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THE STATE OF SOUTH CAROLINA  
In The Court of Appeals

APPEAL FROM SPARTANBURG COUNTY  
Court of Common Pleas  
D. Garrison Hill, Circuit Judge

Appellate Case No. 2016-000227  
Case No. 2013-CP-42-3915

**RECEIVED**  
APR 26 2017  
SC Court of Appeals

Angie Keene, Individually and as Personal  
Representative of the Estate of Dennis Seay, Deceased,  
and Linda Seay,..... Respondents,

v.

CNA Holdings, LLC..... Appellant.

**RECORD ON APPEAL  
VOLUME II**

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Certificate of Counsel

1 on the number you received so we don't have to worry about  
2 where you are. And we'll do our utmost to try to respect  
3 your time. And, please, try to respect everybody else's  
4 time as well.

5 All right. Yes, sir, Mr. Panatier.

6 MR. PANATIER: Thank you, Your Honor.

7 At this time, the Plaintiffs call Dr. Arnold Brody.

8 THE CLERK: Place your left hand on the Bible and  
9 raise your right hand.

10 WHEREUPON,

11 ARNOLD R. BRODY, Ph.D.,

12 after first having been duly sworn, testified as follows:

13 THE CLERK: Thank you.

14 DIRECT EXAMINATION

15 BY MR. PANATIER:

16 Q Okay. Dr. Brody, I have a starting slide here.

17 Dr. Arnold Brody, is that you?

18 A That is.

19 Q And it says, Cell biologist and experimental  
20 pathologist. Is that, also, you?

21 A That is.

22 Q Okay. The first question is, are you a medical  
23 doctor or are you a research doctor?

24 A No. I'm a Ph.D., scientist, research doctor, however  
25 you want to say it.

1 Q And what has your -- can you tell us what cell  
2 biologist and experimental pathologist means?

3 A Right. So every living thing is made of cells. We  
4 need to understand how our cells function. Every disease  
5 has a target cell from which that disease develops. So  
6 cell biologists like myself focus on certain disease --  
7 diseases, and the cells from which those diseases develop.

8 Pathology is the study of disease. So an  
9 experimental pathologist like myself goes through a series  
10 of experiments to understand disease.

11 Q Okay. And is something like asbestos something that  
12 you spent your career studying?

13 A Absolutely.

14 Q All right. Let me just --

15 MR. PANATIER: Your Honor, may I approach?

16 THE COURT: Yes, sir.

17 BY MR. PANATIER:

18 Q Here is a copy of your résumé. Is that a fair and  
19 accurate copy of your résumé?

20 A It is.

21 Q All right. Let me throw this onto the camera here.  
22 Your résumé is longer than mine.

23 A I'm a lot older.

24 Q 28 pages. All right. We're not going to sit here  
25 and read this whole thing. But some basic questions for

1 you.

2 First of all, where do you live?

3 A I currently live in Raleigh, North Carolina. You can  
4 see that up here.

5 Q Okay. And married with two kids?

6 A And six grandkids.

7 Q Okay. So, first question, did you go to college?

8 A Certainly.

9 Q Where did you go to college?

10 A Okay. Well, you can, actually, see up here, after  
11 high school in New Hampshire, I did a bachelor of science  
12 degree at Colorado State University, and that was the  
13 study of zoology. That's the study of animals.

14 Then I went to the University of Illinois where I  
15 received a Master of Science Degree in Anatomy. It's  
16 vertebrae anatomy. And that means animals with backbones  
17 like people, and rats, and dogs, and cats. And we all  
18 have very much the same kinds of function. That's where  
19 you learn -- that's where I learned how our parts fit  
20 together and function and -- muscles, bones, nerves,  
21 joints, that sort of thing.

22 Then I went back to Colorado to do a Ph.D. That's a  
23 Doctorate in Cell Biology that I was telling you about.  
24 But I had a specialty in what's called ultrastructural  
25 cytology. That means the study of cells using what's

1 called an electron microscope. So you can magnify things  
2 hundreds of thousands of times and see things that would  
3 be impossible to see with the human eye.

4 Q I may ask you -- I may bounce around a little bit and  
5 ask you some scientific questions. So to the extent I do  
6 that, will you keep all of your testimony to a reasonable  
7 degree of scientific certainty?

8 A Of course.

9 Q So the first question I have for you is, you said an  
10 "electron microscope." How is that different, if at all,  
11 from, say, a microscope we might have used in middle  
12 school to look at slides?

13 A Right. So the typical microscope that I used in  
14 school, that most people use, is called a light  
15 microscope. And what you're doing is you're using the  
16 room light or a light bulb to -- to illuminate the sample  
17 so you can see it.

18 Now, the waves, the light waves, are -- are rather  
19 long, rather high in light. And they don't allow you to  
20 see things that are very small. By comparison, an  
21 electron microscope uses electrons to illuminate the  
22 sample. And the wavelength of electrons is very short so  
23 that you can, actually, see things that you couldn't  
24 possibly see with a light microscope.

25 So they're both very valuable. I mean, I use light

1 microscopes all the time. But it depends on what you need  
2 to see. If you need to see the smallest asbestos fibers,  
3 for example, you have to use an electron microscope.

4 Q So is it fair to say that, depending on the tool, if  
5 you had a sample of asbestos that you were looking at, in  
6 a light microscope, you may only see some of it where you  
7 could see more of it under an electron microscope? Is  
8 that fair?

9 A Yeah. I mean, there are no fibers that you cannot  
10 see with an electron microscope.

11 Q All right. Now, in 1969, you get your Ph.D. At some  
12 point, did you start looking at asbestos and its effect on  
13 the body?

14 A Yeah, I did. I -- first, I did a postdoctoral  
15 fellowship at Ohio State University. A postdoc is where  
16 you find out if you're suited to be a scientist, if you  
17 have that kind of patience.

18 And then I started as an assistant professor --  
19 that's a beginning professor -- at the University of  
20 Vermont in the pathology department. And it was during  
21 that time in 1974 that I started my interest in asbestos  
22 disease.

23 Q All right. And so, as a scientist, how did you,  
24 actually, start to research it or study it?

25 A So, actually, that's an interesting story. Because

1 it's one of those things where you never expect. But it  
2 was a cold Saturday morning in Vermont. If you know  
3 anything about Vermont, it has its own special qualities  
4 when you say cold. Okay.

5 So it was a cold winter morning. And the chairman of  
6 the pathology department called me on the phone. And my  
7 little five-year-old is running around. As I say, it's  
8 cold out. And he said, Dr. Chris Wagner is here. Now,  
9 that's W-A-G-N-E-R. It looks like Wagner. But he's from  
10 South Africa. He pronounces his name Wagner.

11 Dr. Wagner had discovered in 1960 that asbestos  
12 causes this cancer mesothelioma. And there he was at the  
13 department. And the department chairman was asking me if  
14 I want to talk to him. Well, this wasn't really a  
15 question. This was get down here, get down here now.

16 So I jumped on my bicycle. And I was down there in  
17 just a few minutes. And I got to sit with Dr. Wagner.  
18 And he was explaining to me the kind of work he was doing  
19 with human lungs, and patients, and with what he called an  
20 animal model. He -- he showed that if you expose rats to  
21 asbestos, they get all the diseases that people do,  
22 asbestosis, scarring of the lung, lung cancer, and  
23 mesothelioma.

24 Now, this -- like with any human disease, we use  
25 model systems to tell us about the human disease. And he

1 had developed this asbestos model that -- and he invited  
2 me to come and work with him in Wales, in the United  
3 Kingdom. And this was a fantastic opportunity for a young  
4 scientist. And that's where it started.

5 Q And so throughout your career, have you used animal  
6 models to study the effects of asbestos, and other  
7 particulate, or other toxins on the cells, and how it  
8 affects the body?

9 A Yeah, of course. I and thousands of other scientists  
10 around the world, depending on the disease, use these  
11 model systems. Sure.

12 Q Have you been a teacher? Have you taught about your  
13 research, the effect of asbestos and other toxins on the  
14 cells?

15 A Absolutely. Since I -- actually, my graduate career  
16 at the University of Illinois started with what's called a  
17 teaching assistantship. I -- that's how I got to go to  
18 school. I was teaching the undergraduate classes, and  
19 have been teaching in medical schools ever since.

20 Q All right. And, at some point, did you become a  
21 professor anywhere?

22 A I did.

23 Q Okay. Where?

24 A Okay. So after I was at Vermont as an assistant  
25 professor, I went to the National Institute of

1 Environmental Health Sciences, as you can see here. The  
2 National Institute of Environmental Health Sciences.  
3 That's one of the National Institutes of Health. I was  
4 the head of the pulmonary. That's lung pathology,  
5 remember, the study of disease.

6 So I was the head of the lung pathology group there  
7 for 15 years. And then, in 1993, I was offered a position  
8 as full professor in the department of pathology at Tulane  
9 University Medical School in New Orleans. I was the  
10 director of lung biology.

11 And, actually, if we went down to 1999, you would  
12 see, '99, I was promoted to vice chairman in the pathology  
13 department in the Tulane medical school.

14 Q Okay. So, at some point, were you -- you were  
15 teaching undergrads. Were you ever teaching grad students  
16 and other people who were trying to get advanced degrees?

17 A Yeah, absolutely. Throughout my career, and  
18 particularly at Tulane, I was -- gave regular lectures in  
19 the medical school to the medical students. I mean, it's  
20 not at all unusual for Ph.D.'s like myself to be preparing  
21 the medical students in the basic sciences, physiology,  
22 anatomy, biochemistry, the things they need to understand  
23 before they go into their medical school clinical  
24 sciences.

25 Q And then in 2006 to 2011, it looks like you moved to

1 North Carolina State. What happened there?

2 A Well, you probably heard about this little storm  
3 called Katrina that came blasting through New Orleans. So  
4 you can see I was in, actually, for a year -- Katrina came  
5 through in 2005. And I stayed at Tulane through 2006.

6 But while Tulane and New Orleans was closed, I have  
7 colleagues at North Carolina State University in Raleigh.  
8 And they offered me an opportunity to use a computer and a  
9 desk. And then the dean saw -- of the school there saw  
10 the funding that I have from the National Institutes of  
11 Health, which is an attractive thing to have. And he  
12 offered me a position there.

13 So I finished my last five years of my career as a  
14 professor in the department of molecular and biomedical  
15 sciences at North Carolina State. I retired in 2011. And  
16 then in 2012, I was honored with the position of professor  
17 emeritus in the pathology department at Tulane. And  
18 that's my current academic position.

19 Q All right. And what does "emeritus" means?

20 A So emeritus, from the Latin, means "from merit,"  
21 because of all I had accomplished at Tulane. And, as I  
22 say, I was honored with this position. It's -- I don't  
23 get a salary. I -- but I have the opportunity to be a  
24 faculty member of the department. And I currently am  
25 working with professors, young people that I hired when I

1 was there..

2 So my research program continues as we speak.

3 Q Now, through this time, have you, also -- during the  
4 whole time that you were teaching and researching, have  
5 you, also, come into courtrooms like this and talked to  
6 juries about asbestos?

7 A Many times, sir.

8 Q Is your testimony any different than what you,  
9 actually, teach on the subject of asbestos with the caveat  
10 that maybe it's a little bit more basic initially? Is  
11 that fair?

12 A Yeah, sure. I mean, I use a different vocabulary for  
13 the medical students and my colleagues than I do for when  
14 I talk to a jury, but the message is exactly the same.  
15 Some of the slides that you've asked me to bring here  
16 today I use when I teach in medical school.

17 Q Okay. A few more questions here. There is a  
18 section -- have you been invited to speak all over the  
19 world on asbestos?

20 A Many times.

21 Q Okay. Let's see if I can get -- okay. So here's  
22 a -- so editorial boards. Now, what does that mean?

23 A Well, these are the kinds of journals that we publish  
24 our work. So a scientist, in order -- I mean, the goal  
25 of -- of basic science is to answer questions where the

1 answers are not available in the open medical literature.

2 So scientists like myself publish our work in what we  
3 call the open medical literature so that other scientists  
4 can see what we're doing. Also, that's the way I get to  
5 compete for the research dollars. I don't know if you  
6 want to talk about that, but shall I explain?

7 Q Yeah. No, explain that. When you're publishing, you  
8 just said you're competing for research dollars. What  
9 does that mean?

10 A Yeah. So, I mean, the universities hire professors.  
11 And they -- sometimes, they give you a salary, sometimes  
12 they don't. But they give you a place to do your work.  
13 And it's the requirement of the scientist to attract the  
14 funding to support the graduate students, and the young  
15 faculty, and pay for the supplies and equipment. It's a  
16 very expensive proposition.

17 And so how do we do that? Well, we have to compete.  
18 The National Institutes of Health is the major funding  
19 body for science and medicine across the country. It's  
20 made up of a number of different institutes like the  
21 National Cancer Institute, National Heart, Lung, and Blood  
22 Institute.

23 So I compete with all the other scientists across the  
24 country, whether they're from South Carolina, or Florida,  
25 or California, or New York. And we submit applications.

1 And they're reviewed. And about 10 to 15 percent of those  
2 applications get funded.

3 So that's what I mean by compete. And it's a very  
4 competitive environment. And my work has been supported  
5 by the National Institutes of Health without interruption  
6 through -- throughout my career.

7 So in order to show what I've done, I publish in  
8 journals like this. And I, also, sit on the editorial  
9 boards of these journals. And that's what that is as  
10 well.

11 Q Okay. And then this is getting to the issue of  
12 publications. It says, "review manuscripts for." And  
13 there's something called -- and I think it's on the very  
14 next page. Peer-reviewed publications --

15 A Right.

16 Q -- right? So does that have to -- does that tie in  
17 with "review manuscripts for"?

18 A Yes, exactly.

19 Q Okay. And so can you explain, what is the  
20 peer-review process? What does that mean?

21 A All right. So if I do a series of experiments in my  
22 laboratory and I want that work to be -- to appear in one  
23 of these journals like the ones that are listed here or  
24 the ones that are up here, I send a -- I write up the  
25 manuscript with an introduction, an explanation of what we

1 did, all the results, discussion. And I submit that paper  
2 to the editor of one of these journals.

3 The editor then sends that paper out to two, or  
4 three, or four of my peers, scientists like myself, who  
5 anonymously review my work. They then have a couple of  
6 weeks to write a report back to the editor. And they may  
7 ask for clarification. They may ask for more experiments.  
8 They may complain about it not being clear enough. They  
9 may be happy with it.

10 The reports go back to the editor. The editor sends  
11 this to me. Then I have an opportunity to respond to my  
12 peers. I can revise the manuscript. I can do additional  
13 experiments, write it back up, send it out again. This is  
14 a several-months-long process, which, eventually, ends up  
15 in one of the 150-some-odd peer-reviewed papers that I've  
16 listed in my CV here.

17 And that's the process of peer review.

18 Q Okay. So you have both been on the side of someone  
19 submitting your work to peer review to be published, and  
20 you have, also, served as someone who reviews other  
21 scientists work?

22 A I do that regularly.

23 Q So you said you had 150 peer-reviewed publications;  
24 is that right?

25 A I think it's 153, at last count.

1 Q Give or take. Approximately how many of those are on  
2 the subject of asbestos?

3 A About a hundred or so of them deal directly with  
4 asbestos. I mean, you just opened randomly to a page  
5 here. And you can see that here's a paper that we used  
6 looking at this kind of asbestos called chrysotile. We  
7 looked at a whole variety of different things related to  
8 the injury of lung cells.

9 So either they deal with asbestos, about a hundred or  
10 so of them, and the others, most of them deal with lung  
11 injury and how normal lung cells work.

12 Q All right. And then just flipping through here.  
13 Then there's a section called chapters and proceedings.  
14 So you have some book chapters?

15 A Right. So these are invited. So these are separated  
16 out from the peer-reviewed papers. Because the papers in  
17 this group are not reviewed by my peers. They're invited.

18 So if somebody is writing a book, for example, like  
19 Reviews in Environmental Control, they might ask me to  
20 write a chapter in that book.

21 Q I see the first one, actually, is edited by J.C.  
22 Wagner. Is that the fellow that you mentioned earlier?

23 A Exactly.

24 Q Okay. And --

25 A I think there are 55 of those.

1 Q You're right. It looks like 55 of those. And then  
2 one book?

3 A And a book. That's right.

4 Q The Science Class You Wish You Had?

5 A Yes.

6 Q So you think people, actually, wish they had another  
7 science class?

8 A Well, if they don't, they should. And if they don't  
9 want to go back to school, they can read that book.

10 Q All right. Oh, so, obviously, you are charging for  
11 your time today; is that fair?

12 A True.

13 Q What is your rate that you charge?

14 A \$550 per hour.

15 Q And over the years, how long have you -- at the same  
16 time doing your research and all of that, but how long  
17 have you been coming into courtrooms and talking to  
18 juries?

19 A Okay. So I told you my interest in asbestos disease  
20 started in '74. 15 years later, in 1989, I was asked to  
21 come into a courtroom for the first time. So I had one  
22 case in '89, and a few cases in the early '90s. Since  
23 I've retired, I've been busier doing this sort of  
24 consulting thing, but since 1989.

25 Q And it would be fair to say that over that time

1 you've been paid in the millions? Is that fair?

2 A I have. That's correct.

3 Q Now, have you, also, testified for defendants, and  
4 testified to the exact same issues you're going to testify  
5 today?

6 A Yeah, exactly. If a company would like to hear this  
7 exact same testimony that you're going to ask me to give  
8 here today, and I have the time, I can do that. Sure.

9 Q Okay. And have you done it for John Crane?

10 A I have.

11 Q Okay. Let's start with a basic issue. You're the  
12 first expert that is going to talk to us in this case.  
13 What is asbestos? Is that something you're prepared to  
14 talk about?

15 A Sure.

16 Q Is that something that you -- have you utilized  
17 asbestos in your own research extensively?

18 A Yeah.

19 Q Okay. So what is it?

20 A Well, asbestos is a naturally occurring mineral.  
21 It's been mined in many different places around the world,  
22 including Vermont, and a lot of it Canada, Australia,  
23 South Africa, Russia. There's one kind that's still mined  
24 in a couple of places today. But it, at one time, was  
25 mined in the thousands of tons.

1 Q Okay. I've got this picture that I showed the jury  
2 in opening, the different types of asbestos. Generally  
3 speaking, do these fit into any categories?

4 A Yeah, sure. So there are two -- let's see. You  
5 don't have it up there. Okay. There are two kinds of  
6 minerals, basic kinds of minerals. One of them is called  
7 amphibole, A-M-P-H-I-B-O-L-E.

8 So amphibole minerals have a number of different  
9 asbestos varieties in that amphibole mineral. And that's  
10 what anthophyllite, and tremolite, and amosite,  
11 crocidolite, they're different kinds of amphibole  
12 minerals.

13 And you can see, when they're mined, they have a  
14 certain color to them. So, for example, crocidolite is  
15 called blue asbestos, because, actually, the rock has a  
16 bluish character to it. So it's called blue asbestos.  
17 Amosite has kind of a brown color to it. And so it's  
18 called brown asbestos.

19 Now, there's another mineral type, and that's call  
20 serpentine, like the serpent, ending in I-N-E. So  
21 serpentine asbestos -- serpentine mineral has one asbestos  
22 type. And that's called chrysotile. And you can see that  
23 up here.

24 Now, of all these asbestos varieties, one of them has  
25 been used about 95 percent of the time in the world's use,

1 and that's chrysotile. So chrysotile is about 95 percent  
2 of the world's use. And these different amphiboles,  
3 crocidolite and amosite, make up about the other five  
4 percent. Anthophyllite and tremolite are found, but in  
5 much smaller percentages, and even hard to categorize that  
6 way.

7 Q Generally speaking, are anthophyllite and tremolite,  
8 typically, regarded as a contaminate of chrysotile?

9 A Yeah. I mean, it's normal. It's not like somebody  
10 put it in there and contaminated it. It's part of what  
11 can be mined, along with the chrysotile. It's imbedded in  
12 the ore where you can get anthophyllite and, particularly,  
13 tremolite.

14 Q So I'm just going to write, part of ore.

15 Have you looked at different types of asbestos and  
16 tried to figure out how they get into the body, and how  
17 they affect the cells in animals and humans?

18 A Well, that's part of the research. I mean, when I  
19 started with Dr. Wagner, he knew and we knew, science  
20 knew, that asbestos caused these diseases that we talked  
21 about, asbestosis, lung cancer, and mesothelioma. But  
22 when I asked the question, well, the lung is a very  
23 complex organ, where do those fibers go when they're  
24 inhaled? Okay. They go in the lung, but that's not good  
25 enough.

1           If I went to the library and I asked, well, where in  
2     the lung do they go? And then if I asked, well, once they  
3     get into the lung, how do they injure the lung cells to  
4     produce the diseases we know they produce? Those answers  
5     were not available.

6           So that's why I started doing my own experiments to  
7     answer questions like you just asked. Well, did they get  
8     into the lung? Where did they go? How did they injure?

9           And so that's the way we started with what sounded  
10    like sort of simple questions. And, today, we're at  
11    what's called the molecular level, the genetic level. All  
12    of the asbestos diseases are genetic diseases. They  
13    require either an activation or damage of certain sets of  
14    genes. And that's where science is today in a lot of  
15    different aspects.

16    Q     So when you began your research, you weren't trying  
17    to figure out if asbestos could cause the diseases. That  
18    was already established.

19    A     Exactly.

20    Q     And throughout the period of time that you've done  
21    this research, has it ever been shown that any type of  
22    asbestos can't cause these diseases?

23    A     No. It's the opposite. All of the asbestos  
24    varieties that you see here cause all of the asbestos  
25    diseases. That is a consensus in science. You can find a

1 few people who will tell you that chrysotile does not  
2 cause mesothelioma. But that's a very few and, clearly,  
3 not in the consensus.

4 Q Okay. So let me skip ahead. This is a slide that  
5 you have provided and that you have used throughout the  
6 years; correct?

7 A It is.

8 Q And, in fact, I think the next group of slides are  
9 your slides that you provided.

10 MR. PANATIER: And, Your Honor, can I ask that the  
11 witness just be able to step down so he can make reference  
12 to the slides?

13 THE COURT: Certainly.

14 BY MR. PANATIER:

15 Q I've got a little remote control. That moves  
16 forward.

17 A Okay.

18 Q You've got your own laser --

19 A I do. My laser is bigger --

20 Q And before I ask you the next question -- okay.  
21 We're going to get into a laser -- before I ask you the  
22 next question --

23 MR. PANATIER: Your Honor, at this time, we would  
24 tender Dr. Brody as an expert in cell biology and  
25 experimental pathology on the subject of asbestos and

1 asbestos diseases.

2 THE COURT: Any voir dire?

3 MR. TIVIN: No objection.

4 MR. YOUNG: No objection, Your Honor.

5 THE COURT: All right. Ladies and gentlemen, when a  
6 witness testifies, typically, they are only limited to  
7 testify about things they personally observed through one  
8 of their senses. There is an exception under the law for  
9 people who have been qualified as expert witnesses, who  
10 are witnesses who by reason of their education, training,  
11 or experience have achieved some expertise in their field.

12 These witnesses, unlike any other witnesses, are  
13 allowed to give their opinions as to things they have  
14 observed or had known to them -- made known to them.

15 So that is the difference between an expert witness  
16 and any other witness.

17 But you, the jury, are the sole judge of the  
18 credibility of all the witnesses.

19 So, yes, sir, you may continue.

20 BY MR. PANATIER:

21 Q So this picture here, what is your purpose in showing  
22 us this picture?

23 MR. PANATIER: Some of these pictures will be of  
24 intricate parts of cells. We want to just lower the  
25 lights a little bit.

1 BY MR. PANATIER:

2 Q Okay. So go ahead. So what's your purpose in  
3 showing this picture?

4 A Okay. Well, I know you know where your lungs are.  
5 But I just want to remind you that when you take a breath,  
6 the air -- there we go. Oh, that's great.

7 Thank you. Thank you.

8 So, when you take a breath, the air comes down this  
9 tube that we call the trachea or a windpipe. You can feel  
10 the top of that in your Adam's apple right here. That's  
11 the top of your trachea. And you take a breath. And the  
12 air comes down through this series of tubes that we call  
13 conducting airways, because they conduct air down into the  
14 lung.

15 And I, also, use this diagram as a map. Because it  
16 can help us understand where all the different asbestos  
17 diseases develop. So, for example, lung cancer is caused  
18 by asbestos, typically, in concert with cigarette use.  
19 And that develops in the walls of these tubes. And among  
20 the tubes is the -- develops the disease asbestosis.  
21 That's scar tissue in the lung from inhaling asbestos.

22 Now, you see this black line that runs around the  
23 outside of the lungs. That black line represents the  
24 pleura, P-L-E-U-R-A. That's a very thin -- I mean,  
25 Saran-wrap thin membrane that wraps around the outside of

1 the lungs, makes the lungs airtight like balloons. If you  
2 hear somebody has a collapsed lung, it's, typically,  
3 because there's been a hole, or a tear, or damage to that  
4 very thin pleura. And the lung collapses like a balloon  
5 would.

6 Around the outside of the pleura is a single layer of  
7 cells called mesothelial cells. And if somebody has a  
8 cancer of the mesothelial cells, it's called mesothelioma.

9 Now, I use diagrams a lot. It's helpful to use  
10 diagrams. But we need to be able to see what these  
11 things, actually, look like.

12 You asked me what an electron microscope is. So I'm  
13 going to show you a picture of an electron microscope.  
14 This is a microscope that I had for a very long time, you  
15 can probably tell. And this microscope, actually, was a  
16 victim of Hurricane Katrina. I lost this -- I had this  
17 microscope for 15 or 20 years. They're very expensive,  
18 hundreds of thousands of dollars, and last for many years.

19 I can take a piece of tissue as small as a period at  
20 the end of a sentence or as big as this device I have in  
21 my hand, put that tissue into this door in front of me.  
22 And the column of the microscope has a vacuum in it. It's  
23 evacuated inside. I put the tissue into the vacuum.

24 At the top of the column, there is an electron gun.  
25 And that generates electrons which pass through that

1 vacuum, strike the sample that I've put in the column.  
2 The electrons pass over the surface of the sample, and  
3 recreate in the finest molecular detail the surface of  
4 that sample and make a -- actually, you can get a 3D  
5 perspective out of it that I'm going to show you in a  
6 second.

7 And then we collect those electrons. And in front of  
8 me then appears that image that's created by the  
9 electrons. And then just off of the screen, there is a  
10 camera. So I can take a permanent image of whatever it is  
11 we're looking at.

12 Q And are we -- are you going to show us some actual  
13 pictures you've taken, as well as other researchers?

14 A Yes. All the pictures of the lungs that I'm going to  
15 show you and the asbestos, those are pictures that I've  
16 taken over the years in my laboratory. That's right.

17 So if I cut a piece of tissue out of the lung, for  
18 example, you'll see the conducting airways going up into  
19 the lung. You'll see the pleura running around the  
20 surface.

21 So I'm going to cut this out. I'm going to put it  
22 into the microscope. I'm going to take a picture. And  
23 here is that section of the lung. You can see the  
24 conducting airways going up into the lung. So you take a  
25 breath and the air -- the room air goes up and fills all

1 these little airspaces, hundreds of billions of them that  
2 we have in our lungs.

3 Now, you can, also, see how thin the pleura is. So  
4 when I cut across the edge of the pleura, you can see how  
5 thin that is. Here's the outside lining of the pleura.  
6 And that's where mesothelial cells are, on the outside  
7 lining of the pleura.

8 So the target cell for mesothelioma resides on the  
9 outside lining of the pleura. The asbestos fibers, most  
10 of them, land in the structure of the lung. And I'm going  
11 to show you how they get transported to the pleura.  
12 Because the fiber, the causative agent of mesothelioma,  
13 has to reach the target cell for there to be the  
14 interaction to cause a cancer.

15 Q Just by way of example, you said that mesothelioma  
16 occurs in that mesothelial lining. How would that differ  
17 from lung cancer, just generally in reference to this  
18 photo?

19 A Well, generally, it develops in the walls of these  
20 tubes. And, actually, in the next picture, I'm going to  
21 show you the target cell for lung cancer, just because I  
22 want to show you what -- what I call a defense  
23 mechanism -- or they're called defense mechanisms. I  
24 mean, we walk around all day, every day faced with various  
25 things in the environment, whether they're bacteria, or

1 pollen grains, or viruses.

2 Bacteria, I think I said, are things that, typically,  
3 don't make us sick, because we have very good defense  
4 mechanisms. Our nose hairs and the moisture in the back  
5 of our throats collect a lot of these things. But some of  
6 that goes right past these defenses and gets down into the  
7 lungs.

8 So I want to show you what the surface of our lungs  
9 looks like. And I'm going to do that by focusing the  
10 microscope and filling the screen with what's in that red  
11 spot. Okay. It could be anywhere along the airway. But  
12 I'm going to fill the screen with what's in that red spot.

13 So I'm going to focus the microscope right there.  
14 And that's what the surface of our airways looks like.  
15 And you can see this says, human bronchiole. Bronchiole  
16 is a small airway. These are bronchioles, small airways.  
17 And they are all lined by these interesting little  
18 structures that look like hairs, but they're not hairs at  
19 all. They're extensions of the cell surface called cilia,  
20 C-I-L-I-A.

21 And cilia are constantly beating in a wavelength,  
22 synchronous fashion. So if something lands on our cilia,  
23 it gets swept up to our mouth. And we swallow it or spit  
24 it out.

25 Surrounding the ciliated cells, you can see there are

1 cells that don't have cilia. And those cells make mucous.  
2 And you don't think much about mucous, unless you're a  
3 smoker or you have a cold. And then you're making mucous,  
4 and it brings it up to your mouth. And you swallow it or  
5 spit it out.

6 Now, these cells that don't have cilia that line the  
7 airways are the target cell for lung cancer. So that's  
8 where the lung cancers go.

9 Q Okay. And let me ask you about the little bar down  
10 there in this -- in this photo.

11 A Right.

12 Q What is that?

13 A Okay. So the microscope prints the size of these  
14 things on -- on the pictures for us. Because some of  
15 these things are very small. And you need to understand  
16 how big and small they are. And this says 10 microns.  
17 That's the Greek sign for micron. And so you can see how  
18 easy it is to see 10 microns.

19 Q Well, how big -- how big is a micron?

20 A Right, exactly. Like I said, that's what you need to  
21 know to understand the magnification.

22 So if you take your thumb and your forefinger and you  
23 make a little space that you can just barely see with your  
24 naked eye. Your naked eye means you don't have a  
25 magnifying glass, you don't have a microscope. You're

1 just looking at it with your eye. That's about a  
2 millimeter. So the human eye can see about a millimeter.

3 Okay. Now, take that millimeter and divide it a  
4 thousand times. Okay. So you've made a thousand microns  
5 now. So that means the human eye can see about a thousand  
6 microns. Excuse me.

7 So it -- the reason you can see 10 microns is because  
8 I magnified this tens of thousands of times. And so now  
9 you can see what the size is. And if you want to know how  
10 big or small the cilia are, you take this little bar and  
11 you line it up in your mind's eye against the cilia. And  
12 you can see they're about 10 to -- eight to 10 microns  
13 long.

14 Q And so -- and so just -- let's see if I can do my  
15 math right. So if there's a thousand microns in a  
16 millimeter, there's 10 millimeters in a centimeter; is  
17 that right?

18 A That's right.

19 Q And there's one hundred centimeters in a meter. So,  
20 you know, around a yard; right?

21 A Yeah.

22 Q So is it -- is it fair to say there are one million  
23 microns in a meter?

24 A Exactly, yes. There are a million microns. Right.

25 Q All right. So have you studied how these cells --

1 both the ciliated cells and the mucous cells, how they can  
2 help to defend the body against asbestos?

3 A Yeah, sure. I mean, the fibers that land in the  
4 airways get swept up to the mouth. And we swallow them  
5 and spit them up out. I mean, it's a very effective  
6 defense mechanism. 90 percent of the fibers that we  
7 inhale, actually, land in these areas and can be expelled.  
8 A lot of fibers go right past the escalator -- I'm sorry.  
9 I didn't use that term.

10 Okay. So we call this the moco, for mucous, ciliary  
11 escalator, because it escalates things up to our mouth.  
12 So the mucociliary escalator is constantly moving things  
13 up to our mouth. But a lot of things go -- inhaled  
14 particles go right past the cilia, don't land, and are  
15 then deposited in the -- in the small airspaces. And  
16 those are the ones that cause asbestosis and mesothelioma.

17 Q All right. And have you studied the effect of  
18 whether or not once asbestos gets to the cells deep in the  
19 lung, whether or not there are any other defense  
20 mechanisms that the body has?

21 A Absolutely. We have additional defense mechanisms.  
22 We're on our way to see them.

23 First, I'd like you to understand that if --  
24 obviously, we're sitting here now inhaling and exhaling  
25 the room air. About 20 percent of the room air is oxygen.

1 And that's our goal is to extract oxygen from the room  
2 air. And we do that in these small airspaces. That's why  
3 the lung has so much surface area.

4 If you took my lung out of my chest and stretched it  
5 out, it would pretty much cover the surface of  
6 this courtroom. We have a huge surface area in our lungs.  
7 And that's so it can absorb oxygen and -- and carbon  
8 dioxide. And the reason we can do that is because, on the  
9 surface of all these airspaces, we have a carpet of cells.

10 Now, if you think of this room that we're sitting in  
11 right here as an airspace, -- okay. Take the ceiling off.  
12 And let's use an analogy where this room is now an  
13 airspace. And we're standing in the air, sitting in the  
14 airspace.

15 Q When you say "airspace," you're talking about one of  
16 those little holes?

17 A Yeah. That's right. That's correct. It's,  
18 actually, a cup. It's not a -- it's not a hole.

19 Q Okay.

20 A It's, actually, a three-dimensional crater. Okay.  
21 And if you look on the -- down on the floor of our  
22 airspace that we're in, I see this carpet that's made up  
23 of carpet squares. They're pretty obvious.

24 And if you think of every one of those carpet squares  
25 as a cell, you understand the nature of the cells that

1 cover all of our airspaces. We have this patchwork of  
2 billions of cells that make a complete carpet over the  
3 floor of the airspace, go up over the wall into the next  
4 airspace, et cetera, et cetera, just cover all of our  
5 airspace.

6 Now, if I took a big saw, and I cut through this  
7 room, and I showed you the cut edge, what would you see?  
8 You'd see the room we're sitting in. You'd see the carpet  
9 and the floorboards. And then in the space underneath the  
10 floorboards, you'd see the plumbing, the electricity  
11 running through that space.

12 Well, if I did the same thing and I cut through the  
13 walls -- so let me ask you to -- take you it into an  
14 airspace --

15 Q Do you have a picture of that?

16 A Yeah. So I'm going to go to the end of the airway  
17 where it opens out into these airspaces. So here's the  
18 end of the airway opening out into the airspaces. And,  
19 now, we're getting a little closer view of the cups.

20 Notice when I open this one up, I opened up a lot of  
21 holes in the walls. That's because the blood, all the  
22 blood in our bodies has to run through our lung to pick up  
23 the oxygen.

24 So I'm telling you that you cut through the floor  
25 here and you see pipes running, all the water in the

1 building is connected somehow through these pipes. All  
2 the blood in our bodies is running through the walls of  
3 our airspaces. And when you take a breath, the room gets  
4 filled with the room air, and the 20 percent oxygen  
5 diffuses through the cells and into the blood that's  
6 running underneath in these small vessels.

7 And then the blood carries the oxygen from the room  
8 air to your brain and your muscles. And you use it up.  
9 And you send back carbon dioxide. And you go like that.  
10 And that's what's going on in all of us all the time.  
11 Okay. That's breathing. That's respiration.

12 And I, also, want to add that if a rat or a mouse  
13 went running by here right now, they'd be doing exactly  
14 what you and I are doing, using exactly these same  
15 structures, exchanging oxygen and carbon dioxide using  
16 exactly these same cells and functions.

17 Q One real quick question. Down at the bottom, there's  
18 another bar. And it says -- does that say a hundred?

19 A Right. That's a hundred microns. So this is a lower  
20 magnification. So I didn't have to magnify it quite as  
21 much.

22 But, now, I want to take us into a single human  
23 airspace. So I want to blow this back up. Because I want  
24 to show you those carpet cells. And then I'll show you  
25 the last line of defense, and then we'll talk about

1 asbestos.

2 Q Okay.

3 A Okay. So I'm going to take us into a single human  
4 airspace. It could be any one of these airspaces. We're  
5 going to just focus the microscope right down on the  
6 carpet. And we'll look at those carpet cells. So any one  
7 of these, focus the microscope, take a picture.

8 And here we are now down on the carpet. And I'm  
9 outlining one of the carpet squares, except that nature  
10 doesn't make squares very well. Nature makes smooth  
11 surfaces, rounded cells and surfaces.

12 So this is, actually, a carpet oval. And then  
13 there's another oddly shaped cell over here, and another  
14 one over here. So, in nature, rather than having every  
15 cell the same, they're, in fact -- every one of them is  
16 somewhat different. And we have this big -- we have this  
17 patchwork of millions of cells that cover all of our  
18 airspaces.

19 And we have two kinds of carpet cells. We have these  
20 big, flat ones that allow the movement of oxygen and  
21 carbon dioxide. Then we have these smaller ones with  
22 little bumps all over them.

23 Q And what are those?

24 A So I'll give you the -- in order to answer that  
25 question, I'll give you the big word. Okay.

1 Q Okay.

2 A These cells are called epithelial cells. So  
3 epithelial cells cover surfaces. So your skin is  
4 epithelium. We call it epidermis.

5 Now, we have two kinds of carpet epithelial cells.  
6 We have the big, flat cells that allow the movement of  
7 oxygen and carbon dioxide. But if they get injured by  
8 infection, or asbestos, or ozone, or some oxidant gas that  
9 we know injures these Type 1 cells, these other kind of  
10 epithelial cells, the Type 2 epithelial cells, the cells  
11 with little bumps all over them, they, actually, start to  
12 divide and repair the injury.

13 So every one of us has in every airspace a repair  
14 mechanism. Because we're always facing things that can  
15 damage our airspaces. And when I say you and I have that,  
16 that means -- and I'm not going to say this too many more  
17 times -- rats, cats, guinea pigs, dogs, giraffes, we all  
18 have these same structures that repair our airspace.

19 Q So those -- those kind of round ones that are kind of  
20 clumpy, those are just sort of there as backup?

21 A They are there as backup. And we've done a lot of  
22 studies on how those cells respond to asbestos.

23 Asbestos -- all the asbestos varieties are very  
24 toxic. They damage these carpet cells. And we wanted to  
25 know how quickly they damaged them, and how long it takes.

1 for these cells to repair the small airspace, you know,  
2 the fundamental questions about what asbestos does.

3 Q All right. Can you show us any more defense  
4 mechanisms?

5 A Last line of defense.

6 Q Okay.

7 A And we're going to go down onto the carpet here. And  
8 remember the cell with the bumps all over it. So we're  
9 going to focus right down here. So here's the cell with  
10 the bumps. And, now, here's the cell with the bumps. Do  
11 you see?

12 So I took that microscope right down onto the carpet.  
13 Here's the carpet cell down here, the smooth cell. Here's  
14 a Type 2 cell here -- a Type 2 epithelial cell here.

15 Then there are two added actors here. There's this  
16 one that's kind of ruffled, not going anywhere. Then  
17 there's this one with a tail end and two, what are called,  
18 false feet out in front of it. This cell was on its way  
19 in this direction going after this pollen grain right here  
20 when I caught it in the act about to pick that up.

21 So this lung once belonged to somebody who was killed  
22 in a motorcycle accident. And I was on the medical  
23 examiner's autopsy call. I went in and prepared this  
24 person's lung within not two hours after death. And we  
25 had these chemical fixatives that fixed the tissue in a

1 lifelike condition.

2 And so as this person was tooling along on his  
3 motorcycle, he was inhaling a lot of different things, I'm  
4 sure. One thing we know he inhaled was this pollen grain  
5 right here. It went right past the escalator and landed  
6 on the carpet.

7 We don't want any kind of foreign particles sitting  
8 on our gas exchange surfaces. So we have these cells  
9 called macrophages. Macro means big. And phage means  
10 eater. These cells are the big eaters of the lung. They  
11 patrol our airspace surfaces. They move microns per  
12 minute. And they can detect signals from things that  
13 don't belong there.

14 Like you see how this cell is directed toward this  
15 pollen grain. And it was going to pick up the pollen  
16 grain, envelop it, and digest it, not for nutritional  
17 purposes, of course, but to break it down. Then the cell  
18 migrates on to the cilia.

19 Every time we swallow, we swallow a few of our  
20 friends, these macrophages that are keeping our surfaces  
21 of our airspaces clean.

22 Q How did it -- how did it know the pollen grain --  
23 they don't have eyes, do they?

24 A No eyes, no ears.

25 Q So how do they know to go get the -- in this

1 instance, a pollen grain, or anything else?

2 A Right. So you see how the surface of the cell is  
3 ruffled and anything but smooth. The surfaces of these  
4 cells are covered with chemical receptors. And we  
5 discovered in my laboratory the chemical receptor that  
6 attracts these cells to asbestos. I'm going to show you  
7 the next slide. I'm going to show you asbestos.

8 And we found -- as I was studying this process, we  
9 found that these macrophages were collecting -- within  
10 just hours after exposure, they were collecting around the  
11 asbestos. And, like you say, they don't have eyes, ears.  
12 Nobody is telling them where to go. They must have a  
13 chemical signal that is transferred along the carpet so  
14 that they can pick up a gradient.

15 In other words, it's like a -- it's like a honeybee  
16 finds the right flower, you know. They follow the course  
17 of the -- of the scent from the flower. It's the same  
18 kind of thing. And the thicker the scent and the heavier  
19 the molecule, the closer they are to that sort.

20 It's the same concept. These cells follow gradients  
21 set up by things that don't belong in our lungs. The  
22 yare -- they pick up bacteria. They kill bacteria. They  
23 break down pollen grains.

24 They have a lot of trouble with asbestos. So, while  
25 they do remove a lot of asbestos, they -- these cells are,

1 also, killed by asbestos. All of the asbestos varieties  
2 kill these macrophages. And it turns out, as I'll explain  
3 as we go on, that these cells, actually, become part of  
4 the disease process. Because they're killed by asbestos.

5 Q Okay. And I think the next slide I have is this one.

6 A Right. So we've seen all the cells we need to see to  
7 understand what happens when asbestos gets into the lung.  
8 So we can talk about asbestos.

9 Q Okay. This one says, chrysotile asbestos fiber  
10 bundle. You told us there were a variety of different  
11 types of asbestos. This one happens to be chrysotile.

12 A Yeah. This is chrysotile. As I said, I've used  
13 chrysotile, crocidolite, and amosite in my laboratory.  
14 But chrysotile is 95 percent of the world's use. And so  
15 I've used mostly chrysotile in my work.

16 Q Okay. And on this one, are there -- there's another  
17 bar down at the bottom that gives you a measurement.  
18 What -- so how can you use that to say how big these  
19 fibers are we're looking at?

20 A Right. So this is a one micron bar. And you  
21 remember that it's hard to see a thousand microns. But I  
22 magnified this 4,300 times so that you can see a micron  
23 quite easily.

24 And if you take, again, in your mind's eye, and you  
25 set this on this fiber, you can see this fiber is probably

1 about five or six microns long. Because you can just put  
2 five or six of these little bars along here. And that  
3 makes this bar about six microns long.

4 You can see that some of these fibers start out at a  
5 micron thick, and then break down to less than that, and  
6 break down again to tenths of microns. Look at these  
7 fibers that are passing through the micron bar. They're  
8 tenths of microns.

9 So there's a huge range. Some of these fibers are  
10 hundreds of microns long as they go off the screen. And  
11 some of them are as small as -- as thin as a fiber can get  
12 at about a tenth of a micron. So there's a huge range.  
13 And these -- it's constantly changing.

14 Chrysotile asbestos fibers are constantly breaking  
15 down. They're breaking down in -- when you mine them.  
16 They break down in the products. They break down in the  
17 air. They break down in the lung. And so they're  
18 constantly getting smaller and thinner.

19 Q Okay. And I've heard the term "fibril." What is  
20 that?

21 A Yeah. So these are fibrils. You're looking at  
22 fibrils. A fiber is, actually, an agglomeration of  
23 fibrils.

24 Q That means a bunch of them together?

25 A Exactly.

1 Thank you.

2 A bunch of them together. Perfect.

3 Q Okay. And then if they -- as they -- you say you see  
4 these tiny, tiny, thin ones, you might call that a fibril?

5 A This is fibril. See this one right here? Then this  
6 one going through -- that's right. That's the smallest  
7 division of a chrysotile fiber is a fibril.

8 Q All right. And then have you looked at how this,  
9 actually, gets into the body and affects cells?

10 A Right. So the next couple of slides I'm going to  
11 show you are from experiments I did where we exposed  
12 animals.

13 So, in other words, we used chambers that Dr. Wagner  
14 developed decades ago. They're about six feet high, four  
15 feet wide. We used, typically, rats or mice. We put them  
16 into the chambers and created a very dusty environment.  
17 The idea is to be sure that the animals get a disease  
18 process. We're not trying to protect them. We're trying  
19 to make sure that they get a disease process.

20 I didn't take them all the way to the mesothelioma --  
21 clinical mesothelioma process. Other investigators have  
22 done that. Dr. Wagner did that decades ago. He showed  
23 that all of the asbestos varieties, crocidolite, amosite,  
24 and chrysotile cause mesothelioma in these animals.

25 The epidemiology is clear that all the asbestos

1 fibers cause mesothelioma. So it wasn't my goal -- excuse  
2 me -- to produce mesotheliomas in the animals. What I  
3 wanted to know was, what are the processes that lead to  
4 the cancer?

5 If you expose these animals through their lifespan,  
6 which is about two to three years, a few of them, near the  
7 end of their lifespan, get mesothelioma, just like people.  
8 A very small percentage of people exposed to asbestos get  
9 mesothelioma. It's the same thing in these experiments as  
10 well. Very few of them get the disease.

11 So the concept, in my experiments and a lot of other  
12 scientists, is to understand the beginning, the process.  
13 What does it take to, in the end, produce a clinical  
14 disease? And so that's where we're going.

15 Q Okay. So does -- the next slide starts on that  
16 adventure, I guess.

17 A Right. Okay. So here -- now, this is from a rat.  
18 This is the -- you're familiar with this now. So this is  
19 from -- this is from the lung of a rat that's been exposed  
20 to asbestos for a single hour. Because I wanted to know  
21 where the fibers land in the lung.

22 If I take the animals out immediately after a single  
23 hour of exposure and I give them an anesthetic, an  
24 overdose, they're not going to wake up from that. And  
25 then any asbestos that I see in the lung, obviously, got

1 in there during that first hour.

2 So let me show you -- and this is how we answer the  
3 question, where do the fibers land. Now, this is one of  
4 millions of spots like this around the lung. It's been  
5 the topic of a number of different papers I've written.  
6 I'm going to show you one slide, one spot, understanding  
7 that this is an example of that.

8 So I'm going to focus the microscope right here.  
9 Here are the airspaces that we've been looking at.  
10 Remember the blood running through these small capillaries  
11 in the walls. And I'm going to blow this area up right  
12 here. I'm going to focus on this spot immediately after  
13 the exposure. And -- okay.

14 So this black hole right here is this black hole  
15 right here. So we're looking at this carpet right here.

16 Okay. Now, you can see -- here's -- this is a 10  
17 micron bar. So this fiber is about 10 microns long. And  
18 you can see, again, there's the whole range of fiber sizes  
19 and shapes.

20 Q So that's the asbestos that, actually, landed there?

21 A It's landed right here. It's a long, curly fiber.  
22 Remember, we looked at the asbestos, some of these fibers  
23 are long and curly, some are short and straight. And here  
24 they are now on the lung. Some are long and curly, some  
25 are short and straight. And the whole array of fibers is

1 now sitting on the carpet.

2 Now, the concept here now is to figure out -- well,  
3 now, we know where they land. What happens next? And so  
4 we did a series of experiments to understand that. And  
5 you can see one of the things that happens next is that  
6 some of the fibers start disappearing under those carpet  
7 cells. In fact, here, you can see the asbestos very  
8 clearly, but here you can't see the fibers. Because the  
9 carpet is covering the fibers.

10 In fact, you can see the carpet is kind of lifting  
11 here. And, here, you can see the fibers very well, but  
12 you can't see them here. What we discovered was that when  
13 the fibers land on the carpet, the carpet cells come up  
14 over the top of the fibers and shove them under the  
15 carpet.

16 Now, it was a surprise to me when I came -- when I  
17 saw this. I'm looking at this under the microscope. And  
18 I'm saying, where are these cells going? No one has ever  
19 reported anything like this.

20 So we had to do a whole series of experiments by  
21 slicing through -- remember I showed you a cut surface,  
22 what it would look like? Well, we use these very -- what  
23 are called diamond knives. And we make very thin  
24 sections, and put them into the microscope, and prove  
25 where the fibers are going.

1           In fact, have we heard that we all have some asbestos  
2           in our lungs?

3           Q     I said in opening that we all have a little bit of  
4           asbestos in our lungs, but that's not evidence. So let me  
5           ask you about it.

6           A     Okay.

7           Q     Is it true that we all have some asbestos in  
8           our lungs by virtue of just what's in the background  
9           air?

10          A     Absolutely true.

11          Q     Okay.

12          A     And the point is that our asbestos is under the  
13          carpet. Okay. We have a space, a storage space under the  
14          carpet that we all, including rats, and cats, and  
15          giraffes -- we all store things in this compartment.

16                Now, we store those things. And, typically, we don't  
17          get enough to cause disease. From the environment, the  
18          little bit of asbestos we get, even though it can be  
19          millions of fibers, that's not a lot. You can get a  
20          billion asbestos fibers into a thimble, those little  
21          sewing thimbles, remember. You can get about a billion  
22          fibers into them.

23                So a few million fibers in somebody's lungs is not a  
24          lot. And as you accumulate those slowly over time and  
25          they distribute within all of our spaces underneath the

1 carpet, it's not enough to cause disease.

2 Q And just, generally speaking, what's the difference  
3 between the background that -- the little bit you said  
4 that is in the air and someone who's, you know, perhaps,  
5 exposed for 10 or 20 years occupationally?

6 MR. TIVIN: Objection to foundation.

7 THE COURT: Overruled.

8 THE WITNESS: I mean, it's called orders of magnitude  
9 difference. In other words -- so let me give you an  
10 example.

11 A typical background concentration of asbestos, like  
12 if you walked outside, would be .00001 fiber. That's a  
13 ten thousandth of a fiber. So you'd need -- so a sugar  
14 cube -- if you picture a sugar cube, that's about a cubic  
15 centimeter of volume.

16 So if you take a cubic centimeter of air, you'd need  
17 10,000 cubic centimeters of air to find a single fiber.  
18 That's the concentration of fibers that we're talking  
19 about when you go outside.

20 Okay. Now, an order of magnitude means you lop off  
21 the zero. Okay. So in a setting where people are using  
22 asbestos, you know, you don't have -- you don't have .000,  
23 typically. You have -- you know, five or six fibers per  
24 cc, or even .1 fiber per cc is a lot. Orders of magnitude  
25 increased over what we, typically, are exposed to.

1 BY MR. PANATIER:

2 Q So --

3 MR. TIVIN: Objection. Move to strike as  
4 nonresponsive.

5 MR. YOUNG: Join, Your Honor.

6 THE COURT: Overruled.

7 BY MR. PANATIER:

8 Q So just to sum it up just real easily. If someone  
9 was exposed to one fiber per sugar cube of air, that would  
10 be approximately 10,000 times higher than this general  
11 background; is that fair?

12 A Yeah. That's one way to look at it, a different way.  
13 Yeah. That's right. Exactly.

14 Q All right. So you are looking at the exposure to the  
15 animals and where this asbestos went. Did you follow it?

16 A Yes. So let me show you that in the next slide.  
17 Again, this is an example of hundreds of pictures and  
18 papers that I've written on this -- on this topic; right?

19 So -- so here's an airspace. Here is another  
20 airspace, another experiment, another set of animals.  
21 There's a small asbestos fiber bundle right there. You  
22 can see there's a little bit of a fiber sticking out, and  
23 another one on its way in. You can see the fibers here.  
24 But you can't see them here because they're covered.

25 Over here it, actually, is a fiber that's completely

1 covered. And all you can see is sort of an electron  
2 shadow of the fiber. So there's a range of fiber uptake.  
3 So the fiber that's completely covered probably landed  
4 before the fibers that you can see, right? Because this  
5 is a process that is progressive as time moves along.

