said.

15 MR. REID: Understood, Your Honor. It was an  
16 after-court determination on my part.

17 THE COURT: Well, I understand that, and that's  
18 just what we try to avoid.

19 MR. REID: In that volume, our counter  
20 designations show 247, to 22 and 248, 11 to 20. I'm  
21 sorry, I'm looking at the wrong --

22 THE COURT: Just a second. This is Mr. Jolly's  
23 deposition, is what I'm looking at right now and  
24 something taken out of his deposition, which you say is  
25 a counter designation.



1 MR. REID: Right.

2 THE COURT: This is Volume 2.

3 MR. REID: Discovery Volume 2.

4 THE COURT: That's this.

5 MR. REID: We're --

6 THE COURT: Just a second. Let me just explain  
7 what I'm looking at now.

8 Mr. Holder, this is a document that was a counter  
9 designation submitted July the 20th. How far before  
10 trial was that? Three or four days.

11 MR. HOLDER: Yeah.

12 THE COURT: All right. Their counter designation  
13 for Mr. Jolly on Page 3 of it designates out of  
14 Mr. Jolly's deposition Volume 1, 161, 14 through 17.  
15 So that includes that one. Then on Volume 2, it says  
16 Volume 2, 240, 7 through 22. So that's there. Then  
17 248, 11 through 20. That's on there. Then trial  
18 Volume 2, 137 --

19 MR. REID: If I may save the court a moment.  
20 That's the one we had in our original designation. I  
21 think you confirmed that one already.

22 THE COURT: Yes. All right.

23 So, Mr. Holder, it looks like, from this document,  
24 that they designated it.

25 MR. HOLDER: I would like to be heard in response

1 to that, Your Honor.

2 THE COURT: Well, you can be heard, but, you know,  
3 they brought me what I asked them. It's on there.  
4 They counter designated it. About the only thing you  
5 can say is, "They didn't tell me last night." I don't  
6 like, that but they designated.

7 MR. HOLDER: Right. But counter designation, by  
8 their very definition, are in response to designations  
9 of another party.

10 Now that they want to play these counters,  
11 plaintiffs have to go back, file objections and counter  
12 designations.

13 THE COURT: No, it's too late for that.

14 MR. HOLDER: I know. That's what --

15 THE COURT: You got them on July the 20th before  
16 the trial started. I'm not going to go back and do  
17 that.

18 MR. HOLDER: I understand, Your Honor, but think  
19 about the logic of this. For them to be able to only  
20 play the counters out of context, isolated, completely  
21 blurs the picture of what the testimony was from that  
22 deposition. I mean, we --

23 THE COURT: I'm going to consider that,  
24 Mr. Holder. I don't have that in front of me now, but  
25 what I will tell you is these things have been in the

1 mix for a while. This isn't a surprise. They gave you  
2 these things on July the 20th.

3 MR. HOLDER: They told us last night that they  
4 weren't calling these people.

5 THE COURT: That was last night. You had from the  
6 20th on, you could have assumed they were going to play  
7 these. And if you had some counter designations, you  
8 could have made them.

9 MR. HOLDER: I did make counter designations to  
10 those counters in the context of the entire designation  
11 coming in.

12 THE COURT: Well, Mr. Holder, I'm not going to  
13 take up any more time with this. If you have got some  
14 other designations you want to make before these  
15 materials are played, then let's see them, and let's  
16 get them to the other side.

17 MR. HOLDER: Your Honor, I would also need to put  
18 on the record that the plaintiff has appeared in this  
19 case, and Mr. Reid himself cross-examined him for over  
20 an hour, and we asked him, "Are you okay? Do you need  
21 to leave?" And Mr. Jolly said, "No. I want to answer  
22 the all the questions. I want to stay," so they're  
23 getting two bites at the apple by doing this, and they  
24 purposely, I believe, it's plaintiffs' position,  
25 purposely omitted certain questions they didn't want to

1 ask in front of the jury live because they didn't want  
2 the answer, and now they want to back-door it in  
3 through the reading of a deposition after he's off the  
4 stand.

5 THE COURT: Well, I don't know what rules that  
6 violates other than your sense of fairness about it,  
7 but the point is they can call the plaintiff by  
8 deposition in their case just like you can call some of  
9 their people in your case. But you've got the ability  
10 to --

11 MR. HOLDER: Call them in rebuttal to explain?

12 THE COURT: -- call the plaintiff in rebuttal.

13 MR. HOLDER: Thank you.

14 THE COURT: And if that is what you feel you need  
15 to do, then I'm going to allow you to do that. Okay?

16 MR. HOLDER: Thank you, Your Honor.

17 THE COURT: That solves Jolly. Y'all tell me, are  
18 these designations of Freeman and Simpson things that  
19 were provided?

20 MR. REID: We won't use Simpson. I have handed  
21 your clerk Freeman.

22 THE COURT: Help me out. I'm going to take some  
23 representation on y'all's honor because I don't want to  
24 spend a lot of time on this.

25 Were these designated the way these others were on

1 your honor as a lawyer?

2 MR. REID: Yes.

3 MR. HOLDER: Counter to our designations.

4 THE COURT: I will allow you to do that,  
5 Mr. Holder, but again, these things came to you on the  
6 20th, and other than last night's random discussions  
7 right at the end, you could have assumed that they were  
8 going to put these things up.

9 MR. HOLDER: I didn't assume that because I  
10 believed the representations of the officer of the  
11 court they made on the record yesterday, Your Honor,  
12 and I'm sorry.