6 Q I'm more interested in the Spaghettios, though, there  
7 in the --

8 A These?

9 Q Yeah.

10 A Spaghettios. Okay.

11 Q What are those?

12 A All right. So -- actually, I've never heard them  
13 referred to as that.

14 Q They look just like Spaghettios.

15 A Yeah, sure. That's brilliant.

16 Okay. So this is what our red blood cells look like.  
17 Now, they look like sort of like doughnuts or Spaghettios,  
18 if you will. Because they have a depression, not a hole  
19 in the center, but a depression. So that would not be a  
20 SpaghettiO then.

21 Q Okay.

22 A All right. So you can see them -- these red blood  
23 cells are lined up in the capillaries, those small blood  
24 vessels. And you can see that some of the fibers are,  
25 actually, moving into the -- what's called the fluid flow

1. of the lung.

2. The fluid flow of the lung has two compartments. One  
3. is blood. And we and other investigators have shown that  
4. asbestos can get into the blood flow and, therefore, go  
5. anywhere in the body. But there's a more significant  
6. fluid flow.

7. Q What's that?

8. A So -- and that's called lymph, L-Y-M-P-H. Lymph is a  
9. clear fluid that flows from head to toe in our bodies.  
10. Wherever blood flows, there's lymph flowing around it.  
11. Here, you can see blood flowing. And if I were to peel  
12. back -- remember, the capillaries are flowing under the  
13. carpet. Okay. In fact, we're sitting in the airspace --  
14. we're sitting in an airspace. And the air comes rushing  
15. in. And the oxygen has to diffuse through the carpet and  
16. into the blood that's flowing by, and there it is.

17. This is how thin -- you can see how thin it is. This  
18. is that barrier between the air that we're sitting in and  
19. the blood that's flowing by. So the blood cells are going  
20. to pick up the oxygen from the room air.

21. Now, if I pulled back the carpet and I show you where  
22. those blood -- where the blood vessels are running, and  
23. they look like tubes. It's moist in there. It's wet.  
24. And it's wet because there's lymph fluid in there. It's  
25. like if I opened up your peritoneal cavity or your chest

1 cavity where our lungs sit, or our stomach, or all of our  
2 organs, it's wet, it's moist, because of lymph.

3 Lymph is a clear fluid that flows from head to toe.  
4 It's two functions are, number one, to control pressure in  
5 the blood flow and, two, to carry cells of the immune  
6 system. Those are its normal functions. And we have  
7 these small bundles of tissue called lymph nodes. You've  
8 probably all heard of lymph nodes.

9 Lymph nodes filter all the lymph fluid that's  
10 flowing. And, sometimes, you can feel them getting  
11 irritated in your armpits or around your -- around your  
12 neck. Because they're carrying cells in the immune  
13 system. And if you're fighting an infection, you can,  
14 actually, feel that in your body. It turns out that  
15 asbestos collects in the lymph nodes.

16 So we can talk about lymph flow, because what has  
17 been determined is that -- that asbestos gets into the  
18 lymph. And that's an important pathway to the pleura, to  
19 the target cell for mesothelioma.

20 Q And I think I, actually, put that in out of order,  
21 that slide.

22 A That's okay. Actually, we can digress for a second.

23 Q Yeah. What is that?

24 A Okay. So these are macrophages. So here is an  
25 airspace. This is the carpet. And, here, you can see

1 some asbestos fibers that were inhaled. And a bunch of  
2 macrophages came in to collect the asbestos. And you can  
3 see one, two, three, four, five, six. And that's exactly  
4 what they're doing, but this one's dead. These are dead.  
5 You see they're covered with holes. Remember what the  
6 normal ones -- remember what they're supposed to look  
7 like? Ruffled and handsome. This picture is copyrighted,  
8 by the way.

9 Q Is it really?

10 A Yes.

11 Okay. So -- so here are these macrophages, dead and  
12 dying, because they have picked out very toxic chrysotile  
13 asbestos. Now, what happens is when macrophages die, they  
14 release a series of what are called cytokines, those are  
15 cell messengers. And they're telling other cells to -- to  
16 divide, and multiply, and repair whatever injury has been  
17 produced.

18 And I'm going to tell you in a minute, when we talk  
19 about cancer, that a dividing cell, a cell that's making  
20 new cells, is more likely to become a cancer cell. So you  
21 don't want cells dividing out of turn. And killing  
22 macrophages does that. It causes cells to divide out of  
23 turn. So that's why that's there.

24 Q Okay. All right.

25 A Okay. But let's go back to the lymph for a second.

1 So this moisture that I told you about collects in small  
2 vessels called lymphatic vessels. And this is a picture,  
3 a diagram. It's called a Netter diagram. Dr. Netter has  
4 given us atlases of the human body in health and disease.  
5 Here, Dr. Netter is showing us the pattern of lymph flow  
6 in the lung. And you can see these small vessels, many of  
7 which end at the pleura.

8 And if you look at the surface of the pleura, you can  
9 see that there is a reticular, netlike pattern on the  
10 surface of the pleura. Because there's lymph running  
11 around through the lung and out to the pleura. And these  
12 green blobs that you see around the lung, those are lymph  
13 nodes. And you can see how they're interconnected by  
14 lymphatic vessels.

15 Now, some investigators -- it's not my work. But  
16 some investigators studied these lymph nodes around the  
17 lung and, also, lymph nodes in the peritoneal cavity. The  
18 peritoneal cavity is the second most likely place to get a  
19 mesothelioma. The first most likely place is on the  
20 surface of the pleura, the mesothelial cells. The  
21 peritoneal cavity is lined by mesothelial cells, the same  
22 kind of cell, second most likely place. A lot of lymph  
23 nodes down there.

24 Some investigators studied the lymph nodes in the  
25 peritoneal cavity and the lymph nodes around the lung.

1 And they found increased asbestos collected in the lymph  
2 nodes in people occupationally exposed to asbestos.

3 So that shows -- that proves that asbestos gets into  
4 the lymph flow. There's no other way to get a fiber into  
5 the lymph system, than to inhale it, have it pass into the  
6 lymph flow, and then be trapped in the lymph nodes.

7 Q Is it the case that all of the different types of  
8 fibers we've discussed can get into the lymph system and  
9 out to the pleura where mesothelioma occurs?

10 A Absolutely. It turns out that chrysotile is more  
11 likely to get out there. Because it breaks down into  
12 smaller fibers and is more easily transported into the  
13 lymphatic network.

14 Q Okay.

15 A All right. So I'm going to finish this concept of  
16 translocation. I have one more slide. And then we'll  
17 talk about cancer.

18 So I'm going to cut a piece of the lung out here and  
19 make another diagram -- well, I didn't make the diagram,  
20 but Dr. Craighead, who was the chairman of the pathology  
21 department and gave me my first job, actually, wrote a  
22 chapter on this process. And that's from one of his  
23 books. And I'll show you that in a second.

24 But you're going to see the pleura on the right. And  
25 you'll see the lymph vessels, but in a little -- in a more

1 focused way, a blown-up way. So I'm going to cut this  
2 out, pleura on the right. Here is the pleura on the  
3 right. You see it says, normal mesothelium. So you have  
4 a single layer of cells sitting on a little connective  
5 tissue. That's the pleura. And then you can see the  
6 lymph vessels, just like the ones here but now blown up so  
7 you can see they, actually, transport things.

8 So the artist has a fiber getting inhaled, and  
9 another one here, into the bronchiole. Remember, I showed  
10 you how that happens. The fibers then land on the  
11 epithelial surface in the small airspaces.

12 You can see this fiber is -- sort of part of it  
13 sticking out. And the rest of it is inside this vessel,  
14 kind of like this picture that I took right here, a little  
15 bit of it's sticking out on its way into the flow. That's  
16 exactly what's happening here.

17 And you can see the artist says, lymphatic --  
18 lymphatic fiber transport to the pleura. So that's what's  
19 going on in these small vessels as the fibers, finally,  
20 reach the target site -- the target cell for mesothelioma.  
21 And here the artist is showing you that there are  
22 different kinds of mesotheliomas, epithelial kinds and  
23 mixed. And that's for another discussion here.

24 Q And have you shown -- shown and studied, once the  
25 fiber gets there to the target cell, the mesothelial cell,

1 how it can cause cancer?

2 A Exactly.

3 Q Okay. And you've got a new slide here, cellular and  
4 molecular aspects of fiber carcinogenics. What is that?

5 A Right. So this is the cover of a proceedings of a  
6 meeting I was at a few years ago. And the concept -- and  
7 I gave a talk at this conference. And the concept at the  
8 meeting was to discuss how fibers cause cancer. Here's  
9 the big word, carcino, cancer, genesis, formation,  
10 formation of cancer. Carcinogenesis.

11 Now, I've been talking to you today about cells. I  
12 showed you that certain cells pick up these fibers,  
13 macrophages, epithelial cells pick up the fibers. But you  
14 cannot talk about carcinogenesis, unless you talk about  
15 the molecular aspects. And that means your genes.

16 Molecular biology is the study of genes and genetics.  
17 And maybe you saw on my CV the last position I had as a  
18 professor was in the department of molecular biomedical  
19 sciences. So that's the biology of medicine at the  
20 molecular level, genes and genetics.

21 Now, humans have about 20,000 or so genes. Some  
22 have said up to 30,000 or so genes. There's still a  
23 little bit of discussion about exactly how many we have.  
24 But there's somewhere between 20,000 and 30,000 different  
25 genes that make us what we are. You can see what a few of

1 those genes do. You look around. You see different hair  
2 color, eye color, skin color, different size people,  
3 different metabolisms. These are all things that you can  
4 see that our genes do.

5 Q Can you tell us -- I'm sorry. When I was young, my  
6 mom would say, It's in your genes. That's why you're  
7 short. And I would look down at my pants and try to  
8 figure out what about my jeans was causing me to be short.  
9 What are genes?

10 A First of all, they're not spelled J-E-A-N-S.

11 Q I figured that out.

12 A We're talking about genes, G-E-N-E-S; right? And  
13 these, of course, are our molecular blueprints that make  
14 us what we are. Now, the reason I'm telling you that is  
15 because cancer is a -- I think I said a genetic disease.

16 Let me give you the simplest definition of cancer.  
17 Cancer is the loss of control of cell growth. Okay. I'll  
18 say that again, and then I'll explain. Cancer is the loss  
19 of control of cell growth.

20 If I took a piece of your skin and I put it under a  
21 microscope, I can show you that about 10 percent of your  
22 skin cells are dividing. You're always making new skin.  
23 You're always losing skin. So you always have to make new  
24 skin.

25 And there's a layer of skin that you can't see that

1 is always -- has about 10 percent of those cells are  
2 dividing. Your lung and your liver are about one percent.  
3 The surface of the mesothelial surfaces, one-half of one  
4 percent. So there's a range of requirements that our body  
5 has. And those growth rates are all controlled by genes.  
6 And of the 30,000 or so genes we have, about a hundred of  
7 them are growth-control genes. I'll tell you a little bit  
8 more about some of those.

9 In order to get a cancer, you have to have errors or  
10 mistakes, mutations sometimes, in genes that control cell  
11 growth, a set of genes. A single gene error -- there are  
12 a few cancers like that. There are some breast cancers,  
13 some prostate cancers that only require an error in one  
14 gene, but that's very unusual.

15 Most cancers require mistakes or errors in sets of  
16 genes, multiple genes. 10, 20 separate errors, sometimes,  
17 before a cancer will develop. So a carcinogen is a  
18 cancer-causing -- a cancer-causing substance, a  
19 carcinogen, a cancer-causing substance.

20 Q Is asbestos a carcinogen?

21 A Asbestos -- all the asbestos varieties are complete  
22 carcinogens. It means you don't need anything else. They  
23 in and of themselves can produce the changes, the errors  
24 I'm telling you about in growth-control genes that are  
25 necessary to produce a cancer.

1           Now, the way -- one of the ways we study that is by  
2 taking cells out of people or out of animals, put those  
3 cells in a dish. And, actually, if you give the cells the  
4 right nutrients, those cells will grow. And I don't mean  
5 get bigger. I mean they divide and multiply.

6           And then you can add the agent you're interested in  
7 studying and, actually, watch the interactions between  
8 those carcinogens and the cells. And that's a common way  
9 it do it. There are other ways, but that's one way.

10          Q     Is that what was going on there?

11          A     Exactly. Here are two cells. I'm outlining one for  
12 you here. There's another one over here. And this is two  
13 of millions of cells in this experiment. I'm showing you  
14 two of them, and some fibers were added. You can see kind  
15 of a long fiber here and some short fibers. And notice  
16 how the fibers have collected around the center circle in  
17 the cell. But they're excluded from the center circle.

18                The center circle is called the nucleus. And the  
19 nucleus of all of our cells contains our DNA. DNA are  
20 genetic material, all of our genes. Genes are short  
21 segments of DNA, and they're -- the segments have a  
22 specific alphabet in them that makes them your genes or my  
23 genes.

24                I mean, a gene that grows hair on us that causes hair  
25 is the same gene that's growing hair on a mouse. But the

1       sequence of that gene is just different enough that you  
2       get a mouse hair on a mouse versus one we're growing.

3               The concept is that a gene is sending a message that  
4       is -- that produces a -- either a protein or a set of  
5       structures that we can see, eventually, or -- or it plays  
6       a role in our metabolism.

7               So here, the DNA is protected by this membrane that  
8       goes around the nucleus. And you can see that because  
9       there's no asbestos. There are no fibers in the -- in the  
10       DNA. And that's the good thing. That's exactly what we  
11       would -- we would hope for.

12       Q       So can the cells always keep it out?

13       A       No. So here's the point. When a -- I think I told  
14       you earlier, I think I did. A dividing cell, a cell  
15       that's dividing, is more likely to become a cancer cell.  
16       And the reason is -- your question -- the reason is  
17       because, when a cell divides, it loses that protective  
18       membrane.

19               So we asked what would happen if we added fiber  
20       asbestos and other agents, and studied the interaction of  
21       those agents with the DNA in the dividing cells. And we  
22       can go on and see what...

23       Q       Okay. This says, normal cell division. This is, I  
24       take it, a cell that has divided?

25       A       Right. So this is what is supposed to happen. This

1 is what's happening in all of us right this second all the  
2 time. As I said, your skin, your GI tract, there's a lot  
3 of cell division going on all the time. There are three  
4 cells here, one, two, three. The two cells on the outside  
5 are not dividing. The nucleus is intact. The DNA has  
6 been stained blue so you can see where it is.

7 The cell in the center is dividing. Now, it has a --  
8 it's received a signal to divide. You cut your skin or  
9 you scrape your skin, the cells around that wound get a  
10 signal from your serum in your blood, let's repair that  
11 injury. It's signals that are carried in your blood.

12 And the cells around that wound go from a normal  
13 10 percent rate to about 40 or 50 percent rate until that  
14 wound is healed. And then they go back to the normal 10  
15 percent. That's normal cell division. And that's, as I  
16 say, what's going on all the time.

17 The idea is to condense the DNA into these threads  
18 called chromosomes. Chromosomes are bands of condensed  
19 DNA that hold all of our genes. Let me show you -- let me  
20 show you what our chromosomes look like. This is human  
21 karyotype. A karyotype just simply means a chromosome  
22 distribution. And you can see the light and dark bands  
23 across all of our chromosomes.

24 So humans have 23 pairs of chromosomes. You've got  
25 one from your mother, one from your father. And the light

1 and dark bands indicate where all of our 20,000 or 30,000  
2 genes are distributed.

3 The take-home message from this slide is that every  
4 one of our genes must be on the correct chromosome, and in  
5 the correct place on that chromosome or that gene will not  
6 work. Okay. I'm going to come back to that point a  
7 couple of times. Because that's the key to development of  
8 a cancer. Because some of these genes distributed here  
9 are those growth control genes, I told you, that have to  
10 be damaged for a cancer to develop.

11 So let's go on and finish that process where the cell  
12 receives a signal to divide. You can see the chromosomes  
13 now. They've been stained purple. So you can see where  
14 they are.

15 And, now, if they go through faithful replication --  
16 meaning every gene on the correct chromosome in the right  
17 place -- the cells divide. And you have two normal --  
18 what we call daughter cells just like the original. And,  
19 again, that's what's going on all the time.

20 Now, we put asbestos into these kinds of experiments.

21 Q Is that what that's showing there? Those are  
22 asbestos fibers?

23 A Right. So, again, this is one of millions of cells  
24 in these kinds of experiments. In Panel A, we have a  
25 single cell, no fibers. Half the chromosomes go to one

1 side, half to the other. Then you'll have two normal  
2 daughter cells, just like you should.

3 Now, over here in Panel B, we've added crocidolite  
4 asbestos in this experiment, this set of experiments.  
5 These were experiments done in my laboratory and with  
6 colleagues in adjacent laboratories. And we studied a  
7 whole bunch of different fibers. In this one, we used  
8 crocidolite.

9 And, here, you can see a long crocidolite fiber. So  
10 this cell from this side to this side is about 40 microns.  
11 Okay. So, obviously, you can't see this. You need a  
12 microscope.

13 In this case, we're using a light microscope. So you  
14 don't get a lot of the detail that you've seen with --  
15 when we use the electron microscope. But, still, you can  
16 see that the cell is intact, that there's about a  
17 30-micron-long crocidolite fiber, or a 20-micron-long  
18 fiber.

19 Then there are some shorter fibers here. And I put  
20 arrowheads on these because these fibers have some of the  
21 DNA bound to the surface of the fibers. So most of the  
22 DNA is where it's supposed to be. But some of the DNA is  
23 bound to the surface of the fiber.

24 Now, that results in a condition you can see up here  
25 called aneuploidy. Now, I'm going to show you one more

1 slide. And then I'll tell you about the aneuploidy.

2 Q Okay.

3 A And then I just have one slide after that, and I'll  
4 be finished.

5 So this is the same kind of experiment, but now  
6 mesothelial cells have been used, and chrysotile asbestos  
7 was added. And, here, you can see a normal mesothelial  
8 cell, no fibers. Half of the chromosomes are going to go  
9 to one side, half to the other. And we'll get two new  
10 cells.

11 Here, the daughter cells have -- are forming, but  
12 they're not quite separated. You can see there's a bridge  
13 between the two. And there's a chrysotile fiber that's  
14 spanning the two cells. And there's some DNA bound to the  
15 surface of the fiber.

16 Now, aneuploid cells are not cancer cells. But  
17 aneuploidy means abnormal chromosome separation. These  
18 are not cancer cells, but the door has been opened.

19 Q Okay.

20 A What do we mean by that?

21 Q Yeah. And so you talked about how, to have cancer,  
22 you have to have damage to the genes that control cell  
23 growth?

24 A Exactly.

25 Q And this, obviously, is impacting the DNA that has

1 the genes on it; is that right?

2 A Right. So -- so, remember, I told you that in order  
3 for a gene to work, it has to be in the right place on the  
4 right chromosome. Well, there are a lot of genes in this  
5 DNA. And there are a lot of genes in this DNA. And I  
6 wouldn't know which ones they are, unless I took that  
7 specific clump of DNA out and did a sequence on it. And  
8 that's been done.

9 But you can be sure that within this DNA, or this  
10 DNA, there are some genes that control cell growth. And  
11 those genes are not where they're supposed to be,  
12 obviously.

13 Now, I'll tell you about two of them. Okay. Of the  
14 hundred or so that we have, I'll tell you about two of  
15 them. Because we've studied them in my laboratory.

16 One of them is called p53. It's a -- it's a gene of  
17 53,000 molecular weight. That's why they call it 53.  
18 It's a protein -- it produces a protein, so it's called P.

19 This gene was the molecule of the year in 1993. That  
20 means it got its own cover on Science Magazine. And it's  
21 been called the guardian of the genome. Because what  
22 happens is if a cell gets -- becomes aneuploid or if there  
23 are genes that control cell growth are damaged, the p53  
24 gene gets activated and stops the cell from dividing.

25 If the cell is not dividing, then the daughter cells

1 don't get the mistakes, and the tumor can't continue to  
2 develop. So they can't pass on the mistakes. The p53  
3 gene is damaged in about half of all human tumors. It's a  
4 very central gene to protecting our genes. In fact, it's  
5 called -- I don't know if I said the guardian of the  
6 genome. It's a very central gene to protect us.

7 Now, if there's p53 in this clump of DNA, the p53 is  
8 not going to work.

9 Q Which means it won't be able to tell the cell to stop  
10 dividing?

11 A Exactly. Now, there's another set -- there's a set  
12 of genes. They're called death pathway genes. When there  
13 is this kind of DNA damage in aneuploidy, these cells,  
14 typically, die.

15 And they die because we start activating a set of  
16 genes that kill the cells, actually, literally, send the  
17 cells down a death pathway. The cells die. You never  
18 hear anything more from them again. And, obviously, it's  
19 protecting from -- protecting us from getting a cancer.

20 Q And that's what -- you, actually, want the cells to  
21 die if they have an error?

22 A Absolutely. And that's happening in all of us all  
23 the time. We all go out, we get a sunburn. That  
24 radiation causes DNA damage. UV light causes genetic  
25 damage. But, typically, you don't get a tumor right there

1 because of this death pathway that causes these cells to  
2 die.

3 You breathe somebody else's cigarette smoke -- I know  
4 some of you don't smoke here. So you breathe somebody  
5 else's cigarette smoke, you get some DNA damage. Those  
6 cells die. And you never hear from them again. And  
7 that's going on, as I say, in all of us all the time.

8 Q And that's what you hope happens anytime there's an  
9 exposure to a carcinogen?

10 A Yeah. These are very essential protective  
11 mechanisms. Remember that no matter how much asbestos a  
12 person is exposed to, it's highly unlikely that they'll  
13 get a mesothelioma, no matter how much asbestos they're  
14 exposed to, because of these very effective defense  
15 mechanisms that we all have.

16 Q Okay. Now, but we still see -- people, obviously,  
17 get mesothelioma. Do you have a range that you could give  
18 us of approximately how many occur per year in the U.S.?

19 A I mean, I've seen anywhere from 2,500 to 3,000 new  
20 cases every year.

21 Q Okay. And is it the case that some people can be  
22 exposed to asbestos constantly and not get mesothelioma,  
23 and some can be exposed to the same amount and they do?

24 A Well, that's exactly what I'm saying. And that's  
25 related to this concept of susceptibility. What is it.

1 that makes one person more susceptible than another? And  
2 it has a genetic basis. And at this point in time in  
3 science, we can't tell you what set of genes makes  
4 somebody more susceptible than another.

5 But, I mean, just as an example, when p53 gets  
6 activated and stops a cell from dividing, we have other  
7 sets of genes that make enzymes called DNA repair enzymes.  
8 And they can, actually, knit back together damaged DNA.  
9 Now, if somebody's DNA repair enzymes are better than  
10 another person's because they're more effective or there  
11 are more of them, they would be less susceptible.

12 You know, I mean, there are a whole list of things  
13 like that that would make one person more susceptible than  
14 another.

15 Q Like some people may feel like they get sick a lot,  
16 and someone else may not?

17 A Well, no question. I mean, there's susceptibilities  
18 to getting -- to coming down with the flu. I may be  
19 exposed to the same flu virus as you, and it depends on  
20 the genetics that control our immune system.

21 Q And what is this slide?

22 A All right. So this is the final slide that you've  
23 asked me to show. And what I want to do there is sort of  
24 summarize what I told you. I mean, cancer is a very  
25 complex process. And that's shown in the fact that we

1 don't know how to cure most cancers. And that's  
2 because -- that's because these cells that have sufficient  
3 genetic errors, we don't know how to shut them off yet.  
4 But, I mean, that's where these things are -- that's where  
5 the therapies are headed.

6 But I want you, also, to understand what's going on  
7 in that area called latency. That's sometimes difficult  
8 to understand.

9 Latencies in most -- I don't know the latency in this  
10 case. But, typically, they're anywhere from 30 to 60  
11 years. I mean, most cases fall in that 40- to 30- to  
12 45-year latency. That's the time from first exposure  
13 until the time the person comes to the clinic.

14 Now, what's going on during those decades? I'm going  
15 to try to answer that with this slide.

16 Q Okay.

17 A Okay. So here the artist has given us a single layer  
18 of mesothelial cells. And you can see the single nucleus.  
19 And these cells are normal and sitting among the other  
20 hundreds of millions of them on the mesothelial surface.  
21 And then the artist has a couple of lightening bolts come  
22 in. He says, DNA damage. As far as I know, lightning  
23 doesn't cause DNA damage.

24 What we're talking about is something from the  
25 environment has reached the nucleus, reached the DNA.

1 We're talking about a mesothelioma. We're talking about  
2 asbestos. Asbestos is the only known environmental cause  
3 of mesothelioma in North America.

4 So, here, we have the DNA damage, which we know is  
5 required for a cancer. And the artist has one of the  
6 daughter cells going off into the upper left-hand corner  
7 and dying. And you can see the DNA is clumped up. And  
8 the surface of the cell is bubbled up. And here is a  
9 macrophage coming in to clean up the mess.

10 So that's what is -- the artist knows very well  
11 that's what happens to most cells with DNA damage. They  
12 die. You never hear anything more about them.

13 But now we're talking about a cancer. So we have to  
14 have a surviving daughter cell. And that's what this cell  
15 is. And you can see it's dividing because you can see the  
16 chromosomes. The only time you can see the chromosomes is  
17 when the cell is dividing.

18 Now, then the artist produces this tumor with this  
19 odd green color that I'll tell you about in a second. But  
20 between this first daughter cell with a genetic error and  
21 the tumor, you've got to give me about 40 years in here.  
22 Okay. That's the latency. So I'm going to talk to you  
23 about -- just spend just a minute and talk to you about  
24 what's going on on the surface of the mesothelium during  
25 those 40 years.

1           So now here is this single cell with a genetic error  
2 in a gene that controls cell growth, whether it's p53, or  
3 the whole set of death pathway genes, or enzyme repair  
4 genes, whatever it may be. There's a cell with a genetic  
5 error.

6           And it can sit there looking and acting like a normal  
7 mesothelial cell for months. You'd never know it was  
8 there. Nobody is going to go in and start taking  
9 mesothelial cells off people's lungs and doing a DNA  
10 sequence. It's just, obviously, not going to happen.

11           So that cell then sits there. But, eventually, it  
12 has to divide. All of our cells -- I told you half of one  
13 percent, but it -- still it has to divide. Two cells,  
14 four cells, eight cells, 16, 32, making a little field of  
15 cells all with the same error that they've passed on.

16           And one or more of those cells gets hit again by  
17 another fiber. And now you have two errors, and a second  
18 gene that controls cell growth. You can't predict just  
19 how many errors it's going to take. It's -- in  
20 mesothelioma, it looks like it's more than five. We know  
21 that when you look at the DNA distribution of genes in  
22 mesothelial tumors, there can be 16 or 20 different  
23 errors. We can't tell you just which ones were required,  
24 but there are a number of them. Okay.

25           So now we're up to two. Okay. We have a separate --

1 two separate errors now. And that cell sits there looking  
2 and acting like a normal mesothelial cell for months.  
3 Eventually, it has to divide, two cells, four cells,  
4 eight, 16, another field. And one or more of those gets  
5 hit again.

6 Now, if I stand here and do that for 40 years, that's  
7 what's happening. In other words, our genetic defenses  
8 are continuously knocking out cells with genetic damage.

9 But, eventually, a single cell with sufficient errors  
10 and a combination of errors for that person -- remember  
11 how hard it is to get a cancer. A sufficient number of  
12 errors and in a combination of errors sufficient for that  
13 person that it grows out into this tumor. And that's why  
14 the artist made them all the same color, this odd color,  
15 because they all came from a single cell with sufficient  
16 errors.

17 Now, it might be -- there's some good recent evidence  
18 that -- and this is called a clone, by the way. Because  
19 all the cells came from that one cell -- all the tumor  
20 cells came from that one cell. There may be multiple  
21 clones.

22 Now, I told you there are these different fields of  
23 cells that -- that develop with multiple errors. You may  
24 have more than one clone grow out. And they -- by the  
25 time the person comes to the clinic, it looks like one

1 tumor, but there could be more than one clone. But that  
2 doesn't change anything I told you about the way the  
3 asbestos is interacting and causing genetic damage. And  
4 then, eventually, that tumor grows and brings that person  
5 to the clinic.

6 Q All right. I have a few more questions for you that  
7 you can take your seat, if you'd like.

8 A (Witness complied.)

9 Q You mentioned on the issue of what diseases does  
10 asbestos cause -- we talked about this a little bit. And  
11 I'm just going to kind of move through this a little bit  
12 quickly.

13 The first one I want to ask you about is asbestosis.  
14 You mentioned asbestosis.

15 A Right.

16 Q Is that a type of cancer?

17 A No, it's not. It's a scar tissue. It's the  
18 production of scar tissue caused by asbestos. So,  
19 remember I told you that a certain percentage of fibers  
20 are taken into that compartment under the carpet. That's  
21 where asbestosis develops. That's where the scar tissue  
22 develops, because of the injury to the carpet and the  
23 activation of cells that make scar tissue.

24 Now, that, typically, requires long-term, high levels  
25 of exposure.

1 Q Okay. Now, do you have to have asbestosis first  
2 before you can develop mesothelioma?

3 A Oh, certainly not. In fact, most cases of  
4 mesothelioma, you don't see the disease -- separate  
5 disease asbestosis.

6 Q Now, you brought up latency. And, to be clear, you  
7 are not one of Mr. Seay's treating physicians. You're not  
8 a medical doctor, right?

9 A I am not. That's true.

10 Q Okay. And I want you to assume he was first exposed  
11 around 1971, diagnosed in about 2013. So that's -- you're  
12 talking just around 40 years.

13 A Okay. Good.

14 Q Is that typical of the latency for an  
15 asbestos-related mesothelioma?

16 A As I say, I mean, I really -- I really did not know  
17 that was his latency period. But, yeah, sure. That's a  
18 classic latency period.

19 Q Okay. And asbestosis -- lastly, can asbestosis, if  
20 it develops, be a fatal disease?

21 A Oh, certainly. If it develops -- progresses, gets  
22 worse, yes.

23 Q I'll blow up that little side image there, pleural  
24 plaques. Just real briefly, what are pleural plaques?

25 A All right. So, here, you can see the artist has cut

1 the ribs away. This is the ends of the ribs. And this is  
2 the surface -- you're, actually, looking at the  
3 mesothelial surface right here. And a lot of the  
4 fibers -- I showed you how the fibers get to the pleura.

5 Well, some of those fibers cause scarring by the same  
6 way they do -- cause scarring in asbestosis. That process  
7 under the carpet, that same process can occur under the  
8 pleura, sort of the underlying connective tissue of the  
9 pleura.

10 I mean, the pleura is really two layers. There's  
11 that mesothelial cell layer on the outside sitting on a  
12 thin layer of connective tissue. Connective tissue is  
13 what -- you know, you pinch your skin, you let it go,  
14 it'll pop back because we have this elastic tissue.

15 Now, if asbestos gets into that normal elastic  
16 tissue, it will cause scarring just like it does when it  
17 goes underneath the carpet. And there, it can produce  
18 this scarring that forms these plaques or along the  
19 surface of the lung.

20 Q Okay. We talked a little bit about the differences  
21 between lung cancer and mesothelioma. Just briefly, I  
22 want to ask you -- here, we're looking at lung cancer and  
23 that clump in the middle. What's that?

24 A This is a -- this is a lung cancer. You can see it's  
25 centrally located. Actually, the normal pleura you can

1 see is here, thin, shiny, just the way it should be. The  
2 tumor started.

3 I showed you the target cell for lung cancer in the  
4 walls of the airways. And that's why this is a  
5 centrally-located tumor. It started somewhere in the wall  
6 of one of these airways.

7 Q Now, we've all heard that -- you said that all the  
8 types of asbestos we discussed could cause lung cancer; is  
9 that fair?

10 A That's right.

11 Q And -- but we, also, know that smoking can cause lung  
12 cancer; right?

13 A No question.

14 Q Okay. Have there been studies that have shown the  
15 impact of smoking plus asbestos on the rate of lung  
16 cancer?

17 MR. TIVIN: Objection, relevance.

18 Can we approach?

19 THE COURT: Sure.

20 I'll tell you what. Let's take a short recess.  
21 Don't talk about the case. Continue to keep an open mind.

22 (WHEREUPON, the jury was excused from open court at  
23 approximately 11:14 a.m.)

24 THE COURT: We'll take a five-minute break.

25 (WHEREUPON, a break was taken.)

1 THE COURT: So just for planning purposes, how much  
2 longer on direct?

3 MR. PANATIER: I have five to six minutes. And it's  
4 going to be, apparently, a very short cross.

5 THE COURT: Okay.

6 MR. TIVIN: I anticipate being done before lunch,  
7 before noon. I don't know --

8 THE COURT: Before noon?

9 MR. TIVIN: Yeah. I mean, I...

10 THE COURT: Okay. So I guess the issue is, your next  
11 witness is a video; right?

12 MR. PANATIER: A video, which we -- we would need  
13 just a second to switch it over. We could get it switched  
14 over in just a couple minutes, or we can just go to lunch  
15 whenever, and play the video after. We're flexible.

16 THE COURT: And that video is how long?

17 MR. PANATIER: That video is an hour 20. And then  
18 the Defense is going to read in the discovery, which may  
19 fill a lot of the afternoon.

20 MR. TIVIN: A long time, a long time.

21 MR. PANATIER: It's going to be -- we would,  
22 actually, ask Your Honor, if you would, you could tell the  
23 jury they could drink a lot of coffee at lunch.

24 MR. TIVIN: Dr. Brody is the last live witness that  
25 we'd have.

1 MR. PANATIER: If they finish that read-in, we'll  
2 start with another video.

3 THE COURT: Okay. Well, let's just -- I guess if the  
4 testimony of Dr. Brody concludes, we may be better off  
5 just going to lunch and coming back.

6 MR. PANATIER: That's probably the way to --

7 THE COURT: Does that suit everybody?

8 MR. PANATIER: That works. Yeah, that suits us.

9 THE COURT: Okay. You can bring the jury in.  
10 Thank you.

11 (WHEREUPON, the jury came into open court at  
12 approximately 11:26 a.m.)

13 THE COURT: Yes, sir.

14 BY MR. PANATIER:

15 Q A couple more questions, Dr. Brody. Mesothelioma --  
16 we were just talking about lung cancer. Mesothelioma, you  
17 said the -- the only, generally, accepted cause of  
18 mesothelioma in the U.S. is asbestos; is that correct?

19 A Right.

20 Q Does smoking cause mesothelioma?

21 A It does not.

22 Q Okay. And describe what we're looking at here in  
23 this Netter diagram.

24 A Right. So you remember in the previous slide in the  
25 cancer, I showed you that normal thin pleura. Well, this

1 is the pleura that has been replaced by tumor cells. And  
2 when you have these clones growing out, over time, they  
3 coalesce into this tumor that can completely cover and  
4 surround the lung, and, actually, constrict and cause the  
5 person not to be able to breathe.

6 Q With regard to your several decades of research and  
7 from what you have read, is it generally accepted that all  
8 of the fiber types can cause mesothelioma?

9 A Yes.

10 Q Now, are there a different level of potency between  
11 the different fiber types, generally speaking?

12 A Well, for causing mesothelioma, yes. I mean, there's  
13 no evidence I know that says that any fiber is more likely  
14 to cause asbestosis or lung cancer.

15 But for mesothelioma, the amphiboles -- that's  
16 crocidolite and amosite, typically -- are more potent.  
17 But that's on a fiber-per-fiber basis. That means that if  
18 all you're exposed to is chrysotile, chrysotile caused it.  
19 If all you're exposed to is crocidolite, crocidolite  
20 caused it. If you're exposed to a mixture, then they all  
21 participate.

22 Q All right. Is there any way scientifically, that  
23 you're aware of, to take one type of fiber or one exposure  
24 that a person had and say, well, that didn't play a role?

25 A You can't do that. It's like if I could -- well,

1 there are a lot of analogies like that. I mean, which  
2 sunburn caused your melanoma? You know, it's the same  
3 kind of thing.

4 Q Okay. And then, again, generally speaking, you  
5 talked broadly about background levels of asbestos versus  
6 occupational levels, which would be orders of magnitude,  
7 higher exposure levels. Would it be fair to say that for  
8 someone who has repeated, regular, frequent, and proximate  
9 exposures on an occupational level that each of those  
10 types of exposures would be a substantial factor in the  
11 development of their mesothelioma?

12 MR. TIVIN: Objection. Speculation. Foundation.  
13 Vague.

14 MR. YOUNG: Join.

15 THE COURT: Overruled.

16 THE WITNESS: Right. So think about -- well, the  
17 answer to your question is yes. In other words, every one  
18 of those exposures increases the dose. I mean, this  
19 is a -- these are dose-response diseases. And if I could  
20 use an analogy today.

21 BY MR. PANATIER:

22 Q Sure.

23 A We already established that cigarette smoking doesn't  
24 cause mesothelioma. But just take what happens in a lung  
25 cancer from a long-term cigarette smoker, right? They

1 start smoking a brand when they were a teenager. And then  
2 they switched to another brand. And then they're buying  
3 packs, and they're buying cartons. And, eventually, they  
4 get lung cancer 30, 40, 50 years later. Which brand did  
5 it? Which pack did it?

6 Every time you inhale a cigarette, you apply  
7 carcinogens directly to the target cells. Every time a  
8 person is exposed to asbestos, some proportion of those  
9 fibers reach the target cell. And there's no way to  
10 discount any of them.

11 Q And you're not saying that one fiber causes  
12 mesothelioma, are you?

13 THE COURT: Yes.

14 MR. TIVIN: Objection. Move to strike. Previous  
15 motion:

16 MR. YOUNG: Join.

17 THE COURT: Okay. Overruled.

18 BY MR. PANATIER:

19 Q Dr. Brody, you're not saying one fiber someone  
20 breathes in causes mesothelioma, are you?

21 A No, of course not.

22 Q And, to be clear, you're not an industrial hygienist;  
23 right?

24 A That is true.

25 Q Okay. And you're not saying that someone walking by

1 one time something having asbestos in it causes  
2 mesothelioma, are you?

3 A No. I'm not saying that.

4 Q All right. And lastly --

5 A We know -- you know, we know that a single fiber can  
6 cause genetic damage. But that doesn't mean if all you're  
7 exposed to is a single fiber that it causes cancer. I  
8 told you that multiple steps have to be accomplished.

9 Q I understand. And, lastly, from a scientific  
10 perspective, is there any known safe level of exposure to  
11 asbestos that you can say this is the level -- aside from  
12 background, which you've already talked about, this is the  
13 level that we know is safe and no cancer will occur?

14 A No. There's no level that's been established that is  
15 safe if it's above background.

16 MR. PANATIER: Okay. Thank you, sir.

17 Pass the witness.

18 THE WITNESS: You're welcome.

19 THE COURT: Cross-examination.

20 MR. TIVIN: If I may have a moment just to kind of  
21 move things around a little bit.

22 THE COURT: Yes, sir.

23 CROSS-EXAMINATION

24 BY MR. TIVIN:

25 Q Well, I suppose I can ask questions while I'm doing

- 1 it if you're -- is that okay with you, Doctor?
- 2 A However you'd like.
- 3 Q You've been testifying since about 1989?
- 4 A I had one case in '89. That's right.
- 5 Q And, currently, about 90 percent of your income comes
- 6 from about testifying as an expert?
- 7 A That's right.
- 8 Q And you've already talked with Mr. Panatier about how
- 9 much you make. And you've been making a couple hundred
- 10 thousand dollars a year testifying?
- 11 A I have been, yes.
- 12 Q And this isn't the first time you've -- you've
- 13 testified in South Carolina before?
- 14 A I have, sure.
- 15 Q Illinois?
- 16 A I have.
- 17 Q New York?
- 18 A Sure.
- 19 Q California?
- 20 A Indeed.
- 21 Q Would it be easier to list the states you haven't
- 22 testified in?
- 23 A Do it however you like. People seem to be interested
- 24 in what I have to say. What's the point?
- 25 Q What states haven't you testified in for plaintiffs

1 attorneys?

2 A I don't know. I don't keep track of that. Do you?

3 I don't. Sorry.

4 Q There -- you testified in West Virginia for  
5 plaintiffs attorneys?

6 A Yeah. Put up the map, you know. We can go through  
7 it. But I've testified in a lot of states.

8 Q And those have all been on behalf of plaintiffs in  
9 jury trials?

10 A Well -- well, yeah. But including several  
11 manufacturers, including John Crane, who asked me to give  
12 exactly the same testimony that I gave here today. So  
13 these are companies who are plaintiffs. But there were  
14 companies who made asbestos and asked me to give the same  
15 testimony that I did here today.

16 Q Yeah. And the case against John Crane, there was no  
17 jury, was there?

18 A There, certainly, was a competent judge.

19 Q Would I be correct in saying there was no jury?

20 A That's correct.

21 Q In the case against John Crane, that was in a  
22 business dispute; correct?

23 A Do we want to talk about what these cases were about  
24 for John Crane?

25 Q My question is, it was a business dispute; correct?

1 A I'm not really sure what you would call it.

2 Q In that case, there wasn't an injured party. There  
3 wasn't a -- someone who was sick seeking compensation;  
4 correct?

5 A Well, there were a lot of sick people who were  
6 seeking compensation.

7 Q In the case that you testified in, was there a  
8 plaintiff that was a -- someone who was claiming that they  
9 were sick that was seeking compensation?

10 A Not in that case. But that's why we were there,  
11 because of people who were claiming injury.

12 Q And John Crane had put you on to put you on as an  
13 example of plaintiffs cases; correct?

14 A Yeah, sure. That's a good example, absolutely.

15 Q Okay. And you've testified for Simon Eddins many  
16 times before?

17 A Many times.

18 Q And in this case, I think you told the jury you  
19 didn't even -- you're aware that Mr. Seay was deposed --  
20 were you aware that Mr. Seay was deposed?

21 A Well, I would have assumed so. But I didn't --

22 Q And were you aware that he had given several  
23 depositions?

24 A I really didn't ask. I'm not sure.

25 Q You didn't review any -- you didn't review any of

1 Mr. Seay's prior testimony before coming here?

2 A No. That's not going to have anything to do with my  
3 testimony.

4 So Mr. Seay, I was asked to assume, has this cancer  
5 mesothelioma --

6 Q Sir, if you could just answer my question.

7 A I am answering your question.

8 Q The question was, did you review any of the  
9 materials?

10 A No. But I was asked to assume --

11 MR. TIVIN: Your Honor, I would ask the --

12 THE COURT: Well, he's got a right to explain his  
13 answer.

14 THE WITNESS: Thank you, Your Honor.

15 So I was asked to assume that there was a diagnosis  
16 of mesothelioma. So my testimony then explaining how  
17 asbestos causes mesothelioma would be directly applicable  
18 to Mr. Seay, whether I read any of his depositions or not.

19 BY MR. TIVIN:

20 Q But -- right. Your -- your -- the testimony that  
21 you're giving here is the same testimony you give in every  
22 case that Simon Greenstone brings you; right?

23 A Sure.

24 Q And it's the same slides in every -- in every case?

25 A Well, just like when I teach the medical students, I

1 use the same set of slides. I don't know why I'd change.  
2 I mean, you know, the idea is for the jury to understand  
3 what the concept is. And I think those slides help to do  
4 that.

5 Q I guess my thing is you don't do anything special for  
6 this case that you do for any other case, correct?

7 A That's correct.

8 Q And you're not an industrial hygienist?

9 A Still not.

10 Q And you're not someone who's, actually, studied  
11 asbestos products to see if they release fibers?

12 A I have not. That's correct.

13 Q And that would be outside your area of expertise?

14 A That's right.

15 Q And you would rely on an industrial hygienist or a  
16 material scientist to testify -- well, strike that.

17 An industrial hygienist is someone who -- can you  
18 tell the jury what they are?

19 A So this is a field that, typically, a person can be  
20 certified in to study workplace conditions, who gets  
21 exposed to what and what the agents are that are,  
22 actually, in the workplace that can cause people illness  
23 or injury.

24 Q And a material scientist is someone who, actually,  
25 studies different materials and studies their makeup, and

1 in the terms of asbestos-containing products, also, can  
2 see if they release fibers during activities?

3 A Sure.

4 Q And you would you defer to an industrial hygienist as  
5 to whether a product, actually, released fibers and the  
6 amount of the released fibers?

7 A Of course.

8 Q And you would, also, refer to a -- well, strike that.

9 And for this case, were you told anything about  
10 Mr. Seay's actual exposures?

11 A No.

12 Q For this case, were you -- did you investigate  
13 anything -- were you told any information about what  
14 products from John Crane may be involved?

15 A No.

16 Q Or anyone else?

17 A No.

18 Q Because that isn't important to you as to how -- the  
19 products he was exposed to. It's whether he developed  
20 mesothelioma?

21 A Yeah. And how that happened from asbestos, right.

22 Q What's epidemiology?

23 A So that's the study of populations. Epidemiologists  
24 establish who gets sick in a population and from what.

25 Q And then as a layperson, epidemiology is how we,

1 initially, link different agents to different diseases?

2 A That's what I tried to say, yes.

3 Q Well, okay. And, for example, when we discovered  
4 that asbestos caused -- is linked to mesothelioma, that  
5 was through epidemiologic studies?

6 A Yeah, of course.

7 Q And with regard to mesothelioma, I believe that was  
8 Dr. Wagner. And I think it was 1960?

9 A Right.

10 Q And in 1960, Dr. Wagner discovered there was a link  
11 between people who worked in a crocidolite mine and  
12 worked -- and lived around that crocidolite mine --

13 A Right.

14 Q -- in the development of mesothelioma?

15 A Right. That's the environment he was in. He was  
16 working at a small hospital near a mine, a crocidolite  
17 mine. And in came these very rare -- these cases of this  
18 very rare disease, mesothelioma. And the common thread  
19 was they were all exposed either at the mine or living in  
20 the community.

21 Q And that was a crocidolite mine in South Africa, I  
22 think?

23 A Exactly.

24 Q Now, they've done epidemiologic studies in -- well,  
25 strike that.

1           Are you generally aware of the epidemiologic studies  
2 that have been done on asbestos and its ability to cause  
3 disease?

4           A     General principles, sure.

5           Q     And you've read the literature, and you're familiar  
6 with the literature?

7           A     Sure. I mean, that's where scientists like myself  
8 get their cues as to where to go, I mean, where are the  
9 problems that we need to understand. And the  
10 epidemiologists set that up, sure.

11          Q     And one of the -- have there ever been any  
12 epidemiologic articles -- well, strike that.

13                 There have been epidemiological articles that have  
14 linked the use of thermal insulation --  
15 asbestos-containing thermal insulation, and mesothelioma;  
16 correct?

17          A     Sure.

18          Q     And those were -- one of those was done by a guy  
19 named Dr. Selikoff?

20          A     Right.

21          Q     And he is a respected -- he was a respected physician  
22 in asbestos-related disease?

23          A     Certainly.

24          Q     And he, actually, linked the use of people who use  
25 thermal insulation all the time, and the development of

1 mesothelioma, and other asbestos-related diseases?

2 A That's right.

3 Q Have there been any epidemiologic articles that link  
4 the use of gaskets to any asbestos-related disease?

5 A I don't know if that's been done, actually. That  
6 sounds kind of specific to me. I mean, the concept of a  
7 product that releases asbestos leading to a mesothelioma,  
8 that's pretty -- that's established.

9 Now, whether or not gaskets, per se, have been  
10 studied, I really couldn't say.

11 Q But thermal insulation has been studied. And one of  
12 the things they noted in the thermal insulation articles  
13 is that those people have extremely high doses; correct?

14 A Sure.

15 Q And one of the things that's important when you look  
16 at mesothelioma, and any other asbestos-related disease,  
17 is the dose?

18 A As I say, they're dose-responsive diseases, sure.

19 Q So the lower the dose, the lower the risk?

20 A Exactly.

21 Q And in your case, you believe that if someone has a  
22 background level of exposure that there's zero risk?

23 A Well, I don't think I've ever said zero risk. I've  
24 said that we don't know of a measurement. I mean, I don't  
25 know that we know that there -- that there is a level in

1 the background which we can say causes disease. That's  
2 not been shown.

3 But you can't say there's zero risk. I mean, there  
4 are some cases where you don't know the cause of the  
5 mesothelioma. It could be somebody highly susceptible  
6 that got a background dose. So, I mean, I can't tell you  
7 that background causes disease. But I can tell you that  
8 there -- that it's not zero.

9 Q Well, one of the things we've got to talk about, and  
10 I don't know if it was really discussed, is the way that  
11 we measure dose -- asbestos -- we did measure in  
12 concentration, the concentration of asbestos in the air;  
13 correct?

14 A Well, in order to get a dose, you have to multiply  
15 that concentration by the time the person is exposed.

16 Q And asbestos concentration is usually measured in  
17 something called "fibers per CC"?

18 A Right. That's what I was explaining to the jury.  
19 The CC, this cubic centimeter, and what the concentration  
20 is in that, you combine the time, multiply it by that  
21 concentration, and you get what you're talking about,  
22 fibers per CC.

23 Q Right. And it's your opinion that someone who's  
24 exposed to .01 fibers per CC all day, every day is not at  
25 an increased risk for the development of mesothelioma;

1 correct?

2 A Well, I think you picked that out of a -- out of a  
3 transcript somewhere. I'm trying to say that .001 is the  
4 lowest -- is the highest background I've seen. And I  
5 wouldn't expect that to cause disease.

6 And I think somewhere along the way we got a  
7 misprint, or I misspoke, or something. I don't think  
8 it's .01. I've been trying to correct that for a while.  
9 But you still like .01, so I guess we'll hear about that.

10 I'm sure it's in the transcript. I don't doubt that.

11 Q You testified two weeks ago in California?

12 A Right.

13 Q Two weeks ago in California, did you give the -- were  
14 you asked these questions, and did you give these answers?

15 "And would you agree, as far as you know, if someone  
16 is exposed to levels of .01 fibers per CC or lower -- are  
17 you with me?"

18 Answer: "Yeah."

19 "Every day, all day, that person is not at an  
20 increased risk of developing mesothelioma?"

21 Answer: "Not that I know of. That's correct."

22 A Yeah. That's fine. I mean, if we're talking about  
23 the -- the highest background that I've heard of, I'm  
24 saying it's .001. If you're asking me does .1 cause  
25 disease -- .01 cause disease, I don't know that there's

1 any evidence that it does. I haven't seen that.

2 Q But you were asked those questions two weeks ago, and  
3 that's what you said?

4 A I -- like I just said, yes.

5 Q Now, you're, also, aware that Dr. Selikoff wrote a  
6 book -- or edited a book called, Asbestos and Disease?

7 A Yeah. I have that.

8 Q And you find this book to be authoritative?

9 A Of course.

10 Q And you find Dr. Selikoff to be authoritative?

11 A Of course.

12 Q And this book was written in 1978?

13 A '78, yeah.

14 Q And in this book Dr. Selikoff edited, there were --  
15 there's a portion of the book where they talk about  
16 substitute products; correct?

17 A I mean, if that's what it says --

18 Q Do you want me to --

19 A No. I -- whatever you represent that says, I'm sure  
20 you're right. You know, I don't keep track of all the  
21 sections of that book.

22 Q And in the section of the book, there's a chart where  
23 they talk about progress and introducing a -- substitute  
24 materials. And if you'd like --

25 MR. TIVIN: Can I use the ELMO? May I use the ELMO,

1 Your Honor?

2 THE COURT: You certainly may. I don't --

3 MR. PANATIER: Yeah. Go ahead.

4 MR. TIVIN: Will you show me how to turn it on?

5 MR. PANATIER: It's on.

6 (Pause.)

7 BY MR. TIVIN:

8 Q Sorry. I'm a little bit technologically challenged.

9 This is on Page -- and I need glasses -- 466. Can  
10 you read that up there?

11 A Sure.

12 Q And it's -- there is a chart. And it's three --  
13 there are three columns in it. And one says  
14 "application." Do you see that in the upper left?

15 A (There was no response.)

16 Q Up. Up. There you go.

17 Do you see that?

18 A Sure.

19 Q And then it says "asbestos material" in the middle?

20 A Right.

21 Q And it says "progress and introduction of substitute  
22 materials."

23 A Okay.

24 Q Now, you would agree with me on the one right --

25 A Do you want this --

1 Q No. I can just point.

2 Right here. Do you see what that says?

3 A It says, "high temperature joining" -- "jointing and  
4 packing materials."

5 Q And jointing materials are gaskets; right?

6 A That would be a good question for a material  
7 scientist, an industrial hygienist, which you've already  
8 established I am not.

9 Q You don't know? You don't know?

10 A I do not know. That is correct.

11 Q Sure. And for jointing material, it says, no health  
12 hazard in forms used in shipyard applications. Do you see  
13 that?