13 THE COURT: They made several representations,  
14 Mr. Bouch did, that they're not living up to now. I  
15 don't like that, but in terms of designation of these  
16 materials for their use, they have done what this order  
17 requires. This order doesn't say anything about  
18 in-court discussions about, "Hey, what does your case  
19 look like," and I'm not going to go by that.

20 MS. McVEY: Your Honor, just really briefly. I  
21 don't want to interrupt Mr. Holder. He's doing an  
22 excellent job.

23 We had a rule in this case, motion in limine, that  
24 24 hours before they call a witness, they're supposed  
25 to disclose it to us. That's the rule we've all been

1 living by. That's number one.

2 Number two, Mr. Freeman wasn't even on their  
3 witness list.

4 THE COURT: That's true. He wasn't on their  
5 witness list.

6 MR. McLEOD: Our witness list specifically said  
7 that we reserve the right --

8 THE COURT: Mr. McLeod, when she finishes, I'm  
9 going to come to you.

10 Now, I'm looking at the witness list, and it  
11 doesn't have his name on it.

12 LAW CLERK: What document is that, Mr. Holder?

13 MR. HOLDER: Exhibit Number 1.

14 THE COURT: 1 and 2 have got what -- Defendant  
15 Crosby Valve: Sahmel, Oury, Crapo, Martin, Jolly, and  
16 Jolly. That was on July the 10th. Then Fisher  
17 Controls: Sahmel, Oury, Crapo, Dumistra, Jolly, and  
18 Jolly. None of these people were on that designation.  
19 That is required. Then there are other things that are  
20 required.

21 The final -- actually, your final list is supposed  
22 to be exchanged 14 days before trial, and that says  
23 July 10th, so they haven't complied with that. Then  
24 seven days before trial, final exhibit list. Then  
25 three days before trial, any objections. And one day

1 before trial, counter page designations, so forth and  
2 so on.

3 Now, nowhere in here does that allow for you to  
4 add witnesses to your witness list, so explain that one  
5 first to me. You've got Jolly on there, but you don't  
6 have any of these coworkers.

7 MR. REID: Your Honor, that point, may I defer to  
8 Mr. McLeod? I think he's better acquainted with what  
9 we did.

10 THE COURT: All right. Mr. McLeod.

11 MR. McLEOD: I believe our witness list also lists  
12 any witnesses that are listed by the plaintiffs.

13 THE COURT: This thing about you're reserving the  
14 right is trumped by Judge Hill's order. Judge Hill's  
15 order says that you're supposed to list all of your  
16 witnesses or potential witnesses. That doesn't cut it.

17 How about the 24 hours for who you're going to  
18 actually use because that's what that's for. This is  
19 for anybody I'm thinking about using. Then 24 hours  
20 beforehand, you're supposed to say this is who I am  
21 going to use.

22 MR. REID: Your Honor, throughout this case, I  
23 think we have been doing it the evening before.

24 THE COURT: Well, you didn't even list them  
25 beforehand. That's the big hang-up I've got. They

1 were not listed globally as somebody you were going to  
2 call.

3 MR. McLEOD: Well, I think the reason for that is  
4 the designations and that, you know, at that time,  
5 there was another defendant in the case. We have all  
6 designated.

7 And just for the record, Your Honor, I was  
8 prepared to cross-examine both of these witnesses  
9 because we were told they were coming live, so, you  
10 know, and then I would just point out to the court --

11 THE COURT: Are you talking about something --  
12 we're getting over to what they did?

13 MR. McLEOD: We were told they were coming live to  
14 trial.

15 THE COURT: You were told by them that they were  
16 going to bring these people?

17 MR. McLEOD: That's correct.

18 THE COURT: Well, that doesn't obviate the  
19 necessity for you to make your witness list reflect  
20 what you're going to do if they decide they're not  
21 going to use a witness they list.

22 MR. McLEOD: I would finally point the court to  
23 Rule 32(a)(3) that the deposition of a party can be  
24 used for any purpose.

25 THE COURT: Well, that's trumped by Judge Hill's



1 order, his standing order, which I'm going to go by.  
2 That's an order that's been in place since 2015;  
3 everybody knows about it; the supreme court, the chief  
4 justices designated these asbestos cases from long  
5 since, many different orders of chiefs, that these  
6 cases are to be managed by a single judge, and that  
7 procedural orders are to be issued. This procedural  
8 order trumps that. All right? You can use them for  
9 any purpose, but you can't use them unless you  
10 designate them in the way that this order says. And  
11 that has not been followed in this.

12 So here is what's going to happen. I'm going to  
13 let in Jolly material because it was designated when it  
14 was supposed to be. I'm going to consider what you all  
15 offer as some designations, but I'm shaky-shaky on that  
16 because you knew about this long before, and I  
17 understand the arguments you're making, but they don't  
18 have anything to do with compliance with this order,  
19 and what's sauce for the goose is sauce for the gander.  
20 You got those designations on July 20th. You should  
21 have answered them long before now in terms of more  
22 complete designations of material out of Jolly. If you  
23 had done that, then I'll look at it. If it's just  
24 going to come up right now, I won't look at it, so  
25 that's where I'm standing.

1 MR. HOLDER: Thank you, Your Honor. The only  
2 clarification I wish to put on the record is we did  
3 respond to them, but again, it was within the context  
4 of the full designation, but we have those things and  
5 we can get the documents to you. Thank you, Your  
6 Honor.

7 THE COURT: I'm going to take a look at it, and  
8 I'm going to take a look at what you offered them as  
9 counter designations, and then we'll see where we are.

10 With respect to the coworkers, I am not going to  
11 allow their depositions to be read because the rules  
12 were not followed about putting them on the witness  
13 list at the proper time under Judge Hill's order.