14 A I see that.

15 Q And that's what Dr. Selikoff wrote about jointing  
16 materials in 1978?

17 A That's what he said.

18 Q And you believe that what he wrote in 1978 was --  
19 well, strike that..

20 You believe his book was new and novel about  
21 asbestos; correct?

22 A Well --

23 Q Introduced new and novel ideas about asbestos?

24 A Well, I don't know if that book did that. I mean, it  
25 reviewed a lot of materials, a lot of things that were --

1 that are important in the field. Whatever in there was  
2 informative, certainly.

3 Q And you believe in the '60s -- strike that.

4 In the '60s, 1960s, that's when it was known in the  
5 medical literature that exposure to thermal insulation  
6 could cause mesothelioma?

7 A Well, I think in the '60s and beyond, it became clear  
8 that asbestos, under a whole variety of conditions,  
9 whether it's insulation or other agents or other places  
10 can cause mesothelioma.

11 Q And you agree that only when sufficient fibers  
12 accumulate on the pleura -- strike that.

13 Only when the fibers overwhelm the carpet cells is  
14 when they can get to the pleura?

15 A No. I've never -- I'm sure you cannot find anywhere  
16 that I said that. So there's no overwhelming of anything.  
17 I mean, what you have are fibers that can come in two at a  
18 time or they can come in dozens at a time. And some  
19 proportion of them are taken under the carpet and reach --  
20 and some proportion of those reach the pleura. So I don't  
21 know why you said "overwhelm." I didn't say that.

22 Q I'd say that that's a poor choice of words. I  
23 apologize.

24 You testified on direct examination, I believe,  
25 that -- about a substantial factor. You were asked a

1 question about whether something was a substantial factor,  
2 I believe?

3 A Yes.

4 Q In any of the hundreds of medical articles that  
5 you've written, have you ever written about something  
6 being a substantial factor in the development of  
7 mesothelioma?

8 A No. I don't, typically, use that term. I mean, I've  
9 been asked in a courtroom what I think substantial means.  
10 And I say if it contributes to a disease that  
11 incapacitates a person, then I consider that substantial.  
12 But I don't use that as part of my scientific lingo.

13 Q In any of the hundreds of articles you've written  
14 about the causation of mesothelioma or any other  
15 asbestos-related disease, have you ever wrote about the  
16 cumulative dose causing the disease?

17 A Well, no. And I don't think you -- I'm not sure you  
18 really find that. Because it's clear that every time  
19 there is an exposure that you increase the dose from that  
20 accumulation of whatever the person was exposed to. I'm  
21 not going to sit there and write cumulative dose. That  
22 would --

23 Q Can you name me --

24 A -- somebody would laugh if I tried to say that.

25 Q Can you name me any article that anyone has ever

1 written and published in the medical and scientific  
2 literature that says the cumulative dose -- all of those  
3 exposures cause the disease, anyone ever who's written  
4 that?

5 A No. For the same reason that I just explained.  
6 It -- there are certain things in science that are  
7 intuitive. You don't have to write. I don't write the --  
8 there are a lot of things I haven't said.

9 And I'm sure that I haven't said, nor has anybody  
10 else, that in order to produce a dose, you have to have  
11 multiple exposures. And then all of those exposures --  
12 some proportion of those accumulate to form your dose.

13 Why would I -- you know, it just wouldn't make sense  
14 for me to say that when it's so obvious.

15 Q When you talk about dose, you're talking about risk;  
16 right?

17 A You can.

18 Q Dose-response diseases are -- as you increase the  
19 dose, you increase the risk; correct?

20 A Sure. And that happens as you get the multiple  
21 exposures that accumulate to produce that dose.

22 Q And risk is different than causation?

23 A Sure, sure. Here you have a -- here you have a  
24 hundred percent risk --

25 Q Right. So it's a hundred percent risk. So it's a

1 different question as to whether you have an increased  
2 risk and what caused the disease; correct?

3 A You know, I don't think it makes any sense to try to  
4 separate those. Because as the person's dose increases,  
5 it increases their risk, as we just talked about. Whether  
6 I said that, specifically, in a paper or not, it increases  
7 the dose. And some people reach that hundred percent  
8 point. And that's what we have here.

9 Q But when you want to talk about what exposure,  
10 actually, caused the disease, medicine hasn't really  
11 figured it out as to which fiber caused it, which actual  
12 breath of asbestos caused it. They don't know. So it's  
13 an assumption that they make; correct?

14 A Well, it's exactly the analogy I gave you for  
15 cigarette smoking, exactly. Which brand would you choose?  
16 You can't do that.

17 And if you do an experiment like I have and other  
18 investigators do where you have cells in a dish and you  
19 add fibers on one day and you add fibers on the next day,  
20 you know, which fiber caused the genetic damage? You  
21 know, it's the same -- it's exactly the same issue.  
22 Nobody is trying to separate out an individual fiber.  
23 Because they all contribute to causing that person's  
24 disease.

25 Q Because it isn't important to you which fiber caused

1 it. It's important to you that it occurred?

2 A I'll agree with that.

3 Q And the same thing would go to the development of the  
4 disease. You don't care -- it's not important to you what  
5 his dose was. It isn't important to you to know what  
6 products he was exposed to. It's important to you to know  
7 that there was asbestos somewhere and he got disease?

8 A Yeah. I mean, my role here, and it has been in  
9 science, is to understand the process. And that's what I  
10 tried to explain to the jury.

11 Q And the overall tenor of your research isn't does  
12 asbestos, or does a product, or does anything else give  
13 off anything to cause disease. Your -- the tenor of your  
14 research is more on the -- what happens at the cellular  
15 level?

16 A I agree.

17 Q You don't -- it doesn't matter to you if it's a -- if  
18 he was exposed for a day, a week, or a year. That part  
19 has nothing to do with your research?

20 A I agree.

21 Q And it has nothing to do with your research about  
22 whether something was a substantial cause or any other  
23 cause. That really has nothing to do with anything you've  
24 researched?

25 A Well, we talked about substantial. I mean, I -- it's

1 substantial if it adds to the process that causes disease.

2 But that's not the scientific term.

3 Q Right. And that's not -- that's not anything that

4 you -- that's not what you're researching. You're

5 researching what happens at the cellular level. You're

6 not concerned with who did what?

7 A I agree with you.

8 Q And you've never studied who did what?

9 A I agree with you.

10 Q And you don't know anything about whether John Crane

11 gaskets that they sold did anything; right?

12 A I don't know that. And I certainly didn't testify

13 about that.

14 Q But I just want to make sure the jury is clear that

15 that isn't what you're here to talk about. You're not

16 here to talk about John Crane doing anything, John Crane

17 causing anything. You're here to talk about Mr. Seay had

18 mesothelioma, and it was caused by asbestos?

19 A Yeah. And I didn't talk about any of those things.

20 But I will tell you that if it's clear that a product --

21 whatever their product is releases asbestos at levels

22 above background, then it contributes.

23 Q I just have one final question. It's just an

24 intellectual curiosity. And you used the smoking example.

25 If you're breathing asbestos in at background -- and you

1 testified that we have millions or billions of fibers in  
2 our lungs -- why don't those contribute?

3 A Well, I can't say that they don't. It's just that  
4 what we know is that at that level, that's not sufficient  
5 in and of itself to measure any increased risk. So  
6 that's -- that's -- I didn't say they don't contribute.  
7 I'm saying that you can't in and of themselves show that  
8 they cause risk.

9 Q Why don't the -- why don't those millions and  
10 billions of fibers in your lungs add to your cumulative  
11 dose that you just talked about that you can't take  
12 anything out and everything causes it, increases the  
13 risk -- why don't those millions or billions of fibers  
14 increase the risk?

15 A Okay. Because there's not enough to increase the  
16 risk, apparently. In other words, I'm not saying they  
17 don't increase the risk. So -- so if you -- it's like  
18 this. If -- I told you that you can get a billion fibers  
19 into a thimble; right?

20 So if you took my lungs or yours and you spread them  
21 out across the floor and you took a pepper shaker and  
22 sprinkled them around the floor, you can get millions of  
23 grains of pepper. I mean, but that's not enough to cause  
24 disease. That's the point.

25 But, sure, they're there. And the background fibers

1 are there. And it doesn't mean they don't -- they're not  
2 part of the cumulative dose. They are.

3 But if you start adding -- if you start looking at  
4 the fiber dose from a product, like an industrial exposure  
5 where you get .1 or 5 fibers per cc, whatever, we know  
6 that that's enough to cause disease.

7 So why are we talking about accumulation of the  
8 background, which does not cause disease?

9 MR. TIVIN: Okay. No further questions.

10 REDIRECT EXAMINATION

11 BY MR. PANATIER:

12 Q Okay. So have you heard of the concept of a trick  
13 question --

14 THE COURT: Hold on one second.

15 MR. COLLIER: Your Honor, we don't have any  
16 questions.

17 MR. PANATIER: Okay. They told me they didn't have  
18 any questions.

19 THE COURT: I'm sorry. I didn't know that.

20 Go ahead.

21 BY MR. PANATIER:

22 Q You've heard of the concept of a trick question;  
23 right?

24 MR. TIVIN: Objection to form.

25 THE COURT: Sustained.

1 BY MR. PANATIER:

2 Q All right. So you were asked about, have you heard  
3 about epidemiological studies of insulation workers?

4 A Right.

5 Q And that they were shown to be at an increased risk  
6 for mesothelioma by virtue of working with insulation;  
7 right?

8 A Right.

9 Q And that certainly is in the literature; is that  
10 fair?

11 A Yeah, of course.

12 Q Okay. And then you were asked, well, are there any  
13 epidemiological studies of gasket workers; right? Do you  
14 recall that?

15 A I was.

16 Q Do you know whether or not there is any trade that  
17 exists that, I'm a gasket worker, that's all I do?

18 A I don't know that. And I, also, didn't know if  
19 anything like that had been studied, no.

20 Q Okay. And you were, also, asked a question -- let me  
21 just tip that over.

22 From a scientific perspective, you said that, look,  
23 it's a cumulative dose disease. The fibers that are  
24 inhaled at an occupational level, they contribute; right?

25 A Right.

1 Q Okay. And you were asked, well, you don't know,  
2 specifically, what product they came from; right?

3 A Right..

4 Q Now, you've looked at a lot of asbestos under the  
5 microscope; fair?

6 A Sure.

7 Q And let's say you look at it. Let's say you zoom in  
8 really, really far, really far -- millions of times,  
9 hundreds of thousands of times, whatever, and you see an  
10 asbestos fiber; right?

11 A Right..

12 Q Have you ever seen this?

13 A I can't see him, but I know he's writing.

14 Q I'm going to show you.

15 A I know you're writing somebody's name on there.

16 Q Have you ever seen that?

17 MR. TIVIN: Objection to form. Argumentative.

18 THE COURT: Overruled.

19 THE WITNESS: No, of course not. They all look the  
20 same, act the same. The lung does not discriminate.  
21 Let's put it that way. The lung does not -- the lung  
22 can't tell where a fiber came from.

23 MR. PANATIER: May I see your book?

24 MR. TIVIN: Yeah.

25 MR. PANATIER: Thanks.

1 BY MR. PANATIER:

2 Q And you were shown the Selikoff [inaudible] from  
3 1978?

4 A Right..

5 Q When you publish a -- paper, in a scientific paper --  
6 I've got some laying around. But sometimes you see a  
7 number after a sentence?

8 A Sure.

9 Q What is that?

10 A Well, it's, typically, called a reference. It means  
11 the -- that's where you find the information that I just  
12 stated.

13 Q Okay. And so one of the things that you were asked  
14 about was the statement in this 1978 book that was a -- it  
15 was a table that they put in here about different --  
16 different products; right?

17 A Right..

18 Q Okay. And one of those was -- I'll zoom in a little  
19 bit -- high temperature jointing and packing materials.  
20 And I'll ask you to assume -- let's just assume, for the  
21 question, that jointing means gaskets. Okay.

22 A Yeah, yeah.

23 Q And here, they said, No health hazard in forms used  
24 in shipyard applications. Does it say what, specifically,  
25 they're talking about?

1 A No.

2 Q Does it say whether or not they're just dropping in a  
3 new gasket or grinding one off?

4 A I didn't see anything like that.

5 Q In fact -- and, lastly, do you see one of those  
6 little numbers?

7 A I didn't see any numbers. I didn't see any  
8 references.

9 Q Okay. And then let me take you to the page before.  
10 Well, this is Page 463 or 464, right at the top, because  
11 of the manifold ways in which asbestos is processed or  
12 used, the specific methods appropriate to control will  
13 vary with the situation.

14 And my question for you is, sir, you already said you  
15 weren't an industrial hygienist. But, obviously, the  
16 amount of asbestos that's released depends on what the  
17 worker is doing; is that fair?

18 A Of course.

19 Q Okay. And then for everything -- all of the science  
20 you talked about with this jury, have you published on  
21 every bit in the peer-reviewed literature of what you  
22 talked about today with this jury?

23 A Yes. Although I did say that I didn't do the studies  
24 that analyze the lymph nodes. Those are colleagues.  
25 Those are colleagues. And I reference those kinds of

1 papers all the time.

2 MR. PANATIER: All right. Thank you, sir.

3 No further questions.

4 THE WITNESS: You're welcome.

5 RE CROSS-EXAMINATION

6 BY MR. TIVIN:

7 Q Did you see any -- just one question. It says, Made  
8 by John Crane. And we're definitely John Crane, Inc. Did  
9 you see any that said John Crane, Inc., on there?

10 A No.

11 MR. TIVIN: Okay. I don't have anything else.

12 MR. PANATIER: May the witness be excused?

13 THE COURT: All right. Thank you, Dr. Brody.

14 THE WITNESS: You're welcome.

15 THE COURT: Okay. Thank you.

16 Ladies and gentlemen, we're going to go ahead and  
17 break for lunch. Just be back in the jury room at 1:15.  
18 And we'll get back underway at 1:15.

19 Thank you.

20 Don't talk about the case. Don't do any outside  
21 investigation, and continue to keep an open mind.

22 (WHEREUPON, the jury was excused from open court at  
23 approximately 12:03 p.m.)

24 THE COURT: Okay. See you back at 1:15.

25 MR. TIVIN: Your Honor, I have a quick question. The

1. only thing we're doing after the -- well, the first thing  
2. we're doing after the break is playing the video.

3. THE COURT: Okay.

4. MR. TIVIN: Would I have permission to possibly not  
5. be in the courtroom during a portion of the video so I can  
6. accomplish some other work on this case if I have someone  
7. else representing John Crane that's sitting at the table?  
8. I would be in the hallway.

9. MR. PANATIER: I don't care. It's fine with me, Your  
10. Honor.

11. THE COURT: You're not going to get lonely?

12. MR. PANATIER: I'm not what?

13. THE COURT: You're not going to get lonely?

14. MR. PANATIER: I do have those tender moments, Your  
15. Honor.

16. THE COURT: That's fine. That's fine.

17. MR. TIVIN: I just wanted to ask the Court's  
18. permission before I --

19. THE COURT: That's fine.

20. MR. TIVIN: -- did anything.

21. THE COURT: Okay. We'll see you back at 1:15.

22. (WHEREUPON, a lunch break was taken.)

23. (WHEREUPON, Court's Exhibit No. 1 was marked for  
24. identification and admitted into evidence.)

25. THE COURT: I apologize. I got delayed.

1 Anything before we bring the jury in?

2 MR. PANATIER: Just the video that is going to be  
3 played, we have the transcript of the exact testimony  
4 that's going to be played. We'd like to mark that as --  
5 it's been marked as Court's Exhibit No. 1. And we'd just  
6 attach that to the record so that the court reporters  
7 don't have to take it down.

8 THE COURT: Okay.

9 MR. TIVIN: No objection, Your Honor.

10 THE COURT: It's not going back to the jury?

11 MR. PANATIER: This is not going back to the jury.  
12 It's just the transcript.

13 THE COURT: Thank you.

14 You can bring the jury on in.

15 (WHEREUPON, the jury came into open court at  
16 approximately 1:39 p.m.)

17 THE COURT: Somebody is interested in taking notes,  
18 apparently.

19 Okay. It's perfectly fine.

20 Just remember, if you want to take notes, we'll be  
21 glad to provide you with the paper and a pen. Just  
22 remember that part of your job is to assess the  
23 credibility of the evidence. And don't get so engrossed  
24 in taking notes that you don't pay attention to the  
25 witnesses while they're on the stand.

1           Your notes can't be shared with others. And they  
2           certainly don't trump anybody's memory who didn't take  
3           notes.

4           But you can take them, sure. If anybody else wants  
5           to, we can give you pen and paper.

6           All right. Yes, sir, Mr. Panatier.

7           MR. PANATIER: All right. Your Honor, at this time,  
8           the Plaintiffs call the video -- we call Dennis Seay by  
9           video deposition.

10          THE COURT: All right.

11          MR. PANATIER: This is from January 17th, 2014. It  
12          includes our excerpts and those that the Defendant wanted  
13          to play -- the Defendants wanted to play.

14          (WHEREUPON, Court's Exhibit No. 1 was played in open  
15          court.)

16          MR. PANATIER: Your Honor, that's the end of the  
17          video deposition. And I understand that this is probably  
18          a good time for a break. There's some stuff to read in,  
19          too.

20          THE COURT: All right. We'll take about a 10-minute  
21          break.

22          Thank you.

23          (WHEREUPON, the jury was excused from open court at  
24          approximately 3:07 p.m.)

25          THE COURT: Yes, sir.

1 MR. TIVIN: I just happened to be standing here, Your  
2 Honor, but I do have a question.

3 THE COURT: Okay.

4 MR. TIVIN: Would you -- do you want -- we're going  
5 to start reading the depositions. Do you want me to read  
6 from here or there, or do you care?

7 He's, obviously, going to be the witness.

8 THE COURT: Who?

9 MR. TIVIN: Simon is going to be in the witness.

10 THE COURT: Oh, okay.

11 MR. TIVIN: We're reading. So did you want me to be  
12 at the podium, or from the table, or do you care? Because  
13 this is going to be long. I mean, I'll stand at the  
14 podium. It doesn't matter to me.

15 THE COURT: And this is the deposition of?

16 MR. TIVIN: Mr. Seay.

17 MR. YOUNG: Mark, I think you should do it from the  
18 podium, but I'm not doing it.

19 MR. TIVIN: Then you, by all means, stand up.

20 Here is our tentative -- do you want a copy of the  
21 transcript?

22 THE COURT: It doesn't matter to me. So whatever you  
23 want to do.

24 MR. TIVIN: Okay. Do you want Simon -- Mr. Purnell  
25 in the witness box now, or do you want to call him up?

1 I just -- I've never been in your courtroom, Your  
2 Honor. And some judges handle it differently.

3 THE COURT: It's not any big deal. He can come on  
4 up.

5 Are you ready for the jury?

6 And this one is how many pages?

7 MR. TIVIN: A lot. It's every page of that.

8 THE COURT: Do you know how long it's going to take?  
9 Do you have any idea?

10 MR. TIVIN: We've -- I just -- we just got the final  
11 version of it this morning. I believe it's going to take,  
12 at least, the rest of the afternoon.

13 THE COURT: Okay.

14 MR. YOUNG: Shorter than if I was reading it.

15 THE COURT: You think so. I don't know. The slowest  
16 would probably be me reading it.

17 (WHEREUPON, the jury came into open court at  
18 approximately 3:25 p.m.)

19 THE COURT: All right. Ladies and gentlemen, my  
20 understanding is we're going to have some additional  
21 testimony from Mr. Seay's deposition.

22 I just want to instruct you, in case you don't  
23 already know, that a deposition is simply an out-of-court  
24 statement by a witness that's made under oath before  
25 trial. It is admissible under the rules of evidence and

1 the law, and certainly to be given the same weight as live  
2 testimony.

3 So with that, we'll proceed.

4 And, yes, sir, Mr. Tivin.

5 MR. TIVIN: Thank you, Your Honor.

6 (WHEREUPON, the deposition of Mr. Dennis Seay was  
7 read into the record by Mr. Mark Tivin asking questions  
8 and Mr. Simon Purnell answering.)

9 EXAMINATION

10 Q Let's just start at the beginning. What is your full  
11 name, Mr. Seay?

12 A Dennis Delane Seay.

13 Q All right, sir. So when you left school in the  
14 eleventh grade, what did you do?

15 A I went to work at the textile shops.

16 Q And in the upstate up here, there were lots of  
17 textile facilities?

18 A It was a machine shop. We filled rolls and stuff  
19 like that for the textile industry.

20 Q Sure. Now, was this attached to a single mill, or  
21 was this something that served the textile industry  
22 generally?

23 A It just served the textile generally, like rolls, if  
24 somebody wanted some rolls. I was a machinist -- a  
25 machinist helper when I went to work there. But at about

1 six months, they reclassified me as a machinist. And then  
2 I was on my own from then on as far as building rolls, or  
3 whatever. Mostly metal work.

4 Q Now, let me see. What year was it when you got out  
5 of high school, in the eleventh grade?

6 A I think it was around -- I want to say '61 or '62.

7 Q '61 or '62. All right, sir. Was this -- we got a  
8 work history sheet that your lawyers filled out for us.

9 A Yes, sir.

10 Q I think maybe there's an error on it. It started at  
11 a place called Black Manula, which I assume is Black  
12 Maneular?

13 A That is Black Maneular. It used to be the old  
14 textile shops. Black Maneular bought it out and changed  
15 it to Bristol Metals.

16 Q Yes.

17 A Black Maneular owned Bristol Metals. So they changed  
18 the name of it to Bristol Metals. And they switched over  
19 from the textile business to building tanks and stuff like  
20 that, stainless steel tanks.

21 Q All right, sir. So did this section of Black  
22 Maneular or the machine shop, did they have a specialty?  
23 You mentioned they had -- they made the big rolls?

24 A Right.

25 Q Describe the size of those rolls, because I'm not

1       sure most of us know.

2       A     They would range anywhere from 3 inches to 20 inches  
3       in diameter.

4       Q     And they were part of the textile mill operations  
5       where they, actually, roll out the cloth or -- and the  
6       yarn, or whatever they're making?

7       A     Right. Right.

8       Q     How long did you stay there? Well, I'll just ask  
9       you. According to our work history that we got, they say  
10      that you were there from '62 to either '66 or '67.

11      A     Right.

12      Q     Does that sound right?

13      A     Uh-huh.

14      Q     Do you remember when you left?

15      A     I left there around that time and went to -- I worked  
16      at Precision Bearing twice. I left there and went to  
17      Precision Bearing, and went there as a machinist and ran a  
18      lathe there up until '69. And then I went to Hoechst  
19      Fibers.

20      Q     So then you went to Precision Bearing '67 -- maybe  
21      the tail end of '66 to '69. And, again, you're primarily  
22      in the machine shop?

23      A     Right.

24      Q     And you're working on a lathe?

25      A     Right.

1 Q What were you, actually, making?

2 A The same thing, rolls.

3 Q Still making rolls?

4 A Right.

5 Q All right. So, again, when you're at Precision  
6 Bearing from '67 to '69, is there any asbestos exposure?

7 A No.

8 Q Then when you left Precision Bearing in '69, that's  
9 when you went to work at Hoechst Celanese?

10 A I went to Hoechst Celanese.

11 Q And the -- who were you working for?

12 A Daniel's, Daniel Construction.

13 Q You got on with Daniel's?

14 A Right.

15 Q All right, sir. How did you get that job?

16 A I just went over there and applied for it. At that  
17 time, it was a good bit higher-paying job. But I had to  
18 go to work as a millwright helper. But I worked myself up  
19 within about six months to millwright.

20 Q All right. And, according to our work history  
21 sheets, you were there at Hoechst Celanese from about 1969  
22 to about 1978. So close to 10 years, nine years, let's  
23 say.

24 A Right.

25 Q Now, what were you doing out at Hoechst Celanese?

1 A Performing maintenance work. That was if something  
2 broke down, I would fix it on regular routine PM  
3 maintenance work on lines.

4 Q "PM" being preventative maintenance?

5 A Right.

6 Q All right, sir. So was there any new construction  
7 going on out there at Hoechst Celanese?

8 A Yes.

9 Q Were you involved in that?

10 A Not really. There was -- while I was there, they  
11 built two new lines, 13/15. But I wasn't involved in the  
12 construction of it.

13 Q Okay. You were in maintenance for the existing  
14 plant?

15 A Right, the old plant.

16 Q Sure. And what was the old plant making?

17 A Fiber.

18 Q So -- so it's --

19 A Polyester.

20 Q It's just a pure synthetic fiber plant?

21 A Right.

22 Q All right. Did they have machine shop facilities  
23 there?

24 A Yes, they did.

25 Q And was that your primary job, based on your --

1 A No. I worked out at the machine shop on several  
2 jobs, but that wasn't my primary job. My primary job was  
3 a millwright out in the field.

4 Q And as a millwright, at this point, when you were  
5 working for Daniel, Daniel is a nonunion, right?

6 A Right.

7 Q So as a millwright -- as a nonunion millwright with  
8 Daniel out there at Hoechst Celanese, what kinds of  
9 equipment would you have been maintaining?

10 A Just about any and everything in the whole plant from  
11 the basement -- from the beginning of a -- they made  
12 chemicals at the DMT plants and the chips. And then  
13 they'd load the chips over to Hoechst Celanese. From that  
14 point on to the finished product on the stretch line was  
15 our work area.

16 Q So you were not over at the DMT plant, but you were  
17 as soon as the chips got to Hoechst Celanese?

18 A Right. But we would work at the DMT plant on  
19 shutdowns. They had shutdowns about once a year.

20 Q It was --

21 A They would pull us -- some of us workers out of  
22 Hoechst Celanese and work the shut-out.

23 Q Sure. And were those shutdowns always carefully  
24 timed to ruin your holidays?

25 A Yeah, most of the time.

1 Q They even ran them on 4th of July or Christmas;  
2 right?

3 A Christmastime.

4 Q Now, so during the period that you were out there at  
5 Hoechst Celanese doing maintenance work, not really in the  
6 DMT area except for shutdowns, how many workers were in  
7 there from Daniel, rather than Hoechst Celanese?

8 A Total number of workers back in the early '70s when,  
9 you know, the fiber industry was booming, there were  
10 probably 500 maintenance workers, about 4,000 production  
11 workers.

12 Q All right. And were all -- the 500 maintenance  
13 workers, were they all Daniel?

14 A Yes.

15 Q Were there any Hoechst Celanese employees that were  
16 maintenance?

17 A No.

18 Q They were all production?

19 A Right.

20 Q So they pretty much contracted out their entire  
21 maintenance --

22 A Right.

23 Q -- program to Daniel?

24 A Everything.

25 Q Okay. And out of the 500 maintenance workers, how

1 many were millwrights like you?

2 A Oh, probably -- a rough estimate would be probably  
3 350. And then the rest would have been fab shop workers  
4 and machinists.

5 Q So they had a separate valve shop, sort of more  
6 specialized?

7 A Well, on the valves or on mostly anything, they had a  
8 PIV and valve shop. I worked in there probably eight  
9 months by myself.

10 So most of the work was performed by each individual.  
11 You go in -- you go in this morning. If they got a line  
12 down, they pull PM on that line. And then whatever job  
13 was assigned, that's where you went and done.

14 If it was repair this line, and you see three or four  
15 valves on there that need to be replaced or the packing  
16 and all replaced, then you pull the valve out and you do  
17 that.

18 Q That's your preventive maintenance?

19 A Right. And then you'd proceed on down the line  
20 catching whatever you had to do.

21 Q And if you had gone out to that Hoechst Celanese  
22 facility in those days in the boom years, how many acres  
23 would it be?

24 A Oh, I'd say they probably had -- an estimate, I'd say  
25 they had well over 100 acres in that facility, if you

1 count all the way down to the river. Because their  
2 property line went all the way down to the Pacolet River,  
3 which is a good ways from Hoechst Fibers.

4 Q So the building site must have been enormous?

5 A It was.

6 Q All right. So we were talking -- before we kind of  
7 got off track, we were talking about the buildings out  
8 there. We got the filament building. We got the poly  
9 building. You said you had your area, which was -- what  
10 was the name?

11 A Which was the staple, staple A and B, and then the  
12 stretch line.

13 Q So that was all together under one roof, staple A and  
14 B and stretch line?

15 A Right.

16 Q All right, sir. In addition to the filament  
17 building, staple stretch building, and the poly building,  
18 any other buildings?

19 A Well, you had the DMT plant.

20 Q The DMT plant, which you worked on shutdowns?

21 A Right. And I worked in the poly building a couple of  
22 times on shutdowns, not all that much, just some. That  
23 was putting packing in reactors.

24 Q Did you ever work in the filament building?

25 A No. Huh-uh.

1 Q So never worked in the filament buildings. Your main  
2 area is what we're calling the staple stretch building?

3 A Right.

4 Q A couple times, on shutdowns, you were at the poly  
5 building. And maybe once a year you'd be in the DMT  
6 build -- plant for a shutdown?

7 A Right.

8 Q Any other buildings out there? Is there an office  
9 area separate?

10 A Well, you had what we called the white house, where  
11 all the engineers and all stayed at up on the hill.

12 Q The white house with the engineers. Did you ever  
13 work up there?

14 A No. But I've been up there several times.

15 Q Just going up to talk to an engineer about some  
16 issue?

17 A Right.

18 Q Are there any separate pumping stations or pump  
19 buildings?

20 A Yeah. But I wasn't involved. And you had some main  
21 pumping systems at different locations that was out of my  
22 work area. So I really wasn't involved with that.

23 Q We'll call them pump buildings, but you didn't work  
24 in them. Any other buildings that you can think of out  
25 there that are in this pretty sizable plant?

1 A Not that I can recall, other than the supply room.  
2 We had a pretty huge supply room.

3 Q So there's the separate centralized supply area?

4 A Right.

5 Q Tell me about that. Was that run by Hoechst Celanese  
6 or Daniel?

7 A Hoechst Celanese.

8 Q So the supply building -- and did it stock supplies  
9 for everything out there at the plant?

10 A Everything.

11 Q How'd that work?

12 A Well, that's like if you're working out on the line,  
13 you're working on a PIV or a valve, and, say, it's a Crane  
14 valve and you needed a set of gaskets and packing for that  
15 particular valve, you get your number off the valve and  
16 you go up to the supply room and give them that number.  
17 And they go back there and get you a kit.

18 Or if you wanted to replace the whole valve, they get  
19 you a new valve, or you would get a kit and you would  
20 replace the packing, or whatever. That's how it worked.

21 On everything else that's on your gearboxes that's on  
22 everything, they kept the inventory of spare parts for  
23 just about every part in that whole plant that was in the  
24 production line.

25 Q Because you don't want to have to -- you don't want

1 to have any downtime?

2 A They got that five, six, \$8 million worth of spare  
3 parts out there.

4 Q Anyway, so you're assigned to different people doing  
5 different tasks around the plant during the six-month help  
6 period. What kind of -- what different kinds of jobs did  
7 you learn how to do?

8 A We were -- just everything concerning the plant site  
9 that I worked in. No person had a particular job that he  
10 did every day. I mean, you were all over that plant.

11 Whenever a breakdown was or a PM being performed,  
12 that's where you would be working. You would like to be  
13 working on valves today. You'd like to be working on  
14 gearboxes tomorrow, PIVs the next day. You like to be  
15 working on sunflower wheels, anything, anything concerning  
16 the plant.

17 Q So you had to be capable of working on like gear  
18 machinery, gearboxes, transmissions, chains, pulleys,  
19 rollers, valves, piping systems, all those things?

20 A Uh-huh.

21 Q That's a "yes"?

22 A Yes.

23 Q But, occasionally, you said you would pick up a new  
24 piece of equipment from the storeroom and put it in;  
25 right?

1 A Right.

2 Q And that would be to replace something that was  
3 just -- there just wasn't time to repair it?

4 A Right.

5 Q For some equipment, maybe even for most, the  
6 storeroom would have a stock of replacement equipment;  
7 right?

8 A Right.

9 Q Now, was the stuff in the storeroom that was the  
10 replacement equipment, had that been refurbished by Daniel  
11 folks out there, or was it brand-spanking new from the  
12 factory?

13 A New from the factory.

14 Q So they just ordered new parts or new equipment and  
15 just stacked it?

16 A Right.

17 Q And Hoechst Celanese did all the ordering?

18 A Yes.

19 Q And there was like a Hoechst Celanese employee who  
20 kind of ran the supply room?

21 A Yes.

22 Q Do you remember his name, by any chance?

23 A No, I don't. He was from Germany, the fellow that  
24 ran the supply room. And I can't think of his name right  
25 now.

1 Q Okay. And when you went to the supply room, was it  
2 almost like a store where you go up to the counter?

3 A Right.

4 Q And you would tell them that you want -- what you  
5 wanted, and he would go in the back and get it for you?

6 A Yes, sir.

7 Q When you were first learning the ropes when you were  
8 out there as a helper out there at Hoechst Celanese, we  
9 talk about -- we've talked about millwright. And we've  
10 talked about people who worked in the fab shop?

11 A Yes, sir.

12 Q Who would fabricate metal, and piping, and such? Was  
13 there an insulator shop?

14 A There was an insulator group.

15 Q Were they Daniel, as well?

16 A They were Daniel employees.

17 Q And did they have their own shop?

18 A Yes.

19 Q Do you know any of those guys? Did you ever work  
20 with them?

21 A Well, I was around them, but I didn't work with them.

22 Q And these are the people who had been insulating  
23 those pieces of pipe or whatever out there that needed to  
24 retain heat; right?

25 A Yes.

1 Q So was some of -- so was -- some or all the pipe out  
2 there at Hoechst Celanese, was it insulated?

3 A All of your pipe was insulated, your chill water  
4 pipe, your DOWTHERM line and your steam lines, and all  
5 that was insulated.

6 Q So you did have some DOWTHERM piping?

7 A Right.

8 Q Were you ever involved in taking a vat apart?

9 A Yes.

10 Q What was that kind of like -- was that kind of like I  
11 was discussing before? You've got DOWTHERM on the  
12 outside -- well, DOWTHERM is -- is in the pipe. And then  
13 there's some -- there's another pipe that goes inside of  
14 it that carries the --

15 A No.

16 Q This is just purely a pipe that carries DOWTHERM?

17 A Right.

18 Q Where was the DOWTHERM being pumped to?

19 A It was being distributed to -- you had deicers. You  
20 had reactors with melted polymer in it. It was being  
21 distributed to some of those. It was being distributed to  
22 all of your spin beams. That's where you pop product out.  
23 It goes through the deicers. It comes back to your spin  
24 beam and goes down. And that's when you turn it into a  
25 rope fiber stage.

1           And the spin beam was heated with DOWTHERM. And  
2           that -- your polyment went through packs and comes out  
3           those little-bitty holes and spaghetti-like strings, and  
4           comes down in this cooler, and run over a finish process,  
5           and then over the sunflower wheels into the tubs into the  
6           stretch line.

7           Q     Understood. So you've got water lines. You've got  
8           steam lines. You've got DOWTHERM lines. You've got  
9           process piping. And the insulators would have insulated  
10          these lines?

11          A     Yes.

12          Q     Did you ever help insulate any piping?

13          A     No. But I tore a lot of it off.

14          Q     And would that be when you're doing preventive  
15          maintenance on that line?

16          A     Yes.

17          Q     And then when you finished doing preventive  
18          maintenance on that line, the insulators would come behind  
19          you and reinsulate it?

20          A     Yes, most of the time. If you had to tear -- most of  
21          the time, then they insulated. And they insulate it all  
22          the way up to the flange. And that would cover your bolts  
23          and nuts.

24                 Then you would have to chisel that stuff off and  
25          brush it off to even get a wrench on the nuts itself to

1 loosen the flange. Like if you was replacing the gasket,  
2 you would have to tear it back so far to get your wrench  
3 and all in there.

4 So they would come back and probably sort of repair  
5 what damage you did to the old insulation.

6 Q All right, sir. Do you have any idea whether any of  
7 the insulation that was used out there at Hoechst Celanese  
8 was asbestos-containing?

9 A I can tell you all of your -- everything, except the  
10 chill water, was asbestos.

11 Q All right, sir. When you left Hoechst Celanese in  
12 '78, you went back to Precision Bearing?

13 A Yes.

14 Q And when you went back to Precision Bearing in '78,  
15 you went back to being a machinist, correct?

16 A Right.

17 Q What caused you to leave?

18 A I just got tired of the heat and dust. See, over  
19 there at Hoechst, you had grated floor, uniform flooring.  
20 It gets up to 115, 120 degrees. And you're working up  
21 there in that heat and dust and junk coming up, and you're  
22 sitting there burning up. I just got tired of that and  
23 went back to Precision Bearing and finished out my work  
24 career there.

25 Q And you worked at Precision Bearing, again, from --

1 the second, from '78 to 2008?

2 A Until I retired. And I was working there until I  
3 come down -- I was working there part-time when I come  
4 down with this.

5 Q Okay. During your second time at Precision Bearing  
6 from '78 to 2008, do you know of any asbestos exposure you  
7 would have had?

8 A No. We had nothing there that was asbestos, not  
9 anything.

10 Q This was just metal shavings?

11 A Just metal shavings. We had a lot of CNC machinery,  
12 and we produced chips.

13 Q All right, sir. Now, is it your impression that the  
14 only place that you had any asbestos exposure during your  
15 career would have been at Hoechst Celanese?

16 A Yes, sir.

17 Q Okay. And during the entire time that you were out  
18 at Hoechst Celanese, did you take your -- not take -- did  
19 you get your paycheck from Daniel or Hoechst Celanese?

20 A From Daniel.

21 Q So, as a Daniel employee, could Hoechst Celanese tell  
22 people -- could Hoechst Celanese people tell you what to  
23 do?

24 A They probably could, but I was employed with Daniel.

25 Q All right, sir. Did you have safety meetings?

1 A Yes.

2 Q And they -- and were they with Daniel people or  
3 Hoechst Celanese people?

4 A Daniel people.

5 Q And so how often did you all have these safety  
6 meetings?

7 A About every two, three weeks.

8 Q Two, three weeks. And were they just first thing in  
9 the morning kind of?

10 A Yes.

11 Q What kinds of things would be covered?

12 A Mostly hard hats and glasses.

13 Q Steel-toed shoes?

14 A That was, basically, it, and cleaning up your area  
15 when you got done working, stuff like that.

16 Q Did you have safety meetings or safety instruction  
17 that would have talked about lock-out/tag-out for your  
18 lines?

19 A Yes. We had that, yeah.

20 Q And this was to make sure that you never opened a  
21 line that had live product running through it?

22 A Right.

23 Q And -- all right. So when you arrived at the  
24 worksite out there at Hoechst Celanese, was there a  
25 special place that the Daniel folks went to check in, or

1 did you just go in with the rest of them?

2 A We had a time clock in a specific area that we  
3 reported to, and got our job duties for that day. We had  
4 a time clock there that we punched in.

5 Q So you would go in, you'd punch in, and who would  
6 give you your job duties?

7 A Most of the time, the Hoechst supervisor would give  
8 it to either the lead man or give it to us direct, where  
9 to go work for the day.

10 Q So, at this point, there was, actually, a Hoechst  
11 Celanese management guy who was identifying what needed to  
12 be done that day; correct?

13 A Yes, sir.

14 Q Was there anyone -- was there anywhere in this plant  
15 that required people to wear respirators or masks to  
16 protect them from fumes or dust?

17 A Not that I know of.

18 Q Did you ever see respirators or masks available?

19 A No.

20 Q Did you ever see insulators ever wearing masks?

21 A I seen a whole lot of insulating going on, but I  
22 never did see anybody really wearing a mask.

23 Q While you were out there, your time at Hoechst  
24 Celanese was right during the period when OSHA came in and  
25 they started having OSHA requirements for job sites. Do

1 you remember OSHA being a part of your latter years at  
2 Hoechst Celanese?

3 A No. I don't recall OSHA. I don't recall OSHA ever  
4 meeting with us in any form or fashion.

5 Q Okay. That's fine.

6 A They might have come through the plant while I was  
7 working there in my latter years, but -- just looking, you  
8 know. But other than that, no.

9 Q Did you ever hear of any OSHA violations out there?

10 A Not that I know of.

11 Q In any of your safety meetings, did Daniel ever tell  
12 you about OSHA requirements that were new?

13 A Not that I know of.

14 Q At any time when you were working out there, did  
15 anybody -- whether it's an outside person, or whether it's  
16 a Hoechst Celanese, or whether it's Daniel, did anybody  
17 talk to you about the dangers of asbestos?

18 A No.

19 Q It never came up in a safety meeting?

20 A Never.

21 Q And in the late '70s, '74 to '78, let's say, you  
22 know, the last part of your time out there, do you  
23 remember any changes in the way the insulators did their  
24 job?

25 A Not really. I didn't -- I don't recall of any

1 changes myself.

2 Q Okay.

3 A I seen them -- like I say, I seen them out in the  
4 workshop insulating. And I never seen no respirators or  
5 nothing on them.

6 Q Do you remember the insulators using pipe covering  
7 that looked like -- we call them half-rounds or half-moon  
8 shapes, that's two halves split down the middle, and it  
9 fits around the pipe?

10 A Not very often.

11 Q Not very often?

12 A Maybe once or twice.

13 Q Okay. Do you remember seeing them use insulating mud  
14 or cement that mixed up in a bucket, or a pail, or a flap  
15 and trowelled on?

16 A Yes. I seen them do that.

17 Q Do you remember ever seeing them use like a cloth to  
18 wrap around a pipe?

19 A -Yes.

20 Q Do you happen to know if it was an asbestos cloth?  
21 Did people call it a cloth, or anything?

22 A I'm not sure. But I'm almost one hundred percent  
23 sure it was asbestos. At least, that's what the  
24 insulators called it.

25 Q That's what they called it, asbestos cloth.

1 All right, sir. Do you remember any other kinds of  
2 insulation product besides the half-rounds, the cement  
3 mud, and the cloth?

4 A Not really.

5 Q That's fine. When you said that you had to tear off  
6 insulation when you were working on preventive maintenance  
7 for a pipeline, you said that you had to tear it off where  
8 the insulators had come all the way back up to the flange,  
9 where you had to break the line, and that insulation would  
10 cover the bolts and you had -- that you had to get to;  
11 right?

12 A Yes.

13 Q So you chop it back a few inches so you could get  
14 your wrench in?

15 A Yes.

16 Q The stuff you were taking off, was that cement or  
17 mud-type?

18 A Some of it was and some of it -- up to the point --  
19 it was sort of like it had cloth on it, you know. And  
20 then I'd have to take a hacksaw and, actually, go around  
21 it and tear it off, and then brush the threads and the  
22 bolt heads off where you could get a wrench on it.

23 Q Understood. So it'd be a -- some of the cloth and  
24 some of the mud product?

25 A Yes, sir.

1 Q And during your career out there, you never took any  
2 precautions, never used a rag or a mask to prevent  
3 breathing this insulation dust?

4 A No.

5 Q You said the insulators had their own shop. Did they  
6 cut and fabricate insulation materials in that shop?

7 A A lot.

8 Q Did you ever go over there?

9 A I've been in there several times, yes.

10 Q Were they running band saws?

11 A They had band saws in there and had different  
12 equipment.

13 Q Band saws, hand saws, all kind of saws to cut and  
14 fabricate material?

15 A Yes.

16 Q According to one of the work history sheets that we  
17 received from your attorneys, there are two kinds of  
18 insulation -- pipe insulation that are listed. Do you  
19 remember the name John -- Johns Manville?

20 A I remember the name, but I don't recall exactly where  
21 at.

22 Q Okay. Now, we talked about being exposed to the  
23 insulation that the insulators would put on right up to  
24 the flange, if you're coming up to a valve, right?

25 A Yes.

1 Q Was there any insulation on the valve itself?

2 A There'd probably be -- sometimes, there would be on  
3 the flange portion.

4 Q But not on the valve?

5 A Not on the valve itself, no.

6 Q Okay. Do you remember any pieces of equipment or  
7 places in the plant that had spray-on insulation? Do you  
8 know what I'm talking about?

9 A Yes, yes.

10 Q Was there any spray-on insulation?

11 A It was in the basement. It was in the basement  
12 portion of the spinning department.

13 Q Okay. Did you ever see anybody applying spray-on  
14 insulation?

15 A No.

16 Q Did you ever have to tear it out, or remove it?

17 A I didn't, but they removed some.

18 Q And was that when you were around to see it?

19 A No. I wasn't around it, but they tore out some.

20 Q And you don't happen to know the brands or the  
21 manufacturer of that spray-on insulation, do you?

22 A No.

23 Q All right. Now, going back to your work when you had  
24 to tear off the insulation, the mud or the cloth that had  
25 been put on the pipes by the insulators, would that be a

1       dusty process?

2       A     Would that be dusty?

3       Q     Wait. That's me again.

4                Would that be dusty? Would it be dusty when you were  
5       tearing that stuff off?

6       A     Yes.

7       Q     And you were working on the shutdowns in those plants  
8       where you didn't ordinarily work. Can you tell me a  
9       little bit about those shutdowns? I think you said,  
10      basically, you were in the DMT plant on shutdowns?

11      A     Right.

12      Q     And maybe in the poly building a couple of times on  
13      shutdowns?

14      A     Yes.

15      Q     What kind of work would you do in the DMT plant on  
16      shutdowns?

17      A     Just whatever they scheduled you to do on that shift.  
18      You like to be in some of those tanks chiseling material  
19      off the walls of the tank, or you like to be rebuilding  
20      pumps, gearboxes, or just anything they got you scheduled  
21      to do while you're there that day or night.

22                They work around the shift. When they had a  
23      shutdown, they work 24 hours a day until they got it  
24      completed. And most of the time, they wanted it completed  
25      in a week. So just whatever they scheduled you to do.

1 Q So it sounds as though when you were working at the  
2 DMT plant on shutdowns, you might go slightly off craft.  
3 You might do some things that you wouldn't ordinarily do?

4 A Yes.

5 Q And you talked about chiseling, I guess hardened  
6 material out of a tank?

7 A Yes.

8 Q What was that material?

9 A It wasn't -- it was -- it wasn't really material. It  
10 was ingredients that they used. And some of it got melted  
11 to the walls, the vessels. And when they had shutdowns,  
12 they would pull the baffles, especially the baffles in the  
13 tanks that would catch ingredients, impurities. And you  
14 would have to clean all that off.

15 Q So you would chisel or brush all the stuff off?

16 A Right.

17 Q And clean up the tank, clean up the baffles so  
18 everything would flow smoothly again?

19 A Right.

20 Q And while you were there, you said you might be  
21 assigned to work on some pumps?

22 A Right.

23 Q I don't know that we really talked about pumps really  
24 on your regular job. How often would you work on pumps  
25 outside of shutdown?

1 A Probably maybe once a week or two weeks. It's hard  
2 to tell. You know, you work on -- naturally, you do  
3 preventive maintenance. But if something goes wrong, you  
4 have to work on it right there and then, you know.

5 So it's according to how the line is running and how  
6 often you're pulling the PM on that particular line.

7 Q So you would -- on your regular job outside of the  
8 shutdowns when you're at Hoechst Celanese, you think you  
9 might have done pump work every week or two, if you  
10 averaged it out?

11 A Yes.

12 Q And how about working on like gearboxes?

13 A I worked on gearboxes probably that often, also.

14 Q Gearboxes, again, every week or two. How often would  
15 you work on like sprockets and rollers?

16 A Just whenever you're out on the line and you're doing  
17 maintenance work on the line, whatever is tore up, you  
18 fix. You're like to draw a gearbox this week or a pump  
19 today, and somebody else is fixing the sprocket, or the  
20 bearings, or whatever. You know, it all works itself out.

21 Q All right, sir. During this period, how often would  
22 you work on valves?

23 A Pretty often. Probably -- probably one or two a day.

24 Q So do you remember the name brands or the  
25 manufacturer's name of any of the valves that you worked

1 on out there?

2 A We had Crane valves. We had Crosbys. We have Henry  
3 Vogt. We had Powells, Westinghouses. We had just about  
4 every -- just to tell you the truth, we had just about  
5 every named valve there were. That was a pretty big  
6 operation.

7 Q Sure. Anyone -- any valve more than any other?

8 A Probably -- probably Crane valves. We worked on  
9 Crane valves probably more.

10 Q I was trying to get an estimate, if you could, for  
11 the amount of time that you would have spent working on a  
12 Crane valve versus some other brand of valve.

13 A The reason I said we probably -- I worked on Crane  
14 valves more is because we had a lot of Crane valves in the  
15 steam lines.

16 Q Okay. And, again, when we're talking about work on  
17 these valves, sometimes, it literally would have been just  
18 tightening the packing gland nut, right?

19 A Yes, sir.

20 Q And other times, it's taking the whole thing out and  
21 sending it off to be refurnished or scrapped?

22 A Yes.

23 Q Now, when you worked on these valves in these  
24 different kinds of lines, did you have some valves that  
25 were threaded -- screw-threaded in?

1 A Yes.

2 Q And you had some valves that were welded in?

3 A Just a few that was welded.

4 Q Particularly, like on the DOWTHERM lines, I would  
5 think?

6 A Not all of them.

7 Q Not all of them. But some of the DOWTHERM --

8 A Yes, sir.

9 Q -- would be welded in?

10 You say you had some screwed, some welded?

11 A Most of them was flanged.

12 Q But for ease of removal, most of them would be  
13 flanged, right?

14 A Right.

15 Q The flanged valves, did you ever see a flange valve  
16 come new to the factory? Never brand-spanking new?

17 A Did I what?

18 Q Did you ever see a flange valve, as opposed to one of  
19 the screwed or welded ones coming brand-new from the  
20 factory?

21 A Yes.

22 Q And did they come in on pallets?

23 A The ones I used come from the supply room. It was on  
24 stock.

25 Q Okay.

1 A You just go down there and --

2 Q They were new, but they weren't literally coming from  
3 the factory. They had already been unloaded and stocked  
4 in the stockroom?

5 A Right.

6 Q So when the stockroom worker brings you the valve,  
7 it's already got packing in it?

8 A Yes.

9 Q But it doesn't have flange gaskets -- or does it?  
10 Does it have any?

11 A Sometimes, it would. Most of the time you had to  
12 make your own flange gaskets.

13 Q Okay. Industrial facilities like Hoechst Celanese,  
14 do you recall there being different kinds of gasket  
15 material for different applications?

16 A Yes.

17 Q Do you remember any red rubber gaskets that had  
18 cotton dust in the middle of them?

19 A No.

20 Q Do you remember any black -- kind of almost like a  
21 rubber material, but let's say black flexible gasket  
22 material? If you don't, that's fine.

23 A No.

24 Q Do you remember Teflon gaskets?

25 A Yes.

1 Q Do you remember cork gaskets?

2 A Yes.

3 Q Do you remember metal gaskets, either the corrugated  
4 kind --

5 A Yeah. I remember some of them are silver, made out  
6 of the silver.

7 Q Like silver?

8 A Yes.

9 Q Okay. So you got the silver kind of corrugated?

10 A Corrugated -- surrogated, service.

11 Q Do you, also, remember the kind of -- what's called a  
12 spiral-wound, metallic gasket?

13 A Yes.

14 Q And do you remember copper gaskets?

15 A Yes.

16 Q Do you know whether some of the sheet gasket material  
17 had any asbestos in it?

18 A Yes. I believe all of it did.

19 Q You think all of it did?

20 A Yes.

21 Q And depending on what the valve, or the pump, or the  
22 piece of equipment was in service for, you might use one  
23 of those different kinds of gaskets that I mentioned;  
24 right?

25 A Right. Most of the time, it was a sheet gasket.

1 Q Most of the time, it was a sheet gasket?

2 A Right.

3 Q Did they have some precut gaskets?

4 A Yes.

5 Q And so, sometimes, you would just get one that had  
6 already been fabricated, either by somebody else --

7 A Yes, yes.

8 Q -- or by the factory?

9 A A lot of times, you go down there and you order a kit.  
10 to repair a valve. You get your packing and all in the  
11 kit.

12 Q And --

13 A In other words, we had this valve. You would have a  
14 repair kit for this particular valve. It would have  
15 everything in it to repair that valve. But most of the  
16 time, it wouldn't have your flange gasket. You would have  
17 to cut your flange gasket.