14 MR. REID: Very well, Your Honor.

15 May I retrieve my copies?

16 THE COURT: Yes.

17 MR. REID: Thank you.

18 THE COURT: Now, I have one more thing before we  
19 go to the instructions. I am -- I have taken a lot of  
20 time to look at the report that was prepared by  
21 Ms. Sahmel who took the stand yesterday.

22 This report is an enormous compilation of her  
23 opinions about depositions of many different people in  
24 this case, some of which I'm not admitting into  
25 evidence. It is a huge compilation of her opinions

1 about the scholarship of people in the field. It is a  
2 lot of hearsay within hearsay.

3 The court of appeals wrestled with this issue in  
4 *Allegro vs. Scully*, a 2012 decision of the court of  
5 appeals analyzing Rule 703 of the rules of evidence  
6 which allows experts to give an opinion, to rely on  
7 facts that are or data that are not admitted into  
8 evidence or ever admissible. However, 703 does not  
9 allow the admission of hearsay evidence simply because  
10 an expert used it in preparing his opinion.

11 I don't see any exception in the rules of hearsay  
12 for that. This -- that ruling was made in connection  
13 with a written report that was ultimately found not  
14 admissible for the reasons I have stated, and,  
15 therefore, I am not going to admit this Fisher  
16 Exhibit 66 into evidence relying on *Allegro*.

17 Before I finish with that, if y'all have anything  
18 to say about that now or later, now is the time.

19 Mr. Reid.

20 MR. REID: Your Honor, I guess two points to make.  
21 I think the expert reports of the other side came in.  
22 I think it would be fair to have Ms. Sahmel's report  
23 in, and the court can weigh it and the jury can weigh  
24 it based on the proper considerations. Plus, I would  
25 ask that if the court does not agree with me and sticks

1 to its ruling, that that at least be conditional  
2 because her testimony has not been completed yesterday?

3 THE COURT: All right. Well, for the present  
4 time, then, that's the position I'm taking with respect  
5 to Fisher Exhibit 66, but we'll put that in the  
6 to-be-ultimately-decided category. And if in the  
7 meantime you also think of other things you've got to  
8 say about it, that's fine. As I say, I'm very  
9 concerned about the volume of material that comments on  
10 testimony that is not in evidence in this case, and  
11 that is the reason that in the *Allegro* case the McHenry  
12 report was not allowed in evidence. The opinions were  
13 allowed to be expressed as she very fully expressed her  
14 opinions yesterday, but the report was not allowed in,  
15 and that's the concern I've got.

16 All right. Now --

17 MR. REID: Your Honor?

18 THE COURT: Yes.

19 MR. REID: One question. Looking ahead a little  
20 bit, I anticipate we get a verdict this week.

21 THE COURT: Oh, yes, sir. I do, too.

22 MR. REID: I understand there are time limits for  
23 motions after verdict. We'll have a winner; we'll have  
24 a loser, but I think it would probably serve both sides  
25 to have some idea of what time frame the court will

1 impose on us.

2 THE COURT: We can talk about that, and y'all can  
3 make some suggestions. We won't leave here before we  
4 have a very firm idea of how that will work.

5 As I think I've explained to y'all in my part-time  
6 capacity, I will be on vacation most of the month of  
7 August in the Isle of Palms, but I have access to  
8 everything in terms of if we want to defer a hearing on  
9 posttrial motions, which is quite common in a complex  
10 case like this, we'll pick a time when it's convenient  
11 to both parties to conduct such a hearing, and we'll  
12 set some deadlines before that time for you all to  
13 submit material to me, memoranda, so I'll be fully  
14 prepared when we actually conduct the hearing. So  
15 don't worry about that. We're going to set some time  
16 frames that accommodate both sides.

17 MR. REID: That's helpful to know, and I thank you  
18 for that.

19 THE COURT: Yes, sir.

20 My law clerk is worrying about Rule 59(b). The  
21 time for the motion has to be within ten days. I'm  
22 going to note the motions, of course, as soon as the  
23 trial is over, and then you're going to be permitted to  
24 elucidate on them at a later time, but it will have --  
25 your motions will be noted, and you'll have complete

1 flexibility to bring up additional material and  
2 additional information.

3 I think, as I construe the rule as I've always  
4 construed it, you have to note the motion and at least  
5 make some statement about what you base the motion on,  
6 but beyond that, I'm going to be pretty flexible about  
7 what you can say as long as it's exchanged with both  
8 sides. So I think we can comply with the rule about  
9 timeliness. Don't be frightened and worried about  
10 that, either side.

11 MS. McVEY: Thank you.

12 THE COURT: All right. Now, here is where I want  
13 to go about dealing with these charges. What I'd like  
14 to do is go through Fisher's proposed jury charges.

15 I have gone through both jury charges at length,  
16 and Josh and I have compared the two and tried to  
17 figure out what's in both and so forth and so on. So I  
18 am going to operate as if the baseline document is the  
19 old *Garvin* charge as modified. Then I'm going to look  
20 at each of the Fisher charges to see whether they  
21 should be added to or substituted for the *Garvin*  
22 charges.

23 Do you follow what I'm doing?

24 MR. REID: Yes..

25 MR. McLEOD: Yes, Your Honor.

1        THE COURT: Okay. So I may say to you, to begin  
2 with, Judge Anderson's style of charging is very  
3 academic, and that is why a lot of circuit judges have  
4 gone to a more colloquial form of charging, which is  
5 reflected in the Hill charges. And I think well of  
6 that.

7        So out of the introduction, fourth paragraph down,  
8 the first page, "In deciding the facts of this case,  
9 you must not be swayed by bias or prejudice or favor as  
10 to any party. Our system of law does not permit jurors  
11 to be governed by prejudice or sympathy or public  
12 opinion." I will charge that. The rest of it on that  
13 page, I think, is included in the *Garvin* charge.

14        I will also charge on Page 3 the first paragraph  
15 at the top of page, "This case shall be considered and  
16 decided by you as an action between persons of equal  
17 standing in the community of equal worth and holding  
18 the same or similar stations in life. A corporation is  
19 entitled to a same fair trial as a private individual.  
20 All individuals stand equal before the law and are to  
21 be dealt with as equals in a court of justice." I will  
22 charge that.

23        Any comment on Number 1?

24        MS. McVEY: It's fine with us, Your Honor. I  
25 would say, I think the bias piece is already in there,

1    but I'm happy. That language is fine with us.

2            THE COURT: All right.

3            Mr. McLeod?

4            MR. McLEOD: No, Your Honor..

5            THE COURT: All right.

6            Number 2, the burden of proof. The burden of  
7 proof is, I think, adequately covered in the *Garvin*  
8 charge. I don't see any need to add this one to it.  
9 It's already in there.

10           Mr. McLeod?

11           MR. McLEOD: No objection.

12           THE COURT: Number 3, certainly I will charge  
13 that. It's just been read in the first one, but I will  
14 certainly emphasize to them that the verdict has got to  
15 be supported by the evidence; can't be influenced by  
16 passion, prejudice, or consideration not found in the  
17 evidence.

18           All right. Direct or circumstantial evidence.  
19 This circumstantial charge in Number 4 is a very  
20 academic circumstantial evidence charge, but it also  
21 suffers from a couple of other concerns.

22           Y'all may remember the time when circumstantial  
23 evidence was the all roads lead to Rome charge where  
24 you said that evidence had to be -- each piece of  
25 evidence had to be proved to the standard of proof



1 required in the case, and then every piece of evidence  
2 must point to a conclusion to the exclusion of all  
3 other reasonable hypotheses.

4 Our supreme court at a certain point disapproved  
5 that charge. And the reason was because it puts the  
6 burden on the jury to be the provers rather than simply  
7 the deciders, as our court saw it. Similarly, the  
8 supreme court has banned charging on weighing and on  
9 other burdens like that like search for the truth.  
10 You've got to search the evidence. That again puts the  
11 burden on the jury beyond what the supreme court  
12 considers appropriate.

13 I worry about this circumstantial evidence charge  
14 for that reason. I think the circumstantial evidence  
15 charge in the Hill *Garvin* formulation is a more  
16 colloquial way of doing it, and it really hits the  
17 target of what kids now call connecting the dots. I  
18 think it does a good job of that, so I will make that  
19 charge.

20 Mr. McLeod?

21 MR. McLEOD: Just preserve our objection for the  
22 record. We think our charge is proper, but --

23 THE COURT: I want to know now if you have an  
24 objection to Number 4 not being charged, what is it  
25 specifically that's not in the *Garvin* charge that you

1 think needs to be in there that is in Number 4 but not  
2 in the charge as I propose to make it?

3 MR. McLEOD: Beg the court's indulgence.

4 Your Honor, we're okay.

5 THE COURT: All right. Expert witness testimony.  
6 I think that's already covered both in the charge I  
7 gave the jury before the witnesses were heard and in  
8 the baseline *Garvin* charge.

9 Mr. McLeod?

10 MR. McLEOD: The court's going to charge the  
11 *Garvin* expert witness?

12 THE COURT: Yes.

13 MR. McLEOD: I don't believe we have any  
14 objections.

15 THE COURT: All right. Conflict of evidence and  
16 the expert witness. I think this charge, out of the  
17 Anderson charge book, was now been discredited by the  
18 rulings of the supreme court. The business of you must  
19 weigh one expert's opinion against the other and  
20 declare a winner kind of an idea and you must search  
21 puts the burden on the jury, requires the jury to pit  
22 the witnesses. I don't think that would be approved by  
23 the supreme court today, so I will not charge Number 6.

24 Mr. McLeod?

25 MR. McLEOD: Nothing, Your Honor.

1 THE COURT: All right. Statements of counsel.  
2 We'll certainly charge something like that.

3 MS. McVEY: Your Honor, I think that's in the  
4 *Garvin* charge.

5 THE COURT: It is. I'll just look to see if there  
6 is a better way of saying it than what's in here, but  
7 we're certainly going to charge that.

8 MS. McVEY: Okay.

9 THE COURT: And same thing with Number 8,  
10 objections. I think I said a little something to them  
11 about not punishing counsel for making objections, and  
12 I'm certainly going to emphasize that to them again.

13 Number 9, rejected or stricken evidence. I don't  
14 recall any stricken evidence, but I'm going to ask  
15 y'all whether you do.

16 MS. McVEY: There was one piece with the asbestos  
17 bodies, the photograph for Dr. Frank.

18 THE COURT: Oh, during Dr. Frank's, that's right.

19 MR. McLEOD: Well --

20 MS. McVEY: But it's going to come in in Oury.

21 MR. McLEOD: It's a moot point because it's coming  
22 in.

23 THE COURT: I wonder whether we just confuse them  
24 if they're trying to think about --

25 MR. McLEOD: Yes, Your Honor. I didn't mean to

1 interrupt. I'm sorry. There was one other strike to  
2 the mention of bankruptcy in the Taylor matter.