18 Q Sure. Okay. Was this -- was that repair kit  
19 something that Hoechst Celanese put together?

20 A They bought it like that.

21 Q So it was prepackaged?

22 A Yes.

23 Q It's not something they took from one of these and  
24 put it in a baggie for you?

25 A No.

- 1 Q It was prepackaged. Okay. Do you know who sold  
2 those repair kits?
- 3 A I think it was the manufacturer of each.
- 4 Q Of each individual --
- 5 A Yes.
- 6 Q Did you ever repair a valve, or a pump, or a piece of  
7 equipment of any kind where you'd not get a prepackaged  
8 repair kit?
- 9 A Yes.
- 10 Q So, sometimes, you would just get the raw material  
11 from the storeroom?
- 12 A Right.
- 13 Q So you would get your own packing?
- 14 A Right.
- 15 Q And you would get your own flange nuts or bolts?
- 16 A Right. You cut your packing out.
- 17 Q And get your own --
- 18 A Feed it in there.
- 19 Q Get your own flange gaskets?
- 20 A Right.
- 21 Q So, sometimes, there would not be repair kits?
- 22 A Right.
- 23 Q Do you remember whether repair kits came for a  
24 particular brand or style of valve, and not others?
- 25 A Not really. Most of the time, if they had a repair

1 kit, that's what you would use for that particular valve.  
2 If you were working on, let's say, a Crane valve, a  
3 4-inch, or a 2-inch, or 6-inch, or whatever and you had  
4 your part number of the valve itself, you go down there  
5 and you get a repair kit from the valve -- for that valve  
6 from that part number.

7 If they didn't have that, then you naturally have to  
8 make your own.

9 Q The new packing is lubricated and kind of  
10 greasy-feeling?

11 A Yes, sir.

12 Q And when you're chafing out old packing, the reason  
13 that you have to change the packing, eventually, is that  
14 no matter how many times new rings of packing are put in  
15 and no matter how tight you tighten down that packing  
16 gland, it's -- it gets leaking, right?

17 A Right.

18 Q So at this point, we're pulling out soggy, old  
19 packing that is no longer sealing the shaft?

20 A Not always. Not always. A lot of times, it's done  
21 got brittle and dried out, then you've got to scrape and  
22 pick it out.

23 Q Okay. So sometimes it's not soggy?

24 A Right.

25 Q If it's dried out but it was leaking before, someone

1 must have shut down that line and let it dry, right?

2 A Right..

3 Q Sure. You know, we talked briefly about the rope  
4 packing and the square packing. Do you know whether some  
5 or all the packing had any asbestos in it?

6 A I believe all of it did.

7 Q Okay. Did you ever see any Teflon-coated packing?

8 A No.

9 Q It was all braided, or woven, or square?

10 A Square. Some of it was round.

11 Q Okay. And impregnated with like lubricants, or  
12 graphite, or something slick?

13 A Yes.

14 Q What did you use to pull the old packing out with?

15 A We had needlepoint, sort of like something you pick  
16 your teeth with. You reach in there.

17 Q Little probes that had a little hook on the end?

18 A Yes.

19 Q Like a packing hook?

20 A Yes.

21 Q Did you ever use those kind that we have -- the  
22 little corkscrew?

23 A Yes.

24 Q Those, too?

25 A Yes.

1 Q You talked a little bit about the gaskets and packing  
2 in terms -- being in terms of the types, and all that. Do  
3 you remember the brand name or the manufacturer's name of  
4 any of the gaskets or packing they used out there?

5 A We used Armstrong. We used Garlock. Out of the  
6 square and roping type was Garlock. We used Garlock. We  
7 used Flexitallic, and several other different kinds. I  
8 can't think of it right now.

9 Q That's fine. But you remember Armstrong -- you  
10 remember the Armstrong, the Garlock, and the Flexitallic?

11 A Yes. And John Crane.

12 Q And John Crane. All right, sir. Did you remember  
13 any Johns Manville gaskets or packing?

14 A Huh-uh.

15 Q And how many people would be in a crew that were  
16 assigned to work on a particular, you know, line for a  
17 synthetic fiber?

18 A Probably -- if it was a PM line, probably, just  
19 estimating, 50 people or more, if we were pulling  
20 preventive maintenance on that particular line.

21 Q So 50 people would be working on that line from where  
22 you got barrels of flakes, plastic, to where you got bales  
23 of finish thread?

24 A Right. That would include -- again, that would  
25 include your fab shop workers. The fab shop work needed

1 to be done on the line while it's down. A lot of it  
2 required your insulators. There -- like to be some  
3 insulation that needed to be done, and then requires your  
4 millwright doing the preventive maintenance work.

5 So roughly, on the PM, you'd easily have 50 people on  
6 the line working at one time.

7 Q And during the time that you were out there at  
8 Hoechst Celanese, was it a daily occurrence for you to be  
9 around the dust from pipe insulation and other insulation  
10 the insulators would use?

11 A Yes.

12 Q Okay. Let me go back to something I mentioned a  
13 little while ago. We were talking about the different  
14 kinds of gaskets and packing. And you said you remembered  
15 Armstrong, Garlock, Flexitallic, and John Crane; correct?

16 A I think so.

17 Q The Flexitallic, is that the spiral-wound metal  
18 gasket that we were talking about before?

19 A No. We used Flexitallic in sheet form.

20 Q You had sheets?

21 A Sheet form.

22 Q Okay.

23 A Plus, you had your Garlock in sheet form. Plus, you  
24 had your Garlock in square, and the rope form, and your  
25 Armstrong and all. We used a lot of it in that sheet

1 form.

2 Q Okay. Do you remember the name brands or  
3 manufacturers names of any of the nonasbestos gaskets like  
4 the Teflon or the metal, silver-covered ones?

5 A No. We had several vessels that required the  
6 silver -- the steel, silver-tone coated gaskets.

7 Q Right. Understood. Now, when you left the Hoechst  
8 Celanese facility and went back to Precision Bearing in  
9 1978, had you ever seen anybody at Hoechst Celanese taking  
10 air samples? You know, maybe wearing a little bubbler on  
11 their shoulder, or on their collar, or on their belt that  
12 would suck in air.

13 A Huh-uh.

14 Q Did you ever see anybody walling off, hanging  
15 plastic, keeping people separate to when they were  
16 removing it or replacing the insulation?

17 A Well, I have seen plastic put in the area and people  
18 working in there. But I never asked or knew what they  
19 were doing. I didn't go around the area, so I didn't  
20 know.

21 Q Sure.

22 A It might have not been in my department. It might  
23 have been next door, or whatever.

24 Q Was that -- all right. When did you see them hanging  
25 the plastic sheeting and walling off the area? Do you

1 remember the time, generally what time frame that is?

2 A No. It was probably -- if I wanted to place a time,  
3 it was -- it probably was -- probably in the late '70s  
4 before I left there.

5 Q Okay. And again, just to confirm, you said you don't  
6 know what they were doing back in there?

7 A Well, they did tear out some of that. The area I'm  
8 talking about is in the basement. They tore out some of  
9 that spray-on insulation, as you were speaking of earlier.

10 Q Oh, okay.

11 A And they had plastic up with safety rope around it.

12 Q So you had to stay away?

13 A Yeah.

14 Q The guys that were in there doing the work inside the  
15 sheeting and tearing off the spray-on insulation, did they  
16 have any kind of protection masks, or suits, or anything?

17 A I believe they did.

18 Q Okay.

19 A They wouldn't -- I don't even think they were our  
20 workers that was in there. I'm not sure.

21 Q Somebody else? Some other contractor?

22 A Yeah.

23 Q When we were talking about pumps a little while ago,  
24 I think I got sidetracked. Are there any other kinds of  
25 equipment? We had mentioned valves. We mentioned

1 gearboxes -- gearbox of all kinds. We mentioned  
2 sprockets, and shafts, and those rollers that you moved  
3 the product.

4 Can you recall any other kinds of equipment that if  
5 you were writing your job description, you would tell your  
6 replacement, you better know how to repair this?

7 A. Say that one more time.

8 Q In other words, we talked about all this different  
9 kinds of equipment that you had to repair and that you had  
10 to know about it. Well, if you had to write a job  
11 description, say, to your replacement, son, you better  
12 know how to repair this, is there any other type of  
13 equipment you would put on that list?

14 A Well, we did a lot of repair work on the set techs up  
15 on the stretch line. That is these huge gearboxes with  
16 large rolls on it where your fiber comes out, goes  
17 through. One of them has chill water running through it.  
18 And it rolls itself out there. It's real cold. It  
19 freezes the product. And then it goes over steamrollers  
20 which stretches the product. And then it goes into the  
21 crimpers.

22 Q Other than the time you hurt your back being a  
23 strongman pulling the hundred-pound sprocket wheel off --

24 A Yeah.

25 Q -- did you ever get any other injury out there?

1 A Huh-uh.

2 Q Well, you were lucky, it sounds like.

3 A Yes, sir.

4 Q So --

5 A I take that back. I did.

6 Q Do tell.

7 A Carrying around it today, this asbestos cancer.

8 Q Oh, well, with the exception of the asbestos -- and I  
9 understand that.

10 And can you remember any particular repair kit that  
11 you would have ever seen for a Crane valve so that you  
12 could tell me what it was -- what was in it?

13 A Yes. Most of the time, we had a repair kit. It  
14 consists of your packing, your gaskets under it down  
15 there, under your bonnet there.

16 Q Your bonnet gasket?

17 A Yeah. And sometimes it would have your bolts in it.  
18 And the big gaskets, we would have to make.

19 Q The flange gaskets?

20 A If we didn't have a repair kit, we'd have to make  
21 everything.

22 Q Understood. So it would have -- if you've got a  
23 Crane repair kit for a Crane valve, it would have precut  
24 lengths of packing that were designed to fit around a  
25 particular shaft; right?

1 A Right.

2 Q The bonnet gaskets that you remember -- do you  
3 remember were they -- do you remember whether they were  
4 Teflon, or cork, or an asbestos composite, or do you  
5 remember?

6 A They looked like they was -- they wasn't cork or  
7 Teflon. They were mostly -- it looked like asbestos-type  
8 gaskets.

9 Q But if there was a Crane valve that had a bonnet  
10 gasket, and if you had a repair kit so you were replacing  
11 it, would there be any way to tell whether the bonnet  
12 gasket that you were pulling out was one that had been  
13 just fabricated from Hoechst Celanese's stock, or whether  
14 it came from Crane Company?

15 A It would have come from Crane Co. Because the kit  
16 itself, Hoechst didn't put nothing in it.

17 Q Right.

18 A It was a kit, Crane Co.

19 Q So the new one would be from Crane Company?

20 A Right.

21 Q What I'm asking is, the old bonnet gasket that you  
22 pull out and you replace with one from the kit, would you  
23 know whether that one that you were replacing had come  
24 from Crane Company, or whether someone else had fabricated  
25 it from just regular stock?

1 A They didn't fabricate any kind of gaskets like that  
2 and put in the supply room. We made -- we made gaskets  
3 out in the field if we had to, you know, or we would  
4 designate somebody to make gaskets a day. And they would  
5 make gaskets about all day, different sizes for your  
6 three, four, five, six-inch flange valves. And we would  
7 make a supply of them.

8 Q Sure.

9 A And other than that -- that was for emergency  
10 purposes. Other than that, we used Crane Co. packages  
11 from the supply room.

12 Q Understood. Is there a chance that -- the bonnet  
13 gasket on a Crane Company valve that you pulled out, is  
14 there a chance that some other Daniel employee had made  
15 that, cut that himself?

16 A No.

17 Q Okay. When you removed gaskets, were there occasions  
18 when you open up the two halves of the -- you crack open  
19 the flange, were there occasions when the gasket would  
20 just come out loose?

21 A Occasionally, yes.

22 Q And were there other times that you would have to  
23 like use a putty knife, or something, and pop it and pry  
24 it out?

25 A Sometimes.

1 Q Did you ever have to use any other kind of tool  
2 besides like a putty knife?

3 A Well, on your flange portion, you know, you had that  
4 surrogated surface on that lip.

5 Q Yes, sir.

6 A And you would have to -- sometimes on a steam line or  
7 a DOWTHERM line, that stuff is -- it's literally got baked  
8 in there.

9 Q Sure.

10 A I've even put brushes in drill motors and sit there  
11 and try to get it out. And I have literally took a pick  
12 and tried to go around the surrogated surface on the  
13 flange itself getting it out. It was just like it was  
14 welded in there sometimes, you know. It was hard to get  
15 out.

16 Q Do you remember any brand name or manufacturer's name  
17 of a valve where you know they used an electric motor with  
18 a brush on it?

19 A Probably Crane Co., and just about all the valves in  
20 there at one time or another.

21 Q So if you went to the supply shop to get a valve  
22 repair kit, how did you know that the contents of the  
23 valve repair kit were supplied by the valve manufacturers?  
24 How do you know that?

25 A That's -- we didn't. Hoechst didn't make any kind of

1 repair kits over there. And we didn't -- Daniel didn't.  
2 And everything in the supply room is set up from the  
3 factory by the factory. All the gears, all the shafts,  
4 everything pertaining to a certain item came from the  
5 factory, even down to the repair kits.

6 Q Did you ever see any kind of purchase order or other  
7 piece of paper associated with a valve repair kit that had  
8 a manufacturer's name on it?

9 A We had paperwork in there. And I believe it had the  
10 manufacturer's name on the paperwork in the valve kit  
11 itself. But as far as the purchase order, I don't recall.

12 Q Okay. Are you saying a piece of paper came with a  
13 manufacturer's name on it, came with the valve, or was in  
14 the valve repair kit?

15 A It was in the kit.

16 Q And that would be on that piece of -- and what would  
17 be on that piece of paper? What would it say?

18 A I think it was an instruction, more or less an  
19 instruction piece of paper showing a diagram of what you  
20 had in there versus with the valve, if I ain't mistaken.  
21 Again, we're referring back to 40 years ago. And a lot of  
22 water has been under the dam since then.

23 Q What I want to know is, you mentioned John Crane.  
24 What product do you remember that you -- that was for?  
25 Gaskets or packing?

1 A Gaskets.

2 Q Okay. And that was just gaskets?

3 A Mostly, yes.

4 Q Is there any other product you recall John Crane  
5 being associated with?

6 A Not really.

7 Q Okay. Great. I'm just going to focus on gaskets  
8 then.

9 A Okay.

10 Q How do you know that John Crane gaskets were used at  
11 Hoechst Celanese?

12 A On the sheets, it had John Crane's name on them.

13 Q What size were those sheets?

14 A Oh, we had them up probably -- probably around four  
15 foot, four foot by three foot.

16 Q Okay.

17 A Pretty big sheets.

18 Q And how thick were those sheets?

19 A They ranged from thin to up to probably between a  
20 sixteenth and an eighth of an inch thick.

21 Q Great. What color were there -- were they? I'm  
22 talking about -- just about the John Crane sheet gaskets.

23 A Dark.

24 Q Dark. Like dark gray?

25 A Dark gray.

1 Q Okay. Did it have a logo on it, or was it just the  
2 name?

3 A I believe it had a logo, but I can't explain exactly  
4 what it looked like.

5 Q All right. And do you recall John Crane gaskets in  
6 any other variety, other than the sheet gaskets?

7 A That's all.

8 Q Okay. Were -- all these sheet gaskets were uncut?

9 A Yes.

10 Q Did you personally -- do you recall a very specific  
11 time -- do you recall a specific time where you personally  
12 handled John Crane sheet gaskets?

13 A Yes.

14 Q Okay. About how many times was that?

15 A We would -- probably once or twice a week, we would  
16 cut gaskets out of it.

17 Q Who is "we"?

18 A Me.

19 Q Okay.

20 A Or whoever was doing it that specific day. It wasn't  
21 necessarily me. It was whoever was assigned to that job  
22 on this day.

23 Q Okay. So once or twice a week, someone that was  
24 assigned to a job requiring cutting sheet gasket may  
25 handle that particular material?

1 A Right.

2 Q What about you -- what about you? How many times did  
3 you personally handle John Crane sheet gasket material?

4 A Probably once or twice a week John Crane itself. But  
5 when I handled it, I would cut a good many gaskets.

6 Q Okay.

7 A You wouldn't cut just one. You would cut a supply of  
8 them.

9 Q Was that for the entire time -- was that for the  
10 entire period between 1969 or 1978, or was that just a  
11 certain time while you were working at Hoechst Celanese?

12 A It was continuously, a continuous thing the whole  
13 time I was there. I mean, we had to have the gaskets on  
14 all the time on the job.

15 Q Okay.

16 A And, like I say, it's whoever was assigned to cut  
17 gaskets that day. Or if it was an emergency, you would  
18 have to cut one then.

19 Q Okay. So if you -- I think what you're saying is  
20 that either once or twice a week you would be assigned to  
21 cut gaskets; is that right? Or do I have your  
22 testimony --

23 A Right.

24 Q All right. And where would you cut those gaskets?

25 A We had a room back there. We had a big sheet of

1 thick plywood. And we had the transit-type razor blade  
2 with needlepoint on it. You measure out your diameter,  
3 and you cut out the circumference of it. Then you cut it  
4 that way or you would have a sample.

5 Q You would?

6 A You'd have a sample gasket already cut to order.

7 Q Okay.

8 A You lay it down, and trace it, and punch it out, and  
9 cut it out.

10 Q Got it. About how long did it take to cut a gasket,  
11 one gasket?

12 A They can be pretty aggravating sometimes. 30, 40  
13 minutes sometimes. Because they would be aggravating.

14 Q There was other sheet gasket material that you would  
15 cut new gaskets from, other than John Crane; is that  
16 right?

17 A Yes, ma'am.

18 Q Do you know about how many other brands, or can you  
19 just not recall?

20 A It's Armstrong and your Flexitallic. Different ones  
21 we used.

22 Q Can you recall a particular brand of sheet gasket  
23 material they used more than any other kind?

24 A We probably -- I don't know. I'd say it was probably  
25 on an equally basis.

1 Q And about -- about how long of a time period would  
2 you be cutting new gaskets?

3 A If you was assigned to cut gaskets today, you would  
4 probably go four, five, six hours doing them, cutting  
5 gaskets.

6 Q Would it just -- would it be just you that would be  
7 assigned, or would it be multiple people assigned?

8 A It would be one person today. And there would be a  
9 different person next week or week after next.

10 Q Got it.

11 A Whenever they needed another supply of them cut out.

12 Q Got it.

13 A Because we used a lot of them.

14 Q Do you recall a specific time using John Crane gasket  
15 material in any other context than cutting the actual  
16 gaskets from the sheets, and in any other way other than  
17 the piece of plywood you were cutting them out?

18 A No.

19 Q All right. Can you describe to me the process of  
20 removing a gasket?

21 A A used gasket?

22 Q Yes, sir.

23 A It's like I said earlier. After -- on the line, most  
24 of it was under heated circumstances. And those things --  
25 most of your flanges and your valves had a -- well, one of

1 them had a surrogated surface on it. And that thing would  
2 get matted in there. And I'll tell you, for something to  
3 look as easy as a gasket, it would get welded, actually,  
4 into the metal itself. And you would have to --  
5 wire-brushing it sometimes would be sufficient to get it  
6 out.

7 Like I said earlier, I've used a drill motor and a  
8 brush that way. And I have took a pick and I went in  
9 there and, actually, picked it out of that surrogated  
10 surface. It would be matted in there so bad, sometimes,  
11 it was hard to get it out.

12 Q Okay. How long did it take you to remove the gasket  
13 in usual circumstances?

14 A In usual circumstances, it didn't take very long.

15 Q Well, about how many minutes?

16 A Probably taking the bolts out and taking the gaskets  
17 off, most of the time you could take a putty knife or  
18 anything and just get behind your gasket and buff it off.  
19 And then sometimes you would have all the problems with  
20 it. It would be hard to estimate.

21 Q So if you're just popping it off, 30 seconds?

22 A Yeah.

23 Q And, obviously, when there was some circumstances  
24 where it was longer than that?

25 A Yes.

1 Q Describe to me the process of installing a new  
2 gasket.

3 A Well --

4 Q Without having to cut it, because we've already  
5 talked about cutting it out of sheets. What about if  
6 you're, actually -- what about if you're, actually,  
7 installing, putting it in?

8 A Most of the time what I did was, you're putting it in  
9 on the line out there. The easiest way I ever done it was  
10 to drop two bolts in the bottom half of it, bring your  
11 gasket down and center it up, and put your other bolts in,  
12 tighten it up is the way I've always done it. And try to  
13 draw it up to where your flange is pretty well equal all  
14 the way around. You ain't got it draw together here and a  
15 gap up here. That it's pretty well equal all the way  
16 around.

17 Q Did installing a new gasket create dust?

18 A Not installing it, but take it off.

19 Q About how often would you encounter a gasket that was  
20 not able to be popped out?

21 A About 95, 98 percent of the time. Because under the  
22 conditions of the hot heat and all, it was just about all  
23 the time.

24 Q All right. The entire process of removing an old  
25 gasket and putting a new one in, how long would that take?

1 A Again, it's -- you could brush and clean on the  
2 flange for an hour or, at least, an hour or longer trying  
3 to get the old gasket material off. So it's hard to tell.

4 Q You testified earlier that you think some of these  
5 materials were made of -- some of these gasket materials  
6 were asbestos. Do you recall that testimony?

7 A Uh-huh.

8 Q How do you know that some of it was asbestos?

9 A Well, you can -- especially, if it's white,  
10 white-colored, you can tell by the grain. You can tell by  
11 looking at it. The grain of the gasket material itself is  
12 the way I told. I might be wrong, but...

13 Q Why do you think that?

14 A Because that's -- why do I think that?

15 Q Yeah. How do you -- how did you come to think that  
16 that meant asbestos?

17 A Well, you know, that's what everybody always said it  
18 was. So that's what I went by.

19 Q Was there ever a period of time at Hoechst Celanese  
20 when you were not assigned to working with gasket  
21 materials, such as a long period of time when you were  
22 transferred to another side of the plant where you would  
23 not have worked with sheet gasket material, or removing,  
24 or installing gaskets?

25 A No. Even when I went to the PIV shop up there and

1 worked for a while, we were still putting gasket material  
2 up there.

3 Q In your work history sheet, it says there were roles  
4 at Hoechst Celanese -- and correct me if I'm wrong -- it's  
5 millwright helper, millwright, and maintenance worker?

6 A Well, millwright and maintenance worker, it's the  
7 same thing.

8 Q Okay. Were those job duties pretty much the same in  
9 that you may have worked with sheet gaskets in both those  
10 roles?

11 A Yes.

12 Q Was there a time period in either one of those roles  
13 that you would have spent less time working with sheet  
14 gasket material?

15 A No.

16 Q Were you ever in a role at Hoechst Celanese where you  
17 would just be observing somebody else working with  
18 relation to some sheet gasket material?

19 A No.

20 Q Did you see any signs -- I'll say the caution signs  
21 or warning signs stating, Don't breathe asbestos dust.  
22 Asbestos dust could be harmful?

23 A No, sir.

24 Q Did you see the insulators using that --

25 A Maybe one or twice, not much at all. Maybe once or

1 twice. And I've seen them use -- take some out of the box  
2 and put it on the line on the short, short run.

3 Q Okay.

4 A But not on a daily basis.

5 Q So the insulators -- and correct me if I'm wrong --  
6 for the most part, we're talking 50-pound bags of cement,  
7 dumping them into a trough, making the mud, and putting  
8 that mud on the steam spines that were -- they were  
9 insulating?

10 A They would put it on it -- like I said earlier, if I  
11 stripped the line back this far in order to get the bolts  
12 and studs out, they would reinsulate that -- done it that  
13 like. Most of the insulation was put on the lines  
14 when the line was constructed, when construction was going  
15 on.

16 When they put the lines in, then they insulated the  
17 lines. And that was a permanent deal, unless you tore the  
18 line out. But on all your vessels -- like you got all  
19 kinds of equipment on your deicers, and reactors, and all  
20 of that that you had to tear out and rebuild.

21 In the beginning, back in the early part of the '70s,  
22 that insulation was put on there and it was embedded. And  
23 when I say "embedded," it was glued to the surface of the  
24 pumps, or whatever you wanted to pull off that vessel.  
25 And you would have to scrape, and scrape, and scrape to

1 get to your bolts and nuts and all of that to get your  
2 equipment out.

3 Q That's where you did your work as a millwright?

4 A Right.

5 Q And the way they would insulate those lines is, in  
6 that regard, they would use this half-round, half-moon  
7 stuff to replace it?

8 A I've only seen them use that maybe once or twice --

9 Q Okay.

10 A -- in my eight or nine years. And the rest of the  
11 time, they insulated that thing with mud, I guess. Most  
12 of the time, insulators done their job. And we weren't in  
13 there working when they was working there. And they  
14 wouldn't be in our area where we were -- where we was  
15 working at. You know what I mean? We wouldn't be in one  
16 another's way.

17 But most of the time insulators, if they was  
18 insulating, you'd be working over here somewhere.

19 Q Okay. You mentioned earlier that the floor was sort  
20 of a grated floor that the dust could flow throughout --  
21 all throughout the plant?

22 A Yes.

23 Q It's not like you were working in a room like we are  
24 right now?

25 A No.

1 Q And the insulators were working in the room down on  
2 the other side of the hotel, everything was still open,  
3 and you had grated floors, and all sorts of heat?

4 A A good portion of the plant, it had grated floors.  
5 From the second floor to the fourth floor, it had grated  
6 floors. And then in some spots on the second floor, you  
7 had cement floors. Part of it was grated, part of it  
8 wasn't.

9 Q So if I had an insulator on the fourth floor mixing  
10 up a trough full of asbestos cement or asbestos mud, when  
11 he dumps that 50-pound bag into the trough --

12 A If I'm working on the fourth floor and he's working  
13 on the second floor, I'd get a dose of it. Because the  
14 vacuum pull is sort of like you got a fan, an exhaust fan  
15 up here running from those floors being open, you know.  
16 It just -- everything goes up.

17 Q And the heat in the facility would keep things sort  
18 of circulating around?

19 A Yes, sir.

20 Q I noticed in your worksheet that you mentioned  
21 boilers. Did Daniel have its own boilermakers, or did you  
22 work on boilers?

23 A No. The boilers was down at the DMT plant. When  
24 they had shutdowns, we go down there and we may have to  
25 scrape and clean a lot of work on the boilers. But they

1 did that work on the boilers theirself [sic] then.

2 Q Who's "they"?

3 A Daniel that worked in that area.

4 Q Oh, okay.

5 A There was experts on the boilers. And we wasn't --  
6 because we didn't work -- we did mostly the cleanup work  
7 on them.

8 Q Were you ever in the area where a boiler was being  
9 worked on?

10 A Yes.

11 Q Were you ever in the area where a boiler was being  
12 reinsulated?

13 A No, not when it was being insulated. But I have did  
14 a lot of scraping. And, like I was talking about, in  
15 those vessels with all the gunk in them, we done the same  
16 thing around the boilers.

17 Q Are you talking about being inside the boiler when  
18 you're doing that?

19 A I'm talking about inside the tanks and everything,  
20 but the boiler itself, all the piping is running to and  
21 fro the boiler. We cleaned it up, cleaned the flanges up  
22 on it, and all of that.

23 Q Okay. Were the steam lines used to -- do those run  
24 to equipment in the facility?

25 MR. PURNELL: What page are we on?

1 MR. TIVIN: 178.

2 MR. PURNELL: I believe 178, Line 5

3 MR. TIVIN: Your Honor, could we take a two-minute  
4 break?

5 THE COURT: Sure.

6 All right. Ladies and gentlemen, don't talk about  
7 the case. Continue to keep an open mind.

8 We'll take a short recess.

9 (WHEREUPON, the jury was excused from open court at  
10 approximately 4:23 p.m.)

11 (WHEREUPON, a break was taken.)

12 THE COURT: Yes, ma'am. Bring them on in.

13 (WHEREUPON, the jury came into open court at  
14 approximately 4:36 p.m.)

15 THE COURT: Yes, ma'am.

16 THE BAILIFF: Your Honor, I think some of the jurors  
17 are saying that they're having a hard time hearing.

18 MR. TIVIN: That's a first. But, yeah, I'll make  
19 sure to speak up. I'm sorry.

20 THE BAILIFF: Thank you, sir.

21 MR. TIVIN: And if it happens again, just stop me  
22 right then. And then we'll fix it.

23 (WHEREUPON, the deposition of Mr. Dennis Seay was  
24 read into the record by Mr. Mark Tivin asking questions  
25 and Mr. Simon Purnell answering.)

EXAMINATION (CONTINUED)

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Q When I was reading through your transcript last time, there was a lot of talk about lines. It seems like I guess there were three main lines at Hoechst, DOWTHERM, steam, and chilled water?

A Right.

Q Okay. Were the steam lines used to -- do those run to equipment in the facility?

A Yes. We had steam lines, miles and miles of steam lines with Hoechst Fibers running everywhere in there.

Q The DOWTHERM lines, were those used to heat the facility?

A The DOWTHERM run to -- we had -- like your spin beams is DOWTHERM run from the boilers to the spin beam. The different areas, degassers, reactors, different pieces of equipment that required where the polymer is being melted. And that's what we used to melt the polymer with was the DOWTHERM.

Q Okay. So these lines were used kind of in the operation of the plant?

A Operation of the plant, true.

Q So it sounds like the lines were fairly important to the operation of the business; is that fair?

A Very important. If they didn't operate, they wouldn't run.

1 Q Okay. Outside of these lines, was there any way to  
2 get the steam or DOWTHERM to the machinery and equipment?

3 A No.

4 Q So when the lines were down, it was important to  
5 repair those lines and get them operational?

6 A Very important. Because if the line was down, unless  
7 you could bypass, if it was coming off your main line --  
8 see, back in the early '70s, we got our steam from the DMT  
9 plant, which is down next to 85.

10 Q Okay.

11 A That's where -- and that's where we got our steam  
12 from. See, it came up through there on the main line.

13 And then when it got up there to spinning, it spread  
14 out. It went to the poly building. It went to the  
15 stretch line and spinning. It went all over the plant  
16 from that point.

17 And if you had a valve go out, if you're, say, on the  
18 stretch line, it's very important to get that back running  
19 as quick as you could.

20 Q Okay. So if something went off on the stretch line,  
21 it would shut down the stretch line?

22 A Yeah.

23 Q And if something went down on the spinning line, it  
24 would shut down the spinning line?

25 A As far as I know.

1 Q Okay.

2 A I mean, as far as my recollection.

3 Q So you would -- so would you agree that these lines  
4 were important to the operation of Hoechst Celanese?

5 A Very important.

6 Q If a line went down and there was failure, was it  
7 important for you to perform the repair quickly?

8 A Yes.

9 Q And that would be the case no matter where the repair  
10 was made in the facility; right?

11 A Yes.

12 Q You, also, mentioned repairing some equipment last  
13 time during your deposition. When you made a repair, was  
14 it because there was something wrong with the equipment?

15 A Right.

16 Q So, in other words, you had two types of repairs or  
17 work that -- that I understood from your deposition --  
18 sorry. I'm asking an inartful question here.

19 You talked about preventive maintenance and repairs  
20 generally. Is that the two types of work you did at  
21 Hoechst Celanese?

22 A Right, preventive maintenance. And a lot of times we  
23 had shutdowns, you know, in which we have preventive  
24 maintenance, too.

25 Q Okay.

1 A And then emergency was the type.

2 Q Okay. And the preventive maintenance was -- it's my  
3 understanding that it was scheduled at certain times  
4 during the year?

5 A Right.

6 Q Would it be twice a year that you did preventive  
7 maintenance?

8 A Most of the time, maybe once or twice on the average.  
9 Probably once a year that we had what you might say a  
10 shutdown on the line. And that's pretty well go through  
11 the whole line from the operation, say, from spinning all  
12 the way across the stretch line and catch repairs, and  
13 replace parts that we know in advance needs to be done.

14 Q Okay. So you were looking for any equipment that may  
15 be broken and, also, anticipating --

16 A Anticipating it to be broken.

17 Q Okay. So preventive maintenance was performed even  
18 at times when there was no issue with the equipment?

19 A Right.

20 Q And was the purpose of that to identify issues before  
21 they occur?

22 A The purpose of preventive maintenance is to prevent  
23 the line going down in the future and costing you  
24 production. When you're scheduled to go down, your  
25 catchall is preventive maintenance then. And that way, in

1 the long run, next month this particular vessel that is  
2 about to tear up, you done fixed it. So you won't have a  
3 shutdown or loss of production on account of that is the  
4 purpose of preventive maintenance.

5 Q Okay. So the preventive maintenance was done to  
6 ensure the plant would continue operating?

7 A Right.

8 Q Would you say that preventive maintenance is  
9 essential to the operation of the plant?

10 A Very important.

11 Q And then in terms of the repairs, the repairs were  
12 done either -- like some particular type of equipment. I  
13 know you talked a lot about the equipment last time. But  
14 when one of those pieces of equipment failed, then you  
15 would perform a repair; is that fair?

16 A Yeah.

17 Q Okay. And when there's -- the repairs were made,  
18 basically, to get the machinery or equipment back up and  
19 running so the plant could continue operating; right?

20 A Right.

21 Q And then you made those repairs, the factory workers  
22 could keep doing their jobs; right?

23 A Correct.

24 Q It sounds like, I guess, Daniel employees took care  
25 of all the maintenance at the plant?

1 A Yes.

2 Q So if any equipment broke down in the plant, it would  
3 only be a Daniel employee that repaired it?

4 A As far as I know.

5 Q Did you ever see anyone else besides Daniel employees  
6 making repairs at the plant?

7 A Not unless they had an outside contractor come in on  
8 a specific -- specific piece of machinery, or something.  
9 But, mostly, it was Daniel that did the repair work.

10 Q So, generally, if a piece of equipment went down,  
11 there was only you or another Daniel employee that would  
12 make those essential repairs?

13 A Yeah.

14 Q And the repairs, whether you did them or another  
15 Daniel employee, those were done to keep the plant  
16 operational?

17 A Correct.

18 Q Did Hoechst ever give you instructions about  
19 repairing equipment?

20 A No.

21 Q Those instructions would come from your supervisors?

22 A Right.

23 Q And then would your supervisors get their  
24 instructions from Hoechst?

25 A Right.

1 Q Would it be the lead man? Is that the person that --

2 A Right.

3 Q So Hoechst provided instructions to the lead man?

4 A Right.

5 Q And then did you have meetings in the morning where  
6 you would get your assignments for the day?

7 A We would get our assignments every morning.

8 Q Okay. You testified about some parts from a -- about  
9 some parts -- excuse me. You testified about some parts  
10 room last time, or a storeroom, I believe?

11 A A what?

12 Q A storeroom where parts were kept.

13 A Yeah, a supply room.

14 Q I believe you said that there could even be millions  
15 of dollars worth of parts in that storeroom?

16 A Correct.

17 Q And were the products in the storeroom kept so that  
18 you could fix most of the equipment in the plant?

19 A Sir?

20 Q Were those parts in the storeroom there so you could  
21 have them accessible to fix the parts in the plant?

22 A Right. Just about every -- as far as I know, just  
23 about every piece of equipment in there had the  
24 blueprints. And everything was set up to where you had  
25 two or three basic parts to rebuild this whole -- if it

1 was a box, or a pump, or whatever, to rebuild it.

2 And they always kept so many parts in there for that  
3 one particular thing at all times. So there was millions  
4 of dollars worth of parts concerning PIVs, and gearboxes,  
5 and whatever in there at all times.

6 Q And then when you had those parts so close by, then  
7 you didn't have to order them?

8 A Right. Plus, the fact -- plus, the fact your line is  
9 supplying, say, 70, one line, especially in staple B. One  
10 line is supplying like 70 or 80 bales a shift of fiber,  
11 700 and something pounds. And as high as that stuff is a  
12 pound, you wouldn't want a \$20 item to shut that line  
13 down.

14 So they tried to have everything set up on stock to  
15 where anything that tore down, we had a spare part for it,  
16 where it could be easily fixed.

17 Q Okay. So then you could get the parts and make the  
18 repair quickly and get the line back running?

19 A Right.

20 Q Did that help you make your job faster then?

21 A Yes.

22 Q And it cut down on downtime at the factory?

23 A Correct.

24 Q Would you agree that each piece of equipment in the  
25 factory then is essential to the manufacturing operation?

1 A Correct.

2 Q Like you said, you don't want a \$20 piece of  
3 equipment to shut down a million-dollar line; right?

4 A Right.

5 Q And it was important to get those parts from the  
6 storeroom so you could make your repairs; right?

7 A Correct.

8 Q You mentioned some insulation and mud at your last  
9 deposition. Do you recall that?

10 A Yes.

11 Q Was part of that insulation used to prevent heat loss  
12 so you could maintain the temperature?

13 A Correct.

14 Q Was insulation, also, used to keep people from  
15 getting burned?

16 A It was mostly -- insulation on all your piping and  
17 all was mostly to keep the piping hot. Because you take  
18 the DOWTHERM, for instance, it takes a certain degree to  
19 melt that polymer. And your DOWTHERM is your heating  
20 source to melt it. And it's got to maintain a  
21 temperature.

22 If it don't, it won't do its job. And then your line  
23 goes down and you lose all your packs and everything else  
24 on that particular one line, which runs into thousands of  
25 dollars.

1 Q Oh, okay.

2 A So that's what the insulation is for mainly.

3 Q I didn't mean to cut you off there.

4 A No. That's okay.

5 Q So the insulation is important in the manufacturing  
6 to keep the temperature hot on those lines?

7 A Yes, it is.

8 Q Okay. You talked about insulators. I guess there  
9 were insulators on-site at Hoechst?

10 A Sir?

11 Q There was an insulation crew on-site?

12 A Yes, yes, yes.

13 Q Did they have their own shop?

14 A In the beginning, if I'm not mistaken, the back of --  
15 the back of staple going towards that supply room I was  
16 talking about, on the right, you had the carpenters, if  
17 I'm not mistaken. You had the carpenters and the  
18 insulators together in the same building there on the  
19 right.

20 Now, later on, I think the insulators got their own  
21 shop, if I ain't mistaken. I might be wrong. But if I  
22 remember correctly, in the beginning, your insulators and  
23 your carpenters was working out of the same building.

24 Q Okay.

25 A It wasn't a very big building either.

1 Q Did you ever work in that building?

2 A No.

3 Q Did you ever work as an insulator?

4 A No.

5 Q Did you ever install any insulation?

6 A I tore some off. A lot of times around those  
7 degassers and reactors in the beginning -- in the  
8 beginning, they would put that mud on there. And then  
9 that tremendous heat would more or less cook that stuff on  
10 there, you know.

11 And then we came back and would have to remove the  
12 pump or whatever is pulling the fiber out of the vessel.  
13 We got to chisel that stuff off. And it got to where it  
14 was such a bad process and such -- such a rough process,  
15 somebody come up with the idea to make a -- take the pump  
16 under there, for instance, and take it out there and make  
17 a mold, and then insulate that thing, and split the  
18 insulation, and mount the insulation on in sections and  
19 then put a band around it.

20 And then when we come along as maintenance workers,  
21 all we would have to do is break the band then and remove  
22 it. And we didn't have all that wasted time of tearing  
23 all that stuff off. Then we can put the same old mold  
24 back on when we got done.

25 Q So then all you had to do was take off, cut the

1 bands, and just set it to the side?

2 A That was only on -- where certain vessels. You had  
3 so much piping running everywhere that it was so hard to  
4 get what you was working on out without being very  
5 destructive. That was really the only part that was  
6 modified to where the insulation was easier to take off,  
7 you know.

8 Q Okay.

9 A Because most of the time when a line shut down on PM,  
10 it would be shut down so many hours. And they'd pretty  
11 well set a deadline, and they want the deadline held. And  
12 tearing the insulation all off was slowing the process  
13 down a whole lot.

14 So I don't know who come up with that idea, but it  
15 was a very good one.

16 Q After you cut the insulation off, would you install  
17 it -- reinstall it when you were done with your work, or  
18 would insulators come back?

19 A At first, we would install it. But, finally, the  
20 insulators would come back and put it back on. We took it  
21 off. And they'd come back and put it on.

22 Q There was some talk about half-rounds last time. Did  
23 you ever install half-rounds as part of your job?

24 A No.

25 Q And the mud material, did you ever mix and install

1 that?

2 A No.

3 Q Do you know who -- the manufacturer of any of the  
4 insulation in the plant?

5 A Not really. I never did ask, to tell you the truth.  
6 I never did ask or -- you know.

7 Q Okay. Did you ever have any training on asbestos  
8 identification?

9 A No.

10 Q Did you ever see any writings or markings on the  
11 material indicating that it contained asbestos?

12 A No.

13 Q Are you generally aware that there were asbestos and  
14 nonasbestos insulation materials?

15 A No.

16 Q Okay.

17 A Believe me -- believe you me, out of all of them  
18 times crawling up on them ladders and way up yonder using  
19 a drill motor with a brush in it, and you're standing  
20 there looking at it trying to get -- trying to get gasket  
21 material and all off of flanges, if I had known that stuff  
22 would have done what it's done to me, there ain't no way I  
23 would have been up there.

24 Q Did you ever see any packaging for the insulation  
25 material?

1 A Any what?

2 Q Any packaging?

3 A No.

4 Q Cardboard, or anything?

5 A No.

6 Q Are you aware or did you see any warnings on the  
7 insulation?

8 A Any what?

9 Q Any warnings?

10 A No. I wasn't involved with installing insulation, or  
11 anything like that.

12 Q Oh, okay. You talked about removing some insulation.  
13 When you removed it, would you just generally remove the  
14 part that was covering whatever you needed to work on?

15 A Correct.

16 Q So you were trying to remove just a small -- just as  
17 small amount as possible?

18 A Right.

19 Q And did you generally try to perform your work as  
20 quickly as possible?

21 A That's right.

22 Q The cement-type material, how would you remove it?

23 A Well, most of the time, you would more or less --  
24 like when they come in there and insulate and they  
25 insulated on the valve or insulate around it on the

1 flanges and all, it gets on the bolts and all. You just  
2 more or less have to chisel and brush, chisel and brush to  
3 get it off. And then strip it back so far to where you  
4 can get your bolts and get them out, you know.

5 Q And --

6 A And that was the process that we did.

7 Q When you knocked it off with a chisel, would some of  
8 it come off in chunks?

9 A Yeah, right.

10 Q Did they have laborers that would come and clean up  
11 the areas?

12 A No. We, basically, cleaned up our own area. When we  
13 got done, we'd sweep up and just put it in the trash can,  
14 or whatever.

15 Q So would that be so was that true for insulators,  
16 too, that they would be responsible, too, to clean up  
17 their own areas?

18 A Yes.

19 Q Okay. The insulation that you removed, would you  
20 ever know who installed that insulation?

21 A No.

22 Q Would you know when it was installed?

23 A No.

24 Q Would you know who manufactured it?

25 A No.

1 Q My understanding is that generally on a day-to-day  
2 basis, you did not generally work around insulators; is  
3 that right?

4 A Right.

5 Q And so most of the time when the insulators were  
6 working, they'd be in a different area of the plant. You  
7 all would try to avoid each other?

8 A Not necessarily. I mean, you know, if they were  
9 insulating this vessel here and if we got a job going on  
10 the same floor, we would be working side by side, you  
11 know. Because you only had so many hours to complete the  
12 job, you know.

13 It's very important to get the line back up running.  
14 And so you were -- you're liable to have three or four  
15 crews in there in one area working. You're liable to have  
16 five shop workers running maybe a new vent line, or  
17 something. There would be welding going on. And  
18 everybody is in there working together.

19 Q Even if you were on the same floor, would there be  
20 times that you would be, say, 10 feet away from the  
21 insulators?

22 A Yes.

23 Q And there may be sometimes even further than that?

24 A Yes.

25 Q Would the insulators do most of their work during

1 preventive maintenance?

2 A Well, I don't know. The insulators, you know, they  
3 did their own thing. And they were -- they would show up  
4 in the morning. They were like us. They'd be appointed  
5 to do certain things. And they're liable to be working in  
6 your area today and be working somewhere else tomorrow.  
7 So I don't know.

8 Q On a day-to-day basis, would they primarily be doing  
9 repair work at times when it wasn't --

10 A They would be insulating somewhere all the time.

11 Q Oh, okay. You just saw them every now and then?

12 A Right. When they was in my area of working, I knew  
13 they were there, you know. We'd talk together and eat  
14 lunch together, and things like that.

15 Q Okay. When you were performing your work, did you  
16 generally not want dust to get on the equipment?

17 A We would have to wipe the equipment down when we got  
18 done. If we were working on any piece of equipment, they  
19 didn't want a fingerprint left on it. They wanted it  
20 wiped down.

21 Q Did you ever -- when there were insulators in your  
22 area and -- would you just take the equipment somewhere  
23 else so you could work on it and be away from their dust?

24 A No.

25 Q When they were in your area installing insulation, do

1 you know what type of insulation they were installing?

2 A No.

3 Q And you don't know who manufactured any of that  
4 insulation they installed?

5 A No.

6 Q The cement material, did you ever mix any of that  
7 material yourself?

8 A No.

9 Q Once it was mixed, was it kind of wet, pasty-type  
10 material?

11 A When it first was put on the piping, it was like wet  
12 paper, or something.

13 Q Did you ever see any dust after the material was wet?

14 A I don't recall.

15 Q Did you ever see any packaging for that cement  
16 material?

17 A Did I ever what?

18 Q See any packaging for any of that cement material?

19 A No.

20 Q Do you know how it came? Like did it come in bags or  
21 boxes, anything generally?

22 A No. I never did watch them, how they mixed it up, or  
23 anything like that.

24 Q So you never saw them like dump it into a bucket?

25 A No.

1 Q So when you saw it, it was already just a wet,  
2 paper-mache-like material, like you said?

3 A Yes.

4 Q Did you ever go in that area when they were removing  
5 that material?

6 A Well, no. I didn't go in there when they were  
7 removing it, because they had it blocked off.

8 Q Oh, okay. Did that keep the dust from coming out  
9 while they were removing the material?

10 A Well, not necessarily. It probably kept some, but it  
11 didn't keep all of it.

12 Q And that dust, you wouldn't know where that came  
13 from, would you?

14 A The dust would probably be coming from -- as it was  
15 tearing the insulation off. I didn't watch them. I  
16 didn't watch them tear the insulation off. I just seen  
17 the curtains up, and everything. And I asked somebody  
18 what was happening. And they said they was taking the  
19 insulation off.

20 Q So you were just there for a few minutes then?

21 A Yeah.

22 Q You mentioned using some preformed gaskets the last  
23 time. Do you recall that?

24 A Yeah.

25 Q They were premade to fit on the lines?

1 A Yes.

2 Q Did those gaskets make your job faster?

3 A Yes.

4 Q And were the preformed gaskets made to fit just on  
5 lines, or were they made to fit on equipment as well?

6 A Oh, it was made to fit on the -- we made our own  
7 gaskets, as far as flange -- on your flanges, on your  
8 valves, and on all your steam lines. They were all your  
9 lines.

10 We would make our -- a guy would be appointed. And  
11 he would make gaskets, say, all day today. And everybody  
12 kept them rolling, different gaskets on their toolboxes.  
13 And you went through the shop, you know, you always had a  
14 gasket that one blew up there, and you had one right there  
15 handy, repair it with.

16 Q Okay. So you could just pull it off of there and  
17 stick it on the line?

18 A Right.

19 Q And when you installed those gaskets, would you just  
20 lay them on the line and fold it back up?

21 A Sir?

22 Q When you installed a preformed gasket, would you just  
23 put it on the flange and bolt the flange back up?

24 A No. You would have -- all your flanges had -- all  
25 your flanges had a surrogated surface on it. And if it

1 was a steam line, the stuff would melt in that surrogated  
2 surface. And it would be like steel with steel. And  
3 you'd chisel, brush, and even take a pick and scrape to  
4 get that stuff out of that surrogated surface before you  
5 put the new gasket on. Because if you didn't do that, you  
6 wouldn't be getting a good seal, you know, when you  
7 tighten your flanges back up.

8 Q Okay. And once you had that --

9 A So it was a job to -- if you were working on them --  
10 if you was changing gaskets on a steam line and the  
11 gaskets had been on there for a while, it was a job just  
12 to get it clean to put another gasket on it.

13 Q And once you had that old gasket removed and you had  
14 the new gasket premade for you, at that point, could you  
15 just lay it on the line and bolt it back up?

16 A Most of the time. Most of the time, I would just  
17 drop two bolts in the bottom three holes and the gasket  
18 was already prefit -- precut to fit everything, and drop  
19 it down through there, and align everything up, and sort  
20 of snug the bolts up, and draw it up to where it would be  
21 even, proceed to sort of torque them in around to where  
22 you would have no leaks.

23 Q And when you dropped that gasket in, would that just  
24 take a few seconds? Right?

25 A Yeah.

1 Q And you didn't have to cut or manipulate the gasket  
2 at all?

3 A No.

4 Q And there was no dust when you installed that  
5 preformed gasket, was there?

6 A No. But there was a whole lot of dust when you was  
7 making the old -- taking the old one off.

8 Q And those old gaskets, you don't know who  
9 manufactured them, do you?

10 A Well, most of them, we made them ourselves there at  
11 the shop. We had two or three different gasket materials  
12 there. I done forgot the name of them now.

13 We had -- I think it was three different kinds of  
14 gasket material. Some of it was light. Some of it was  
15 dark. Armstrong, for one. And I don't know. John Crane,  
16 I believe, might have been another.

17 But, anyway, we cut our own gaskets out. We would  
18 get gasket material in there -- say, like four-by-eight  
19 sheets -- partially four-by-eight sheets. And we'd  
20 appoint -- maybe me today, I'd cut gaskets.

21 We had hard plywood or hardboard to go down. We'd  
22 set that down on, and we'd stamp them out, you know. And  
23 we had them for different sizes. And we made our own  
24 gaskets as far as that goes.

25 Q And you mentioned a few different manufacturers of

1 sheet material. And I was sort of interested in knowing:  
2 if there were times, maybe a month at a time, where you  
3 would have one manufacturer of sheet material, and then  
4 maybe the next month, you'd have another manufacturer of  
5 sheet material?

6 A Just whatever our supervisor would order.

7 Q Okay.

8 A I guess whatever he could get his hands on at that  
9 particular time.

10 Q Okay.

11 A But we went through several amount of manufacturers  
12 over a period of years.

13 Q I got you. When you had a number of sheets, I guess  
14 to cut gaskets, would you get, for example, Armstrong  
15 sheet goods to cut all your gaskets, if that's what you  
16 were provided from the supply store?

17 A I don't recall where we were strictly. If I was  
18 cutting gaskets out and I had the piece of Armstrong  
19 material, or John Crane material, or whatever up there, I  
20 was cutting my gaskets out of it.

21 Q And my only point was, when I'm trying to understand,  
22 if you, for example, needed three sheets, would you get  
23 three of the same manufacturer, or would it be a  
24 mix-and-match? Or do you know?

25 A It could be a mix.

1 Q Do you have an estimate of a percentage of time it  
2 would be insulated -- excuse me -- a flange would be  
3 insulated?

4 A Probably about 25, 30 percent of the time, it would  
5 have insulation on it that you'd have to beat off.

6 Q And what -- what did you beat it off with?

7 A Most of the time with a -- if you can get it off with  
8 a screwdriver, you'd get it off that way. And then use a  
9 scrape like a putty knife, and scrape it off.

10 Then if you have to, you'd use a brush. If it was  
11 even tougher than that, you'd put a brush in a drill motor  
12 and use that.

13 Q Got you. The last question is, when you were  
14 cleaning the flange for a stuck-on gasket, what equipment  
15 would you use?

16 A Now, what?

17 Q When you were cleaning a flange, taking the old  
18 gaskets -- you were taking it off, you have to clean it a  
19 little more. Would you ever use -- what equipment would  
20 you use to remove the gasket?

21 A Just what I said. Either you use a brush or a brush  
22 and a drill motor.

23 Q Okay.

24 A A putty knife.

25 Q Okay.

1 A You start probably with a putty knife. And then if  
2 you couldn't get it off with that, you would take and go  
3 to -- when you go to sort of like what I'd say chiseling  
4 it off with a putty knife, you got excessive stuff left  
5 all over it. So then you go to a brush and to a drill  
6 motor with a brush in it to get the excess off there.

7 And then if that didn't work, you'd get your pick.  
8 And you would go picking the rest of it off. It was a  
9 very strenuous job if it was on the steam line.

10 Q Okay. You mentioned removing some insulation. Is  
11 there any way for you to estimate the number of times  
12 during a week or a month that you would remove insulation?

13 A No. The only time we removed any insulation was back  
14 in the late '60s. And that was on the pump that lady was  
15 asking me about under the vessel I was talking about.  
16 That's the only time I removed any insulation was that.

17 Q Okay.

18 A And I did that but one or two times.

19 Q So during your career then, you only removed  
20 insulation one or two times?

21 A I don't know how many times I removed it after it was  
22 built into that mold form. Maybe -- I don't know, three  
23 or four times, you know. It wasn't that many times.