3 THE COURT: Oh, that's right. I'll do something  
4 with this.

5 MS. McVEY: Okay.

6 THE COURT: I'll do something with this.

7 MS. McVEY: It may be in *Garvin*. I can't remember  
8 exactly.

9 THE COURT: Then Number 10, questions aren't  
10 evidence. I'm going to charge that. I don't know that  
11 it will be in exactly this form.

12 Number 11, unanimity of the verdict. I certainly  
13 am going to charge that the verdict must be unanimous.  
14 Don't know if I'm going to use this exact language.

15 Number 12 -- y'all just interrupt me if you want  
16 to add anything to what I've said -- expert witnesses  
17 and causation. That's certainly already covered in the  
18 *Garvin-Hill*.

19 MR. REID: Your Honor?

20 THE COURT: Yes.

21 MR. REID: I don't know if you want to do this now  
22 or later. Looking at that one last night, I thought of  
23 a change that would fit this case. Do you want to hear  
24 me on that?

25 THE COURT: All right, sir.

1 MR. REID: Just the first sentence, I think might  
2 be confusing because, of course, the injury here is the  
3 disease. And so I would suggest that we substitute the  
4 word "exposure" for "injury" in that second line.

5 MS. McVEY: It's not the same thing. Exposure is  
6 not the same thing as injury. Exposure is what gives  
7 rise to the injury. And it's covered in *Garvin*, Your  
8 Honor.

9 THE COURT: Well, I'll give some consideration to  
10 what you have to say, Mr. Reid. I'll look at it one  
11 more time. But, certainly, the idea that the most  
12 probably rule is in effect is something we're going to  
13 let them know about.

14 Number 13, evidence. What are we getting at  
15 there? Is that demonstrative evidence we're talking  
16 about?

17 MS. McVEY: I think that -- and I could be wrong.  
18 It's their charge, but for any documents, I'm trying to  
19 remember if any have come in like that for purposes of  
20 notice, rather than some other reason. I think it's in  
21 *Garvin*, but I assume that's what they mean.

22 THE COURT: We'll certainly make clear that notice  
23 documents are considered for that purpose or words to  
24 that effect. I didn't note any limitation on the  
25 offering of them when we were offering them. That's

1 all I'm trying to say. We either let them in or out.  
2 I didn't make any ruling that, "This is admitted for  
3 the limited purpose of showing notice," or something  
4 like that. And, frankly, I didn't notice that ya'll  
5 proffering them or offering them quite in that way.

6 MS. McVEY: I agree.

7 MR. McLEOD: I mean, it also has to do with  
8 demonstratives.

9 THE COURT: If it's demonstrative evidence, that's  
10 something that's different from this idea of notice.  
11 And demonstrative evidence I'll tell them is just used  
12 to demonstrate points made and is not going back to  
13 them in the jury room, so I'll do something on  
14 demonstrative evidence.

15 Products liability alternative theories. Now, let  
16 me say this. I like the way the causes, the claims, I  
17 like the way beginning on Page 6 that Gary Hill  
18 outlines these issues of the claims. He starts out by  
19 talking about the plaintiff's claims and the fact that  
20 defendants have to be considered separately. Then he  
21 talks about causation, and then he begins to discuss  
22 strictly liability, design defects, failure to warn,  
23 defective and unreasonably dangerous product, implied  
24 breach of warranty, state of the art. Then he goes  
25 into the negligence and its components. And then he

1 goes into the duty and the breach of duty and  
2 causation..

3 I like that setup rather than having to be  
4 repetitive about the way these charges are set up and  
5 repeat some things in each of the charges internally  
6 to, again, emphasize burdens of proof, causation, and  
7 things of that nature.

8 So the question I ask about Number 14, 15, 16, 17,  
9 18, 19 and, 20 are what's the difference between those  
10 and what's in *Garvin* or *Hill Garvin*? And so what --  
11 I'm not asking you to detail all those right now.  
12 We're obviously going to have to have a little bit of  
13 additional cogitation, but I'm not inclined to use that  
14 approach to it. I'm inclined to cover these topics as  
15 they're covered in the *Hill* charges.

16 Mr. McLeod?

17 MR. McLEOD: Well, Your Honor, I would -- I can go  
18 through my objections in detail to the *Hill* charge and  
19 *Garvin* as we did when he made it. He changed the  
20 charge somewhat in the next case, the *Muldoon*. That is  
21 why we have submitted our charges separately and apart  
22 from all of those. I'm happy to do whatever the court  
23 wants.

24 THE COURT: I'm going to let you have a full  
25 chance to do that. I'm mindful of the fact that we're

1 about to get the jury back, but what I'm saying is  
2 you're going to get a chance to outline that  
3 completely. I want that on the record. And I may  
4 change my mind about some of this. I'm just telling  
5 you that those charges, my question about them is  
6 aren't they already covered, and is there some legal  
7 defect in how they were covered in *Garvin* that you want  
8 to put on the record here, and I'm going to let you do  
9 all that.

10 MR. McLEOD: Yes, there were. And to a certain  
11 extent we're having this charge conference before,  
12 obviously, the case is even over.

13 THE COURT: Exactly. You're not going to be  
14 precluded. We're going to have a complete chance to  
15 get everything on the record about what our positions  
16 are about these things before the charge is made.

17 MR. McLEOD: I understand the jury is supposed to  
18 be here at 9:30, so we've got five minutes. I'll do my  
19 very best to go through those objections.

20 THE COURT: As I say, I may change my approach to  
21 some of them. I'm just saying on those particular  
22 ones, that's something we're going to spend some time  
23 on.

24 MR. McLEOD: You want me to go through right now?

25 THE COURT: We're going to go through the rest of



1 these. I want you to at least know what I'm thinking  
2 about these things. I think I can do it before we  
3 bring the jury in. To the extent we can't get around  
4 to arguing them completely right now, I want you to  
5 know what my thoughts are so we can then zero in on  
6 these things when we come back.

7 Are y'all following what I'm doing?

8 MR. McLEOD: Yes, Your Honor.

9 THE COURT: Okay. All right. Number 21, this  
10 products liability charge on negligence does not  
11 accommodate design and distribution, in my view. I  
12 think -- and this is Anderson 32-18 as modified. I  
13 will propose to charge Anderson 32-19, and you can take  
14 a look at it, which I think more clearly drives that,  
15 what we need to drive at with this particular charge.

16 Number 22, negligence. I think it's already  
17 covered by the charge, by the Hill *Garvin* charge.

18 Same thing is true of 23, strict liability.  
19 Again, I ask what is the difference and what is the  
20 legal significance.

21 The same is true of 25 on Page 24. That's  
22 products liability, design defect. I think that's  
23 already in.

24 Number 26, this -- I'm not prepared to do this one  
25 by itself until we talk about what is the bigger issue

1 which is learned intermediary, so I've got questions  
2 about that one.

3 MS. McVEY: Your Honor, I just know that's not the  
4 full charge.

5 THE COURT: Yes, that is correct. That is  
6 correct.

7 MS. McVEY: It's a partial sampling.

8 THE COURT: That's correct. But if I do it, I  
9 would certainly do something that's a fuller use of  
10 what was covered in 32-46 out of Anderson's charge  
11 book.

12 MS. McVEY: By saying that, I'm not saying -- we  
13 do object to this charge.

14 THE COURT: I understand, but it's not complete,  
15 that's true.

16 Number 27 I would charge as stated there,  
17 reasonable alternative design. I will charge that.

18 MS. McVEY: I don't know if you want our  
19 objections now or you want to keep going.

20 THE COURT: You got objections to that?

21 MS. McVEY: My only objection to this is I  
22 understand your ruling, but I want to point out for the  
23 record that in a failure to warn case, I do not believe  
24 the plaintiff always has to prove feasible alternative  
25 design. In this case it's not an issue because it's

1 there, but I am worried about in future cases this  
2 idea --

3 THE COURT: Well, right now I'm just worried about  
4 this case, and I would be prepared to charge it. I  
5 think it's definitely an issue in this case.

6 MS. McVEY: Okay.

7 THE COURT: Number 28, this is the bare metal  
8 approach. I didn't put it in the stream of commerce,  
9 even though they ordered these replacement parts from  
10 me. I'm not going to charge that.

11 MR. REID: Your Honor, obviously, we'll have  
12 something to say about that. Do you want us to save  
13 that?

14 THE COURT: I understand you want to preserve your  
15 position.

16 MR. REID: Your Honor, just to be clear, you want  
17 me to say that now or later in the day?

18 THE COURT: You can do either one. I mean, I  
19 don't want your complete bare metal argument again. I  
20 think we have had that on the record a good many times.

21 MR. REID: At least on the facts of this case, I  
22 think, you know, we're not -- I don't like the term  
23 "bare metal" because I don't think it captures what  
24 we're saying. We're saying we only have responsibility  
25 for those things that we place in the stream of

1 commerce, so if we have a nonmetal gasket internal to  
2 our valve, we take responsibility for that because we  
3 put it in the stream of commerce. But without that  
4 sort of charge, a jury may well think that we're  
5 responsible for insulation or flange gaskets, and  
6 neither Crosby or Fisher provided --

7 THE COURT: Yes. I'm targeting that specifically.  
8 I regard the evidence as sufficient to suggest that,  
9 particularly in the practice engaged in by both Fisher  
10 and Duke of supplying replacement parts, that they do  
11 place these flange gaskets and packing material in the  
12 stream of commerce.

13 MR. REID: To the extent we -- well, I think the  
14 record only reflects that we provided internal gaskets  
15 or packing and, obviously, no packing in the case of  
16 Crosby, but we acknowledge that to the extent a  
17 replacement part came from our client, that's our  
18 responsibility. But, certainly, we think the jury  
19 needs to be instructed that insulation, which was never  
20 provided by our clients, is not our responsibility and  
21 the same for flange gaskets.

22 THE COURT: You're talking about insulation in the  
23 factories, and that is something that is a factual  
24 matter to be argued to the jury, but this thing has to  
25 do with replacement parts. And you're saying defendant

1 is not liable for any injuries allegedly caused by  
2 replacement parts such as gaskets, packing if the  
3 plaintiff did not design, manufacture, or put in the  
4 stream of commerce. It's prefaced by you can't be  
5 liable for allegedly defect in product which it did not  
6 design, manufacture, or put in the stream of commerce.

7 Those two juxtaposed to each other don't make any  
8 sense. If you have got contentions to make about  
9 insulation, that's a factual contention you're going to  
10 make in argument to the jury, and they're going to have  
11 to tie what was supplied to what your client, either by  
12 the first order of the stream of commerce put into the  
13 stream of commerce. And we're going to have some  
14 charges that deal with putting things into the stream  
15 of commerce, but I'm not going to charge this thing  
16 this way.

17 MR. REID: We'll have some similar instructions  
18 we'll get to.

19 THE COURT: Exactly.

20 MR. REID: But we do think the insulation question  
21 is a question of law since there are no facts we  
22 provided it.

23 THE COURT: What would you have me charge the  
24 jury, there's a bunch of insulation in there that  
25 you're not responsible for? That's a factual matter of

1 proof that you can argue to the jury. I can't charge  
2 on the facts.