24 Q And each time you removed that insulation, was it so  
25 that you could make some repair to the equipment?

1 A Yes.

2 Q You had mentioned some safety meetings with Daniel  
3 last time?

4 A Yes.

5 Q Do you recall asbestos being discussed in any of  
6 those meetings?

7 A No.

8 Q We've got a good deal of information about heart  
9 troubles with a cardiac pacemaker. I know you've got  
10 that. And you had some angina and some coronary artery  
11 disease. Do you remember those diagnoses?

12 A Yes.

13 Q I'm sure you do. You've got some high blood pressure  
14 and some -- I guess the technical term is hyperlipidemia.  
15 But it just means, you know, like high fat content in your  
16 blood, right? You know, like -- what's the word I'm  
17 looking for?

18 A Well, you know, the last -- they may have checked my  
19 cholesterol high in my lifetime a couple of times. But  
20 once they classify you with high cholesterol, they put you  
21 on a pill. And they want to keep you on that pill.

22 And every time you're checked, your cholesterol is  
23 all right. So I dropped the pill. I dropped the pill,  
24 what, three years ago. I go to the doctor. The  
25 cholesterol was fine. As far as he knows, I'm still

1 taking the pill, but I'm not. So the pill, I threw it  
2 away.

3 Q Good for you.

4 A So I've got no cholesterol problem.

5 MR. TIVIN: And that ends our reading of the  
6 depositions of the Plaintiff, Dennis Seay.

7 THE COURT: All right. Let me ask y'all something  
8 real quick up here, if I could.

9 (WHEREUPON, a bench conference was held.)

10 THE COURT: Okay. Ladies and gentlemen, it's right  
11 at 5:00. I think probably the most prudent thing to do,  
12 we're going to watch another video just for about 30  
13 minutes. Because if you get out right now, you're going  
14 to be stuck in traffic anyway. So you might as well use  
15 this time.

16 MR. PANATIER: Your Honor, you said you wanted me to  
17 go about 30 minutes. Do you want me to stop it at 30?

18 THE COURT: Right.

19 MR. PANATIER: Okay. So this -- the Plaintiffs would  
20 call Ronnie Thompson. He's a coworker of Mr. Seay from  
21 Celanese. And so we'll play that.

22 THE COURT: Thank you.

23 MR. PANATIER: Oh, and just for the record, we'll  
24 mark -- we'll mark a copy of the transcript for the court  
25 reporter so it doesn't have to be taken down when we're --

1 when we're done.

2 THE COURT: Very good.

3 (WHEREUPON, Court's Exhibit No. 2 was played in open  
4 court.)

5 MR. PANATIER: This is probably a good stopping  
6 point, Your Honor.

7 THE COURT: Okay. We'll resume tomorrow morning at  
8 9:30. Just be back in the jury room at 9:30. And we'll  
9 start up at that time.

10 Don't talk about the case. Don't do any outside  
11 research. And continue to keep an open mind.

12 Thank you very much.

13 (WHEREUPON, the jury was excused from open court at  
14 approximately 5:31 p.m.)

15 THE COURT: We'll see everybody back at 9:30.

16 (WHEREUPON, the proceedings were concluded at  
17 approximately 5:31 p.m., to be reconvened on  
18 Thursday, October 1, 2015.)

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STATE OF SOUTH CAROLINA )

COUNTY OF SPARTANBURG )

COURT OF COMMON PLEAS  
2013-CP-23-03915

ANGIE D. KEENE, INDIVIDUALLY )  
AND AS PERSONAL REPRESENTATIVE )  
OF THE ESTATE OF DENNIS SEAY, )  
DECEASED, AND LINDA SEAY, )  
PLAINTIFF, )

ORIGINAL

vs. )

TRANSCRIPT OF RECORD

CNA HOLDINGS, LLC, AND JOHN )  
CRANE INCORPORATED, )  
DEFENDANTS. )

VOLUME II

October 1, and 2, 2015  
Spartanburg, South Carolina

B E F O R E:

THE HONORABLE D. GARRISON HILL, JUDGE; and a jury.

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I N D E X

(PW) - Denotes Plaintiff's Witness  
 (DW) - Denotes Defense Witness  
 (IC) - Denotes In Camera

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All Exhibits were retained by the Clerk of Court for Spartanburg County.

1                                    THURSDAY, OCTOBER 1, 2015

2                    (WHEREUPON, Court's Exhibit No. 2 was marked for  
3                    identification and admitted into evidence.)

4                    THE COURT: Good morning.

5                    Okay. Anything before we bring the jury in?

6                    MR. PANATIER: Real -- I -- real quick. Court's  
7                    Exhibit No. 2 is the PDF printout of what has been played  
8                    so far and what will be played of the video of Ronnie  
9                    Thompson. So we've already marked that with the court  
10                   reporter. And that will be Court's Exhibit No. 2.

11                   THE COURT: Okay, sir.

12                   MR. TIVIN: And, Your Honor, if I could have a --  
13                   Mark Tivin on behalf of John Crane.

14                   If I could have an instruction on the Court's  
15                   procedures. There may be -- I'm not positive about the  
16                   testimony that's going to be coming in or how it's going  
17                   to be coming in.

18                   THE COURT: Okay.

19                   MR. TIVIN: But there may be a point in time when I  
20                   may be seeking a limiting instruction, or an instruction  
21                   from the Court regarding evidence as it comes in versus  
22                   John Crane versus Hoechst Celanese.

23                   THE COURT: Okay.

24                   MR. TIVIN: Do you want me to do that when that --  
25                   when I hear it, or when they're done?

1           Because I don't know exactly how it's going to be  
2 coming in. I don't know if it's going to be necessary, but  
3 I think it probably will be.

4           THE COURT: Well, if it does occur, we'll maybe have  
5 a discussion up here, or we can take the jury out.

6           MR. TIVIN: Okay. Thank you, Your Honor.

7           THE COURT: All right.

8           MS. SHOFNER: And, Your Honor, we had -- for  
9 Celanese, we had -- we would like to -- there are two  
10 documents that maybe -- that are probably going to be used  
11 with Dr. Holstein's testimony today. One is the  
12 Merewether article and then a 1946 ACGIH article.

13           And we would renew our objections to those articles  
14 as being against Celanese as we are premise owner and the  
15 standard and duty that were -- that we should have known  
16 or -- is different for us. And that there's no evidence  
17 and there will be no proof that we, actually, had actual  
18 constructive knowledge of those two documents.

19           And, therefore, we would ask for a limiting  
20 instruction that these documents are not to be offered  
21 against Celanese as a premise owner.

22           And it may be easier if, after you hear the  
23 testimony, we ask for that limiting instruction for you to  
24 rule on that issue.

25           THE COURT: Okay. It probably would.

1 MS. SHOFNER: Probably. But I just wanted you to be  
2 aware that those are the two documents that we would renew  
3 our objections on.

4 THE COURT: Thank you, Ms. Shofner.

5 MR. YOUNG: Judge, I talked to Mr. Panatier briefly  
6 this morning. We are moving along pretty well. And I  
7 think he was okay with -- we -- I'm going somewhere to see  
8 one of my daughters. And we're both on the 6:30 flight  
9 tomorrow out of Greenville.

10 And we were just going to ask -- make a joint  
11 request, I believe, that we could leave just a little  
12 early tomorrow.

13 MR. PANATIER: And with the -- with the promise that  
14 we're right on schedule. Our case -- our case, we  
15 probably won't even fill the day tomorrow. The only other  
16 thing we have to do for our case in chief is their  
17 corporate representatives, who they're bringing next week.

18 So all of our evidence -- our experts will be done.  
19 Our family will be done. Our videos will be done.  
20 They're just going to hold our case in chief open for  
21 those two corporate reps, so.

22 MR. YOUNG: And, Judge, we feel like we'll be  
23 finished with the evidence for sure by Wednesday  
24 afternoon.

25 THE COURT: Everybody will be through by Wednesday;

1 and we'll have the charge and --

2 MR. PANATIER: We can close Thursday probably.

3 THE COURT: Thursday morning?

4 MR. PANATIER: Yeah.

5 MR. YOUNG: Yes, sir.

6 THE COURT: All right.

7 MR. YOUNG: I just wanted to give you a heads-up,  
8 because I know you want us to finish, so.

9 THE COURT: Okay. Well, we'll, certainly,  
10 accommodate that so everybody can make their flight.

11 MR. PANATIER: Thank you, Your Honor.

12 THE COURT: Thank you.

13 MR. YOUNG: Thank you, Your Honor.

14 MR. PANATIER: And we're going to start with  
15 Dr. Holstein, and then go back to the video.

16 THE COURT: Okay. We can bring the jury in.

17 (WHEREUPON, the jury came into open court at  
18 approximately 9:48 a.m.)

19 THE COURT: Well, I haven't had to stop for a train  
20 in a long time, but I did this morning. And that's why  
21 we're running behind. That's the same train that went by  
22 my freshman dorm at Wofford College. And so I had a panic  
23 attack, too, so.

24 All right. You can call your next witness. Yes,  
25 sir.

1 MR. PANATIER: Thank you, Your Honor.  
2 We're going to interrupt the video that was playing  
3 yesterday to call a live witness.

4 So, at this time, the Plaintiffs call Dr. Edwin  
5 Holstein.

6 THE CLERK: Place your left hand on the Bible and  
7 raise your right hand.

8 WHEREUPON,

9 EDWIN HOLSTEIN, M.D.,  
10 after first having been duly sworn, testified as follows:

11 THE CLERK: Thank you.

12 Have a seat.

13 THE WITNESS: Thank you.

14 MR. PANATIER: Good morning, everybody.

15 DIRECT EXAMINATION

16 BY MR. PANATIER:

17 Q All right. Dr. Holstein, can you introduce yourself  
18 to the ladies and gentlemen of the jury?

19 A My name is Dr. Edwin Holstein.

20 Q Okay. And it's up there. And so, yesterday, we had  
21 a witness who had a doctor in front of his name, and he  
22 was not a medical doctor. What type of a doctor are you?

23 A I am a medical doctor.

24 Q Okay. So does that mean that you were trained as a  
25 doctor that would treat people?

1 A Yes.

2 Q Okay. And throughout your career, have you treated  
3 people, as well as evaluated people's potential for  
4 getting diseases or having dangerous exposures?

5 A Yes, sir, I have.

6 Q Underneath your name, it says, occupational medicine.  
7 Is that your area of specialty?

8 A I have a few areas of specialty, but that's the one  
9 I've mostly made my career out of.

10 Q Okay. What are your other areas of specialty?

11 A I was originally trained in the field of medicine  
12 that is called internal medicine. And then later on,  
13 preventive medicine with a subspecialty in occupational  
14 medicine.

15 Q You handed me an updated résumé yesterday. I'm going  
16 to go ahead and put that on the camera here. There we go.

17 All right. Dr. Holstein, so you live in Boston?

18 A Just outside.

19 Q Okay. And, first of all, did you go to college?

20 A I did.

21 Q Okay. Where did you go to college?

22 A I went to Harvard College in the Boston area.

23 Q Okay. And did you have a major in undergrad?

24 A Biology.

25 Q And did you go to graduate school?

1 A I did.

2 Q Okay. Where did you go to graduate school?

3 A Before I went to medical school, I just went down the  
4 road a couple miles to the Massachusetts Institute of  
5 Technology. It's usually just known as MIT. And I did  
6 two years of research on how the brain works.

7 Q Okay. So Harvard, MIT, you were really slumming it,  
8 I guess. There's MIT.

9 Now, you didn't get your doctorate or your doctor of  
10 medicine there, you continued your education, fair?

11 A Yeah. That was -- MIT was before I went to medical  
12 school.

13 Q Okay.

14 A And after that, I went to the University of  
15 Pittsburgh where I did my first two years of medical  
16 school. Then I made a voluntary transfer to Mount Sinai  
17 School of Medicine, which is in New York City. I did my  
18 last two years of medical school there. I graduated in  
19 1971, which is when I got my MD degree.

20 Q Okay. Before I get too far into this, let me switch  
21 back to the computer. And I want to go through sort of  
22 the outline, what we're going to talk about today -- all  
23 right -- with you, Dr. Holstein.

24 The first thing is we'll talk about your background,  
25 your education, and your experience. We're kind of

1 already doing that.

2 Is that something you're prepared to talk about?

3 A I'll talk about myself all day long, if you want.

4 Q All right. What diseases do asbestos cause? Now, is  
5 this something that you have studied?

6 A Yes.

7 Q Okay. Have you studied the methods that scientists  
8 use, and that you yourself, as a scientist, that you use  
9 to determine whether or not something like asbestos can  
10 cause disease?

11 A Yes, sir.

12 Q Okay. State of the art, or what I like to call is  
13 what was known about a disease or what should have been  
14 known. Is that something you can talk about?

15 A Yes, sir.

16 Q Is that something you've studied before?

17 A Yes, I have.

18 Q And have you talked to other juries about that topic?

19 A I have.

20 Q Causation. So how asbestos can cause diseases. Is  
21 that something you're prepared to do?

22 A Yes, sir.

23 Q Okay. How people can be exposed to asbestos working  
24 with different products. Is that something you're  
25 prepared to talk about?

1 A Yes, sir.

2 Q And then, lastly, have you evaluated Dennis Seay's  
3 exposure to asbestos?

4 A Yes, I have.

5 Q You have a pile of documents up there. Did you  
6 review his testimony, the testimony of Ronnie Thompson?

7 A I did.

8 Q Okay. And, luckily, the juries already seen and  
9 heard from Mr. Seay. So we don't have to do this in a  
10 hypothetical. They've already heard it. So is that  
11 something you reviewed in this case?

12 A I did. I read -- I didn't see the video. I read the  
13 written word --

14 Q Okay.

15 A -- in the transcript.

16 Q All right. So let's go back to your background here.  
17 And let's see. Education. Experience. Service. Okay.  
18 Service.

19 Did you -- did you have any service?

20 A I served in the United States Air Force. That was  
21 from 1970 -- I get the years mixed up. That was 1974 to  
22 1976. I was a major. And I was chief of medicine at an  
23 Air Force hospital.

24 Q Okay. Which one?

25 A It was called Pease, P-E-A-S-E, Air Force Base in New

1. Hampshire.

2. Q All right. Now, you currently run your own  
3 consulting practice, right?

4. A I do.

5. Q And is that Environmental Health Associates?

6. A That's right.

7. Q All right. And is -- today, you're talking to a  
8 jury. This is something you've done many times, fair?

9. A Yes. I have done that.

10. Q I have personally asked you questions in front of  
11 juries?

12. A Yes, you have.

13. Q Okay.

14. A So have these gentlemen.

15. Q Okay. I'm sure they have.

16. Now, it, also, says you are a clinical assistant  
17 professor, Division of Environmental Science's, Mount  
18 Sinai School of Medicine.

19. A Yes.

20. Q So have you taught about environmental sciences,  
21 first of all?

22. A Yes, I have.

23. Q Have you taught about occupational medicine?

24. A Yes.

25. Q What is occupational medicine?

1       A     Occupational medicine is pretty much what you'd guess  
2       from the name of. It's those conditions that you can get  
3       from the work you do. And it's -- you know, many medical  
4       specialties are about just one organ in the body, the  
5       heart, or the lungs, or something. This field can be any  
6       part of the body. What it has in common is that you can  
7       get it from your work.

8             And I've often given the example that if you look in  
9       the carpet on this floor, this was laid by somebody who  
10      probably does it regularly as a living. And wall-to-wall  
11      like this, they're going to do a lot of that work on their  
12      knees stapling this carpet in, particularly at the edges.  
13      And they can get knee problems if they do that for many  
14      years.

15            People who operate jackhammers can get disorders of  
16      the nerves that come out of their neck and down into their  
17      arms from the constant vibration.

18            And coal miners can get affected by the dust that's  
19      in coal mines.

20            And people who work in, let's say, dyeing textiles  
21      can be affected by the dyes that are used.

22            And, in this case, there are questions about whether  
23      a dust like asbestos can cause somebody to get cancer.

24      Q     Would it be fair to say that from an occupational  
25      medicine perspective, you're evaluating potential

1 exposures and potential ways that workers can get sick?

2 A Yes. That's correct.

3 Q All right. Let's back up here a little bit.

4 Now, Mount Sinai School of Medicine -- is Mount Sinai  
5 an institution that historically has been involved with  
6 asbestos issues?

7 A Yes.

8 Q Okay. And can you explain a little bit of that for  
9 us?

10 A Well, sure. It's a big city medical center. It's  
11 got a hospital. And it's, also, got a medical school.  
12 And they're all together. And so they take care of  
13 patients. And they, also, do a lot of teaching. And they  
14 do a lot of research.

15 And starting in the 1950s -- late 1950s, one of the  
16 areas that Mount Sinai became known for was research on  
17 the health effects of asbestos. And that was primarily  
18 due to the fact that there was a -- one particular doctor  
19 there, whose name was Dr. Selikoff. And Selikoff made  
20 this his specialty. And he started publishing a lot of  
21 research articles on it. And they became known worldwide.

22 And then he was able to bring in more doctors and  
23 more scientists, and make a larger and larger department  
24 studying the health effects of asbestos.

25 Q So I showed this book to the jury in opening. You've

1 seen this book before?

2 A Yes, I have.

3 Q Okay. And this was the report of what?

4 A So this is a report of the first really big  
5 scientific conference held on the health effects of  
6 asbestos. It was organized by Dr. Selikoff. You can see  
7 his name sort of near the top upper left-hand side of this  
8 slide.

9 And he brought in scientists from all over the world  
10 to discuss and to present their research on the health  
11 effects of asbestos. It was held in New York City in  
12 1964.

13 And then it took them about a year to get all of the  
14 presentations by all of the different scientists into  
15 print. And they did that. And they put it into a  
16 journal, which has now been given a hard back. And so it  
17 can, also, be called a book.

18 Q And because I bounce around, I'm just going to ask  
19 you right now. To the extent you're asked a scientific or  
20 medical question, can you keep all of your opinions to a  
21 reasonable degree of scientific or medical probability?

22 A Yes.

23 Q All right. So going back here, continuing at the top  
24 on your education. So you went to medical school at  
25 Pittsburgh. And then you moved over to Mount Sinai?

1 A So we covered the first half of that. Public schools  
2 in New Jersey, then down through Harvard, MIT, University  
3 of Pittsburgh for two years, Mount Sinai for two years.

4 And then I started my hospital-based training in the  
5 field of internal medicine. And for that, I went back to  
6 Boston where I had been in college. And I did that  
7 hospital training at the Boston City Hospital. It was in  
8 the field of internal medicine.

9 And internal medicine is taking care of adults for  
10 conditions other than surgery. So it would be anything  
11 from heart attacks, to high blood pressure, to diabetes,  
12 to pneumonia and respiratory failure, kidney failure. All  
13 of that long and dismal list of conditions that we get,  
14 particularly as we get older.

15 Q Okay. So -- but then it looks like you -- so you did  
16 an internship and residency in internal medicine. And  
17 then two years later -- now, what happened between '74 and  
18 '76?

19 A That's when I was in the Air Force.

20 Q All right. So then in '76, then you go into  
21 occupational medicine. Why did you do that?

22 A Well, I'd been thinking about what I was interested  
23 in. And I had become interested in this field by reading  
24 about it. I didn't really have that much training about  
25 it back when I was training in internal medicine. There

1 was a little bit, but not much, but enough to pique my  
2 interest.

3 And I had particular -- particularly read about  
4 Dr. Selikoff's work, among others. And I decided it would  
5 be great if I could study with Dr. Selikoff. So I applied  
6 when I got out of the Air Force. And I was fortunate, he  
7 accepted me into his training program. So I went to work  
8 and study with Dr. Selikoff.

9 Q Now, when you're at Mount Sinai, you're doing  
10 occupational medicine. At some point, did you start to  
11 learn about, and read about, and research asbestos?

12 A From the day I -- really, from before I started with  
13 Dr. Selikoff, but intensively the day I got there.

14 Q Okay. And so what types of things were you learning  
15 about, and what types of research were you doing?

16 A Well, I personally was engaged in different kinds of  
17 research, mostly of the kind that's called epidemiology.  
18 And this is a study of the patterns of disease in large  
19 groups of people.

20 And I participated, also, in trying to answer some  
21 very basic questions about asbestos, things such as how  
22 much exposure is required to cause people to get sick? Is  
23 it a lot, or is it a little?

24 How about family members who might get exposed to  
25 dust that comes home on the clothes? Are they at risk of

1 developing these illnesses?

2 How about bystanders? Not the one who's, actually,  
3 themselves working with the asbestos product with their  
4 own hands. But how about the person who's working 10 feet  
5 away on another job?

6 If you're going to get sick from asbestos, is it  
7 going to happen right away, or is it going to happen after  
8 many years?

9 So a whole series of questions of that sort. Because  
10 they -- if you know the answers to those questions, then  
11 it helps you figure out how to protect people from the  
12 effects of asbestos.

13 Q And would that be called preventative medicine?

14 A That was called preventive medicine, yes.

15 Q And you mentioned -- I just wanted to ask you about  
16 this. You mentioned a scenario where someone might bring  
17 home asbestos on their clothing. Have there been cases of  
18 people who got disease who were just laundering the  
19 clothing of workers who worked with asbestos?

20 A Yes. I helped in research on that and other -- with  
21 Dr. Selikoff. And other places around the world did  
22 similar research. And the answer is, yes. Household  
23 family members, people who live in the same house can and  
24 have gotten sick from the asbestos that just comes home on  
25 the clothes, or on the hair and the boots of the actual

1 working person.

2 Q And we heard this concept yesterday from Dr. Brody  
3 called "individual susceptibility." So have there been  
4 scenarios where someone works with asbestos day in, day  
5 out, they come home, the -- their spouse washes their  
6 clothes, spouse gets mesothelioma, but worker doesn't?

7 A Yes. There have been such cases.

8 Q Okay. You talked about internal medicine. So before  
9 I get past that whole topic, it says here you're  
10 board-certified in internal medicine. What is board  
11 certification?

12 A Board-certified means that you've taken the training,  
13 you've passed an exam. And you're recognized as a  
14 specialist in that field.

15 Q And the same with board certification for  
16 preventative medicine and occupational medicine specialty,  
17 you're board-certified in that?

18 A Everybody likes to add a syllable and call it  
19 "preventative medicine." When I grew up, it was always  
20 just "preventive medicine."

21 Q Oh, preventive. Okay. So I went with the extra  
22 syllable. I'm sorry. Preventive medicine. You are  
23 board-certified in that; Fair?

24 A Yes. That's correct.

25 Q Okay.

1 A It Means I took the training, passed the exam.

2 Q Okay. And then under other certifications, it says  
3 NIOSH A reader. Now, can you explain -- what is that?

4 A Well, That's really a minor -- a very minor thing. I  
5 don't know why I still have it on my résumé.

6 But that means that you took a two-day course in  
7 using -- the right way to use certain terminology, certain  
8 letters and numbers to describe X-rays of people exposed  
9 to dust diseases.

10 Q Okay. And if you -- if you -- to be clear, if you  
11 pass that exam, you're a B reader, if you don't pass,  
12 you're an A reader.

13 A If you take the course, you're an A reader --

14 Q Oh.

15 A -- if you then pass an exam, you're a B reader.

16 Q Okay. So you're an A reader; right?

17 A I am.

18 Q Okay. And did you look at X-rays in this case?

19 A Yes -- no. In this case?

20 Q Yeah, in this case.

21 A No.

22 Q Okay. Did you review the medical records in this  
23 case?

24 A I did.

25 Q Okay. Let me ask you this. From your review of the

1 medical records, what disease did Dennis Seay have?

2 A Well, he had malignant mesothelioma.

3 Q Okay. And you don't disagree with his treating  
4 physicians, based on the records you reviewed; is that  
5 fair?

6 A I agree with that diagnosis.

7 Q Okay. Now, you were not his treating doctor; right?

8 A Correct.

9 Q Okay. And you did not meet Dennis Seay; right?

10 A Correct.

11 Q What you know about him is from reading his testimony  
12 and looking at his medical records; correct?

13 A That's right.

14 Q All right. Do you have an opinion as to what caused  
15 his mesothelioma?

16 A I do.

17 Q What is that?

18 A I believe that his mesothelioma was caused by the  
19 action of the exposures to asbestos that he had, which  
20 were pretty much limited to the period of time when he was  
21 working at Hoechst Celanese.

22 Q Okay. And we'll talk a little bit more about that  
23 shortly. You're licensed to practice medicine?

24 A I am.

25 Q Okay. And that's in Massachusetts where you live --

1 A That's right.

2 Q -- right?

3 Has that license ever lapsed for any reason?

4 A Yes, it has.

5 Q Okay. And why?

6 A Well, two reasons. First of all, in my training as I  
7 moved from place to place, for instance, when I went from  
8 Massachusetts to New York, I allowed my Massachusetts  
9 license to lapse because I got a New York license instead.  
10 I, also, got a New Jersey license.

11 But there did -- I think what you're referring to is  
12 there did come a time when I made a mistake, and I allowed  
13 my license to lapse. And I didn't have a license  
14 anywhere.

15 And the reason for that is that a medical license is  
16 like a driver's license. You've got to renew it every  
17 couple years. They mail you the forms, you fill out the  
18 forms, you write a check, you put that in the envelope,  
19 too, and you send it in. And unless you've done something  
20 wrong, your license gets renewed.

21 And I had changed my office from New Jersey to  
22 Massachusetts -- back to Massachusetts. My mail did not  
23 get forwarded. I didn't get the application materials. I  
24 forgot. I overlooked it.

25 And so I did have a period of two years where I

1 thought I was licensed, but I was not, until I discovered  
2 the mistake. I filled out the forms. I wrote a check. I  
3 submitted it. And within two to three weeks, my license  
4 was renewed.

5 I did not have any discipline, or censure, or  
6 reprimand of any sort. So nobody took my license. Nobody  
7 disciplined me. But it is true that there was a period of  
8 two years when I thought I had a medical license. But,  
9 due to oversight, it turned out that I, actually, did not.

10 Q Okay. So this was an issue of your mail wasn't  
11 forwarded, you didn't renew it. You didn't like do  
12 surgery on someone and cut off the wrong arm?

13 A Correct.

14 Q Okay. A few more things I want to ask about for your  
15 background. You're a member of the American Medical  
16 Association, a pretty big organization?

17 A Yes.

18 Q And then I want to ask you about this. Consulting  
19 medical director, Port Allegany Asbestos Health Program.  
20 What is that?

21 A So there's a little town in the western part of  
22 Pennsylvania called Port Allegany. It's a very rural  
23 area, dotted with small towns. And they -- this  
24 particular town has a couple factories in it.

25 And one of the factories is owned by the Pittsburgh

1 Corning Corporation. And there was a period of time in  
2 the 1960s and 1970s when they made a product out of  
3 asbestos. They made a material that was designed to go on  
4 pipes and to insulate the pipes.

5 And that material had a high concentration of  
6 asbestos in the product. And, therefore, a lot of the  
7 people who worked there became exposed to asbestos during  
8 those years making that product. And, also, family  
9 members were -- also, in the way that I described to you  
10 before. And all together, there were several thousand  
11 people who had probable exposure to asbestos from the  
12 years they made this.

13 So I -- Mount Sinai was approached by the union and  
14 later by the company to see what might be done to help  
15 these people who had been exposed to asbestos. And,  
16 ultimately, after a number of years, it resulted in the  
17 creation of a health program. And it's got the long name,  
18 Port Allegany Asbestos Health Program. And I'm the  
19 medical director of that program. And I have been for  
20 several decades.

21 And I go to Port Allegany. I work with the local  
22 doctors, the local hospitals, also, the clergy, the mayor,  
23 the union, the company. And we've put together a medical  
24 program to do the best that can be done to try and  
25 preserve the health of these several thousand people who

1 have been exposed to asbestos.

2 Many decades have gone by. Many have passed away  
3 from many causes, not just asbestos. Many have moved  
4 away. So over the course of time, the program has become  
5 a little smaller. But it's still going. And I'll be  
6 going to Port Allegany again sometime in the next month or  
7 two.

8 Q So this was a surveillance program for workers who  
9 worked in an asbestos factory; fair?

10 A Medical examinations, and screenings, and health  
11 education about what they can do to help maintain their  
12 health, and, also, to educate the -- make sure the local  
13 physicians were familiar with the latest ways to diagnose  
14 and treat asbestos-related diseases.

15 Q All right. So would it be fair to say you were  
16 working closely with the people who were treating these  
17 individuals hands-on, and helping them learn how to spot  
18 any potential symptoms of an asbestos-related disease and  
19 help them screen for asbestos-related diseases?

20 A Yes. The first time the Red Sox ever won the World  
21 Series, I was sitting in the living room of one of the  
22 doctors in Port Allegany.

23 Q Okay. And -- now, as part of this program, have you  
24 personally conducted interviews on workers?

25 A Yes.

1 Q And is that something where a doctor might call that  
2 taking a work history, or evaluating an exposure?

3 A Yes. A work history or it's called an occupational  
4 history. And the idea is pretty simple. You just sit  
5 down with a person and, as part of your examination of  
6 that person, you ask them in detail about what work did  
7 you do? How did you do it? What tools did you use? How  
8 long did it take. Did you saw it? Did you file it? Did  
9 you drill it? Did you nail it up? Did you tear it down?

10 And just simple, but important questions of that  
11 sort, which, if you do it with hundreds and, in fact,  
12 thousands of people, you begin to get a sense of how  
13 people worked with various materials in the working  
14 environment, and what kinds of exposures -- the magnitude  
15 of the exposures that they suffer when they are doing what  
16 they do.

17 Q And in addition to doing work histories, did you ever  
18 take part in actual air monitoring surveys of any workers  
19 to see what was in the air using samplers that you might  
20 put on a person, or put around a person's work area?

21 A Well, in my training, I was taught how to do air  
22 measurements of asbestos. And I did some. But not --  
23 your description wouldn't quite fit what I, actually, did.

24 Q Okay. Well, explain what you did then.

25 A I took air measurements of asbestos in a school

1 during the summer to see what the asbestos air levels were  
2 in the public school. Because at the time, back in the  
3 '80s, there was a lot of -- a lot of concern because there  
4 were many asbestos-containing products used in the  
5 construction of schools.

6 So we wanted to get measurements during the summer  
7 when the school was empty and quiet, and compare that to  
8 measurements later on when it was full of kids who'd be  
9 throwing pencil darts in the ceiling.

10 Q Okay. Now, let me ask you this question about  
11 asbestos products generally. Is it generally a true  
12 statement that if it's just sitting there, and no one's  
13 touching it, no one's working on it, no one's messing with  
14 it, so long as that's the case, generally speaking, is it  
15 going to release a lot of asbestos?

16 A It may -- it may release a little bit from natural  
17 vibrations, a train going by, a big storm, particularly if  
18 there's a leak in the roof and it's -- then after a while  
19 it dries out. And then it's more crumbly than it was  
20 before.

21 So, yes, maybe a little bit. But, typically, if it's  
22 just totally left undisturbed, most circumstances are not  
23 much to worry about.

24 Q All right. So when you evaluate, for instance,  
25 somebody like Dennis Seay, are you looking for the types

1 of operations that he did himself, as well as those that  
2 were going on around him to evaluate his exposure to  
3 asbestos?

4 A That's correct. I don't care if he walked down a  
5 hallway that had some asbestos in the joint compound in  
6 the sheetrock that makes the walls of the hallway. I  
7 don't care about that.

8 But I do care about what was he tearing out? What  
9 was he sawing? What was he ripping? What were other  
10 people around him doing of that sort?

11 Q Okay. Let's just ask a few more questions about  
12 this. Have you -- I'm not going to ask you about all  
13 these. Have you presented on asbestos and occupational  
14 medicine repeatedly since the 1970s?

15 A Many times.

16 Q Okay. Have you done that on asbestos?

17 A Yes.

18 Q And, in fact, there's -- there's one down there on  
19 asbestos hazards in schools; right?

20 A There it is, next -- second from the bottom.

21 Q All right.

22 A That was in Atlanta.

23 Q There is one second from the top on asbestos disease  
24 in workers of the chemical industry; right?

25 A Yes.

1 Q And that was in Yugoslavia back when --

2 A Back when there was a Yugoslavia.

3 Q Yeah, right. It doesn't exist anymore; right?

4 A It Doesn't exist anymore. It's Broken up into about  
5 six countries.

6 Q Okay. And then you have some publications as well.  
7 You've published a few times on asbestos; is that fair?

8 A Yes. That's right.

9 Q All right. Have you stayed abreast on the medical  
10 and epidemiological literature as it pertains to asbestos?

11 A Constantly. Yes.

12 Q Okay. And have you stayed up to date on the  
13 regulatory and scientific bodies, and their findings from  
14 their research on asbestos?

15 A Yes, sir, I have.

16 Q Okay. Have you stayed up on the literature having to  
17 do with the different ways different products can release  
18 asbestos?

19 A Yes.

20 MR. PANATIER: Your Honor, at this time, we would  
21 offer Dr. Holstein as an expert in occupational medicine  
22 with a focus on asbestos.

23 THE COURT: Any voir dire?

24 MR. TIVIN: Your Honor, we have no problem with --  
25 not at this time on qualifications. But we would object

1 to Mr. -- Dr. Holstein's expertise on the ability of  
2 different products to release fibers.

3 THE COURT: Well, he's qualified as an expert in the  
4 field that you offered, Mr. Panatier. You can continue.

5 MR. PANATIER: Okay. Thank you, Your Honor.

6 BY MR. PANATIER:

7 Q What is the rate that you charge for your time, sir?

8 A I charge a lot. I charge \$700 an hour.

9 Q All right. Now -- and you've done this many times;  
10 fair?

11 A Yes, I have.

12 Q Okay. Let me ask you one other thing. Let me bring  
13 this back to my PowerPoint. Okay. So we went through all  
14 of this.

15 I wanted to ask you about your work with government  
16 bodies. Have you ever done any work with different  
17 government bodies?

18 A Yes, I have.

19 Q Okay. And what's that?

20 A Well, I've worked with something called OSHA. I've  
21 worked with something called NIOSH. I've worked with the  
22 National Cancer Institute. I've worked with the  
23 Environmental Protection Agency. Those are the main  
24 government -- federal government agencies.

25 I've, also, been asked to testify before various

1 state legislatures at one time or another. Sometimes,  
2 I've consulted to state departments of health, sometimes  
3 to state environmental -- environmental departments.

4 Q And have any -- has any of that involvement in --  
5 dealt with the issue of asbestos?

6 A Most of those that I've mentioned were asbestos.  
7 Some were other topics.

8 Q Okay. And, in fact, this is just a -- this is a  
9 quotation from the Federal Register from the Department of  
10 Labor. That's OSHA, right? It says Occupational Safety  
11 and Health Administration.

12 A Yes, O-S-H-A. OSHA, yes.

13 Q And they, actually, quoted you about the progression  
14 of the disease asbestosis, right?

15 A They did.

16 Q Okay. And this would just be your general  
17 description of the progression of that disease when it is  
18 severe; is that fair?

19 A Yes.

20 Q Okay. And can asbestosis be a very severe disease?

21 A It can be. Yes, it can be very severe. It can even  
22 be fatal. But it has the whole range, the whole spectrum.  
23 It has mild cases, too.

24 Q Asbestosis, was that a disease that was published  
25 about in the early 1900s?

1 A Yes, it was.

2 Q Okay. So let's -- let's get to that. So I want to  
3 talk to you a little bit about what was known and when.  
4 And I will move this back to the camera. And then I'll  
5 use the easel probably.

6 Okay. So when we talk about asbestos hazards  
7 generally, you said that you had reviewed the literature  
8 on that and what was publicly available about asbestos  
9 hazards; is that fair?

10 A Yes. That's true.

11 Q Okay. So to give the jury a thumbnail sketch of the  
12 type of information that was available, first of all, give  
13 us an idea. From the 1800s until -- let's say OSHA. When  
14 did OSHA come out?

15 A 1971.

16 Q Okay. So OSHA comes out in '71. From the 1900s to  
17 '71, can you give us some appreciation for just how many  
18 different articles had been published that were publicly  
19 available on the issue of asbestos and asbestos disease?

20 A Sure.

21 Q Okay. What is that?

22 A Well --

23 Q Without a specific number --

24 A -- you're putting me on the spot here.

25 So up until 1970 -- '64, 1964, someone actually,

1 counted. And there were about 700 different  
2 scientific/medical articles on the health effects of  
3 asbestos by 1964. And at that point, it began to really  
4 mushroom. And I couldn't possibly count them now. But  
5 it's in the many thousands of scientific and medical  
6 papers -- research papers on the health effects of  
7 asbestos.

8 Then, in addition to that, there -- in the recent  
9 years, there's been an awful lot, of course, in lay  
10 publications as well. But I'll put an asterisk next to  
11 that. Because there were some -- even in publications  
12 designed for the layperson going back to the 1930s about  
13 the health hazards of asbestos.

14 Q When you say "for the layperson," you mean a  
15 nondoctor, someone who is not necessarily specialized?

16 A That's right. Just an ordinary person in their home.

17 Q All right. Will you -- as we go through sort of this  
18 thumbnail sketch of this information, will you call us out  
19 on those, too?

20 A I'll do my best.

21 Q Okay. So if you wanted to, say, go back to the 1800s  
22 or 1900s, where would you want to start, just as an  
23 example of what was available?

24 A So the first publication that I know of that was ever  
25 published showing that asbestos could be -- could cause a

1 fatal illness --

2 MR. YOUNG: Your Honor, excuse me.

3 THE COURT: Yes, sir.

4 MR. YOUNG: This is the objection we had earlier.

5 THE COURT: Okay. Do y'all want to come up here and  
6 discuss it?

7 (WHEREUPON, a bench conference was held.)

8 BY MR. PANATIER:

9 Q All right. Dr. Holstein, where would you start?

10 A The first article that I'm familiar with showing that  
11 asbestos can cause a fatal illness was published in  
12 English in 1898.

13 And then there's kind of a -- I know more was going  
14 on, but I don't have a record of it. I just know that  
15 there was more recognition. Because around 1915 -- or  
16 1918, I'm sorry -- a well-known X-ray specialist published  
17 a paper on what the scarring in the lungs that asbestos  
18 can cause looks like on X-rays.

19 Then in 1927, a doctor in England named Cooke  
20 published another case, a fatal case of scarring of the  
21 lungs, asbestosis due to asbestos. And --

22 Q Let me stop you there.

23 A -- he --

24 Q Let me stop you there. Did he, actually, call it  
25 asbestosis then?

1 A I was just starting to say that.

2 Q Okay.

3 A He was the one who suggested the name -- a name for  
4 this disease. He called it asbestosis. And the name  
5 stuck. And it's used to the present day.

6 Q And that's Cooke. And it's with an "E", correct?

7 A Yes.

8 Q Okay. What's the next sort of signpost article that  
9 you'd like to address?

10 A The next milepost was 1930.

11 Q Okay. What happened in 1930?

12 A In 1930, two researchers, doctors, named Merewether  
13 and Price did the first study that is called an  
14 epidemiologic study where they looked at large groups of  
15 people. And, in particular, they were looking with people  
16 who used asbestos in factories in England to weave  
17 asbestos into cloth. Because it could be used for a  
18 variety of purposes.

19 And here, they found for the first time that this  
20 illness, the scarring of the lungs, didn't just affect,  
21 perhaps, an isolated person here, or an isolated person  
22 there, or an individual case here or there, but that in a  
23 factory setting like this, it could affect hundreds of  
24 people and make them ill.

25 And so they carried out these studies. And then

1 they, also, did two other very important things. After  
2 they demonstrated that there was a lot of illness among  
3 these people from asbestos, including disabling illness.  
4 And they, also, learned about deaths, although, obviously,  
5 they couldn't examine people who had passed away. But  
6 they, also, accumulated information about deaths.

7 They did two other important things, which is, they,  
8 also, wrote down ways of diminishing the level of dust,  
9 keeping the dust down in the factory so that they could --  
10 so that cases of this could be prevented by having people  
11 exposed to less asbestos dust.

12 And the other important thing they did was they said,  
13 look, this hazard doesn't exist only in textile industries  
14 using asbestos. This clearly will be a hazard in many  
15 other industries. And they elaborated on that to -- to --  
16 in an useful way.

17 So they did a very comprehensive article, the first  
18 epidemiological study and, perhaps, the first, also,  
19 discussing the hazard in numerous industries and how to  
20 control it.

21 Q Under prevention, what types of methods did they  
22 suggest for preventing these diseases?

23 A Very commonsense methods, and simple methods. Number  
24 one, if you can use something else besides asbestos, use  
25 something else.

1           Number two, wet it down. If you can do that in the  
2 process you're engaged in, wet it down. Because if  
3 something's wet, it doesn't give off so much dust.

4           Number three, if you can, provide exhaust  
5 ventilation. What is that? That's like the -- that's  
6 like the oven fan above your stove. It's a -- it's a  
7 vacuum device. It sucks the fumes and the dust out.  
8 Except when you're dealing with a deadly substance, you  
9 have to design it scientifically to be sure you're getting  
10 all the dust out. But it's -- in concept, it's very  
11 simple.

12          Q     So ventilation. I think I gave ventilation an extra  
13 L, but --

14          A     Yeah.

15          Q     So exhaust ventilation. What else did they  
16 recommend?

17          A     They, also, recommended separating people into -- who  
18 are doing different jobs. Why? Well, I already mentioned  
19 in passing bystanders. If I'm working -- if I'm sawing  
20 something that has a biggest -- a substantial asbestos  
21 content in it, and I'm creating dust from doing that,  
22 you're going to be breathing the same dust, 10, 15 feet  
23 away.

24                 So why not put you in a separate room to do your  
25 work, and I'll do my asbestos sawing in my work. I might

1 get exposed, but, at least, there aren't 15 other people  
2 getting exposed to asbestos.

3 Q Did they call that isolation?

4 A Well, they, actually, called it segregation.

5 Q Segregation.

6 A But they have a different -- that has a different  
7 connotation today. But what --

8 Q When they were talking segregation then, they were  
9 talking about separating the workers?

10 A Exactly.

11 Q So I'll put separating. What else?

12 A They, also, recommended that, if necessary, give  
13 people respiratory masks and respirators to filter out the  
14 dust that they would breathe.

15 And last, and very importantly -- I might have missed  
16 one along the way. But, also, very importantly, they said  
17 you have to educate the worker. They used British  
18 language. They said something like, you have to give the  
19 worker a sane appreciation of the risk. So this is fancy  
20 language, which, basically, meant train and warn.

21 Well, why do you have to train and warn? The answer  
22 is this. A lot of those other measures, if you're the  
23 person, actually, doing the work, they're a pain in the  
24 neck. Do you want to wet everything down and then work on  
25 this soggy stuff? Who wants to do that? Who wants to

1 wear a respirator? It's uncomfortable. And, likewise,  
2 other things that I mentioned.

3 So human nature will be to cut corners if you don't  
4 understand why you're -- you have to do this, And  
5 especially with asbestos. Because asbestos doesn't smell  
6 bad. It doesn't make your eyes water. It doesn't sting  
7 your eyes or your nose.

8 If you open up, by way of contrast, a bottle of  
9 ammonia that you might have in the house for cleaning  
10 purposes. And when you were young, maybe you took the lid  
11 off and you took a sniff of it. And you only did that  
12 once in your life because it will snap your head back,  
13 it's so pungent. It warns you that it has some toxic  
14 properties to you.

15 Asbestos has nothing like that. So unless a person,  
16 or a sign, or your supervisor is telling you, this  
17 material is very hazardous, in fact, it can cause death,  
18 and trains you in that and trains the people around you in  
19 that, you're not going to understand why you have to  
20 undertake these control -- dust control mechanisms that,  
21 frankly, are sort of a pain in the neck to do.

22 Q So let me ask you. So this was 1930. These methods  
23 for prevention that you went over that they talked about  
24 in 1930, are they just as true today, 85 years later?

25 A Absolutely. The same -- the same principles are the

1. ones we use today.

2. Q Okay. Anything else from Merewether and Price, 1930?

3. A Well, they, also, talked about various industries,  
4. although that might have been in a follow-up publication  
5. in 1932.

6. Q Let me ask you about that one. I'm not going to  
7. bring out all of these papers. But let me ask you about  
8. that one from 1932.

9. So let me ask you if this is that, Memorandum on the  
10. industrial diseases of silicosis and asbestosis, July,  
11. 1932?

12. A That's it.

13. Q And this is out of England where Merewether and Price  
14. were?

15. A Yes. And like the 1930 article, both of them got  
16. reprinted here in the United States, and were found in --  
17. would be found in medical libraries in the United States.

18. Q So in this article -- we're not going to go through  
19. this whole thing. But you said they addressed products in  
20. industries --

21. A Yes.

22. Q -- regarding asbestos.

23. A Yes, they did.

24. Q What type of information did they provide?

25. A Well, they said that any industry where this material

1 is -- occurs as a dust will be a hazardous -- a  
2 potentially hazardous industry. And they gave specific  
3 examples. They said, any industry in which you turn, or  
4 grind, or abrade asbestos in a dry state is a potential  
5 hazard.

6 Q And this is on Page 12. And it's a very old  
7 publication. It's a rough copy. But let's look at this  
8 one right here, Industries and processes in which  
9 asbestosis occurs. Now, asbestosis, this is --

10 A Oh, yeah.

11 Q -- this is about five years after the Cooke paper in  
12 '27; right?

13 A Yes.

14 Q Okay. So we already had the disease asbestosis;  
15 fair?

16 A Correct.

17 Q Okay. And this says, Processes involving exposure to  
18 asbestos dust which are known to give rise to asbestosis,  
19 or in which -- can you read that?

20 A The conditions, I think.

21 Q -- the conditions are such as to liable to produce  
22 the disease are the breaking, crushing, disintegrating,  
23 opening, and grinding of asbestos, and the mixing or  
24 sieving of asbestos or any admixture of asbestos.

25 I'm going to stop there. What does "admixture" mean?

1 A Oh, lots of materials and dusts have -- are a mixture  
2 of various things. It's not all asbestos. It can be  
3 asbestos, plus other dusty materials in there.

4 Q So they're not just talking about something that's a  
5 hundred percent asbestos. They're talking about asbestos,  
6 plus other ingredients; fair?

7 A Correct.

8 Q Okay. And it says, The maintenance of asbestos  
9 textiles, the making of insulating slabs or sections, and  
10 the making or repairing of insulating mattresses composed  
11 wholly or partly of asbestos, and the sawing, grinding,  
12 and turning in the dry state of articles composed wholly  
13 or partly of asbestos such as -- I think that's, motor  
14 car, brake, and clutch linings, electrical connectors, and  
15 packing, packings and jointings; is that right?

16 A Yes.

17 Q Is "jointings" just another word for gaskets?

18 A "Jointings" is a British word for gaskets.

19 Q And so this is '32. We've already got mention of  
20 gaskets as one of many different things that could lead to  
21 the disease asbestosis; is that fair?

22 A Yes.

23 Q All right. They reissued that same publication in  
24 '35; is that right?

25 A 1930, 1932, 1935, yes.

1 Q All right. We're not going to --

2 A With some variations, but a lot of overlap, also.

3 Q All right. So going back to our timeline. We've  
4 gone into the 1930s now. What is another article that you  
5 might say this one had some important data that the jury  
6 should know about?

7 A Well, we'll jump forward to 1935. And we'll come  
8 right here to South Carolina where two doctors named Lynch  
9 and Smith published their research findings, which was the  
10 first article that suggested that asbestos might cause a  
11 cancer, namely lung cancer, not mesothelioma, which is  
12 different from lung cancer. But they suggested on their  
13 findings it might cause lung cancer.

14 So everything up until that point had been about  
15 scarring of the lungs, not cancer. South Carolina, 1935,  
16 possible lung cancer from asbestos.

17 Q Okay. So is that something we call a -- is that an  
18 epidemiological study, or is that something else?

19 A No. That was a case study.

20 Q A case study. All right. So I'm going to put  
21 that -- I'm going to put that here.

22 What's the difference between a case study and an  
23 epidemiological study?

24 A A case study is where a doctor, a scientist writes  
25 about one, or two, or three, or four, or maybe five or six.

1 patients who have something curious in their condition,  
2 something unusual, something that hasn't been noticed  
3 much. It has not been reported much in the past. And the  
4 point of it is to say, well, maybe we're on to something  
5 new here. And that's what a case study generally does.

6 An epidemiologic study looks, typically, at hundreds  
7 to thousands, and in some cases even millions, of people  
8 to look at patterns of disease in large groups of people.

9 Q Let me ask you this. And I may be jumping ahead a  
10 little bit. But over the last 100 years in this country,  
11 approximately how many different products utilized  
12 asbestos?

13 A Well, at the peak, the best estimate is about 3,000  
14 different products utilized asbestos.

15 Q Okay. And do we have an epidemiological study for  
16 every single product that had asbestos in it?

17 A No. We might have epidemiologic studies for -- I  
18 don't know -- 10 or 20 of those products. There's no  
19 point from a research point of view.

20 Once you've proven that asbestos is hazardous in this  
21 product and hazardous when it occurs in that product, or  
22 this industry, or that industry and you know it's a  
23 hazardous substance, there's no research point in then  
24 methodically going to each product that had asbestos in it  
25 and trying to do a big epidemiologic study involving

1 thousands of people. It's a waste of money. It's a waste  
2 of time. And it doesn't teach you anything that you don't  
3 already know, or very little that you don't already know.

4 Q Okay. So '35, we've got this case study. Asbestos  
5 may cause lung cancer. They saw that case. What happened  
6 after '35?

7 A Well, I would point next to 1938, which is, also, in  
8 the Carolinas.

9 Q Okay.

10 A A study here in the United States by the United  
11 States Public Health Service of asbestos textile  
12 factories, just like Merewether and Price had done in  
13 England in 1930. And they studied textile workers in the  
14 Carolinas who made cloth out of asbestos. And, like,  
15 recent -- I'm sorry -- like Merewether and Price, they  
16 found a good amount of disease in those people.

17 But they went one step further. And they said, we're  
18 going to suggest a particular air concentration of  
19 asbestos. And we're going to recommend that factories all  
20 keep their air concentrations of asbestos below that  
21 level. And if we do that, we think we can eliminate many  
22 cases of asbestosis, not all of them, but many of them.

23 And they used a measurement device that's not used  
24 anymore. And the level of asbestos concentration in the  
25 air they suggested was five million particles per cubic

1 foot.

2 Q Did they have a name for that level, what they call  
3 that level?

4 A Yeah. They called it a threshold limit value, or  
5 they called it a peak exposure limit.

6 Q So TLV, threshold limit value. And they said  
7 five million particles per cubic foot?

8 A Mppcf.

9 Q Okay. Now, I'm going to stop here for a second. So  
10 we have a cubic foot; right? A square of air.

11 A Yes.

12 Q And they said, we think we can prevent most cases of  
13 asbestosis if the total dust in the air is less than that?

14 MR. TIVIN: Objection. Leading.

15 THE COURT: Okay. Rephrase it.

16 BY MR. PANATIER:

17 Q Okay. Why don't you characterize for us what they  
18 mean by five million particles per cubic foot?

19 A A cube -- a -- one cubic foot of air -- in other  
20 words, a cube that's one foot this way, one foot that way,  
21 and one foot that way. Just imagine a box. And each  
22 dimension of the box is one foot. The amount of air in  
23 that is one cubic foot of air.

24 And they're saying keep the -- if it's got asbestos  
25 in it, keep the dust less -- to five million particles of

1 dust in that box. If that -- so keep it below that. And  
2 we believe that will eliminate many cases of scarring of  
3 the lungs.

4 They said nothing about cancer. It was only about  
5 scarring of the lungs.

6 Q Let me ask you. So when they set this guideline of  
7 five million particles, were they saying five million  
8 asbestos particles or five million particles of dust that  
9 may have asbestos in it?

10 A Well, that's exactly why we don't use that  
11 measurement technique anymore. Because it didn't make a  
12 distinction between asbestos and other kinds of dust that  
13 might be mixed in there.

14 So you can imagine that if the dust was only  
15 one percent asbestos, it would be a different situation  
16 than if that dust was a hundred percent asbestos. This  
17 measuring technique didn't make any distinction between  
18 that.

19 So -- so that's a weakness in how it was done in  
20 those days. It was the best they had. And, now, we have  
21 a -- we have better methods.

22 Q But the bottom line is in the 1930s, fair to say, you  
23 already have people saying, look, let's start looking at  
24 some potential guidelines for asbestos exposure because  
25 it's dangerous; is that fair?

1 A That's a good summary.

2 Q All right. So after 1938, what's next?

3 A Then I would point to various states over the next 10  
4 years. Many states then said, this is a good idea.

5 Let's -- and they all published guidelines, let's keep it  
6 below five million particles per cubic foot. Many states  
7 passed either laws, or regulations, or guidelines.

8 There are differences because a guideline is a  
9 suggestion, but you don't have to follow. A law is a law,  
10 and you have to follow it. So some states did laws. Some  
11 states did guidelines. But many of them adopted that  
12 suggestion from the United States Public Health Service.

13 Q After that, where do we go?

14 A Okay. Next, quickly, I would go to 1943.

15 Q Okay.

16 A Which is the first date that somebody published an  
17 article saying that asbestos might cause mesothelioma.

18 Q Who was that?

19 A Well, that's the -- that's the point. That was a guy  
20 in Germany. And it was written in German. And it was  
21 1943 in the middle of the Second World War when we were  
22 fighting against Germany.

23 And so you can reasonably ask the question, did we  
24 learn about that here? And if so, you know, how -- when  
25 did we learn about it? Because that was not a -- that was

1 not a time when we were, actually, having collegial  
2 discussions with scientists in Germany.

3 Q We weren't saying, oh, this nice German doctor --

4 A Yes.

5 Q -- came up with this at that time?

6 A That's correct.

7 Q Okay. Fair enough.

8 A So then there was another one in '48.

9 Q Okay. 1948. Yes.

10 A But the next one I'd point to would be 1949, which  
11 was back here in America.

12 I think you're running out of space here. But that's  
13 all right. That's up to you.

14 Q I've got another page.

15 A Okay. This -- 1949 was an article in a medical  
16 journal called the Journal of the American Medical  
17 Association. It's usually just abbreviated as J-A-M-A or  
18 JAMA.

19 JAMA, at the time, was the most widely read medical  
20 journal in the United States. Most practicing doctors got  
21 it in their mail.

22 In any case, an editorial was written in that -- in  
23 1949 in that journal saying that there was a linkage  
24 between asbestos and lung cancer. Because more cases -- I  
25 only told you about the case from South Carolina in 1935.

1 But there were -- more and more cases were being reported  
2 of people who worked with asbestos getting lung cancer.

3 And in those days, lung cancer was an unusual  
4 disease, because people hadn't started smoking yet. So to  
5 get a case was a little bit unusual. And then to start  
6 finding more and more cases where they had, also, worked  
7 with asbestos, you're putting -- you're starting to put  
8 two and two together. And in 1949, the -- an article  
9 appeared saying, we think it's now proven.

10 Now, my own view is that it wasn't really proven  
11 until 1955. That's just a matter of judgment. Different  
12 people could reasonably disagree on whether it was really  
13 nailed down by 1949, or really nailed down a little later.  
14 My own view, it was nailed down in 1955.

15 Q Okay. And we'll talk about '55. You did say people  
16 really hadn't started smoking until this point. You  
17 weren't saying people didn't smoke. What did you mean?

18 A Well, people smoked pipes, but they didn't smoke as  
19 much. Cigarettes were not being mass produced the way  
20 they are now. The real increase in smoking began to occur  
21 among men in the '20s and '30s. But the lung cancer comes  
22 20, 30, or 40 years later. So the lung cancers were not  
23 yet appearing until -- in large numbers until the 1940s  
24 and 1950s.

25 So I think it was more detail than we need. But the

1 point is, back in 1935 to 1950, a lung cancer was kind of  
2 unusual. There weren't many of them. There was some, but  
3 not like today.

4 Q Okay. You mentioned 1955. I don't want to skip  
5 ahead, but is that the next date?

6 A Yes. 1955 is the next one.

7 Q All right. 1955. What publication are we talking  
8 about?

9 A The researcher was named Doll, Dr. Doll, D-O-L-L,  
10 back in England. He did the first epidemiologic study of  
11 the connection between asbestos and lung cancer, and  
12 concluded that there was a connection. And that, in  
13 addition to all the case studies, the individual case  
14 studies like the first one here from South Carolina, in my  
15 view, made it beyond any reasonable doubt in 1955 that  
16 asbestos caused -- causes lung cancer.

17 Q Beyond a reasonable doubt. Okay.

18 After 1955, what's next?

19 A The next big one is 1960. Something similar  
20 happened, this time from South Africa where there are a  
21 lot of asbestos mines. And doctors there found 33 cases  
22 of mesothelioma, what until then had been considered a  
23 rare disease, hardly ever seen. A doctor could go their  
24 whole life and never even see a case. And, suddenly,  
25 here's 33 cases.

1           And what do they all, except one, have in common?  
2           They all were exposed to asbestos in connection with the  
3           asbestos mines. And that article made it beyond any  
4           reasonable doubt that asbestos causes mesothelioma.

5           Q     Was there a specific type of asbestos that was being  
6           mined there?

7           A     Well, the cases that they reported were due to the  
8           kind of asbestos called crocidolite asbestos.

9           Q     And who was the author's name?

10          A     The author was Wagner, W-A-G-N-E-R, except he said it  
11          Wagner, in the German style or the Dutch style.

12          Q     Okay. We heard about him yesterday.

13          A     Now, in this paper, this was a -- 33 cases from this  
14          type of asbestos, crocidolite. Did he detail in his --  
15          from his review other cases and other publications having  
16          to do with mesothelioma?

17          A     In his publication?

18          Q     Yes.

19          A     Yes.

20          Q     Okay. And what did he discuss there from other  
21          publications?

22          A     Well, he pointed -- couple years back in time where  
23          some doctors in Canada, where there were, also, asbestos  
24          mines, reported cases of mesothelioma there. The  
25          difference is that in Canada, what they were mining was

1 chrysotile asbestos, which I think you've already heard  
2 of. You probably heard quite a bit of that from  
3 Dr. Brody, I would guess.

4 So although the paper by Wagner in 1960 is kind of  
5 the well-known one, a big landmark study, there, actually,  
6 was an earlier paper reporting a couple of cases in Canada  
7 of mesothelioma from people working in or around the  
8 chrysotile mines there.

9 Q And we heard from Dr. Brody yesterday. He said about  
10 95 percent of the world's use was chrysotile. Do you  
11 agree with that approximation?

12 A I do, yes.

13 Q All right.

14 A I don't know if he said -- did he say the world or  
15 the United States?

16 Q I think he said the world.

17 A Okay. I know it's true for the United States. I'm  
18 not quite as sure about the world.

19 Q So I'll just make that note. So chrysotile is  
20 approximately 95 percent of what was used in the U.S. for  
21 your opinion; fair?

22 A Thank you.

23 Q All right. After 1960, what's -- what's the next  
24 thing you would point to?

25 A Well, then there was a flowering of cases about

1 mesothelioma and asbestos. A whole bunch of them started  
2 coming out in the next -- over the next few years.

3 And -- but then the next big event was Dr. Selikoff's  
4 conference in 1964 where you held up the book.

5 Q Okay.

6 A Because that was the first big international  
7 conference bringing researchers from 20, 30 countries  
8 around the world all together in New York City to present  
9 what their researchers -- research had shown on the health  
10 effects of asbestos.

11 Q Okay.

12 A Including asbestosis, including lung cancer, and  
13 including mesothelioma.

14 Q What I'd like to do is just show you a few sections  
15 here, and ask you about this. This is the publication  
16 from that '64 conference; is that fair?

17 A That's right.

18 Q So this is an article called, Occupational and  
19 Nonoccupational Exposures to Asbestos, W.C. Hueper.

20 Now, my first question is you mentioned that there  
21 were some cases that had been reported in the past of  
22 people who, perhaps, washed clothes and got sick from  
23 asbestos. Would that be a nonoccupational exposure to  
24 asbestos?

25 A Yes.

1 Q Okay. And can nonoccupational exposures to asbestos  
2 result in high exposures to asbestos, even if they're not  
3 in the workplace?

4 A Occasionally, yes.

5 Q Okay. So I want to ask you a little bit about this.  
6 So he says, Since 1935, an increasing amount of  
7 epidemiologic, clinical, and pathologic evidence,  
8 moreover, incriminates this health hazard as one of the  
9 environmental sources of cancers of the lung. And, more  
10 recently, also, of mesothelioma of the pleura and  
11 peritoneum. Although some commercially interested  
12 parties, and their medical guardians, and protectors still  
13 prefer, for their own reasons and motives, to deny the  
14 existence of these dangerous and usually fatal sequelae.

15 Now, what does "sequelae" mean?

16 A Consequences.

17 Q Okay. Consequences. Of a respiratory contact with  
18 asbestos dust. The obvious fallacy of such allegations is  
19 well demonstrated by the remarkable and progressive rise  
20 in the number of cases of asbestosis and of cancers of the  
21 lung, pleura, and peritoneum reported from various  
22 countries during the past two decades.

23 So let me ask you about that. This is '64. And  
24 is -- asbestosis, lung cancer, and mesothelioma, are those  
25 latent diseases?

1 A Yes.

2 Q Meaning they take some time to develop?

3 A Yes. Many years.

4 Q Okay. So what does it tell you that they're seeing  
5 these diseases in the '50s and '60s about when the  
6 exposures occurred?

7 A So if they're seeing diseases in 1964 that they're  
8 writing about, that means somebody was getting exposed to  
9 asbestos back in 1944, or 1934, or 1924. And this evil  
10 flower is only now blossoming in 1964.

11 Q Okay. He says, Since the different -- since, of the  
12 different types of asbestos, chrysotile represents  
13 approximately 95 percent of the total asbestos produced,  
14 contact with this type of asbestos furnishes the chief  
15 cause of asbestos, pneumoconiosis.

16 What is that?

17 A Dust disease of the lungs.

18 Q And cancer in most countries, and especially in the  
19 USA, which mainly produces imports and processes and use  
20 chrysotile.

21 And is that consistent with your opinion about the  
22 percentage of chrysotile used?

23 A Yes, sir.

24 Q Okay. Contact with other types of asbestos,  
25 particularly amosite and crocidolite, is of comparatively

1 minor and regional importance for occupational reasons.  
2 Because these varieties of asbestos are mainly mined in  
3 South Africa, and preferably consumed in Great Britain and  
4 represent only a relatively small fraction of the total  
5 amount of asbestos produced in the U.S.

6 Now, let me ask you this. Mr. Seay worked around  
7 insulation; is that fair?

8 A Yes.

9 Q Now, do you have an opinion as to what types of  
10 asbestos was in that insulation?

11 A I do.

12 Q Okay. What is that?

13 A Well, they're different types of insulation. But  
14 just to get to the bottom line, that would have entailed  
15 exposures to chrysotile asbestos and to amosite asbestos.

16 Q Generally speaking, asbestos insulation, the half  
17 moons, the rounds that went around the pipes and the block  
18 type of insulation, generally speaking, was that,  
19 typically, a mixture of chrysotile and amosite?

20 A Yes. Some of it had chrysotile only. Some of it had  
21 amosite only. And some of it had chrysotile and amosite  
22 in the same -- in the same product.

23 Q All right. And since I'm talking about his exposure,  
24 I may be jumping around a little bit. But did you review  
25 the testimony of Ronnie Thompson?

1 A I did.

2 Q Okay. And we've heard part of his deposition today.  
3 But did he give some information as to the type of gaskets  
4 that they were using and what types of asbestos those  
5 contained?

6 A Yes, he did.

7 Q Okay. What was that information?

8 A Well, the gaskets that he testified to, some of them  
9 were chrysotile and some of them were crocidolite.

10 Q All right. So crocidolite would be that -- the blue  
11 asbestos?

12 A The blue asbestos, yes.

13 Q All right. Again, 1964. Asbestosis and asbestos  
14 cancer hazards related to an inhalatory exposure to  
15 asbestos exist not only for asbestos workers proper  
16 engaged in the direct and regular production, processing,  
17 handling, and using of asbestos-containing materials, but,  
18 also, for the large number of individuals who may sustain  
19 such contacts on an incidental basis. Such persons may be  
20 employed permanently or temporarily in or near operations  
21 where asbestos and asbestos products are produced or  
22 handled, and where they inhale, therefore, air polluted  
23 with asbestos dust.

24 And he lists some examples, Repairmen, maintenance  
25 men, engineers, mechanics, laboratory technicians, office

1 workers, medical personnel, truckers, railroad workers,  
2 yardmen, construction workers, shipyard workers,  
3 automobile plant, garage employees, et cetera.

4 Now, you had mentioned, sir, that there was a concern  
5 for people -- when you were doing interviews and learning  
6 about asbestos, there was a concern for people working  
7 with it, and then people who were nearby to those people?

8 A Yes.

9 Q Correct?

10 A Yes. That's right.

11 Q And is this the concept he's describing here?

12 A I think not quite, actually.

13 Q Okay.

14 A I think he's talking here about people who, actually,  
15 themselves work with asbestos, but they don't do it --  
16 they don't do it 40 hours a week. They do it here and  
17 there.

18 So, for instance, let's just take, by way of example,  
19 a laboratory technician, or let's say a railroad worker.  
20 The railroad worker one day might be working in a manner  
21 that causes them to be breathing asbestos, and that might  
22 not happen again for a week. Where -- so very irregular  
23 patterns of usage or short-term patterns of usage. And  
24 he's making the distinction between that and some of the  
25 research articles from earlier years, which were

1 concentrated on people, let's say, for instance, in the --  
2 in the textile factories, where they were being exposed to  
3 asbestos every minute of every working day. And what  
4 he's -- what they're saying now is the evidence is showing  
5 us it's not just that. It's, also, these -- all these  
6 people who were working occasionally with asbestos.

7 Q Okay. And then he -- he has a table here where he  
8 says, Operations and products with contact to asbestos for  
9 producers, processors, users, consumers, and residents.  
10 And he lists dozens of different products; correct?

11 A Yes.

12 Q But he does list insulation blocks, insulation  
13 jackets, pipe coverings; correct?

14 A Yes.

15 Q Did Mr. Seay have exposure to those types of products  
16 at Celanese?

17 A Yes, he did.

18 Q And then gaskets, pump packings, and so forth. Did  
19 he have exposure to asbestos from gaskets and pump  
20 packings?

21 A Yes, he did.

22 Q Then as we get through the '60s, did the information  
23 we were learning about asbestos continue to grow?

24 A Yes, it did.

25 Q Does it continue to grow to today?

1 A Yes, more and more.

2 Q Okay. Now, even though we continue to learn more and  
3 more about it, let me ask you this. Is it just as true  
4 today as it was in the 1960s that asbestos can cause  
5 mesothelioma?

6 A Yes.

7 Q Is it just as true today that asbestos can cause  
8 asbestosis and lung cancer, and is a preventable disease?

9 A Yes.

10 Q I want to ask you about one more thing. When does --  
11 you said OSHA came out '71?

12 A Correct.

13 Q And what was it that OSHA -- first of all, what is  
14 OSHA?

15 A So OSHA is a federal agency. It was created by an  
16 act of Congress which was passed in 1970. But then they  
17 had to hire people, and rent an office building, and  
18 furnish it, and get people in it. So the actual agency  
19 came into existence in about 1971.

20 And when they went into business, their job --  
21 according to the act of Congress, their job was to figure  
22 out rules and regulations to keep the workplace safe, and  
23 to promulgate those rules and regulations, and, also, to  
24 inspect in the workplaces, and to -- and they were given  
25 the power to levy fines if there were violations of the

1 rules and regs.

2 But when they came into existence, they had  
3 potentially thousands of hazardous situations or  
4 substances that they were supposed to make rules about.  
5 It could be electrical shock. It could be my guy with the  
6 jackhammer. It could be any number of things. It could  
7 be the coal mines. Now -- I'm sorry, not the coal mines,  
8 because that had a separate agency. But it could be the  
9 shipyards.

10 So what they -- they decided that the very first one  
11 they would issue rules and regs about was asbestos.  
12 Because they saw a very big hazard, a very big impact on  
13 human health. So the very first rule they made was about  
14 asbestos.

15 Q Let me ask you this question. Prior -- based on  
16 everything you've reviewed and what you've gone through  
17 with the ladies and gentlemen of the jury, prior to OSHA,  
18 was asbestos just a nuisance dust?

19 A I'm sorry?

20 Q Was asbestos regarded as just a nuisance dust, just  
21 an everyday dust?

22 A No, not at all. Not unless you consider mesothelioma  
23 just a nuisance.

24 Q Okay. So if someone from -- from a historical  
25 perspective, looking back, if someone said, before OSHA,

1 asbestos was just a nuisance dust; is that correct?

2 A No. I don't agree with that.

3 Q Okay. Let me show you -- this is from -- first of  
4 all, what's the ACGIH?

5 A You're getting alphabet soup here.

6 American Conference of Industrial -- of -- American  
7 Conference of Governmental Industrial Hygienists, ACGIH.

8 Q Now, you talked about that threshold --

9 A Can I just say one more --

10 Q Oh, yeah.

11 A Just very simply, it's the professional association  
12 of people in the field of industrial hygiene.

13 Q All right. And generally, what's industrial hygiene?

14 A Okay. Industrial hygiene is a -- is a profession.  
15 People in it are engineers. They get trained as  
16 engineers.

17 And they are people who are trained to be able to go  
18 into a factory, spot and identify hazards, all kinds of  
19 hazards. It could be an electrical shock hazard. It  
20 could be a hazard where they don't have a proper procedure  
21 to make sure that somebody doesn't start up a machine  
22 while somebody else is inside cleaning the machine. It  
23 could be dust hazards, all kinds of hazards.

24 They're trained to identify those. They're trained,  
25 as engineers, to design the equipment or to modify the

1 equipment so it will be safe. They're, also, trained to  
2 take air measurements of toxic substances to see how much  
3 of a toxic substance is in the air.

4 So that's the area of training of an industrial  
5 hygienist.

6 Q Now, in your training and in your board certification  
7 for preventive -- preventive medicine and occupational  
8 medicine, did you have to study and learn those same types  
9 of principles?

10 A Yes. We had to be trained in industrial hygiene, Not  
11 everything in industrial hygiene. I'm not going to go in  
12 and design equipment. But most of the other things I  
13 mentioned, we were trained in.

14 Q And would that be things like identifying potential  
15 exposures from different substances?

16 A Correct.

17 Q Including asbestos?

18 A Yes.

19 Q Okay. So American Conference of Governmental --  
20 Governmental Industrial Hygienists, you brought up earlier  
21 this guideline that they started to deal with in the  
22 1930s; right?

23 A Yes.

24 Q Was that guideline adopted by that conference, the  
25 ACGIH?

1 A Yes. The five million particles in a cubic foot of  
2 air, I testified, was adopted by many states. It was,  
3 also, adopted in -- I think the year was 1946 by this  
4 professional group, the ACGIH, where they said -- they  
5 looked at the scientific evidence. And they said, yes,  
6 air levels of asbestos need to be kept below this  
7 five million particles per cubic foot.

8 And there you have their full name projected on the  
9 screen.

10 Q Okay. So that's their conference in 1946. And I  
11 just wanted to put this up there. So there we see that  
12 mppcf. That's the million particles per cubic foot  
13 threshold that they set?

14 A Yes. For various substances which are listed here.

15 Q Okay. And is asbestos listed?

16 A Asbestos is listed.

17 Q And they have a threshold for asbestos of what?

18 A Five million particles per cubic foot, meaning keep  
19 it below five.

20 Q Okay. Now, they, also, have one for nuisance dust,  
21 do they not?

22 A Yes. About halfway down the page, they do have one  
23 for nuisance dust.

24 Q And would it be fair to say the threshold that they  
25 set for just general nuisance dust was 10 times higher

1 than the one they set for asbestos?

2 A That's right. They are saying you can go 10 times  
3 higher in the amount of dust that's in the air if it's  
4 just nuisance dust. But if it's asbestos, it's got to be  
5 10 times lower.

6 Q And then let's just look at their publication. This  
7 is again the ACGIH for 1966. Can you see that at the top  
8 of the paper -- the page?

9 A Yes.

10 Q Copyright American Conference of Governmental  
11 Industrial Hygienists. And they, actually, have a section  
12 on inert or nuisance particles. A number of dusts or  
13 particulates that occur in the working environment that  
14 ordinarily produce no specific effects upon prolonged  
15 inhalation. And they give some examples.

16 But is that generally your understanding of nuisance  
17 particles?

18 A Yes. The dust generally doesn't -- it may be an  
19 annoyance. It might be a nuisance. But it doesn't  
20 destroy your health.

21 Q Although, at the end of the paragraph, they say, It  
22 is desirable to control the concentrations of such  
23 particles -- and they're talking about soluble  
24 substances -- in the air breathed by any individual in  
25 keeping with good industrial hygiene practice.

1 Do you agree with that, that you should try to keep  
2 dust down even if it's a nuisance dust?

3 A Yes, of course.

4 Q Okay.

5 A I mean, it can't be good for you.

6 Q Right. And again, here, 20 years later, six years  
7 before -- or five years before OSHA, they still have the  
8 same threshold for asbestos; is that fair?

9 A They do, yes.

10 Q And nuisance particles, 10 times higher; right?

11 A Yes.

12 Q So does that support your opinion --

13 A The nuisance is the one at the bottom -- yes.

14 Q Right.

15 A At the bottom, it says, inert or nuisance  
16 particulates, yes.

17 Q I'm sorry to interrupt you.

18 A I'm sorry. I was just catching up with you.

19 Q Okay. Sorry.

20 Does that support your opinion that asbestos was not  
21 regarded as a nuisance dust prior to OSHA?

22 A Yes, it does.

23 Q In addition to all the literature we already went  
24 through; right?

25 A Yes.

1 Q So --

2 MR. PANATIER: When would Your Honor like to take a  
3 break? Now would be a fine time, or I can keep going,  
4 whatever.

5 THE COURT: Yeah. We can go ahead and take a short  
6 break. We'll take about a 10-minute break.

7 Don't talk about the case. Continue to keep an open  
8 mind.

9 If you would, ladies and gentlemen, select someone to  
10 be the Foreperson of the jury. And write their name down  
11 and give it to the bailiff while you're on your break,  
12 too, please.

13 Thank you.

14 (WHEREUPON, the jury was excused from open court at  
15 approximately 11:05 a.m.)

16 THE COURT: All right. We'll take about a 10-minute  
17 break.

18 (WHEREUPON, a break was taken.)

19 THE COURT: Anything before we bring the jury back  
20 in?

21 (WHEREUPON, there was no response.)

22 THE COURT: Okay. Yes, ma'am.

23 (WHEREUPON, the jury came into open court at  
24 approximately 11:22 a.m.)

25 THE BAILIFF: They have selected a Foreman --

1 Foreperson. It's Matthew Mason.

2 THE COURT: All right. Mr. Mason, you'll just be the  
3 point of contact between the Court and the jury. If  
4 anybody needs to communicate with me from the jury, I can  
5 only communicate out here on the record, or by way of a  
6 written note that's made part of the record. So keep that  
7 in mind if anybody has to contact me. It's usually rare  
8 if you do have to contact me, but that's the protocol if  
9 you do.

10 And you'll kind of preside over the deliberations.

11 All right. Thank you, sir.

12 JUROR #130, MATTHEW MASON: Thank you.

13 THE BAILIFF: I have another situation. Your Honor,  
14 one of the young men here feels it's a conflict of  
15 interest in him on this --

16 THE COURT: Okay. Wait a minute.

17 All right. Let me just ask everybody to go out of  
18 the courtroom, except you, sir.

19 (WHEREUPON, the jury was excused from open court at  
20 approximately 11:25 a.m., with the exception of Juror  
21 #16, Yevgeniy Bondarchuk, who remained in the  
22 courtroom.)

23 THE COURT: Yes, sir. Now, remind me of your name  
24 again?

25 JUROR #16, YEVGENIY BONDARCHUK: Just call me Eugene

1 Bondarchuk --

2 THE COURT: What's your juror number?

3 JUROR #16, YEVGENIY BONDARCHUK: #16.

4 THE COURT: Okay. Go head.

5 JUROR #16, YEVGENIY BONDARCHUK: Okay. I -- like I  
6 told you before, I'm working at the Auriga plant, which  
7 is -- used to be owned by Hoechst Celanese. And it  
8 happened to be I find out in trial, that it's the very  
9 same plant that Dennis worked at.

10 And then I'm doing very same job he does, working on  
11 the stretch lines. He's talking about staple A, which  
12 is -- was moved. And then he said, in 1975, he moved to  
13 staple B, which is -- [inaudible] stretch lines working  
14 for -- I'm working on those lines on a daily basis --  
15 [inaudible] -- balers. So I don't know how it is going to  
16 be.

17 THE COURT: All right. As I understand it from what  
18 you said to me earlier -- who owns that plant now?

19 JUROR #16, YEVGENIY BONDARCHUK: Auriga Polymers,  
20 which is Indorama Ventures. It's kind of a big  
21 corporation, 12,000 people. But Auriga is the name of  
22 this local plant.

23 THE COURT: And your exact title there or job  
24 position is what?

25 JUROR #16, YEVGENIY BONDARCHUK: Maintenance

1 operator.

2 THE COURT: I can't hear you.

3 JUROR #16, YEVGENIY BONDARCHUK: Maintenance  
4 operator, MO.

5 THE COURT: Okay.

6 JUROR #16, YEVGENIY BONDARCHUK: Well, my main duties  
7 is troubleshooting the equipment. And when I have to, I  
8 run some of the machinery. When somebody calls in sick or  
9 something, I fill in for that. But mainly I work in  
10 the -- fixing stuff.

11 THE COURT: All right. And you feel like -- that  
12 your job experience that you have, after hearing the  
13 testimony of Mr. Seay and Mr. Thompson, creates a problem  
14 for you in what specific way, sir?

15 JUROR #16, YEVGENIY BONDARCHUK: I don't know. I  
16 just -- it's hard to say if it's -- if it's going to  
17 impact my judgment or not. It's hard to say. I don't  
18 know. I mean, I'm just hearing, you know, something that  
19 is very close to my life..

20 So it's kind of -- I don't know. And I work with a  
21 lot of people that used to work for Hoechst Celanese.  
22 They're still there.

23 THE COURT: Well, is there something specific you  
24 think that is -- as we -- as it stands right now that  
25 would affect your ability to be impartial?

1 JUROR #16, YEVGENIY BONDARCHUK: Not really, no.  
2 Nothing that I can say.

3 THE COURT: There's nothing you've heard during the  
4 trial that changes your belief when you took that oath  
5 that you can decide the case based on the evidence and the  
6 law?

7 JUROR #16, YEVGENIY BONDARCHUK: No. I don't think  
8 so.

9 THE COURT: So you're bringing it up now why?

10 JUROR #16, YEVGENIY BONDARCHUK: Well, because I find  
11 out that this case is -- it's exactly about the plant.  
12 Before, you were asking just -- the Celanese.

13 THE COURT: Right.

14 JUROR #16, YEVGENIY BONDARCHUK: And from what I  
15 knew, Celanese owned several plants around here, if I  
16 don't mistake. But when I heard that they said -- they  
17 showed picture in presentation. Then they said it's  
18 the -- borderline with the Pacolet River and talking  
19 about -- [inaudible] and exactly what that is.

20 THE COURT: So you knew exactly --

21 JUROR #16, YEVGENIY BONDARCHUK: So I just -- I just  
22 wanted to let you know so it wouldn't be a problem in the  
23 future. You know what I mean.

24 I don't want to go through the trial and then  
25 somebody finds out that this is what I do. And it's going

1 to be conflict of interest, or something.

2 THE COURT: Have you discussed it with any of the  
3 other jurors?

4 JUROR #16, YEVGENIY BONDARCHUK: Yes. I -- they  
5 asked me where I worked. And I told them that I worked at  
6 this plant now. So that's all we discussed.

7 THE COURT: Okay.

8 JUROR #16, YEVGENIY BONDARCHUK: And I asked to talk  
9 to you about it yesterday, but I guess it didn't get  
10 through.

11 THE COURT: This is the first I've heard of it.

12 So, first of all, thank you for your candor.

13 Second, if I understand what you're telling me, you  
14 don't know of any reason, as it stands right now, why you  
15 would be biased or prejudiced towards or against any party  
16 in this case, or about any issue in this case.

17 And you believe you can still be fair and impartial.  
18 You just were taken aback, for lack of a better term, that  
19 this case involved a gentleman who was working in,  
20 basically, the same job you have now at the same place; is  
21 that right?

22 JUROR #16, YEVGENIY BONDARCHUK: Yes, sir.

23 THE COURT: Okay. Thank you.

24 I'm going to ask you just to step right outside one  
25 second.

1 JUROR #16, YEVGENIY BONDARCHUK: Okay.

2 THE COURT: Thank you.

3 (WHEREUPON, Juror #16, Yevgeniy Bondarchuk, exited  
4 the courtroom.)

5 THE COURT: Okay. Does any party wish to state  
6 anything for the record in regards to what we just heard?

7 MR. TIVIN: Your Honor, this is Mark Tivin on behalf  
8 of John Crane.

9 Obviously, I need a little bit of time to digest what  
10 just occurred in a case where we are going to be  
11 potentially taking the position that the Plaintiff didn't  
12 do some of the things that he testified that he did. And  
13 this man has the same job at the same place.

14 I -- If I had known that before, I may have made  
15 different decisions when we were selecting the jury, or I  
16 may have asked if there would have been inquiries from you  
17 to allow us to make an informed decision.

18 I don't want to make a snap judgment right now off  
19 the top of my head saying that I -- but the fact that he's  
20 told the other jurors that he worked at that plant is very  
21 troubling to me in that, now, it's going to be -- someone  
22 is going to ask him a question, and he's going to be like,  
23 I've been instructed not to talk to you about my job,  
24 which puts a poor taste -- makes -- it makes what's  
25 happening out here seem suspicious in there.

1           But I can't make a snap decision right now. I --  
2           this is something where I have to talk to my client about  
3           what they wish to do. But I don't think we should  
4           interrupt the proceeding. We can go through to lunch and  
5           just say, you know, let's keep your mouth shut and don't  
6           say anything until lunch.

7           And then -- and I can come up with a more considered  
8           position at that time, rather than take any huge break now  
9           and...

10          MR. YOUNG: Judge, could we just all agree that  
11          whatever motion we might make, if any, or anything, does  
12          not waive if we -- you know, motion to excuse a juror or  
13          whatever is not waived if we just keep going. So we can  
14          talk to our -- I need to talk to our -- my client about  
15          it, too.

16          This has never happened to me before, Judge. I  
17          always make decisions based upon what I did in the same or  
18          similar circumstance before. But if it has happened, I  
19          don't remember it.

20          THE COURT: Okay.

21          MR. TIVIN: Unless you want to break for lunch. I  
22          have -- another suggestion is it's 11:30. We could break  
23          for lunch now.

24          MR. PANATIER: We can still get a lot done before  
25          lunch.

1 THE COURT: Yeah. I think so.

2 Anything from the Plaintiff?

3 MR. PANATIER: I -- I have no objection to  
4 stipulating that there's no waiver of an objection if the  
5 Defendants want to talk to their clients first, and maybe  
6 come back after lunch and address it then.

7 I -- my -- just my gut reaction is not that he  
8 expressed any bias one way or another here. But that  
9 there's a potential wild card factor if -- if, when they  
10 get into deliberations, they're like, you worked there.  
11 What happens? How is it laid out?

12 Those types of -- those types of issues -- and he may  
13 not be able to divorce himself from them. So that's just  
14 my candid sort of take right now. So I don't have any  
15 problem with holding off for a little bit. But it is a  
16 wild card issue, clearly.

17 MR. YOUNG: And, Judge, it's -- you know, in the  
18 overall scheme of things, the fact that he's already told  
19 them that he worked there, I mean, that could be a --  
20 wrong. I mean, I guess --

21 MR. TIVIN: That could be a game-changer --

22 MR. YOUNG: Yeah. I mean, that's what I'm worried  
23 about.

24 MR. PANATIER: Well, he said in open court he worked  
25 there. And it was clear he worked at the same place. I

1 think the concern is he's like, I have the same job as  
2 this guy." So that's the -- that's the issue. They  
3 already knew he worked there.

4 MR. TIVIN: Well, they knew he worked for something,  
5 but they didn't know he worked at the same plant.

6 MR. PANATIER: Yes, yes, they did. He said he worked  
7 at the same plant in voir dire.

8 MR. YOUNG: Judge, I didn't mean to start a big  
9 debate.

10 THE COURT: That's okay. I don't -- I'm not that  
11 concerned about -- I'm sure they probably don't have  
12 anything else to talk about. So they're probably talking  
13 about where they're working.

14 So -- but I don't -- it doesn't appear to me there's  
15 been any kind of premature deliberation. He said the  
16 conversation was limited to that particular question and  
17 answer, as I understood it, so.

18 But I think it's certainly reasonable and fair to  
19 allow everybody to have time to kind of process this  
20 information, and consult with your clients, and do  
21 whatever research you might need to do. But it doesn't  
22 appear to me to be an issue about concealment. He didn't  
23 conceal anything intentionally or unintentionally.

24 But the analysis is simply still whether either  
25 side's right to an impartial jury has been compromised.

1 So we can revisit it after y'all have had time to digest  
2 it.

3 MR. PANATIER: All right. I'll get my witness back  
4 out from the hallway.

5 MR. TIVIN: Before we bring them in, can we just tell  
6 him not to talk ---

7 THE COURT: Yeah. That's what I'm going to do right  
8 now.

9 All right. Yes, ma'am.

10 (WHEREUPON, the jury came into open court at  
11 approximately 11:36 a.m.)

12 THE COURT: I just need that one juror back. I'm  
13 sorry.

14 THE BAILIFF: Oh, I'm sorry, Your Honor.

15 (WHEREUPON, the jury was excused from open court at  
16 approximately 11:36 a.m.)

17 (WHEREUPON, Juror #16, Yevgeniy Bondarchuk, entered  
18 the courtroom.)

19 THE COURT: Yes, sir.

20 Thank you again for disclosing that.

21 JUROR #16, YEVGENIY BONDARCHUK: Okay. No problem.

22 THE COURT: And you're going to stay on the jury for  
23 right now. But just make sure, like I've said throughout  
24 the case, don't talk about the case or anything related to  
25 it with anyone, even your fellow jurors at this time. It

1 wouldn't be appropriate, obviously.

2 And I don't -- I don't have any reason to believe  
3 that that's happened, other than what you told me here  
4 today, that they asked you where you worked. But don't  
5 mention what we've discussed out here to your fellow  
6 jurors and -- or about your job, or anything else such as  
7 that. Okay.

8 JUROR #16, YEVGENIY BONDARCHUK: Okay. May I ask a  
9 couple questions? You said so for right now. That means  
10 what?

11 THE COURT: It means what I said.

12 JUROR #16, YEVGENIY BONDARCHUK: It could be further  
13 disqualification, or, I mean --

14 THE COURT: Well, I mean, I think if things stay as  
15 they are, then I have to give everyone time to kind of  
16 process what you told -- what you told us without delaying  
17 the trial.

18 JUROR #16, YEVGENIY BONDARCHUK: Okay. Second  
19 question is, can -- if we go in deliberation -- when we go  
20 in deliberation, can I use my experience, what I saw in my  
21 decision, or talk about it with the other ones? Or how --  
22 it's going to be hard for me to say no because --

23 THE COURT: Well, I understand that. And I think  
24 that's probably part of the thinking that everybody's  
25 doing at this point. So we don't need to get into that

1 right now.

2 JUROR #16, YEVGENIY BONDARCHUK: Okay.

3 THE COURT: Okay. But if, before we make the  
4 decision about what we should do with this information  
5 you've given us, you have some further thoughts about your  
6 ability to be fair and impartial, you do need to let me  
7 know about that.

8 JUROR #16, YEVGENIY BONDARCHUK: Okay.

9 THE COURT: Does that -- do you understand what I'm  
10 saying?

11 JUROR #16, YEVGENIY BONDARCHUK: Yes, sir.

12 THE COURT: Okay. Thank you again, sir.

13 JUROR #16, YEVGENIY BONDARCHUK: Okay. No problem.

14 THE COURT: You can bring the rest of the jury on in.  
15 (WHEREUPON, the jury came into open court at  
16 approximately 11:39 a.m.)

17 THE COURT: Yes, sir. Mr. Panatier.

18 MR. PANATIER: Thank you, Your Honor.

19 CONTINUED DIRECT EXAMINATION

20 BY MR. PANATIER:

21 Q All right. Dr. Holstein, we'll go a little bit  
22 longer before lunchtime.

23 Talking about OSHA a little bit, you said it was --  
24 the first substance they addressed was asbestos. Did they  
25 publish some standard that addressed that as a law?

1 A Yes. They published what they called an emergency  
2 standard for asbestos.

3 Q Okay. And what types of things did they say about  
4 asbestos? What regulation did they pass?

5 A Well, they, first of all -- the main thing they  
6 passed was a regulation saying the level at which you have  
7 to keep the air concentration of asbestos below for  
8 workplaces. But they, also, had some regulations that had  
9 to do with giving caution labels and warnings.

10 And, also, very shortly thereafter, they, also, had  
11 rules and regulations about doing medical examinations of  
12 such people, doing dust measurements, and a whole series  
13 of additional regulations.

14 Q Did they have things like showers, lockers, things  
15 like that?

16 A They required showers and changing areas so that  
17 people would not bring dust home on their clothes to their  
18 families.

19 Q Okay. Now, the one thing I want to talk to you about  
20 is -- first of all, is you said they established some  
21 levels of asbestos exposure. Now, we heard about this one  
22 from the ACGIH of five million particles per cubic foot.  
23 Did that change when OSHA passed their law?

24 A Yes, it did.

25 Q What did they set as -- whatever you want to call

1 it -- a limit?

2 A Well, they started using -- they specified a  
3 different technique for measuring how much asbestos is in  
4 the air. And because they used a different instrument  
5 with different techniques, the air concentration was  
6 expressed differently.

7 Q How did they express it?

8 A They expressed it, at first, as a limit of 12 fibers  
9 per cc. That was the temporary emergency standard, the  
10 one that they could do as quickly as possible.

11 Q I'm sorry. That was in '71?

12 A Yes.

13 Q 12 fibers per cc. What's a "cc"?

14 A Okay. A cc is a cubic centimeter of air. And a  
15 cubic centimeter of air is about a small thimbleful. Or  
16 you used to see those little white sugar cubes in  
17 restaurants. These days they usually have packets. But  
18 if you remember those little white sugar cubes in the  
19 restaurants, those would be about one cubic centimeter or  
20 one cc.

21 So what they're now measuring is not just any old  
22 dust particle, but one that -- ones that look like fibers,  
23 in other words, long and thin, Not round, not oblong, not  
24 clumps, but long and thin fibers.

25 And what they're saying is that in this thimbleful of

1 air, you can have no more than 12 fibers of -- of --  
2 presumably of asbestos to be seen.

3 Q And this was the '71 emergency standard?

4 A Yes, quickly replaced.

5 Q Okay. And you say "quickly replaced." When was it  
6 replaced?

7 A Next year, 1972.

8 Q Did they make the limit -- by the way, what are these  
9 called, the limits?

10 A Well, sometimes it's called a PEL for peak exposure  
11 limit. Sometimes, it's called TLV for threshold limit  
12 value.

13 Q Okay. What about ---

14 A And generally, in medicine, if you can make something  
15 more complicated, instead of simpler, and use more words  
16 instead of fewer, we like to do that.

17 Q Okay. What about permissible exposure level? Is  
18 that a term they've used?

19 A Yes.

20 Q Okay. So in '72, you said it changed almost  
21 immediately. What did it change to?

22 A Five fibers per cc.

23 Q And then just to cover the time in this case, so  
24 through about 1980 that Mr. Seay was at Celanese doing  
25 this work, did it change again during the '70s?

1 A 1976, it changed again.

2 Q What did it change to in '76?

3 A Two fibers per cc.

4 Q So within a period of about five years, they lowered  
5 it by a factor of six. It was six times lower in '76 than  
6 it was in '71; fair?

7 A Six times less asbestos dust allowed in the air, yes.

8 Q Did they, also, set any requirements for ceiling  
9 exposures, or exposures -- temporary exposures that would  
10 be very high?

11 A Yes. Because without getting into too much detail,  
12 the numbers you're already seeing is the permissible  
13 exposure limit averaged over the whole day. Since the  
14 amount of asbestos in most workplaces tends to go up and  
15 down, depending on what's going on.

16 But, in addition to that, they said, even for short  
17 periods of time, you can't go over 10 fibers per cc, even  
18 if it's just brief.

19 Q Okay. So these numbers here would be what OSHA is  
20 saying is for a whole workday, you can't have an average  
21 that is greater than these numbers; is that fair?

22 A That's correct.

23 Q And then you just said, they said for short term, you  
24 can't have one that's higher than 10 fibers?

25 A Correct. Even if it's brief. We're going to put a

1 ceiling on it, 10 fibers per cc. You're never going to  
2 exceed that.

3 Q Okay. So is it fair to say these were both OSHA  
4 requirements, an all-day requirement and a short-term  
5 requirement?

6 A Correct.

7 Q Okay. And then we'll get a little bit into labeling.  
8 But do they have labels required for things like wastes,  
9 products, substances that contained asbestos, and so  
10 forth?

11 A Yes. If it contained asbestos, you had to put a  
12 caution label on it.

13 Q And was the labeling requirement for OSHA the same in  
14 '71 or '72 as it was into the early '80s?

15 A Yes.

16 Q Okay. We may come back and talk a little bit more  
17 about that. But I want to spend some time talking about  
18 these levels of asbestos here, these permissible exposure  
19 limits.

20 First of all, were the permissible exposure limits  
21 ever designed to protect all workers?

22 A No.

23 Q Okay. Were they ever designed to prevent all cancer?

24 A No.

25 Q What were they designed to do?

1 A So they were designed, specifically, to prevent  
2 asbestosis, scarring of the lungs. And they explicitly  
3 said, this is not a protective measure -- I'm sorry. This  
4 will not protect adequately against developing cancers.  
5 It will only protect against developing scarring of the  
6 lungs.

7 And they said, furthermore, that this -- even for  
8 asbestosis, even for scarring of the lungs, it will  
9 prevent the majority -- large majority of cases from  
10 occurring if a person would be exposed under these rules,  
11 in which the rules were adhered to, for an entire working  
12 lifetime of 40 years.

13 So -- but even then, there would be some cases of  
14 asbestosis. But it would get rid of most of the cases.

15 Q And would it be fair to say -- and if I go too far,  
16 you know, afield, if I ask you something that is not in  
17 your area of expertise, let me know.

18 But would it be fair to say, from your understanding,  
19 that the OSHA standard applied to employers like  
20 Mr. Seay's employer?

21 A For the most part, it applied to employers. They're  
22 the ones who had to follow these rules.

23 Q And did it apply to Celanese as an employer?

24 A Yes.

25 Q Did it apply to John Crane as a product manufacturer?

1 A For their employees, yes.

2 Q Okay. And what about for their products?

3 A For their products, too.

4 Q Okay. Let's talk a little bit about these limits.

5 Okay. Because I want to make sure we have an

6 understanding of this.

7 Now, let's take the standard starting in '72. It's a  
8 nice round number of five. So that's 1972, five fibers  
9 per cubic centimeter, the little sugar cube. Okay. Now,  
10 what method did OSHA say to use as a microscope when you,  
11 actually, looked at the samples that were taken?

12 A Something called phase contrast microscopy, or PCM.

13 Q PCM. Is that -- Here's all I want to know. Is that  
14 a light microscope like a biology class microscope, or is  
15 that an electron microscope?

16 A That's like a biology class microscope. It's going  
17 to sit on top of a desk. And it's not -- it's not like an  
18 electron microscope, which requires its own room.

19 Q In fairness, electron microscopes were and still are  
20 very expensive?

21 A Correct.

22 Q Does a light microscope see all of the asbestos that  
23 is present in a sample?

24 A No. It's not powerful enough to see them all. It  
25 will miss many of -- in fact, it will miss the majority of

1 the asbestos fibers.

2 Q So when you're looking at the standard -- and let's  
3 say you have a sample, hypothetically, and you're looking  
4 at it with this light microscope, this basic microscope,  
5 and you see five fibers. Is it a fact that there are many  
6 more present?

7 A Yes.

8 MR. TIVIN: Objection. Speculation.

9 MR. YOUNG: Join.

10 THE COURT: Overruled.

11 THE WITNESS: There will be many more present. This  
12 has been tested and measured by subjecting the same sample  
13 to looking at it under the ordinary light microscope, and  
14 taking the same sample and looking at it with an electron  
15 microscope, which can see more. And what you find is that  
16 there are many more fibers that you can see with the  
17 electron microscope in the same sample than what you can  
18 see with the desktop light microscope.

19 BY MR. PANATIER:

20 Q Okay. So the second thing is, when you look at a  
21 sample, did OSHA say which particles that you saw you were  
22 supposed to count as fibers?

23 A Yes.

24 Q Okay. Which ones were you supposed to count?

25 A Anything that was long and thin and which -- and

1 which was longer than five microns in length.

2 Q Okay. So if the fiber is longer than five microns in  
3 length, you count it. And then did they, also, have  
4 something that was called an aspect ratio?

5 A Yes. That's the long and thin part.

6 Q Okay. And what does that mean?

7 A It had to be, at least, three times as long as it was  
8 thin -- as it was wide.

9 Q All right. So to put this in very simple terms. We  
10 learned what a micron was yesterday, a millionth of a  
11 meter, right?

12 A Yes.

13 Q So if you were looking at an asbestos sample, you had  
14 to count -- you could only count things that were, at  
15 least, five microns long or longer, is that fair?

16 A Correct.

17 Q And were, at least, three times as long as they were  
18 wide?

19 A Correct.

20 Q So, hopefully, I would be a fiber. Am I three times  
21 as long as I am wide?

22 A Unless you put your arms out.

23 Q All right. So you're looking for things that look  
24 like a fiber, look like that, fair?

25 A Yes.

1 Q All right. Now, we, also, heard a concept from  
2 Dr. Brody yesterday called background or asbestos that is  
3 in the ambient air. Is it true, from an occupational  
4 medicine perspective, that there is some asbestos in our  
5 general breathing air?

6 A Yes, there is.

7 Q Okay. And let me just ask you right now. Is there  
8 any -- any evidence that that level of asbestos can cause  
9 by itself mesothelioma?

10 A Well, it's plausible to think that it might cause an  
11 occasional case, rarely. That's a reasonable thing to  
12 believe. But we are -- for technical reasons, there is  
13 no -- there has been no way to prove that, or disprove it.

14 So we -- since we don't have the evidence of it, if I  
15 have a patient and they have mesothelioma and the only  
16 exposure that they have had is to the ordinary air that we  
17 all breathe, if that's the only exposure to asbestos that  
18 they've had, I don't -- I consider them to be a person  
19 whose mesothelioma is of unknown cause.

20 Q Okay. For someone who has occupational exposure to  
21 asbestos that develops mesothelioma, are you able to  
22 attribute that cause?

23 A Yes.

24 MR. TIVIN: Objection. Vague.

25 THE COURT: Overruled.

1 THE WITNESS: Yes. If they have a history of  
2 exposure to asbestos in their work, of course, details  
3 will matter, but, by and large, the answer is yes.

4 BY MR. PANATIER:

5 Q Okay. So let's talk a little bit about that  
6 background level. Do you have an opinion -- is it true  
7 that certainly across the country, there are different  
8 levels of background asbestos? Just the general small  
9 amount of asbestos that may be in the air, from place to  
10 place it varies?

11 A Yes, of course.

12 Q Do you have an opinion on what that average is in the  
13 States, just for purposes of discussion?

14 A I'll tell you what it was back in the '70s.

15 Q Okay.

16 A Because it's lower now. But back in the '70s, a  
17 median air concentration of asbestos would have been  
18 0.00005 fibers per cc.

19 Q Okay. Four zeros and a 5?

20 A Yes.

21 Q Dr. Brody said, put a one there. Is that a  
22 reasonable estimate?

23 A I -- at that level of measurement, the difference  
24 between one and five is almost negligible.

25 Q Okay. We're talking about tens, hundreds,

1 thousands -- am I right about that? Tens, hundreds,  
2 thousands, ten thousands, hundred thousands?

3 A Good luck on that..

4 Q Am I correct about that?

5 A It's five hundred-thousandths of a fiber.

6 Q All right. So if we -- so this is per the sugar  
7 cube --

8 A Correct.

9 Q -- Right?

10 So the amount of asbestos in the background on  
11 average, as you're taking from the '70s here, was  
12 5/100,000 -- so 5/100,000 of a fiber per sugar cube, is  
13 that fair.

14 A That's fair.

15 Q And would it be the same thing to say that for every  
16 500,000 sugar cubes, you would expect to find one fiber?

17 A Five.

18 Q You would -- I'm sorry. You would expect to find  
19 five.

20 A Yes.

21 Q All right. So let's do this. Let's say that you  
22 have, hypothetically, an occupational exposure of one  
23 fiber per cc. So one fiber in the sugar cube. And like  
24 we showed here, OSHA had different limits. In 1972, it  
25 was five. Let's just say you have one. Okay. Someone is

1 doing something, and there's one fiber per cubic  
2 centimeter.

3 Is there a way to figure out -- and I have a  
4 calculator on my phone if we need it -- how much higher is  
5 just one fiber per cubic centimeter than that background  
6 number?

7 A I think it's 10,000 times, but I'd rather get a  
8 calculator to be sure.

9 Q I'm going to use a calculator. Okay. I've got it on  
10 my phone here. Okay. Would we divide this number into  
11 this number?

12 A Yes.

13 Q Okay. So I'm going to take one divided by .00005,  
14 and I get 20,000.

15 A 20,000. Because --

16 Q Okay.

17 A Correct.

18 Q So if you have one fiber, you would be 20,000 times  
19 over that general background number; is that fair?

20 A Correct.

21 Q Okay. So from an occupational standpoint, and for  
22 the types of work that Mr. Seay did, did Mr. Seay do work  
23 that would have exposed him to asbestos far in excess of  
24 background?

25 A On many occasions, yes --

1 MR. TIVIN: Objection to the foundation.

2 THE COURT: Overruled.

3 BY MR. PANATIER:

4 Q All right.

5 A On many occasions, yes.

6 Q And did he have that type of work history for -- in  
7 fairness, his social security records say '71 to '80. He  
8 recalled late '60s to late '70s. But about -- would you  
9 say about anywhere from about eight to 10 years; is that  
10 fair?

11 A Yes.

12 Q Okay. Would you characterize his work that he did  
13 with machinery, packing, gaskets, insulation as regular  
14 work?

15 A Yes, I would. He did it -- that's what he was doing  
16 every day.

17 Q Was it frequent?

18 A It was, also, frequent --

19 MR. TIVIN: Objection to the characterization.

20 MR. YOUNG: Join.

21 THE COURT: Well, rephrase it.

22 BY MR. PANATIER:

23 Q Okay. How would you characterize his work with  
24 asbestos-containing products, Dr. Holstein?

25 A Well, in the first place, it was an ordinary and

1 usual part of his work. It was something he was expected  
2 to do. And he was expected to do it frequently as -- in  
3 the normal course of his duties. It wasn't unusual. It  
4 wasn't just occasional. It was something that he had to  
5 do routinely. And, therefore, it occurred on a regular  
6 basis.

7 It, also, occurred on a frequent basis, being daily.  
8 And many times, it would be several times a day that he  
9 would be exposed to asbestos, either through his own work  
10 or through the work of others.

11 And I would, also, say that the air concentrations of  
12 asbestos to which he was exposed indicated that he was  
13 close to the work. There was proximity.

14 In many cases when it was work with his own hands,  
15 it -- the proximity was arm's length. And on other  
16 occasions, when it was a result of the work of other  
17 people, it might be three feet, or five feet, or 20 feet.  
18 But in any case, he was in proximity to the -- to the  
19 source of asbestos.

20 So that would be a rough characterization of his work  
21 with asbestos.

22 MR. TIVIN: Objection. Move to strike.

23 May I approach?

24 THE COURT: Okay. Sure.

25 (WHEREUPON, a bench conference was held.)

1 BY MR. PANATIER:

2 Q The next question, sir, is, from reading his  
3 testimony, your understanding of the literature, was  
4 his -- his work, as you've characterized it -- was his  
5 work with -- with and around insulation a substantial  
6 factor in developing his mesothelioma?

7 A Yes.

8 Q Was his work with and around gaskets a substantial  
9 factor in his developing mesothelioma?

10 A Yes.

11 Q And, specifically, did he identify several different  
12 brands of gaskets?

13 A Yes, he did.

14 Q Okay. And you have your file there. If you need to  
15 reference it, please do. But he identified -- is it fair  
16 to say he identified Garlock?

17 A He did.

18 Q I think -- well, you tell me. I'm not going to give  
19 you the testimony. You tell me. What other brands did  
20 he --

21 A I recall that he identified Garlock. He identified  
22 Armstrong. He identified John Crane. He identified  
23 Anchor. Those are the ones I recall from his testimony.