3 MR. REID: I think we have a later instruction  
4 that deals with this, but what I'm saying is we need an  
5 instruction that says our clients are not responsible  
6 for things we did not put into the stream of commerce.

7 THE COURT: I'll figure out a way to say that, but  
8 I'm not going to say it in a way that suggests more  
9 than what we're talking about or give you the ability  
10 to argue to the jury, "The judge says you can't  
11 consider these flanges or these packing materials."  
12 And that's been one of your big arguments, and it's one  
13 that I reject because the proof in the case at least  
14 gives the jury the option of deciding whether you're  
15 responsible for the flange gaskets and the packing.  
16 And I'm not going to make a charge that excludes that  
17 from their consideration.

18 MR. REID: What we're trying to accomplish is  
19 this: Having, whether it's by use of the terms  
20 "insulation" or "gaskets" or by use of the term "stream  
21 of commerce" to identify for the jury what they should  
22 consider in assessing whether or not our clients should  
23 be responsible. And we think there is a clear dividing  
24 line between those things that came from our clients  
25 such as the original internal gaskets or later

1 replacement gaskets on one hand, which we acknowledge  
2 would be our responsibility if, in fact, there was  
3 exposure to them, versus things that did not come from  
4 us such as the flange gaskets, insulation, or  
5 replacement parts that came from other sources.

6 THE COURT: Well, I regard the flange gaskets  
7 which you supplied to be something that is part of your  
8 design and your supplying, so I'm not going to exclude  
9 that from their consideration.

10 With respect to insulation on the pipes and this  
11 kind of thing, I'll think about that in terms of what  
12 can be done, but I'm not going to comment on the facts.  
13 If I start doing that, I'm going to comment on your  
14 facts, too.

15 They get to argue to the jury, "We have proved  
16 that part of their design was the flange gaskets as  
17 well as the internal packing." I'm not going to  
18 restrict them to just arguing that you're responsible  
19 for the internal packing but not the flange gaskets.

20 I mean, they have the greater weight of proof on  
21 that, but they have got plenty of information in  
22 evidence, as I see it, to put that forward.

23 MR. REID: Your Honor, I understand what you're  
24 saying. We do think that there's no proof -- we  
25 certainly have some valves with flanges. But I think

1 there's a complete absence of evidence that gaskets  
2 used to connect those flanges to pipe flanges came from  
3 us, so I'll leave it at that.

4 THE COURT: I think that's how the evidence --  
5 well, we have got a number of other ones, so we'll stop  
6 at Page 26 and return to this endeavor at a later time.

7 MS. McVEY: What did you say about Charge 29? I'm  
8 sorry, Your Honor. Is that where we're stopping?

9 THE COURT: We're stopping at Page 25, excuse me.

10 MS. McVEY: Okay.

11 MR. BOUCH: Your Honor, Mr. McLeod indicated that  
12 you are not going to admit Ms. Sahmel's report, and I  
13 understand your ruling and, of course, except to it.

14 MR. McLEOD: I think she said she's going to wait.

15 THE COURT: I think you're premature about that.  
16 At the present time, I am not going to admit that.  
17 There's going to be other testimony, and we'll revisit  
18 that, so I've got it up here to revisit. Based on what  
19 I've heard so far, it's got way too much hearsay within  
20 hearsay, reference to factual testimony that's not in  
21 the record, et cetera, and it violates *Allegro vs.*  
22 *Scully*, a court of appeals case, but we'll visit this  
23 at the end.

24 MR. BOUCH: Okay.

25 MS. McVEY: Can we have two seconds before you



1 bring the jury in?

2 THE COURT: Yes.

3 (WHEREUPON, a recess was taken from 9:33 a.m. to  
4 9:39 a.m.)

5 THE COURT: Ms. Sahmel, please return to the  
6 stand.

7 (WHEREUPON, the jury entered open court at  
8 9:40 a.m.)

9 THE COURT: Good morning, ladies and gentlemen of  
10 the jury. We will, of course, have you take your  
11 seats. I hope you had a good evening. We are in the  
12 midst of the defendant's case, as you know, and  
13 Ms. Sahmel is now going to be cross-examined by  
14 attorneys for the plaintiff.

15 All right. Ms. Sahmel, of course, you know you're  
16 still under oath.

17 THE WITNESS: Thank you, Your Honor.

18 THE COURT: All right. Ms. Farrise.

19 CROSS-EXAMINATION

20 BY MS. FARRISE:

21 Q Good morning, Ms. Sahmel.

22 A Good morning, Ms. Farrise. How are you?

23 Q I'm okay.

24 I just wanted to get the court's official  
25 exhibits.

1            Let me start, if I might, with a smaller matter  
2 you talked about yesterday. Take a look at Fisher  
3 Exhibit 90.

4    A        Okay.

5    Q        It's in evidence. Can you turn it around and show  
6 it to the jury?

7    A        Oh, sure.

8    Q        It's a picture of a -- and then there was, let's  
9 see, this guy, Exhibit 90.1. Do you see that? Have  
10 you seen that picture before?

11   A        I don't believe so.

12   Q        Yesterday you were talking about exhibit -- what  
13 we've marked as 1008.10665, and I believe that it  
14 probably got a new number yesterday from Fisher and  
15 Crosby.

16   A        Okay.

17   Q        But there was a sample that was reported as being  
18 zero. Do you know what I'm talking about?

19   A        Yes, I do recall that.

20   Q        Anyhow, you recall it was Sample Number 4,  
21 correct?

22   A        I believe that's correct.

23   Q        Okay. And so there was more data about Sample  
24 Number 4 that was taken, correct?

25   A        Yes. I have seen this before as well.

1    Q      Okay. And just to orient maybe the jury on what  
2 we're even talking about, in 1980, apparently, based on  
3 these documents, Fisher conducted air sampling at its  
4 factory in Iowa, right?