24 Q All right. And in fairness, he said there might have  
25 been some others; is that fair?

1 A Yes.

2 Q Okay. From the testimony of he and Mr. Thompson,  
3 were you able to determine whether or not his exposure to  
4 each of the gaskets, including John Crane, would have been  
5 a substantial factor in the development of his  
6 mesothelioma?

7 A Yes.

8 Q And what is your opinion?

9 A I think the answer is, yes. They were substantial  
10 factors in causing his mesothelioma.

11 Q Okay. Let me ask you about a general question.  
12 Causation. Okay. You said that you had training in  
13 epidemiology; is that right?

14 A I did.

15 Q And certainly you're a medical doctor; fair?

16 A Yes.

17 Q Okay. And so as a medical doctor, as an occupational  
18 doctor, and in -- someone in preventive medicine, is  
19 assessing a substance's ability to cause a disease  
20 something that you have done throughout your whole career?

21 A Yes. That's right at the core of my field. I mean,  
22 constantly in the field of occupational medicine, you're  
23 seeing people who have some -- some complaint or another.

24 It might be breathing. It might be their arms and  
25 legs. It might be their liver. And your job is to figure

1 out, has this been caused by what's going -- what they've  
2 experienced in their work. So figuring out causation is  
3 right at the center of my field.

4 Q So let me ask you -- and I'll try to -- I'll try to  
5 just sum this up in a few questions.

6 So, first of all, from your -- in your role as an  
7 occupational medicine doctor, do you have an opinion as to  
8 whether or not the different types of asbestos we've  
9 discussed -- chrysotile, amosite, crocidolite, actinolite,  
10 and tremolite -- can cause the disease mesothelioma in  
11 human beings?

12 A I do.

13 Q What's your opinion?

14 A That each of those varieties of asbestos can cause  
15 malignant mesothelioma, and does cause malignant  
16 mesothelioma in human beings.

17 Q Now, I'd like to ask you, what is the basis for that  
18 opinion, for causation, the ability of each of those fiber  
19 types to cause mesothelioma? Can you give us a thumbnail  
20 sketch on the type of information you've included in your  
21 opinion?

22 A Sure.

23 Q Okay.

24 A Starting with chrysotile asbestos, which is the one  
25 for which this issue is most often addressed.

1 Q Okay.

2 A There are many different kinds of information that  
3 all lead to the same conclusion that chrysotile asbestos  
4 causes mesothelioma. So we'll start at the lowest level  
5 of life. And we'll look at what happens within individual  
6 living cells when asbestos penetrates those cells or comes  
7 into contact with those cells. And I would imagine,  
8 Dr. Brody probably testified about that.

9 Q He did. He testified a lot about that.

10 What would you characterize that area as of science?

11 A Perhaps, I would call it carcinogenesis. In other  
12 words, the process within the cell by which a previously  
13 normal cell becomes a cancerous cell. And then that  
14 cancerous cell then begins to divide into more and more  
15 cells. And they're, also, cancerous.

16 Q What else have you considered on the issue of  
17 causation?

18 A So the next thing would be to look at a -- at an  
19 entire tissue that is living. In other words, what I just  
20 talked about was just one cell. But the experiments in  
21 particular that I'm thinking of is you can, actually, take  
22 part of the windpipe out of a hamster, using anesthesia.  
23 And you can, actually, keep it alive in the laboratory.

24 And, again, you can expose asbestos to that windpipe  
25 of the hamster. And the cells there will, also, begin to

1 show changes that are of the type that are the  
2 beginning -- the first stages of growth of a cancer.

3 Q Would that be -- would you call that animal studies?

4 A I just call it tissue studies.

5 Q Okay. Tissue studies. What else?

6 A So the next one would be an intact living animal, the  
7 entire hamster. Or rats are often used in laboratories  
8 for experiments of this sort.

9 And if you expose laboratory animals to chrysotile  
10 asbestos, they will develop mesotheliomas. They will  
11 develop cancers of the pleura and other cancers as well,  
12 particularly lung.

13 And then you can take the next step up and look at a  
14 human being. And we have -- at an individual human being.  
15 And we have lots of case reports -- innumerable case  
16 reports of individual human beings exposed only to  
17 chrysotile asbestos getting mesothelioma.

18 And then, lastly, we have epidemiologic studies,  
19 which are populations or groups of hundreds or thousands  
20 of people exposed only to chrysotile asbestos, and  
21 developing elevated rates of mesothelioma in those groups.

22 So, at least, going from the smallest and simplest  
23 level of life to whole populations of life, we see the  
24 same story. And it's a uniform story. And in my view,  
25 it's conclusive.

1 Q And have you, also, considered the finding of  
2 different scientific bodies, agglomerations or  
3 conglomerations of scientists, and regulatory bodies, and  
4 their conclusions?

5 A Yes.

6 Q So I'll just write, scientific and regulatory. Is  
7 that okay?

8 A Certainly.

9 Q And I'm just going to rattle off some names. I'm not  
10 going to take us through all the documentation. We can go  
11 through some of it.

12 But is it -- is it fair to say that OSHA, NIOSH --  
13 NIOSH is the National Institute for Occupational Safety  
14 and Health?

15 A Correct.

16 Q And who are they?

17 A Well, that's another federal agency. It's different  
18 from OSHA, even though the name is similar. And it has a  
19 slightly different job to do -- well, not just slightly  
20 different, quite a bit different job. But it still has to  
21 do with safety and health in the workplace.

22 Q Are they the research arm?

23 A They do research, and education, and training.

24 Q Okay. OSHA; NIOSH; IARC, which is the International  
25 Agency for Research on Cancer; W-H-O, World Health

1 Organization; the EPA, the Environmental Protection  
2 Agency; the Consumer Product Safety Commission; the  
3 National Cancer Institute. Sir, is it fair that all of  
4 those different bodies, whether they are scientific or  
5 regulatory, have concluded that all forms of asbestos  
6 cause mesothelioma?

7 A Yes.

8 Q And have they, also, concluded that there is no known  
9 safe level of asbestos exposure?

10 A Yes, sir, they have.

11 Q Okay. And do you agree with that?

12 A I do.

13 Q What I want to do is I want to ask you about some  
14 literature. We're not going to sit here and read all  
15 this. I just want to ask, you -- some, I'm going to ask  
16 you just about the titles and whether you've considered  
17 it. Some, I may ask you about an excerpt from it. Okay.

18 A Very good.

19 Q So the first one is -- there's a paper called,  
20 Mesothelioma from Chrysotile Asbestos and Update, by Marty  
21 S. Kanarek. Have you read that?

22 A Yes.

23 Q Do you find it to be authoritative and reliable?

24 A I do. And I would just say that means that it's  
25 useful. It -- the -- it demonstrates knowledge of the

1 field. But it doesn't mean that I necessarily agree with  
2 every sentence in it.

3 Q In fact, you -- there are probably sentences in every  
4 article you've ever read that you don't agree with; is  
5 that fair?

6 A Absolutely. And as much as we revere this book right  
7 here, if you looked at it in detail, you would find things  
8 in it that you might disagree with.

9 Q Okay. Fair.

10 And that is -- that may vary from person to person.  
11 This may vary from expert to expert; fair?

12 A Correct.

13 Q Okay. The next one, Chrysotile Asbestos is the Main  
14 Cause of Pleural Mesothelioma. I'll just put that up  
15 there. By Allan Smith and Catherine Wright. Have you  
16 read that?

17 A Yes.

18 Q Do you find it to be authoritative and reliable?

19 A I do.

20 Q Okay. Chrysotile Asbestos as a Cause of  
21 Mesothelioma: Application of the Hill Causation Model, by  
22 Dr. Lemen. Have you read that before?

23 A I have, yes.

24 Q Do you find that to be authoritative and reliable?

25 A Yes.

1 Q And in fairness, Dr. Lemen has done some testifying  
2 on the plaintiff side in asbestos litigation; fair?

3 A Yes, he has.

4 Q I did want to ask you. Today, you're here at my  
5 request. You're being paid to be here as a consultant  
6 expert. That's something that you do a lot of now; right?

7 A At this -- I'm a month short of 72. And at this  
8 point in my life, I do a lot of it.

9 Q Okay. And have you, also, consulted for companies on  
10 asbestos issues?

11 A Yes, I have.

12 Q Okay.

13 A Including companies that had asbestos products.

14 Q Right. Not just companies that might have an  
15 asbestos issue by virtue of having it in their facility,  
16 but, actually, companies that made it?

17 A Yes.

18 Q Here's one from -- I think this one is from this  
19 year. Yeah. This is by Steven Markowitz, 2015,  
20 Asbestos-Related Lung Cancer and Malignant Mesothelioma of  
21 the Pleura: Selected Current Issues. Have you read and  
22 reviewed that?

23 A Yes, I have.

24 Q Do you find that generally to be authoritative and  
25 reliable?

1 A Yes, in the same sense.

2 Q This one by Dr. Egilman, who, also, has consulted on  
3 both sides in litigation; correct?

4 A Yes, he has.

5 Q Okay. Exposing the 'Myth' of ABC, 'Anything But  
6 Chrysotile': A Critique of the Canadian Asbestos Mining  
7 Industry and McGill University Chrysotile Studies. Have  
8 you read and reviewed that?

9 A Yes, I have.

10 Q Do you generally find that to be authoritative and  
11 reliable?

12 A I do.

13 Q Okay. Have you heard of the Helsinki Consensus  
14 Report or the Helsinki Criteria?

15 A I have.

16 Q It first came out in -- about when?

17 A Around 1999, or something. I don't remember the  
18 exact date.

19 Q They've reissued their findings. This is a consensus  
20 report, Asbestos, Asbestosis, and Cancer, the Helsinki  
21 Criteria for Diagnosis and Attribution, 2014. You've read  
22 and reviewed this; correct?

23 A Yeah. This is the update in 2014. And now that you  
24 have it in front of me, the original date was 1997.

25 Q Okay. Here's a World Health Organization

1 publication. This is from 2006, Elimination of  
2 Asbestos-Related Diseases. Have you read and reviewed  
3 this?

4 A I have.

5 Q Okay. And I just want to ask you about a few  
6 sections on this one. That paragraph.

7 Exposure to asbestos causes a range of diseases, such  
8 as lung cancer, mesothelioma, and asbestosis (fibrosis of  
9 the lungs), as well as pleural plaques, thickening, and  
10 effusions. There's, also, evidence that it causes  
11 laryngeal and possibly some other cancers.

12 Generally, do you agree with that, sir?

13 A I do.

14 Q And then, down at the bottom, it says, All types of  
15 asbestos cause cancer in humans. Asbestos (actinolite,  
16 amosite, anthophyllite, chrysotile, crocidolite, and  
17 tremolite) has been classified by the International Agency  
18 for Research on Cancer as being carcinogenic to humans.  
19 Exposure to chrysotile, amosite, and anthophyllite  
20 asbestos and to mixtures containing crocidolite result in  
21 an increased risk of lung cancer. Mesotheliomas have been  
22 observed after occupational exposure to crocidolite,  
23 amosite, tremolite, and chrysotile, as well as among the  
24 general population living in the neighborhood of asbestos  
25 factories and mines, and in people living with asbestos

1 workers.

2 Do you agree with that?

3 A I do.

4 Q And do you agree with this last sentence that I'll  
5 ask you here, No threshold has been identified for the  
6 carcinogenic risk of chrysotile?

7 A I do.

8 Q Meaning what?

9 A That means -- the word -- the keyword there is  
10 "threshold." And the other -- yes, the keyword there is  
11 "threshold."

12 The threshold is an air concentration or an exposure,  
13 the amount of exposure to asbestos. And what they're  
14 saying there is that nobody has been able to find an  
15 exposure so low that if you -- if lots of people were  
16 exposed to that, that somebody would not get the  
17 mesothelioma.

18 Q And that's the -- is that the same concept that we  
19 addressed here with OSHA setting these permissible  
20 exposure limits, that they were not designed to be  
21 protective against cancer?

22 A That's correct.

23 Q Have you read the National Cancer Institute fact  
24 sheet on asbestos exposure and cancer risk?

25 A Yes, I have.

1 Q Okay. Here, I think they're talking about folks who  
2 worked on cars, but I want to kind of focus on the second  
3 part of the sentence. Studies evaluating the cancer risk  
4 experienced by automobile mechanics exposed to asbestos  
5 through brake repair are limited. But the overall  
6 evidence suggests there is no safe level of asbestos  
7 exposure. Is this the same concept just now from the  
8 National Cancer Institute?

9 A Same concept.

10 Q Are you familiar and have you read the position  
11 statement on asbestos from the Joint Policy Committee of  
12 the Societies of Epidemiology from 2012?

13 A Yes, I have.

14 Q Now, do you find that to be authoritative and  
15 reliable?

16 A Yes, in the same sense as the others.

17 Q Okay. And do you agree with their position that all  
18 fibers can cause mesothelioma?

19 A I do.

20 Q Okay.

21 A All the different types of fibers.

22 Q Right. The different types that we've discussed.

23 A And just to be clear, the different types of asbestos  
24 fibers.

25 Q Yes. Different types of asbestos fibers.

1           Okay. So here's -- here's where we are. Let's talk  
2 about the ability of insulation and gaskets to release  
3 asbestos. Is that something you're prepared to do?

4           A     Sure.

5           Q     And is that one of those things that you've studied  
6 the literature on, and you have continued to stay current  
7 on that?

8           A     Yes. I've studied the literature on that. I've  
9 studied the industrial hygiene literature. The Port  
10 Allegany Asbestos Health Program is about a factory where  
11 they made one of the pipe coverings. I have a lot of  
12 experience with what you just asked about.

13           MR. PANATIER: Your Honor, I can keep going, or this  
14 is a breaking -- a natural breaking spot, too.

15           THE COURT: Yeah. Just keep going.

16           MR. PANATIER: Okay.

17           MR. TIVIN: Your Honor, may we approach?

18           THE COURT: Sure.

19           (WHEREUPON, a bench conference was held.)

20           THE COURT: We'll just go ahead and break for lunch.  
21 Ladies and gentlemen, just come back at 1:30. And  
22 we'll resume.

23           Don't talk about the case. Don't do any outside  
24 investigation. Continue to keep an open mind.

25           Thank you.

1 (WHEREUPON, the jury was excused from open court at  
2 approximately 12:18 p.m.)

3 THE COURT: Okay. Let me back up a couple steps.  
4 Because we've had -- I think that was our third bench  
5 conference. And while I appreciate everyone's willingness  
6 to not disrupt the trial and we'd have to take the jury  
7 out, I don't want to prevent anybody from fully putting  
8 on -- their objections on the record and protecting the  
9 record.

10 So I think, Mr. Young, you were the first one that,  
11 actually, had a matter to be taken up at the bench. And  
12 if you want to summarize what occurred, I'll let you do  
13 that now, sir.

14 MR. YOUNG: I think Ms. Shofner is going to --

15 THE COURT: She was up here, too. All parties were  
16 represented.

17 But go ahead, Ms. Shofner.

18 MS. SHOFNER: I believe it was a renewal of our  
19 objection to allowing documents to come in as to Celanese  
20 as a premise owner. And that that is not our duty to --  
21 that we should have known or gone out and kept abreast of  
22 all of the asbestos literature of hazards of asbestos.

23 THE COURT: Okay.

24 MS. SHOFNER: And then we had, I think, a continuing  
25 objection to all the documents that were -- that he --

1 that Mr. Holstein was talking about regarding the  
2 knowledge and state of the art of asbestos history.

3 MR. YOUNG: Judge, our position -- and it was in our  
4 motion -- is that we're not held to the same standard as a  
5 product manufacturer, which is the standard of an expert.  
6 And that for those to be admissible, there needs to be  
7 some evidence of actual knowledge by Celanese of the  
8 documents, as opposed to what I guess is, you know,  
9 becoming constructive knowledge.

10 And so we had asked that Your Honor give a limiting  
11 instruction to the jury that those articles about the  
12 knowledge of asbestos hazards and the state of the art not  
13 be considered against Celanese for those reasons.

14 And as I understand it, Your Honor overruled our  
15 objection and declined to give a limiting instruction, but  
16 did give us a continuing objection to Dr. Holstein's  
17 testimony with respect to those articles.

18 So we would renew that objection and our request for  
19 a limiting instruction.

20 THE COURT: All right. Sir, does that fairly  
21 summarize the objection in the conference from the  
22 Plaintiffs standpoint as well?

23 MR. PANATIER: It does. It summarizes it.

24 THE COURT: And does John Crane have no issue in this  
25 or --

1 MR. TIVIN: No. We have no position.

2 THE COURT: Okay. Well, obviously, later on, if a  
3 limiting instruction is necessary, I will be glad to  
4 consider it. But at this juncture, I did overrule the  
5 objection and declined to give a limiting instruction.

6 The second matter was John Crane. And that was not  
7 the most recent matter, but there was something right  
8 before that that you objected to.

9 MR. PANATIER: You did object to something. I don't  
10 remember what it was.

11 MR. TIVIN: I imagine it was just foundation or  
12 expertise. But I believe my objection was in open court  
13 on the record. I don't recall having an argument.

14 MR. YOUNG: It's just sad that none of us can  
15 remember something that happened 30 minutes ago.

16 (Pause.)

17 MR. TIVIN: All the objections I made were in open  
18 court. And I don't need to expound on anything further.

19 THE COURT: Okay. That's fine.

20 Then the one we just took up was John Crane's  
21 objection, which I'll let Mr. Tivin articulate.

22 MR. TIVIN: May it please the Court.

23 Mark Tivin on behalf of John Crane.

24 At this point, John Crane is requesting a limiting  
25 instruction in anticipation of testimony it believes is

1 going to be elicited from Dr. Holstein regarding fiber  
2 release from various gasket activities.

3 Although those gasket activities were testified to by  
4 Mr. Seay, specifically, regarding removing gaskets,  
5 removing them with a grinder, with a scraper, and with a  
6 wire brush, there has been no foundation and there is no  
7 foundation that shows that any of the gaskets that he ever  
8 removed were John Crane gaskets.

9 The only testimony in this case is that John Crane  
10 was a number -- one of a number of manufacturers. There  
11 were 350 people in his department doing his job. There is  
12 no testimony that he ever worked on the same thing twice.  
13 There is no testimony that he was able to recognize the  
14 gasket upon removal. There is no testimony that there was  
15 any specific application or piece of equipment that  
16 required John Crane gaskets.

17 So to allow the speculation that some of the gaskets  
18 that he removed were John Crane is in effect -- there's no  
19 foundation for it. And it puts me in a position of having  
20 to prove that they weren't John Crane, impermissibly  
21 shifting the burden, when we've heard numerous Plaintiffs  
22 experts talk about how it's 10,000 times above background,  
23 how it's 20,000 times above background.

24 And then he puts up a number that says that this is,  
25 I believe -- I anticipate it being about 20 fibers per cc

1 for grinding, when there's no foundation that any of those  
2 gaskets that he ground were John Crane, is unduly  
3 prejudicial to John Crane. And the jury needs to know, at  
4 the time the testimony is elicited -- at the time the  
5 testimony is being elicited that this isn't being used  
6 against John Crane. Because any limiting instruction that  
7 occurs later, the damage is already done. Because they're  
8 talking about gaskets. They're talking about John Crane.  
9 And then they're saying, you get 20 fibers per cc on  
10 removing gaskets in some circumstances when there's  
11 absolutely no foundation.

12 And it is pure, rank speculation to say that any of  
13 the -- because of the number of inferences that need to be  
14 jumped through, before you could get to Mr. Seay removing  
15 a John Crane gasket. You're allowed to have a reasonable  
16 inference. But this is the inference that he worked on  
17 the same piece of equipment or someone else put a John  
18 Crane -- someone that he doesn't know put a John Crane  
19 gasket in, at some point in time, and that he's the next  
20 one to work on it.

21 And that if he did work -- and because you can't  
22 identify the gaskets when you remove them, that the gasket  
23 that no one can identify is one of these ones that John  
24 Crane worked on -- that was a John Crane installation,  
25 there's -- you need to lay a basic foundation. And it

1 hasn't been done.

2 And this Court, specifically, struck the question.  
3 The fact that the question was stricken, it can't be used  
4 as a basis for a foundation -- that can't be used as a  
5 basis for a foundation for testimony.

6 Thank you, Your Honor.

7 MR. PANATIER: May I be heard, Your Honor?

8 THE COURT: Yes, sir. Mr. Panatier.

9 MR. PANATIER: Yeah. Just because -- you know, just  
10 because a lot of large numbers are stated, actually,  
11 doesn't -- doesn't make it any less likely he used a John  
12 Crane product. In fact, the fact that you had 350 people  
13 using four brands of gaskets is a fact issue that the jury  
14 can consider as to whether or not he would have, over a  
15 10-year period, pulled off John Crane gaskets.

16 And, in fact, he testified that he removed gaskets on  
17 almost a daily basis. This was something that was ongoing  
18 over a 10-year period with four brands of gaskets. So  
19 it's a fact issue. There's not rank speculation here.

20 And then, lastly, I would just say that the one  
21 question and answer that you sustained their objection to  
22 from the deposition was, On those occasions that you  
23 worked on a pump or a valve more than one time, would it,  
24 also, be fair to say that you would be removing or  
25 replacing asbestos gaskets that you yourself had

1 previously installed?

2 He said, Yes.

3 It didn't get played here. But an expert can rely on  
4 that. It need not be admissible for an expert to rely on  
5 it. In other words -- and that's right in the rules.  
6 That's right in 702, 703, that an expert can rely on  
7 evidence that need not be admissible in court to render  
8 his conclusions.

9 So when I ask him, I can say, Sir, to a reasonable  
10 degree of certainty, over a 10-year period with four  
11 brands of gaskets and 350 people installing and removing  
12 these gaskets over and over during that time, is it -- do  
13 you believe it is more likely than not that he worked with  
14 a John Crane gasket both installing and removing?

15 If the witness says, yes, based on what he read and  
16 his assessment, I think that's a fact issue. And I think  
17 that the witness can testify to that. It's certainly not  
18 shifting of burden to John Crane. It's just my evidence.  
19 It is circumstantial. That's fine. There is now -- there  
20 is no eyewitness, yes, I pulled a John Crane gasket out.  
21 It's circumstantial. It's not direct, but it is evidence.  
22 And it is a fact issue the jury can consider.

23 And I'm sure in closing, he'll say there's no  
24 eyewitness that said he pulled out a John Crane gasket.  
25 At the same time, I'll say the evidence is there were four

1 brands that were being pulled out over a 10-year period  
2 over, and over, and over again.

3 MR. TIVIN: Briefly -- if I may briefly respond, Your  
4 Honor?

5 THE COURT: Sure.

6 MR. TIVIN: An expert is allowed -- an expert is not  
7 allowed to rely on evidence that's been stricken by this  
8 Court. I believe that we can all agree on that.

9 MR. PANATIER: I don't agree to that. I don't think  
10 that's a rule.

11 MR. TIVIN: Because if an expert can rely on evidence  
12 that's been stricken by this Court, then there's no  
13 foundation -- then there's no reason for any witnesses.  
14 It doesn't matter what any of your rulings are regarding  
15 striking testimony if the witness can just get up there  
16 and rely on it, and then spit it out to the jury what  
17 you've already said is not admissible, and is not to be  
18 before the jury.

19 THE COURT: Well, that may be --

20 MR. TIVIN: That's number one.

21 Number two, this -- and I'm sorry for interrupting,  
22 Your Honor.

23 THE COURT: That's okay. Go ahead.

24 MR. TIVIN: And number two, it's more than -- you  
25 look at the testimony regarding the speculative nature of

1 what they're trying to do. Mr. Thompson is going to --  
2 Mr. Thompson testified yesterday that only 25 percent of  
3 the gaskets needed to be scraped or power wire-brushed.  
4 And 75 percent of them fell off.

5 This isn't a question where every gasket needed to be  
6 ground off. And if that was the question, that every  
7 gasket needed to be ground off, I believe that  
8 Mr. Panatier would have a point in that there is some  
9 circumstantial evidence that he would have worked on the  
10 same thing.

11 But, now, it's more than that. It's -- of the  
12 25 percent that needed to be scraped or ground off,  
13 there's no evidence about what percentage of them needed  
14 to be ground off. There's no evidence about which ones of  
15 those were John Crane. There's no evidence about which --  
16 it's one thing to allow a reasonable inference.

17 But, in here, there is no reasonable inference.  
18 Because he wants you to take the leap that he removed a  
19 bunch of gaskets. But then he wants you to use that  
20 grinder removal number and place that before the jury when  
21 there is absolutely zero evidence that that had anything  
22 to do with John Crane.

23 And I want to be sure that I'm clear to the Court. I  
24 am not saying that the grinder evidence doesn't come in.  
25 Because it does come in because he testified to it.

1       However, it's extremely prejudicial when you hear the  
2       testimony that's come out through the Plaintiffs experts  
3       about how it's 10,000, 20,000 times above background. And  
4       then you throw this number and then -- without telling the  
5       jury, this number -- there's no evidence that this number  
6       can apply to John Crane, the prejudice is overwhelming.

7       THE COURT: I understand the objection. I overrule  
8       it on the ground that it does appear to be -- the  
9       Plaintiffs proof includes circumstantial evidence.

10       And the arguments that John Crane is making now may  
11       very well be good arguments to the jury in the closing.  
12       But as far as arguments in favor of excluding evidence or  
13       warranting a limiting instruction, I don't find them  
14       persuasive.

15       I find that there is evidence in the record already,  
16       through Mr. Seay and Mr. Thompson, about the types of  
17       gaskets that were in the plant, the type of work Mr. Seay  
18       did. And this is sufficient to support a foundation for  
19       this testimony of Dr. Holstein.

20       So I overrule the objection. There's no basis for a  
21       limiting instruction. Even if I gave such an instruction,  
22       in the form that's been proposed, it would be a comment on  
23       the facts, which I can't do without violating the  
24       Constitution.

25       So we'll be back at 1:30.

1 All right. Thank you.

2 MR. TIVIN: Thank you, Your Honor.

3 THE COURT: And as far as the issue about the  
4 reliance by the expert on stricken testimony, I believe  
5 Mr. Panatier has a point that the rules do, specifically,  
6 allow for the experts to rely on documents that may not be  
7 admissible.

8 If the goal here is to search for truth, there's  
9 nothing preventing the expert from going out and asking  
10 the same question that was found to be objectionable under  
11 the rules of evidence to a witness. And, therefore, the  
12 expert can then rely on that in forming his opinion if  
13 it's of the type of evidence he reasonably relies on in  
14 forming opinions.

15 So while I understand the logical construct Mr. Tivin  
16 very finely brought, I disagree with it.

17 Thank you.

18 (WHEREUPON, a lunch break was taken.)

19 THE COURT: Anything else before we bring the jury  
20 in?

21 MR. TIVIN: Yes, Your Honor.

22 THE COURT: Yes, sir.

23 MR. TIVIN: Mark -- are you ready?

24 THE COURT: Yes, sir.

25 MR. TIVIN: Two things. One, Your Honor inquired as

1 to me as to what other issue I had on sidebar, and I  
2 couldn't remember what the objection was. I remember what  
3 the objection was, just for the record.

4 I objected to Dr. Holstein making an opinion on the  
5 alternate issue of frequency, regularity, and proximity.  
6 And I stated the basis at the sidebar. And I understand  
7 that Your Honor denied that objection and allowed him to  
8 testify.

9 MR. YOUNG: And we had joined in that, Your Honor.

10 THE COURT: Well, that refreshes my memory as well.  
11 And that is accurate, as far as I can recall.

12 But I do deny that based on Rule 704. I don't think  
13 he's telling the jury what result to reach. And I believe  
14 such testimony would be admissible under the rules, so.

15 MR. TIVIN: Secondly --

16 THE COURT: Yes, sir.

17 MR. TIVIN: -- Your Honor, if I may continue. At  
18 this time, John Crane would make a motion for a mistrial  
19 based on the issue with the juror.

20 THE COURT: Okay.

21 MR. TIVIN: We believe that because this juror has --  
22 not only works at the same plant, but has the same job as  
23 the Plaintiff, there was -- I'm not saying that he -- it  
24 was actively concealed in any way, shape, or form, but it  
25 has come to our attention. And that is something that we

1 would have asked Your Honor to inquire of, and most  
2 probably used -- if you had known that he had the same job  
3 at the same plant, we would have asked you to further  
4 inquire. We would have used our jury strikes differently  
5 had we known of this information.

6 Secondly, he's said that he has told the other jurors  
7 where he worked. And it's the same -- and it's my  
8 understanding he told them that he worked at the same  
9 plant. And, now, because he's told the other jurors there  
10 and now he's going to be -- he's going to say, I've been  
11 forbidden to talk about what I do for a living, it creates  
12 a prejudice in the jury room that I don't think can be  
13 fixed.

14 And it's my -- my notes say that he said he was  
15 worried. Now, I don't know if he said he was worried  
16 about his job, or if he was worried about something else.  
17 Because I know on his juror questionnaire, he said that he  
18 was not -- he was exposed to asbestos, but not worried  
19 about its health effects. And, now, he's listened to two  
20 witnesses come in here and say that a man with the exact  
21 same job at the exact same place has died.

22 I don't -- I don't know what he was referencing. But  
23 I think the fact that -- this is something that we would  
24 have gone into and used a peremptory. And we believe  
25 that, based on the fact that he's had conversations with

1 other jurors that mentioned where he worked and now he's  
2 been to be instructed not to talk, we feel that we are  
3 going to be denied an impartial jury. And because we  
4 believe we're going to be denied an impartial juror, we  
5 don't believe it can be remedied by any way other than a  
6 mistrial.

7 MR. YOUNG: And we would join in the motion for a  
8 mistrial, Your Honor, Celanese.

9 THE COURT: All right.

10 MR. PANATIER: So the first thing, Your Honor, is I'm  
11 looking at the morning session transcript from  
12 September 29th, 2015, where on page 70, Mr. Bondarchuk,  
13 B-O-N-D-A-R-C-H-U-K, #16, said, "I'm working for Auriga  
14 Polymers. That used to be called Celanese. I know some  
15 people that worked for Hoechst Celanese.

16 And then later, he was sworn again. And Your  
17 Honor -- there were a couple follow-up questions that you  
18 were asked to ask him. #16. Okay. Same juror. This is  
19 again -- this is on Page 127.

20 Good afternoon. A couple questions from your  
21 questionnaire. All right. First of all, you said you  
22 worked with Celanese?

23 Answer: No. The Auriga Polymers plant where I work  
24 now used to be Hoechst Celanese.

25 You were never employed by them?

1 No.

2 Do you have any opinions about it?

3 No.

4 Et cetera.

5 He made it very clear that he had worked at the  
6 Hoechst Celanese plant. So everybody already knows that.  
7 The fact that he told any jurors that he worked there,  
8 they already heard him because he said in open court two  
9 times.

10 So I don't think there's any grounds for mistrial on  
11 that. So we would oppose Defendants request for mistrial.

12 As far as the juror remaining on the panel, to the  
13 extent that he has expressed that he has issues as to  
14 whether or not he would be able to keep his personal  
15 knowledge separate from what he learns in trial and the  
16 fact that he works there doing the same job as Mr. Seay, I  
17 think he should be excused. And we'll put in an  
18 alternate. I think that avoids any issues with him.

19 The only thing the juries heard is that he works  
20 there. And he already said he did.

21 MR. TIVIN: If I could briefly respond, Your Honor.

22 When the juror came out this afternoon -- and I think  
23 everyone in Spartanburg knows there was more than one  
24 Celanese plant around here. He said that he didn't  
25 realize it was the same Celanese plant until he heard the

1 testimony about -- I can't pronounce the name of the  
2 river. But there was some river that was mentioned. And  
3 that's how he knew it was the same plant.

4 It was some description that was given by the -- but,  
5 once again, for the reasons that we previously stated, we  
6 don't believe there's any way to cure this. And we  
7 believe that this -- unfortunately, this panel has been  
8 tainted. And...

9 THE COURT: All right. There's no evidence of any  
10 taint to the panel or premature deliberations. As I  
11 already stated, I -- he said that the exchange was  
12 limited, specifically, to where he had worked, which had  
13 already been disclosed.

14 And to the extent he worked at the Celanese plant or  
15 a plant that had once been a Celanese plant, he indicated  
16 there was no further discussion about it.

17 He, obviously, is very conscientious. And he did  
18 express concern about his continuing ability to confine  
19 his decision to the record, given the fact that he would  
20 know details about the setting. And he could place trial  
21 evidence in context that an ordinary juror unfamiliar with  
22 the work environment there would have no way of doing.

23 So I think from that standpoint, it puts him in a  
24 position where he is already worried about that, and  
25 mindful of the instructions I've already given and will

1 give again about confining his decision to the evidence.  
2 He's expressing some doubt that he can comply with that  
3 without some type of brain surgery, basically.

4 So I think he should be excused. I don't find this  
5 to be an issue of concealment. As I stated before,  
6 there's nothing he was asked during voir dire that he has  
7 not disclosed. Even if there were, there were -- it was  
8 some unintentional concealment, I don't find there was any  
9 prejudice to any party by his failure to volunteer that he  
10 worked at a specific plant. He didn't know what plant was  
11 at issue in this case. He had no way of knowing that. He  
12 wasn't asked about a specific plant.

13 So there's nothing showing he is a potential and  
14 material source of bias, except to the extent that he has  
15 personal knowledge of the precise work setting that is at  
16 issue in this case.

17 So even though I don't find that he is biased or  
18 anything but impartial, I am going to excuse him and  
19 insert the alternate just to avoid that potential problem.

20 And as to the mistrial request, mistrial is supposed  
21 to be granted only when absolutely necessary as a last  
22 resort and --

23 Yes, sir.

24 MR. YOUNG: I'm sorry, Judge. I got a -- I'm old and  
25 my back hurts.

1 THE COURT: And, therefore, they're only to be  
2 granted when there's no other choice and to present --  
3 prevent manifest injustice. I certainly don't find any of  
4 that would be occurring in this trial. It was not  
5 granted.

6 So that's my ruling.

7 Yes, sir, Mr. Young.

8 MR. YOUNG: Your Honor, I just -- that wasn't exactly  
9 how I thought this was going to end up.

10 So I would ask that Your Honor -- just so we can be  
11 sure about Your Honor's ruling that before the juror's  
12 excused that we inquire of him exactly what he said to the  
13 other jurors about his work at the plant. That wasn't  
14 fleshed out at all this morning.

15 And I think it's a different motion, Judge, if he  
16 told them about work out there. Because that's, you know,  
17 evidence that didn't come from the witnesses in the case.

18 So I think that's an important issue that we would  
19 request that Your Honor, at least, inquire about before  
20 he's excused.

21 THE COURT: Well, I'll ask him about -- I'd be  
22 willing to ask him to just confirm that he has not  
23 disclosed anything to the jury about his work environment,  
24 other than what he's already told us.

25 Does that cover it?

1 MR. YOUNG: That said it better than I did probably,  
2 Judge.

3 THE COURT: Well, I don't know about that.

4 MR. YOUNG: Right, Mark?

5 MR. TIVIN: Yeah.

6 THE COURT: Okay. So anything further before we  
7 bring Mr. Eugene out?

8 THE BAILIFF: Bring him only?

9 THE COURT: #16.

10 (WHEREUPON, Juror #16, Yevgeniy Bondarchuk, entered  
11 courtroom.)

12 THE COURT: Okay. Sir, you mentioned that the  
13 conversation you had with the other jurors was where you  
14 worked.

15 JUROR #16, YEVGENIY BONDARCHUK: Yes.

16 THE COURT: Was anything else discussed?

17 JUROR #16, YEVGENIY BONDARCHUK: Well, they just  
18 asked me where I work. I said, Well, I work -- I happen  
19 to be at this plant where -- what we talked about. That's  
20 about it.

21 THE COURT: That was the extent of the discussion?

22 JUROR #16, YEVGENIY BONDARCHUK: Yeah, pretty much.

23 THE COURT: Okay.

24 JUROR #16, YEVGENIY BONDARCHUK: I mean, let me think  
25 about it. Just -- yeah. I think that was it. That's

1 pretty much what I had told them, where I work, and I work  
2 on the same stretch lines -- 14. And I do pretty much  
3 same job. That's what I remember. Yeah.

4 THE COURT: Okay. And you didn't share any other  
5 information with the jury about that, other than what  
6 you've already told us?

7 JUROR NUMBER 16: Then one of them asked something  
8 about asbestos. But then somebody said, We shouldn't be  
9 talking about it so we didn't discuss it.

10 THE COURT: Okay. Was that the full extent of it?

11 JUROR #16, YEVGENIY BONDARCHUK: Pretty much, yeah.

12 THE COURT: Nothing else was discussed?

13 JUROR #16, YEVGENIY BONDARCHUK: From what I  
14 remember, no.

15 THE COURT: All right..

16 JUROR #16, YEVGENIY BONDARCHUK: Oh, the other thing,  
17 second time I came back, you mentioned not to talk about  
18 what was discussed. And the first time when I went in the  
19 room, they asked what happened. And I didn't tell them  
20 everything. But I pretty much I was asked why and all  
21 that.

22 THE COURT: I'm sorry. Repeat that, sir.

23 JUROR #16, YEVGENIY BONDARCHUK: The first time when  
24 I went here, you told me to go back. I went back. And  
25 they all asked what happened. And I didn't tell them

1 everything. I just said that he asked me question if it's  
2 going to affect my judgment, and all that. And that's  
3 pretty much it. That was it.

4 THE COURT: Okay. Anything else?

5 JUROR #16, YEVGENIY BONDARCHUK: No.

6 THE COURT: All right. Well, I'm going to go ahead  
7 and excuse you from the trial, just because of the unique  
8 circumstances.

9 JUROR #16, YEVGENIY BONDARCHUK: Okay.

10 THE COURT: So do you need to go back in the jury  
11 room?

12 JUROR #16, YEVGENIY BONDARCHUK: Yes, to get my  
13 stuff.

14 THE COURT: Okay.

15 JUROR #16, YEVGENIY BONDARCHUK: Or somebody can  
16 bring it.

17 THE COURT: If somebody will get it, yeah. So you  
18 just don't need to have any other contact with the jurors.

19 JUROR #16, YEVGENIY BONDARCHUK: Okay.

20 THE COURT: But thank you for your service.

21 JUROR #16, YEVGENIY BONDARCHUK: Yes, sir.

22 THE COURT: And we do have alternates.

23 JUROR #16, YEVGENIY BONDARCHUK: Sure.

24 THE COURT: So, again, I thank you for your  
25 conscientiousness.

1 (WHEREUPON, Juror #16, Yevgeniy Bondarchuk, exited  
2 the courtroom.)

3 THE COURT: Is any bailiff in here still?

4 MR. PANATIER: I think she's getting his stuff.

5 (Pause.)

6 THE COURT: All right. Just -- if you'll just ask  
7 him just to stay right outside the door one minute before  
8 we let you go altogether.

9 THE BAILIFF: Yes, sir.

10 (Pause.)

11 THE COURT: All right. Yes, sir.

12 MR. TIVIN: Your Honor, Mark Tivin on behalf of John  
13 Crane.

14 At this point, based upon the information that was  
15 given by the juror, we would renew our motion for a  
16 mistrial. He clearly said that they asked him what  
17 happened. And then he said he couldn't tell them. That  
18 puts -- somehow puts it in a bad light.

19 And, more importantly, from what I heard, they said  
20 they asked him if there was asbestos out there. And he  
21 put in his jury questionnaire that he had already been  
22 exposed to asbestos there.

23 And if they're asking -- that shows that -- based  
24 upon this, that they're already ignoring the Court's  
25 admonition not to discuss the case. And they're beginning

1 to prejudge the case before the Plaintiffs have even  
2 rested, if they're starting -- asking factual questions  
3 and seeking information that Your Honor has, specifically,  
4 told them that they should not be doing.

5 And because of the reasons that I stated in my  
6 original mistrial motion, as well as the statements that  
7 were made to Your Honor in the voir dire, we would renew  
8 our motion for a mistrial.

9 Thank you.

10 MR. YOUNG: And, Judge, I don't have anything to add,  
11 though that is troubling that they were asking questions  
12 that were clearly outside the evidence in the case. And  
13 that was kind of what I was worried about before.

14 So I just feel like that there is grounds for a  
15 mistrial now. And we would renew our request.

16 MR. PANATIER: May I respond?

17 THE COURT: Yes.

18 MR. PANATIER: Chris Panatier for the Plaintiffs.

19 If he had, actually, provided them with some  
20 information outside the record, then, perhaps, this might  
21 be something to entertain if it wasn't cured by an  
22 instruction. But he didn't. They asked him a question,  
23 and he didn't answer it.

24 The only one he did answer was, What happened?

25 And he said, The Judge told me -- asked me if I could

1 be fair. So -- and set aside my work. And that was it.

2 So I -- I certainly have no objection if the Court is  
3 inclined to give an instruction to -- you know, to  
4 continue refraining from discussing the case. But they  
5 haven't received any outside-the-record information  
6 whatsoever.

7 MR. TIVIN: Briefly. So as we sit here right now,  
8 all we know is that they asked him if there was  
9 asbestos -- from the jury's perspective, they asked him if  
10 there was asbestos in the plant. And the next thing you  
11 know, we send him home.

12 MR. YOUNG: Well -- and, Judge, I mean, that's not  
13 really the issue. I want to try the case as much as  
14 anybody. But you've told them, at least, six times now  
15 not to discuss the case, to keep an open mind. And the  
16 fact that they asked the question at all shows that they  
17 clearly disregarded your instruction.

18 I mean, it -- that's a pretty big deal for a  
19 defendant for a bunch of jurors to ask some guy who worked  
20 at the exact place, was there asbestos out there, whether  
21 they got an answer or not.

22 So I don't think Mr. Panatier's description of the  
23 issue is really what we're concerned about.

24 THE COURT: Well, it's always interesting to try to  
25 interpret the inscrutable workings of jurors. But it

1 appears to me, from what I heard, that one person asked a  
2 question. And then another person said, We're not  
3 supposed to discuss the case, which means, at least, one  
4 person has been listening to what I said.

5 And, of course, they're all presumed to be following  
6 my instructions. And, evidently, they have been because  
7 they didn't have a discussion. One person asked the  
8 question. There's no information that was conveyed to  
9 me.

10 It seems that there's no ground for a mistrial.  
11 There's no evidence of premature deliberation. There may be  
12 evidence of an improper question asked. But if that were  
13 the ground for a mistrial, then there probably wouldn't be  
14 many cases that ever reached a verdict.

15 So I just don't see any prejudice, any -- anything that  
16 could limit either side's right to a fair trial in this  
17 case, based on this juror's interactions, or his status, or  
18 his knowledge, and his presence on the jury up to this  
19 point.

20 So I respectfully deny the motions.

21 And I appreciate your arguments in support of them.  
22 But I just don't find there's a problem.

23 So he can leave. And we'll resume the testimony.

24 You can bring the jury on in.

25 Thank you.

1 (WHEREUPON, the jury came into open court at  
2 approximately 2:01 p.m.)

3 THE COURT: Yes, sir, Mr. Panatier.

4 MR. PANATIER: Thank you, Your Honor.

5 CONTINUED DIRECT EXAMINATION

6 BY MR. PANATIER:

7 Q All right. Dr. Holstein, I have one last area to  
8 talk about with you. And it's just your conclusions about  
9 the ability of insulation and gaskets to release asbestos  
10 fibers into the air based on the literature.

11 Let's start with insulation. First of all, I think  
12 I've asked you this fundamentally, but just to kind of  
13 signpost it. Did you find that -- or conclude that  
14 Mr. Seay had been around insulation both personally and as  
15 a bystander from other workers?

16 A Yes, I did.

17 Q And did you find that he breathed in on a regular  
18 basis over that decade, or so?

19 A Yes, sir, I did.

20 Q All right. So let's talk about insulation in terms  
21 of the concentration of asbestos that can be released from  
22 that.

23 First of all, is it always the same amount of  
24 asbestos that comes out of a product?

25 A No, highly variable, particularly with insulation.

1 It depends on what you're doing with it at that moment.

2 Q Okay. So it might be fair to say that if someone was  
3 violently ripping off a piece of insulation, it might be a  
4 little bit different than if they took the same piece and  
5 gently pulled it off a pipe?

6 A Correct.

7 Q Or someone who was sawing it, as opposed to hammering  
8 it; is that fair?

9 A Correct.

10 Q Okay.

11 A Or they're tearing it off literally hundreds to  
12 thousands of pounds on a huge boiler versus they're  
13 removing one foot from a pipe.

14 Q Okay. Well, what types of activities did Mr. Seay  
15 and Mr. Thompson describe that they would have to do out  
16 there across the board with regard to insulation?

17 A Well, they would frequently remove it from -- from  
18 pumps and valves so that they could carry out their  
19 repairs on pumps and valves. And sometimes, they'd have  
20 to cut some type of insulation back from the flanges.

21 A flange, I think you probably already know, is where  
22 two pipes come together and join. But that might only  
23 involve cutting back a few inches of insulation to get to  
24 the flange.

25 They would -- they were not insulators. So it was

1 not mainly their job to insulate materials. But  
2 sometimes, they would do a small job of insulation.

3 Q And at the same time, did you see in the testimony  
4 where Mr. Seay said they would be around the insulating  
5 crew?

6 A Yes.

7 Q And would that be in a circumstance where they would  
8 be called like a bystander?

9 A Correct.

10 Q So I'm going to, also, put "bystander" on here.  
11 And this isn't every scenario, is it, Doctor?

12 A No. There are other scenarios, too.

13 Q Okay. From the literature you've reviewed and from  
14 your study of this issue, can you give us a range of what  
15 the potential exposures are, from the low end to the high  
16 end, for removing, cutting, and bystander exposure to  
17 insulation?

18 A Well, surprisingly enough, some of the activities --  
19 some of the times when insulators are working, the air  
20 concentrations may be less than one fiber per cc. They  
21 may go all the way down to a tenth of a fiber per cc. But  
22 at the other end, they have been measured up in the  
23 hundreds of fibers per cc.

24 So it's a very broad range, depending on what they're  
25 doing at that exact moment. Now, so that's generally the

1 range.

2 Q Okay. And would it be fair to say that, all things  
3 equal, the further away you get from the operation, the  
4 lower the exposure?

5 A Yes.

6 Q So how would you characterize his bystander exposure?

7 A Well, I think the bystander's exposure was an  
8 important exposure from a medical point of view. I think  
9 that even though he wasn't the one doing the job we're  
10 talking about when we talk about bystanders, he was --  
11 because those air concentrations can be so great for the  
12 person doing the job, they can be pretty high for the  
13 person 20 feet away, too, or even 30 or 40 feet.

14 Q So would you say it would be in this range as well?

15 A Yes. But, of course, the whole thing would be  
16 shifted a little bit to the left, so to speak. In other  
17 words, towards the lower end of the range.

18 Q So lower end of the range. Would that be fair to  
19 say?

20 A Yes.

21 Q Would it be fair to say from Mr. Seay's work that  
22 Mr. Seay experienced insulation exposures to asbestos  
23 anywhere from the low end of .1 fiber cc all the way up to  
24 hundreds of fibers per cc's over the period of time that  
25 he was at Celanese?

1 A Yes. Perhaps, low -- you know, perhaps, around a  
2 hundred. I wouldn't go up into the many hundreds for a  
3 bystander, unless he was right next to the guy.

4 Q All right. And, of course, another thing that might  
5 play a role is whether you're in a confined space, as  
6 opposed to an open space; Is that fair?

7 A That plays a role. It, also, plays a role whether  
8 there are fans blowing. It plays a role how big a job it  
9 is. There are a lot of factors that play a role. That's  
10 why I'm sort of hedging --

11 Q Yeah.

12 A -- on this and just speaking generally.

13 Q And, in fact, there's literature of people like, for  
14 instance, working on ships where they're in a very small  
15 boiler room smashing out insulation; right?

16 A Correct.

17 Q And those levels, you would expect to be way, way,  
18 way higher; is that fair?

19 A Those levels can be extraordinarily high, yes.

20 Q That's not what he was doing; is that fair?

21 A Correct.

22 Q So if you had to say what -- from his activities,  
23 what range would you give for the average where his  
24 exposure would have fallen from these types of activities?

25 MR. TIVIN: Objection --

1 THE WITNESS: I think the long-term average would  
2 be --

3 BY MR. PANATIER:

4 Q Oh, I'm sorry. I'm sorry. I think there's an  
5 objection.

6 MR. TIVIN: Objection to foundation.

7 THE COURT: Overruled.

8 THE WITNESS: So there is -- there is industrial  
9 hygiene literature on what the average exposure would look  
10 like. And so, for instance, one set of investigators were  
11 named Nicholson and Holiday and Heimann. And they said  
12 the average exposure to an insulator was about six fibers  
13 per cc, the long-term average.

14 Now, if he's a bystander, I'd cut that back a little  
15 bit, make it maybe four fibers per cc as a bystander. And  
16 it might not be all the time, the way it would be for an  
17 insulator. It might be part of the time.

18 BY MR. PANATIER:

19 Q So someone who's an insulator, the literature says,  
20 about six fibers. So six of those fibers per sugar cube;  
21 fair?

22 A Yes.

23 Q And he may have experienced, throughout that time,  
24 levels at six fibers per cc; is that fair?

25 A Undoubtedly, at times. Undoubtedly, higher than six

1 fibers per cc. But the average would have been most  
2 likely lower than that, the long-term average.

3 Q Okay. And would that have been on a regular basis,  
4 as you discussed earlier?

5 A Regular -- frequent and regular, but intermittent.

6 Q Okay. And we talk about proximate. When he's doing  
7 it himself, he's doing it within arm's reach; fair?

8 A Yes.

9 Q Let's talk about gaskets now. Let me ask you -- I'm  
10 going to ask you some papers. And then we may talk about  
11 a few of them, but briefly. Have you read and do you rely  
12 upon this paper: Exposure to Asbestos from Asbestos  
13 Gaskets, by Cheng and McDermott?

14 A Yes.

15 Q Do you find that to be authoritative and reliable  
16 with all the same caveats we've stated?

17 A Yes.

18 Q Okay. Evaluation of Airborne Asbestos Fiber Levels  
19 During Removal and Installation of Valve Gaskets and  
20 Packing.

21 A Yes.

22 Q Have you read that?

23 A Yes, I have.

24 Q Do you find it to be authoritative and reliable?

25 A I do.

1 Q Okay. Fiber Release During the Removal of  
2 Asbestos-Containing Gaskets: A Work Practice Simulation,  
3 by Longo, Egeland, Hatfield, and Newton.

4 Have you read that?

5 A Yes.

6 Q Do you find it to be authoritative and reliable?

7 A I do.

8 Q Now, in fairness, Dr. Longo, you know he has,  
9 actually, testified for Plaintiffs in these types of  
10 cases?

11 A I understand that.

12 Q Okay. But on the other side of the coin, have you  
13 read this paper: Airborne Asbestos Exposures Associated  
14 with Gasket and Packing Replacement: A Simulation Study  
15 of Flange and Valve Repair Work and Assessment of Exposure  
16 Variables by Model, et cetera?

17 A Yes.

18 Q Okay. And you know, of course, that -- I'll show you  
19 here, near the last page. That study was funded by John  
20 Crane, the Defendant in this case; right?

21 A Correct.

22 MR. TIVIN: Objection. Relevance. It's not anything  
23 we're putting into evidence.

24 MR. PANATIER: It's Part of the literature --

25 MR. TIVIN: The fact that we may have funded

1 something, at some point in time, is simply not relevant  
2 here.

3 MR. PANATIER: Your Honor, if I may?

4 THE COURT: Go ahead.

5 MR. PANATIER: I'm showing the spectrum of the  
6 literature. Some has been done by plaintiffs experts,  
7 some by defense experts.

8 THE COURT: All right. Overruled.

9 BY MR. PANATIER:

10 Q So, sir, can you see where this one was funded by  
11 John Crane?

12 A I see that, yes.

13 Q All right. And that eight of the nine authors are  
14 currently employed by Cardno ChemRisk, a consulting firm  
15 that provides scientific advice to government,  
16 corporations, law firms, and so forth; right?

17 A Yes.

18 Q Okay. And Amy Madl, in fact, is a designated expert  
19 of John Crane in this case. Okay. I want you to assume  
20 that. All right.

21 A I will.

22 MR. TIVIN: Objection, Your Honor.

23 THE COURT: What's your objection?

24 MR. TIVIN: Sidebar, please.

25 THE COURT: Okay.

1 (WHEREUPON, a bench conference was held.)

2 THE COURT: All right. Ladies and gentlemen, those  
3 last two questions are not evidence in this case. You're  
4 to disregard the questions and the answers.

5 And, as I told you, you must confine your decision in  
6 this case to the evidence. And that exchange, the last  
7 two questions and the answers to them, are not evidence.  
8 They should not have been brought out. And, therefore,  
9 they won't be part of the record in this case.