5    A      That's my understanding.

6    Q      Right. And so here's the Iowa factory of Fisher.  
7 And, let's see. Duke, the customer, is down here,  
8 which is not really true. But these documents that we  
9 are looking at, someone like yourself, an industrial  
10 hygienist, went into the Fisher Marshalltown, Iowa  
11 factory, put some kind of a gizmo on a worker, filter,  
12 right, and they sought to measure in 1980 whether those  
13 folks were being exposed to asbestos from the  
14 production process, correct?

15    A      That's my understanding based on my review of the  
16 materials and the best that I can elicit from what is  
17 remaining of the documents and documentation.

18    Q      Okay. And so there was this correspondence --  
19 which maybe it will make more sense now -- back and  
20 forth between Fisher, this Mr. Adams, Paul Adams, who  
21 has some role at the Fisher plant, right?

22    A      It appears to be so, that's right.

23    Q      And Mr. Adams of Fisher Controls is sending the  
24 air sample that was taken from a worker to a lab at the  
25 University Hygienic Laboratory medical laboratory

1 building in Iowa City, correct?

2 A That's my read of the document.

3 Q Okay. So what that tells us or not is that  
4 whether the workers who were sampled were or were not  
5 being exposed to asbestos as part of their work in 1980  
6 at the Fisher plant, right?

7 A So they were part of an air sampling program,  
8 that's right, that was undertaken to understand or  
9 characterize the potential for exposure during a number  
10 of different -- it looks like routine operations.

11 Q Four, right?

12 A In this particular instance, there were four.  
13 There were other samples that were collected at other  
14 times.

15 Q And you -- yesterday, there was a bulk sample that  
16 was like the biopsy of the product, and then there were  
17 four air samples from this time period, right?

18 A I don't recall. I need to look at the document to  
19 confirm that. Do you have a copy that I might look at  
20 a little closer?

21 Q I just want to ask you about Sample Number 4 which  
22 is in evidence.

23 A Okay.

24 Q And so this zero, if it is a zero, has nothing to  
25 do with what happened at Duke?

1     A        I don't know of any connection between those two.

2     Q        But what the test does tell us, Number 4, there is  
3     more information about what happened, which is that it  
4     occurred in July of 1980. This Mr. Paul Adams was  
5     somehow the supervisor in charge. It was, in fact,  
6     sampling specifically for asbestos, and at the bottom,  
7     it tells us, I guess, it was a 45-minute -- no, no. It  
8     was a ten-minute sample -- no. I don't know. Whatever  
9     it turns out to be. 31-minute sample, right?

10    A        So I'm trying to read the notes at the bottom.  
11    They're a little bit cut off.

12    Q        I know. Right now I'm just asking about the  
13    sampling time.

14    A        Correct. The sampling time is just over  
15    30 minutes.

16    Q        Okay. And what they report -- let's get to  
17    that -- is that ten minutes of the time, the worker,  
18    who had the gizmo that they were measuring, was  
19    actually on break, not doing anything, right? It says,  
20    "Run time of test included a ten-minute break" -- it's  
21    kind of cut off there -- "during which the operator  
22    stayed at his workstation," right?

23    A        It's very hard to read, but I think it certainly  
24    appears that there's a ten-minute -- something is ten  
25    minutes.

1 Q Ten minutes of activity?

2 A Possibly. It's hard to tell from the writing  
3 that's remaining.

4 Q Okay. Well, yesterday on direct, this document  
5 was put in front of you and you said this is a zero  
6 sample, and you knew all about it. So you have seen  
7 this document before. I'm not just springing it on you  
8 right now?

9 A In terms of the result, absolutely. I'm just  
10 talking about these remarks.

11 Q But you saw these remarks when you did your work  
12 in the case?

13 A I do recall seeing them. It's been a little  
14 while, so I just wanted to make sure I could read them.

15 Q Okay. But what we know is the guy who is doing  
16 21 minutes' -- or the woman -- worth of work is  
17 putting, merely putting the spiral-wound gasket into  
18 the box. That's all they're doing?

19 A That's right. That's what it looks like.

20 Q Right. And you, I think, don't know enough about  
21 the packaging processes at Fisher in Iowa to be able to  
22 say to the jury that they weren't putting something  
23 that was already in plastic into a cardboard box for  
24 shipping?

25 A That's right. I don't know that.

1 Q Right. So the zero which was pointed out  
2 yesterday could mean it's zero because this person's  
3 job was to take a sealed plastic part or part sealed in  
4 plastic or shrinkwrapped and simply put it into a  
5 cardboard box?

6 A It's certainly possible. I don't know one way or  
7 the other.

8 Q It has nothing to do with fiber release in the  
9 field, right?

10 A In this particular case, it's not related to field  
11 work with a gasket, although it's certainly relevant.

12 Q Yeah. It's relevant that Fisher had the capacity  
13 and the ability and the availability of a lab by 1980  
14 to do air sampling at its factories, correct?

15 A That's correct.

16 Q And in the field, had it chosen to do that, right?

17 A I believe it did for its own employees, that's  
18 right.

19 Q You've seen field sampling for Fisher employees in  
20 the field at customer sites?

21 A No, for their own employees at their sites.

22 Q Right. I'm talking about capacity, ma'am. There  
23 could have been field air testing in the same easy way  
24 that they did plant air sampling for asbestos when  
25 someone's at the field using the product, removing the