10 Yes, sir. You can continue.

11 MR. PANATIER: All right. Thank you, Your Honor.

12 BY MR. PANATIER:

13 Q Did you read this paper?

14 A I did.

15 Q Okay. And does this paper report different findings  
16 of the ability of gasket and packing work, and valve work,  
17 and so forth to release asbestos?

18 A Yes, it does.

19 Q Did you consider it in your evaluation of the overall  
20 literature?

21 A Certainly.

22 Q Okay. Is it fair to say that -- well, I've got one  
23 more. This is a report from MVA, this company right here,  
24 MVA Scientific Consultants. You're familiar with them;  
25 right?

1 A I am.

2 Q Okay. And this is, Fiber Release Testing During  
3 Gasket Making, dated May 22nd, 2006. Have you read and  
4 relied upon this?

5 A Yes, I have.

6 MR. TIVIN: Just objection to relevance. There's no  
7 evidence of hand hammering in this case.

8 THE COURT: All right. Overruled.

9 BY MR. PANATIER:

10 Q Very briefly. This was a test of a work practice  
11 study where they did some hand hammering and filing of  
12 gaskets; right?

13 A Correct.

14 Q Okay. And they found fibers per cc over here, 2.2;  
15 2.2; the area, .7; 2.2; 1.5; and the area, 1.0. That's  
16 fibers per sugar cube; right?

17 A Correct.

18 Q And is this something you've considered in your  
19 evaluation of the literature?

20 A Yes.

21 Q Okay. Now, this one is a report. It's not published  
22 in a journal; right?

23 A Correct.

24 Q They, also, analyzed -- this was a study of John  
25 Crane gasketing material; correct?

1 A Yes, it was.

2 Q Okay. And they analyzed it. And they found that  
3 John Crane 2150 was 72 percent chrysotile asbestos and  
4 .15 percent tremolite, actinolite; correct?

5 MR. TIVIN: Objection. Relevance. No evidence that  
6 product is in this case.

7 THE COURT: Overruled.

8 BY MR. PANATIER:

9 Q Tremolite, actinolite are that amphiboles type of  
10 asbestos; correct?

11 A That's right.

12 And the answer to the previous question is yes.

13 Q Got you.

14 And to be clear, what types from your notes -- or  
15 from your recollection, what model numbers or type numbers  
16 of John Crane gaskets were testified about in this case?

17 A 33 -- I'm sorry -- 333 and 2112.

18 Q Okay. And what type of asbestos is in 333?

19 MR. TIVIN: Objection. Foundation.

20 MR. PANATIER: I can lay a foundation.

21 THE COURT: Go ahead.

22 BY MR. PANATIER:

23 Q Have you looked into what type of asbestos is in 333?

24 A Yes.

25 Q And have you considered company documents as well as

1 corporate representative testimony?

2 A I have.

3 Q Okay. And what type of asbestos is in 333?

4 A Chrysotile asbestos.

5 Q Okay. And the same question for 2112. Have you  
6 relied upon corporate representative testimony, as far as  
7 what type of asbestos is in John Crane gasket 2112?

8 A I have.

9 Q Okay. What type is in it?

10 A That's the crocidolite kind, the blue asbestos.

11 Q All right. And those were numbers, in fairness, that  
12 Mr. Thompson recalled; fair?

13 A That's correct.

14 Q Okay. So, now, let's talk about the work practices  
15 that were done with gaskets. Okay. Similar to what we  
16 did with insulation. And then this is my last area, and  
17 I'll be all done.

18 All right. First of all, it's fair that Mr. Seay  
19 identified four -- or Mr. Seay and Mr. Thompson together  
20 identified about four different brands of gaskets at  
21 Celanese; fair?

22 A Yes.

23 Q And over how long were they installing and removing  
24 gaskets?

25 A Well, the entire time he was there. And,

1 undoubtedly, it would have started as soon as they started  
2 up that plant, as soon as they began to build that plant.

3 Q Okay. And have you reached a conclusion to a  
4 reasonable degree of certainty as to whether or not  
5 Mr. Seay would have, on a regular basis, removed all four  
6 of those brands, based on the evidence you've looked at?

7 MR. TIVIN: Objection. Foundation.

8 THE COURT: Overruled.

9 THE WITNESS: Yes. I have reached a conclusion about  
10 that.

11 BY MR. PANATIER:

12 Q What is it?

13 A He would have removed all four of those brands. They  
14 were being put in by himself, by others. And later on,  
15 when repairs needed to be done or preventive maintenance  
16 needed to be done, they were being taken out again.

17 Q Okay. What types of -- first of all, for  
18 installation of gaskets -- installation, so new a gasket.

19 A Okay.

20 Q What types of operations did they use or what types  
21 of work practices did they use to fabricate those gaskets?

22 A The test -- in general or the testimony in this case?

23 Q In this case.

24 A The testimony in this case indicates that they would  
25 start with a flat sheet of material -- of gasket material.

1 And it would be a flat sheet like this, only a little bit  
2 thicker. And they would lay it on plywood. And they  
3 would take a knife. And they would cut it to the shape  
4 that they needed it to be.

5 And, according to the testimony, somebody would sort  
6 of be assigned to do that on a particular day, and would  
7 make a bunch of them all at one time. And then they would  
8 keep them in stock. And then people would just take them  
9 as needed until somebody needed to make more.

10 Q In fairness, sometimes they didn't have to fabricate  
11 one, they would have one precut; right?

12 A Sometimes they would have ones that were precut, yes.

13 Q And sometimes they had preformed gaskets from the  
14 manufacturers; true?

15 A That's correct. And I guess part of this  
16 conversation is it's important to make a gasket fit  
17 correctly. Because its whole purpose is to keep -- where  
18 metal is coming up against metal, its purpose is to  
19 prevent leakage of whatever is going through that  
20 machinery or the pipes, the vessels, the pumps, the  
21 valves, et cetera.

22 So you have to get a good fit. So it has to be  
23 shaped correctly to where it's going to be placed.

24 Q All right. And from the literature you've reviewed,  
25 what is the range of exposure you would expect from just

1 cutting of asbestos-containing gaskets that you believe  
2 Mr. Seay would have experienced?

3 A The brand new gaskets?

4 Q Yes, sir.

5 A From a tenth of a fiber or even lower -- in other  
6 words, hardly detectable, all the way up to about two  
7 fibers per cc.

8 Q And just for reference, if you have something --  
9 earlier, I asked you if you had something that was in,  
10 say, the middle of this range, one fiber per cc, how many  
11 times over that background level that would be, that was  
12 20,000 times; is that right?

13 A That's correct.

14 Q Okay. Were there any other operations you noted for  
15 fabrication?

16 A Not in this plant as described by the two witnesses.

17 Q Sometimes, you see folks who hammered them out, but  
18 you didn't see that here?

19 A That's what I usually see -- That's too strong.  
20 That's what I often see. And I often, also, see the  
21 cutting with a knife.

22 Q Okay. So let's go to removal of gaskets. Removal.  
23 What types of practices were used here to remove gaskets?

24 A So I don't know if this has been described before.

25 So, now, we're dealing with gaskets that have been in use.

1 And they're corroded. Because they've been exposed to  
2 heat. They've been exposed to pressure. So to some  
3 degree, they are dried out. They're corroded. And they  
4 are, to some degree -- variable degree, baked onto the  
5 metal surface where they have been placed.

6 And if they haven't been in service too long, or the  
7 temperature wasn't too high, or the pressure wasn't too  
8 high, they can be taken off pretty easily with a putty  
9 knife. But not infrequently, they would be somewhat baked  
10 onto the metal surface. And then it would have to be  
11 scraped. And then it would have to be wire-brushed.

12 And then, sometimes, even a wire brush put on a  
13 rotating drill so it becomes a power wire brush, and -- to  
14 scrape off the last residue. Because if you don't get  
15 that metal surface absolutely clean, then what the new --  
16 putting on the new gasket is not going to be good enough.  
17 You're still going to get a leak because you have an  
18 uneven surface that you're putting that gasket on.

19 So you have to get it absolutely clean right down to  
20 the metal.

21 Q Okay. Can you give us, from the literature we've  
22 talked about here, whether -- as well as any other gasket  
23 literature you've looked at, can you give us an opinion as  
24 to -- for each of these what the approximate range of  
25 exposure to asbestos would have been for Mr. Seay when he

1 did these operations on all the different brands he  
2 identified?

3 A So the lowest range is, again, down around a tenth of  
4 a fiber per -- less than a tenth of a fiber per cc.

5 Q For what?

6 A For any -- for any of those, except the power wire  
7 brush.

8 Q So I'm just putting one, and I'm putting a little  
9 squiggly here. That means around one, potentially lower.

10 A A tenth of --

11 Q .1, that's right.

12 A Yes.

13 Q Up to?

14 A The highest I know of is 31 fibers per cc. But  
15 that's with a power wire brush.

16 Q Okay. So 31, we're talking about a power wire brush?

17 A Correct.

18 Q Okay. Now, 31 -- I'm going to get my calculator out  
19 again. Check Facebook. All right. 31 divided by .00005,  
20 the background number, what I get is 622,000. Is that  
21 about right?

22 A Yes.

23 Q Okay. So if you're up here -- if you're at the  
24 higher range -- what did I say? 620?

25 A 622.

1 Q 622. 620-ish. 620 times above background. All  
2 right.

3 A 620,000.

4 Q Right. 620,000 times above background.

5 A Yes, sir.

6 Q It's getting sloppier as we go along.

7 Now, in fairness, the literature has lower numbers  
8 for something like power wire brushing and higher numbers;  
9 fair?

10 A That's correct.

11 Q Okay. For instance, Dr. Longo's go into the  
12 hundreds, correct?

13 A Not for power wire brushing, no.

14 Q Oh, Okay. I'm sorry. Let me check. I don't want to  
15 misrepresent it.

16 You're exactly correct. This is the number that  
17 Dr. Longo used. And you can see the worker, for power  
18 wire brushing, the range was 14.9 to 31.

19 A The second line of numbers, yes.

20 Q Right. The average he got was 21.8; is that fair,  
21 for the worker?

22 A For a short -- for a short time-weighted average,  
23 yes.

24 Q Okay.

25 A For a brief time-weighted average.

1 Q Okay. And then he even took that work and he put it  
2 over a full day, 2.3 for eight hours, is that fair?

3 A Correct.

4 Q Let me ask you this question. Do you have an opinion  
5 as to whether or not Mr. Seay would have been exposed in  
6 excess of the ceiling limits passed by OSHA from his work  
7 with gaskets?

8 A I do.

9 Q Okay. And what is that opinion?

10 A My opinion is that that short-term limit would have  
11 been exceeded on many, but not all, occasions that he was  
12 using the power wire brush, and even occasionally when he  
13 was using the hand wire brush to remove gaskets.

14 Q Okay. And based on the numbers here, when we get to  
15 1976, and the OSHA number goes to two for the average, is  
16 it possible -- or probable that he was exposed in excess  
17 of the eight-hour time-weighted average on occasion if he  
18 was doing power wire brushing?

19 A Sorry. That was a little too fast for me. I didn't  
20 get it.

21 Q It was. If he did power wire brushing and was  
22 exposed at that higher end of that range, sir --

23 A Yes.

24 Q -- over the 10 years, on certain days, is it possible  
25 that he was exposed in excess of the two-fiber average.

1 OSHA limit?

2 A Yes.

3 Q Okay. You're not saying he was every day; right?

4 A No. But if he did -- if he did that several times in  
5 the same day, he would have been over the OSHA average for  
6 that day -- the OSHA rule for that day.

7 Q Okay. Last thing I want to do is just point this  
8 out. You talked about the difference between light  
9 microscope; right? The classroom microscope and the  
10 electron microscope; right?

11 A Yes.

12 Q And so this right here, TEM, what does that stand  
13 for?

14 A Transmission electron microscope.

15 Q Okay. And what we were looking at before is PCM.  
16 That's that light microscope; correct?

17 A Phase contrast microscopy; yes.

18 Q So I'm going to highlight this. So the worker was  
19 14.9 to 31 fibers in a cubic centimeter in a sugar cube;  
20 right?

21 A That's right..

22 Q Using the basic microscope; true?

23 A Yes.

24 Q But if you look at the same sample using an electron  
25 microscope, you find 877 to 1,636 fibers; correct?

1 A Well, without reviewing the article, I don't know if  
2 it was the same sample, but it was the same activity.

3 Q Okay. So let's just start with that. Same activity.  
4 If you look with an electron microscope, your results  
5 appear to be much higher; is that fair?

6 A Correct.

7 Q Okay. But this isn't what OSHA uses. OSHA uses the  
8 other one?

9 A Yes. OSHA uses the other one. There's a practical  
10 reason for that.

11 Q And what is the practical reason that OSHA uses the  
12 light microscope, instead of electron microscope?

13 MR. TIVIN: Objection. Calls for state of mind of  
14 the [inaudible].

15 THE COURT: Overruled.

16 THE WITNESS: The practical reason is that OSHA has  
17 to make rules that will be put into effect in the real  
18 world. And so practicality enters into it. And they  
19 can't demand that every little company in the country go  
20 out and buy an electron microscope -- they're big, they're  
21 expensive -- or -- nor even the expense of having a  
22 consulting firm do it for them. It's expensive to do  
23 electron microscopy, very expensive. And it was even more  
24 expensive back then.

25 So it just wouldn't have been practical to say you've

1 got to use electron microscopy.

2 BY MR. PANATIER:

3 Q Okay. And then lastly, I just want to use the paper  
4 that we saw that John Crane paid for. Let's just look at  
5 their number. You can see -- and, I'll highlight this  
6 because it's kind of tough to read. But average worker  
7 exposures during flange gasket work, the number they  
8 came -- came to using the basic microscope was .166 fibers  
9 per cc; right?

10 A 0.166, yes.

11 Q Right. And you said the low end could be around .1;  
12 right?

13 A Yes. And this is about .2.

14 Q Okay. It's almost .2. But let's just take that  
15 number from this paper.

16 A Yes.

17 Q .166 divided by .00005, the background level, and I  
18 get 3,320 times above background; is that fair?

19 A Yes.

20 Q Okay. So no matter how you slice it, if you use the  
21 one from Dr. Longo, who has even testified for plaintiffs,  
22 you get -- he had some pretty high numbers; right?

23 A Yes, he does.

24 Q And this one, paid for by John Crane, a lower number;  
25 right?

1 A Correct.

2 Q They're all substantially above background, is that  
3 fair?

4 A Absolutely.

5 MR. PANATIER: Those are all the questions I have for  
6 you.

7 Thank you.

8 THE WITNESS: Thank you, sir.

9 MR. PANATIER: Pass the witness.

10 THE COURT: Cross-examination.

11 MR. TIVIN: Thank you, Your Honor.

12 CROSS-EXAMINATION

13 BY MR. TIVIN:

14 Q Let's kind of start -- we'll go backwards to the  
15 beginning.

16 Dr. Holstein, you said you read the deposition of  
17 Ronnie Thompson?

18 A Yes, sir. Got it right here.

19 Q Mr. Thompson testified -- what is the fiber -- the  
20 one thing that Mr. Panatier didn't put on his board,  
21 didn't put on his board right here. Mr. Thompson  
22 testified that they only had to use a scraper, or wire  
23 brush, or wire -- power wire brush 25 percent of the time.  
24 So the other 75 percent of the time they didn't need to  
25 use any tools; right?

1 A Yes. I saw --

2 Q So --

3 A -- that testimony --

4 Q -- where would a --

5 A I'm sorry, sir. Please just let me finish my answer.

6 And I'll try not to override you, also.

7 MR. TIVIN: Your Honor, I would -- the witness was  
8 asked a clear yes-or-no question. And if you could  
9 instruct him to answer the question. And he can get an  
10 explanation on redirect, if it's necessary.

11 THE COURT: Well, he's got a right to explain it.  
12 Go ahead.

13 THE WITNESS: I didn't have anything more to say. I  
14 was just -- but I was finishing my sentence.

15 THE COURT: Oh, okay. Well --

16 THE WITNESS: I said something like, yes, sir, that's  
17 correct. I saw that.

18 THE COURT: All right.

19 MR. TIVIN: I apologize, Dr. Holstein.

20 THE WITNESS: Nothing to apologize for. Just we'll  
21 have a clearer record.

22 BY MR. TIVIN:

23 Q For the 75 percent of the time that they didn't need  
24 to use any tools, what was the fiber release then?

25 A Oh, it would have been low. It would have just been

1 a scraper with a putty knife.

2 Q No. Those are still tools. There is no scraper.

3 A Oh, I'm sorry.

4 Q He said 25 -- only on 25 percent of the time did he  
5 have to use a scraper, a wire brush, or a power wire  
6 brush. So that means 75 percent of the time, he didn't  
7 need to use any of them?

8 A No. He still would have had to use a tool to pop it  
9 off. What he meant was he didn't have to scrape.

10 Q Oh, so you're saying that Mr. Thompson was mistaken  
11 in his testimony?

12 A No. I'm just telling what the testimony was.

13 Q Well, yeah. He said he didn't use it 75 percent of  
14 the time, and you're saying that that's incorrect?

15 A No, sir. I didn't say that. I am saying he needed  
16 to use a tool.

17 Q If he used a putty knife and popped it out, what  
18 would be the fiber release then?

19 A There would be some, but it'd be extremely low. I  
20 don't know exactly what it would be. But it would be down  
21 in the tenth of a fiber range, or even less than a tenth.

22 Q Can you give me any -- you were kind enough to go  
23 through a lot of the medical -- the scientific literature  
24 regarding gasket. And you've told us that you've tried to  
25 review it all; is that correct?

1 A Yes, I did.

2 Q Can you give me any article and scientific literature  
3 where they report fiber release levels from popping a  
4 gasket out with a putty knife without having to scrape the  
5 face?

6 A It could have been any of these papers that show very  
7 low results. Because, typically, they said, well, you  
8 know, we, for research purposes, had somebody remove the  
9 gaskets, you know, using a putty knife or a similar tool,  
10 but didn't necessarily describe whether it was hard or  
11 easy to do that. So it could have been any of them.

12 Q Well, you -- well, are you saying -- is it your  
13 testimony here today that you believe in Dr. Longo's paper  
14 that any of those gaskets popped off?

15 A I didn't follow the question, sir.

16 Q Is it your testimony here today that it's your  
17 understanding in Dr. Longo's paper, that you just  
18 testified at before this jury, that any of those gaskets  
19 popped off?

20 A Probably not, given the results he got.

21 Q So we can take Dr. Longo's paper out of consideration  
22 because that isn't what happened in that -- that wouldn't  
23 instruct us as to what the fiber release may or may not be  
24 when the gaskets -- when you don't need to use any tools;  
25 correct?

1 A I -- it's still relevant to the other circumstances.

2 Q Well, I'm not asking about the other circumstances  
3 right now.

4 A Yeah.

5 Q I'm talking about the 75 percent-of-the-time  
6 circumstances.

7 A It may not be -- may or may not be. It's hard to  
8 tell from the text.

9 Q And I'm sure that you have read and talked about --  
10 you've read, examined Fred Boelter's paper?

11 A Yes.

12 Q Airborne fiber exposure assessment of dry  
13 asbestos-containing gaskets and packing. Have you seen  
14 this?

15 A I have. The results are down less than a hundredth  
16 of a fiber.

17 Q Here. Isn't one of the criticisms that you've made  
18 of this -- of this paper is that the gaskets just popped  
19 off?

20 A You know, I don't recall. I really don't, as I sit  
21 here. If you -- if I've said that in some previous  
22 occasion and you have a transcript, I'm not going to  
23 disavow it. I might have said it. I just haven't read  
24 this recently enough to remember that detail.

25 MR. TIVIN: Okay. If we could -- is this on?

1 MR. PANATIER: We're bringing it up over there. Hold  
2 on. Stop pressing buttons.

3 MR. TIVIN: I like pressing buttons.

4 MR. PANATIER: Hit it again. Hit it again.

5 MR. TIVIN: I like pressing buttons. Doesn't that  
6 fix everything?

7 BY MR. TIVIN:

8 Q This just says -- we'll go. We'll start at #1. This  
9 says --

10 MR. TIVIN: Start over here. Sorry.

11 MR. PANATIER: You can zoom out.

12 MR. TIVIN: No. That makes it too easy.

13 BY MR. TIVIN:

14 Q This says flat-blade scraping. Do you see that?

15 A I'm sorry. Where are you taking me?

16 Q Well, there are only three words on -- flat-blade  
17 scraping. It's the one at the top of the --

18 A Oh, yes, I see it. Flat-blade scraping. Yes, I see  
19 it.

20 Are you looking at table one?

21 Q Yes, I am.

22 A Okay.

23 Q The number he got for flat-blade scraping -- the  
24 maximum that he got was .035 fibers per cc, that was  
25 the -- that was the maximum; right?

1 A Yes. I'm familiar with the paper.

2 Q No. I -- I appreciate that you're familiar with the  
3 paper, Doctor. But that's what it says, the maximum is  
4 .035 fibers per cc?

5 A Yes.

6 Q And the minimum would be .028 fibers per cc?

7 A Correct.

8 Q Do you know what a stereophonic finish is on a  
9 gasket?

10 A Stereophonic?

11 Q Yeah.

12 A No. I don't know what a stereophonic -- did you say  
13 a surface?

14 Q Yeah. Finish. I said "finish."

15 A Finish. No. I'm not familiar with that.

16 Q Are you aware that some gaskets -- it's called a  
17 stereophonic finish, because it has grooves in it like a  
18 record player. Did you know that?

19 A Yeah. I knew some of them were grooved, but I didn't  
20 know that phrase.

21 Q And do you know if any of the flanges out at  
22 Hoechst -- I believe I'm pronouncing that correctly --  
23 Hoechst Celanese has stereophonic finishes on it?

24 A I Don't know.

25 Q Do you know if it's harder to get gasket material out

1 of gaskets that have stereophonic finishes versus ones  
2 that are smooth?

3 A Do I know which, sir?

4 Q I'm sorry. Do you know if it's harder to remove  
5 gasket material from gaskets with the stereophonic  
6 finishes with the grooves than from flanges that are  
7 smooth that don't have any?

8 A Well, first of all, the sheet gasket material does  
9 not come grooved. And that's what the testimony is that  
10 these men fabricated.

11 Q You're misunderstanding me. The flange has grooves  
12 in it.

13 A Yeah.

14 Q Okay. So the gasket gets stuck into the grooves  
15 between the flanges. Okay.

16 A Well, you were telling me that there is a  
17 stereophonic finish --

18 Q Finish --

19 A -- on the gaskets.

20 Q No. On a flange.

21 A Oh, I'm sorry. I misunderstood you.

22 Q I'm sorry. My fault.

23 Some flanges have stereophonic finishes that have  
24 grooves in them; right? You've heard of that?

25 A I don't recall whether that's the case or not.

1 Q Okay.

2 A Most of the flanges I've seen and most of the  
3 evidence that I've reviewed in my career indicates flat  
4 faces of the flanges.

5 Q Do you have any idea when you would use a  
6 stereophonic finish on a flange versus a regular smooth  
7 finish?

8 A I'm not an engineer. I don't know.

9 Q Do you -- one of the things you talked about with the  
10 jury was that they used a power wire brush; right?

11 A Yes.

12 Q There's no indication anywhere in any of the  
13 depositions of Mr. Seay or Mr. Thompson how often they had  
14 to use a power wire brush. They just said they had --  
15 that it had to be used; correct?

16 A Oh, they used sort of ordinary language. They'd say  
17 from time to time or, you know, pretty often, that kind of  
18 language. Nothing exact.

19 Q They didn't use -- are you telling the jury that  
20 Mr. Seay or Mr. Thompson said they had to use a power wire  
21 brush pretty often?

22 A They used it regularly.

23 Q And by "regularly," at least, from -- Mr. Thompson  
24 said they didn't use anything 75 percent of the time. So  
25 for you "regularly" is -- what percentage of the gaskets

1 that stuck on did you need to use a power wire brush?  
2 Because you realize that sometimes you just had to use a  
3 scraper. Sometimes you had to use a scraper and a wire  
4 brush. And then they said sometimes you had to use all  
5 three, right?

6 A Yeah.

7 Q Do you know which one of those was the most common,  
8 from your reading of the transcripts and talking to the  
9 jury about the frequency, proximity, and regularity of his  
10 work practices?

11 A Well, I don't -- I don't recall. If it's in -- if  
12 that question was asked, I don't recall it. I know it's  
13 generally the case in similar industrial circumstances.

14 And what's generally the case is that most of them  
15 can be done with a scraper and a wire brush. And how  
16 often the power wire brush is used depends really upon how  
17 close at hand it is. It's a nice way to finish off the  
18 surface, if you have one close at hand. If you've got to  
19 go to the shop to get it and come back with it, you'll  
20 finish it off by hand.

21 Q Now, Mr. Seay didn't say that it was a nice way to  
22 finish off the surface, or anything like that. He said  
23 that if he couldn't get -- usually, when you're talking  
24 about -- well, I'm sorry. I'm talking too fast. I'll  
25 slow down.

1           You, also, realize that one of the most important  
2 things in changing a gasket is the last thing you want to  
3 do is scar or do anything to the flange face; correct?

4       A     That's right. You do not want to create a groove or  
5 a cut in the metal facing.

6       Q     And you realize that the -- because if you do  
7 anything to the flange face, number one, you have to  
8 either -- you have to replace the whole flange instead of  
9 the gasket because --

10      A     Yes. That -- that piece of equipment has got to be  
11 replaced.

12      Q     -- because there's a leak path?

13           And you would agree with me that if someone was using  
14 a power wire brush, that's a lot -- those are made out of  
15 metal; right. The power wires are made out of metal.

16      A     The brush is a metal brush, yes.

17      Q     And so if you have a metal brush on the end -- on the  
18 end of a drill bit, and you're going zz zz zz, that has a  
19 good opportunity to scratch the face of the -- the metal  
20 face of the flange, doesn't it?

21      A     These men knew how to do it.

22      Q     Well, that really wasn't my question. I didn't ask  
23 what they --

24      A     Well, that's what they went through their training  
25 for was to learn that kind of thing.

1 Q What -- where did you hear that, at any point in  
2 time, Mr. Seay had got any training on how to use a power  
3 wire brush and under what circumstances he used a power  
4 wire brush?

5 A In that plant, they had on-the-job training. So he  
6 was taught by the more experienced men when he first  
7 started.

8 Q Was there a -- I guess we watched Mr. Seay's  
9 testimony yesterday, and then we read it for about a  
10 million hours, it seemed like to me. But nowhere in there  
11 did he testify that anyone taught him when or where to use  
12 a power wire brush. I'm wondering where you got that  
13 information.

14 A Nobody -- nobody in a responsible complicated factory  
15 is going to take a brand-new guy and turn him loose.  
16 They've got too much at stake. That equipment costs tens  
17 of thousands, hundreds of thousands of dollars. It's just  
18 not going to happen.

19 Q So you're just making that -- I just want to make  
20 sure that we're clear that you're making an assumption  
21 here. But it isn't anything that was testified -- that's  
22 an assumption that you're making, right?

23 A It's based on my experience.

24 Q Right.

25 A I mean, either the person goes through a formal union

1 apprenticeship that can last three or four years to become  
2 a millwright, or they get on-the-job training. But nobody  
3 takes a brand-new person and just sets them loose and  
4 says, go scrape that gasket off. Use whatever tool you  
5 want to. It's not going to happen.

6 Q See, now, it's too small, or my eyes are too bad.  
7 This is it back to table one of Dr. Boelter's study.  
8 And as you know from -- because you're familiar with the  
9 study, that this involved industrial and maritime  
10 fittings, right?

11 A Yes.

12 Q Maritime fittings are just flanges that are found on  
13 boat. And industrial fittings are flanges that are found  
14 in a factory?

15 A Yes. That's right.

16 Q And Dr. Boelter had his power wire brushing. I  
17 think -- I didn't get enough. The minimum was .02?

18 A .002.

19 Q Oh, I'm sorry. The maximum was .02. If you look at  
20 it, it says, power wire brushing?

21 A There it is.

22 Q Power wire brushing. It says .02. Minimum is .02,  
23 with a standard deviation of .0002. So he got .02 when he  
24 did his power wire brushing?

25 A .02. That's right.

1 Q And did you consider that number when you were  
2 testifying about what's the fiber release from using a  
3 power wire brush?

4 A Yes. I -- my testimony was less than a tenth of a  
5 fiber.

6 Q No. I believe -- I believe your -- maybe I  
7 misunderstood. But I believe that when you said less than  
8 a tenth of a fiber, you were talking about scraping. When  
9 you talked about the power wire brushing, you said it was  
10 31.

11 A You're right. I don't think I addressed the lower  
12 limit. But the lower limit is low.

13 My whole testimony has been that all of these  
14 measurements have a wide range. Everything that's on  
15 those flip charts, for various measurements for various --  
16 this one and the preceding sheet. My testimony is there's  
17 a wide range.

18 Q Do you have any information as to whether Mr. Seay  
19 would have been exposed to the .02 when he power  
20 wire-brushed versus the 31?

21 A I think the .02 is an outlier. It's at the extreme  
22 end. Just as I would not say that he was always being  
23 exposed to 31, I would not be saying that he's always  
24 exposed to the .02.

25 Q When you say "outlier," that's interesting. Outlier

1 is a term in science when one of the -- one of the data  
2 points is way outside all the other data points; right?

3 A More or less.

4 Q And so you kind of -- you kind of discount it.  
5 Because you're like a ton are over here. And then one is  
6 way over here. And then you're like, we can't trust that  
7 one because it's too -- too much; right?

8 A More or less correct.

9 Q Now, there is another study by Dr. Madl. I'm sure  
10 you're familiar with it. It says "Exposure to air" --

11 MR. TIVIN: I'm sorry, Your Honor. May I approach  
12 the witness?

13 THE COURT: Sure.

14 BY MR. TIVIN:

15 Q I'm just sort of wandering around out here. I  
16 apologize.

17 It's called, Exposure to airborne asbestos during  
18 removal and installation of gaskets and packings. It's a  
19 review of the published and unpublished studies. You've  
20 seen that before; right?

21 A Yes. We were just talking about it.

22 Q No, you weren't. You were talking about another  
23 study.

24 A Oh, I'm sorry. You are correct.

25 Q Now, what was done in this study was that Dr. Madl

1 took everything in the literature, every gasket study and  
2 put them all in a -- in a chart. She compared them all;  
3 right?

4 A Yes. But show me which chart --

5 Q She didn't, actually, do any work in this one. What  
6 she did was she said, here's what's in the literature.  
7 Here's everything that's in the literature, What we got  
8 going on; right?

9 A Correct.

10 Q So -- and in here, she has a -- charts of everyone  
11 who's done studies, including Dr. Longo; right?

12 A Yes. I'm not sure it's --

13 MR. PANATIER: Mark, what's the date of that one?

14 MR. TIVIN: 2007.

15 BY MR. TIVIN:

16 Q Now, I want to make sure I get to the right part. In  
17 this paper, she discusses Dr. Longo, does she not?

18 A I don't recall.

19 Discusses him personally or discusses his results --

20 Q Discusses his work.

21 A Oh, I'm sure it's in here, yes.

22 Q And when she looks at the other studies on here  
23 and -- I'm sorry. This is -- I'm sorry. I'm a little bit  
24 disorganized.

25 None of the other power wire brushing numbers come

1 even close to 30, do they?

2 A No. That's at the high end of the range.

3 Q None of them are either -- none of the other ones are  
4 even over 20?

5 A Well, he had -- I forget all of his numbers. But I  
6 don't think others have gone over 20.

7 Q Dr. Millette --

8 A But would you show me what numbers you're referring  
9 to in this paper, please?

10 Q They have a chart. They have all of the --

11 A well, they have a lot of them, sir. Sorry. I didn't  
12 mean to talk over you.

13 Q Okay. I'm sorry. I thought that you were familiar  
14 with it. I'm sorry.

15 Can I take this, and I'll find it for you?

16 A Thank you.

17 Q Thanks.

18 Wire brushing. Wire brushing. Here's power wire  
19 brushing. And then it's Boelter. And it was .02. We've  
20 discussed that one. Here's a power sander that's a 1.4.

21 A May I see it, please?

22 Q Sure. I'm sorry.

23 A Thank you.

24 Q If you just look in there, you can see.

25 And I can just move on, if you'd like. I mean,

1 that's fine. I can move on.

2 You were talking --

3 A No. I'm here to answer your questions. It's --

4 Q Right. But I don't want --

5 A -- not what I want to do. It's what you want to do.

6 Q But it's, also ==

7 A But I'm -- if you are asking me about numbers, then,

8 please, let me answer whatever the question is.

9 Q Okay. I'll withdraw the question. I'll move on.

10 You testified about Cheng and McDermott?

11 A I did.

12 Q And you rely on them for your numbers?

13 A In part, yes.

14 Q Yeah. They -- in theirs, they used a power sander;

15 right?

16 A So this is the Cheng and McDermott paper now?

17 Q Yeah.

18 A Okay.

19 Q They used a power sander?

20 A Well, they did use a power sander, yes.

21 Q And they got one?

22 A They got 1.4.

23 Q 1.4. Okay. I can't seem to find my Dr. Millette

24 paper. But you're familiar with Dr. Millette?

25 A Yes, sir.

1 Q And he's done power wire brushing?

2 A Yes, he has.

3 Q And this is just from memory. But is it -- my memory  
4 serves that -- I believe that his number was like 16.4?

5 A The number I remember is 6.8.

6 Q 6 -- that's even better. 6.8?

7 A Yes.

8 Q And that's for power wire brushing?

9 A Yes.

10 Q So we got -- for the power wire brushings, we have  
11 31. And then we got 6.8 that he testifies for plaintiffs;  
12 right? Dr. Millette?

13 A I'm told he does, from time to time.

14 Q 31 from Dr. Longo. Then we have 6.8. And then we  
15 have 1.4. And then we have .02. And it seems that one of  
16 those was much higher than all the other ones, and that  
17 would be Dr. Longo's. At what point does one become an  
18 outlier?

19 A There's no specific definition of that. But I would  
20 say the same thing is true at the low end.

21 Q So you would -- so throw out the high and throw out  
22 the low --

23 A I'm not throwing anything out. I'm saying that  
24 all -- that when you do work, the results are highly  
25 variable. It depends on how hard is this gasket baked on?

1 How long has it been there? How corroded is it? How --  
2 how much pressure is applied when you use any of the  
3 tools? How long do you do it for? All those kinds of --  
4 all those kinds of variables will affect the outcome. And  
5 sometimes we don't know why they vary a lot, but they do  
6 vary.

7 Q And those are all important things to know in order  
8 to determine what the actual fiber release is from these  
9 gaskets, right?

10 A Well, these are the fiber releases, yes.

11 Q But in order to know which number to pick, I mean, if  
12 some of them is really baked on or something like that,  
13 then you might go one way. And if something just comes  
14 out, you might go another way. That's kind of what lets  
15 you know where to go in this range, right?

16 A No. It's possible to bring order out of diversity.  
17 It's not a big deal. You see what their -- where the  
18 results usually are. And the results usually are in the  
19 low single digits, fibers per cc for hand tools. And it's  
20 higher single digits on average for the power -- for the  
21 power tools.

22 Q Now, you would agree with me that when you have the  
23 low number here, you have approximately .01. So, now,  
24 what -- I believe what you told the jury that, at least,  
25 the range for using Dr. Boelter is that the low range

1 would be, at least, .02; right?

2 A For -- I'm sorry. For Boelter?

3 Q Yeah.

4 A Yeah. Boelter had a low result, yes.

5 Q So when we have .1 to 31, it should, actually, be, at  
6 least, .02 to 31?

7 A Well, what I said verbally on -- and there's a little  
8 squiggle next to that .1.

9 Q Which means approximately?

10 A Yeah. But what I, actually, said was from less than  
11 .1 up to 31.

12 Q All right. So how much less than .1 do we get to go?

13 A Well, .02 is 50 times less.

14 Q Right. But --

15 A And so that's just as much as -- of an outlier. For  
16 instance, if you go from 2 to 31, that's a 15-fold  
17 difference. But going in the other direction, it was a  
18 50-fold difference. So they're both outliers.

19 Q And outliers -- do you find outliers to be reasonably  
20 reliable when you're discussing fiber release with a jury?

21 A No. I go with the -- what people call the central  
22 tendency. In other words, about where the average is.

23 Q So I'm just saying, when it says this -- you've just  
24 now told the jury that you think that this 31 is an  
25 outlier?

1 A Yes. I did say that.

2 Q So when we have the 31 being an outlier, that's  
3 not -- an outlier isn't something you can rely upon as a  
4 scientist in determining what fiber release is. That's  
5 why they call it an outlier, right?

6 A You rely on it as part of the entire picture. You're  
7 the one who's talking about taking certain results and  
8 throwing them out. I'm saying, no, I don't do that. I  
9 take them all into account. And I look at the question as  
10 where about is the average.

11 Q Okay. And so for the average for -- just the power  
12 wire brushing for now, we believe that that might be what?  
13 I believe it was six? Is that what you said? The  
14 average?

15 A For power wire brushing?

16 Q Yeah.

17 A It's somewhere in the higher single digits, yes.

18 Q So six to nine --

19 A Six, seven, some -- anywhere in there would be a  
20 reasonable estimate of this central tendency.

21 Q And for the -- just the regular wire brush, what's  
22 that average?

23 A Low single digits.

24 Q If power wire brush is six to nine, what's the  
25 regular wire brush?

1 A Lower single digits. One, two, three, in that range.

2 Q One, two, three. And then what is the scraper?

3 A Maybe -- it depends on how hard they have to scrape.  
4 But it could be tenths of a fiber. It could be a fiber.  
5 It's going to be variable, too.

6 Q Could it be hundreds?

7 A I mean, these are men at work. This is not a  
8 scientific laboratory. These are men at work. And then  
9 these are scientists who are trying to simulate men at  
10 work. And this is not like doing some precise experiment  
11 of science in a laboratory somewhere. There are many  
12 variables here that, in real life, aren't controlled.

13 So if you're going to do a simulation, you, also,  
14 have many variables that are not controlled. And so you  
15 get very diverse readings.

16 Q So the lower limit would be in the hundreds,  
17 hundredths of .01 or .02 for the hand scraping?

18 A Yes. We've established that.

19 Q Okay. I just wanted to make sure we're clear there.

20 And for the insulation, I believe Mr. Seay testified  
21 that he had to hammer and chisel off cement, right?

22 Asbestos-containing cement?

23 A Well, it's called asbestos cement. It's not really  
24 cement like your driveway, but it's called asbestos  
25 cement. So the answer is yes.

1 Q And after he chipped it off with a screwdriver or a  
2 hammer, I think he said, then he said he had to take a  
3 wire brush and clean off the surface, right?

4 A Yes. Sometimes he had to do that.

5 Q And he had to do that -- well, he had to do it more  
6 than sometimes. Didn't he say he had to do it every time  
7 to access the bolts?

8 A No. I don't think so. But if you want to -- if I've  
9 misremembered, please, point me to it.

10 Q As someone looks for that -- it was somewhere in  
11 there yesterday.

12 But he testified that they -- that they put the  
13 insulation on, and then he had to get it off to access the  
14 bolts. Remember?

15 A Yes. You don't need -- you don't usually need to  
16 wire brush it down to get to the bolts. But --

17 Q Well, he said he cleaned it off. And that was -- I  
18 believe the testimony was -- and the jury will be the  
19 ultimate judge of the facts. I believe the testimony was  
20 that he chipped it off with a screwdriver or used a  
21 hammer, and then used a wire brush to clean the rest of it  
22 off, so he could get his wrench in there and open the --  
23 crack the nuts and open the flange.

24 Now, you're, also, aware, when you replace a gasket,  
25 there are a lot of different things that have to go on

1 when you replace a gasket; right?

2 A Yes.

3 Q The first thing you have to do is you have to expose  
4 the flange?

5 A Right.

6 Q And expose the flange in Mr. Seay's case meant having  
7 to go through this little bit of asbestos cement or  
8 insulation --

9 A It's called mud. And then it dries, and then it's  
10 hard. But it's not hard like your driveway.

11 Q Going through whatever to get to the bolts; right?

12 A Yes, sir.

13 Q And then the next thing you have to do is you have to  
14 take the bolts off?

15 A Yes.

16 Q And then the next thing you have to do is you have to  
17 split the flange apart?

18 A Correct.

19 Q And then you have to remove the gasket?

20 A Right.

21 Q And then you have to put one in?

22 A Yes.

23 Q Now, it's the -- it's your understanding -- well,  
24 it's your understanding that Mr. Seay, with regards to the  
25 putting the gasket in, he always had a pre-cut gasket;

1 right? Either someone made it in the shop or they bought  
2 it precut. But he didn't formulate his gaskets at the  
3 flange; right?

4 A The testimony is for about the first three years,  
5 they fabricated all their own gaskets. After about three  
6 years, some of them were coming precut and some of them  
7 were not.

8 Q But at the point when he's installing them -- when  
9 he's at the flange installing it, it was already cut?

10 A Oh, at that point in time, somebody had cut it.  
11 Either a factory had cut it before it got there, or  
12 Mr. Seay himself, or one of the other men had cut it by  
13 hand.

14 Q You would agree that in a -- in a new condition, a  
15 brand new gasket, that those are not friable; correct?

16 A I agree.

17 Q And you would agree that a brand new gasket, when  
18 you're installing -- when you're just dropping it in and  
19 installing it doesn't result in any fiber release?

20 A Actually, it does. It's been measured. It's a  
21 detail. I don't want to quibble. It's a very, very tiny  
22 amount. But it has been measured. It does release a  
23 little bit.

24 Q Is it any amount that you would consider significant  
25 as a preventive medicine physician?

1 A Not unless somebody did that all day long for a long  
2 time, in which case I'd have to really think about it.

3 Q In the stuff that Mr. Seay mentioned, did he do it  
4 enough to give you pause about installing these gaskets?

5 A Not if you're just talking about the process of  
6 taking a brand new precut gasket and plopping it into  
7 place, no.

8 Q Okay. So --

9 A If you limit it to that, the answer is no.

10 Q Then that was my question. Limited to that, that --  
11 there's no fiber relief -- fiber release that you would be  
12 concerned of as a physician; right?

13 A Correct.

14 Q Now, the -- cutting the gasket with a knife, there's,  
15 also, another range of -- range of exposures that are  
16 possible; correct?

17 A Yes.

18 Q And do we -- I don't know if we have to go through  
19 this all over again. But is it your -- cutting with a  
20 knife, you get some of the -- the absolute lowest fiber  
21 release numbers possible; correct?

22 A Pretty low.

23 Q And here, you had the same thing for cutting with a  
24 knife and removing. You would agree with me that cutting  
25 with a knife is always going to be lower than removal,

1. wouldn't you?

2. A Lower than removal of a used gasket?

3. Q Yeah.

4. A Unless that gasket is brand new that's being removed.  
5. If somebody put it in place, they closed up the flange, it  
6. leaked right away, they opened up the flange, took the  
7. brand new gasket right out, then I would -- then,  
8. otherwise -- if it were not that situation, then I would  
9. agree with you.

10. Q And -- okay. And that's the situation of Mr. Seay.  
11. So you would expect this one, also, to be in the  
12. hundredths -- because I know this is -- you said "less  
13. than," but that means approximately.

14. You would expect it to be in the hundredths of a  
15. fiber per cc for cutting a gasket with a knife?

16. A Or tenths.

17. Q Okay.

18. A Tenths of a fiber.

19. Q And you would expect someone who was hitting  
20. asbestos-containing mud -- or what Mr. Seay called  
21. asbestos-containing cement, you would expect those fiber  
22. release numbers to be much higher?

23. A Yes.

24. Q And you would expect it -- orders of magnitude  
25. higher?

- 1 A Than cutting a new gasket?
- 2 Q Yeah.
- 3 A Yes. Yes, I would.
- 4 Q I mean, if it was -- if it was -- if you could get
- 5 exposures from hitting asbestos-containing cement and
- 6 hitting it with a wire brush, I would expect you could
- 7 expect up to -- into the higher end of the range of your
- 8 insulation numbers. Would you agree?
- 9 A Not for -- not for a small job. Not -- if you mean
- 10 in the hundredths, no.
- 11 Q No, not over a hundred. I mean, just -- you would
- 12 expect it in the higher range, though. Because he, also,
- 13 testifies -- didn't he, also, testify that he used a
- 14 hacksaw to cut it off sometimes?
- 15 A He Used a hacksaw for something, but I'm not sure it
- 16 was that.
- 17 Q It was cutting insulation, wasn't it?
- 18 A I think it was cutting new insulation to put it into
- 19 place.
- 20 Q Okay. So you -- you've seen numbers about cutting it
- 21 with a hacksaw; right?
- 22 A Sure.
- 23 Q And those are very high numbers; right?
- 24 A Yes. Those can be dozens of fibers, occasionally,
- 25 hundreds of fibers.

1 Q So that can get all the way -- using your range, that  
2 could get up to hundreds of the fibers. So that seems,  
3 using your numbers that -- using a hacksaw could be --  
4 that would be five zeros -- 10,000 times more than cutting  
5 a gasket with a knife?

6 A I don't know. I haven't done the arithmetic in my  
7 mind. But I certainly agree it could be several orders of  
8 magnitude.

9 Q And an order of magnitude, when you say that, it's  
10 times -- it's logarithmic. It goes ten, hundred,  
11 thousand; right?

12 A Yes.

13 Q Anytime you add a decimal point?

14 A Yes. That's true.

15 Q And with regards to the cement, you said that could  
16 be dozens of times; right? You did say the cement with  
17 the hammer and the wire brush, that could be dozens of  
18 times; right?

19 A Dozens of times of what --

20 Q Dozens of fibers per cc. I'm sorry.

21 That could be dozens of fibers per cc?

22 A Yes, it could.

23 Q Okay. So if that was 36, that's three dozen. And if  
24 we were at .02, that would be what? I don't know where  
25 the calculator is on my phone, but --

1 A It would be five times 36 -- no. It'd be 50 times  
2 36.

3 Q 50 times 36?

4 A Yeah.

5 Q So that's 200 -- that's 2,100?

6 A I'm not sure. I don't want to testify on the record  
7 for something that I'm -- just trying to come up with off  
8 the head --

9 MR. TIVIN: Chris, can I borrow the calculator? Or  
10 can someone do 50 times 36? I get 2,100 in my head.

11 MR. PANATIER: 50 times 36. 1,800, I think.

12 MR. TIVIN: 1,800?

13 MR. PANATIER: Yeah. I think. Because 100 times  
14 36 --

15 MR. TIVIN: That's fine.

16 MR. PANATIER: -- would be 3,600. And then divide it  
17 in half, 1,800.

18 BY MR. TIVIN:

19 Q 1,800?

20 A Okay.

21 Q Okay. So that would be 1,800 times more release for  
22 the insulation than the cutting the gasket?

23 A Fair enough.

24 Q And that would be every single time that you did the  
25 insulation?

1 A No. My testimony is very consistent. This job is  
2 never the same one time to the next --

3 Q Well, that's why we're using --

4 A -- and the results show that. It's different every  
5 time.

6 Q But he's removing insulation on every single flange.  
7 That's what he testified -- isn't that what he testified  
8 to?

9 A To get to -- if the flange has been insulated, he's  
10 got to remove it to get to the flange.

11 Q So every single time that he wants to remove it --  
12 use a gasket, he has to remove insulation; right? If  
13 there's insulation there, he's got to get through it to  
14 get to the flange?

15 A If there's insulation there, he has got to remove it,  
16 yes.

17 Q And I believe he testified that he always had to  
18 remove it, not in whole sections of it, but just enough to  
19 expose the bolts?

20 A Correct.

21 Q And that those activities had to be done every  
22 single -- every single time?

23 A Every single time there was insulation on the flange.

24 Q Right. Now -- now, these are -- I'm going -- I only  
25 have one copy. So I'm going to have to just show you

1 these. Okay.

2 These are -- you're familiar with answers to  
3 interrogatories?

4 A Yes.

5 Q And you're familiar with what they are. They're  
6 questions that each side sends to the other side, and they  
7 have to be answered under oath?

8 A Yes.

9 Q And in this one -- that's in this case, right, Dennis  
10 Seay v. People, et al.?

11 A Yes.

12 Q Okay. And it looks like Mr. Seay signed it?

13 A It does.

14 Q And said they're true --

15 A Correct.

16 Q -- to the best of his knowledge?

17 A Yes.

18 Q And Mr. Seay -- this is something called a work  
19 history sheet that was attached. See, it says, work  
20 history sheet?

21 A Yes, I do.

22 Q And this is for a place called Bristol Metals?

23 A Yes, sir.

24 Q At Bristol Metals, Mr. Seay said he used some  
25 gaskets?

- 1 A Okay.
- 2 Q Is that what it says?
- 3 A That's what it says.
- 4 Q It says he worked with Armstrong, Garlock, and  
5 Cranite?
- 6 A Correct.
- 7 Q Were you aware of this information when you testified  
8 earlier that Mr. Seay didn't have any asbestos exposure at  
9 any other site besides Hoechst Celanese?
- 10 A I was told that early on there was a belief that  
11 there may have been and that, as the evidence developed in  
12 the course of the case, that it -- the conclusion was  
13 reached that there was not until he got to Hoechst  
14 Celanese.
- 15 Q Well, at least, Mr. Seay thought that was correct  
16 when he signed those answers, right?
- 17 A I can't speak for his state of mind. But, you know,  
18 he did swear to it. So I presume that, at that time, he  
19 thought that could be the case.
- 20 Q And then this is Hoechst Celanese; right?
- 21 A Yes, sir.
- 22 Q There, he listed Armstrong, Garlock, Cranite,  
23 Flexitallic, and John Crane; right?
- 24 A Yes.
- 25 Q And he, also, had pipe covering and -- by Johns

1 Manville and PABCO?

2 A Yes.

3 Q Now, when it says, pipe covering and block  
4 insulation, do you -- is this -- was this where you would  
5 include the cement?

6 A That's not usually called pipe covering. It's just  
7 called mud or cement.

8 Q Okay. I just wanted to know if you would include it  
9 in there. Because then it goes down and it says -- talks  
10 about pumps, valves, compressors, boilers. And it says he  
11 wore a mask; right?

12 A Yeah. A paper mask.

13 Q So you believe that, based upon your review of the  
14 testimony, that there should be another category here  
15 that's for mud that he worked with and around; right?

16 A I do.

17 Q Okay.

18 A But I'm not saying -- well, that's -- I'll leave it  
19 at that.

20 Q You got your information from the depositions in the  
21 case; right?

22 A Correct.

23 Q And sometimes the depositions can be different than  
24 the answers to interrogatories; right?

25 A They can be sometimes.

1 Q Now, when you reviewed the information in this case,  
2 they sent this stuff to you and you took notes; right?

3 A I took some notes, yes.

4 Q Is this a correct copy of your notes? Just so you  
5 can --

6 A It certainly looks like it.

7 Q I just want you to check all the pages. When I put  
8 it up there, I don't want it to be wrong, or anything. It  
9 looks like this?

10 A Yes. That's correct.

11 Q In your notes that you took of Mr. Thompson's  
12 testimony, you took down what you thought was the  
13 important stuff -- the stuff that you considered important  
14 in preparation of your report and your testimony in this  
15 case?

16 A No.

17 Q Okay. What's -- well, why else would you take notes  
18 if you didn't think it was important?

19 A I get asked that question many times in depositions.  
20 And the answer is that I take notes on those issues that I  
21 think I am most likely to be asked questions about during  
22 the deposition so I can get to the answers quickly and  
23 efficiently.

24 And what I'm likely to be asked about in a  
25 deposition, based on my experience, is not always the same

1 thing as what I think is important.

2 Q Okay. Did you think that when you were going to be  
3 asked questions in this case that they were going to ask  
4 you who made all the gaskets?

5 A Yes. I expected that.

6 Q Okay. And so that's one of the things you paid  
7 particular attention to?

8 A I did.

9 Q And one of the things that you made sure to note was  
10 that -- it's going to be on the third line -- is that that  
11 they always used John Crane, but not more than any of the  
12 others?

13 A Correct.

14 Q So when you say it's not more than any of the others,  
15 that would mean, to you, that they were each used equally.  
16 Would that -- would that mean to you?

17 A Approximately so.

18 Q Approximately. Obviously, you might have 51 and 49  
19 of the other, but that would all be --

20 A We're reaching back 40 years. So this is people's  
21 best memories. And approximately they used them all about  
22 the same.

23 Q Was there any indication to you in any of the -- any  
24 of the testimony that you read that any of the John Crane  
25 gaskets were the ones that were stuck on?

1 A Do you mean as opposed to the other brands? They  
2 were all stuck on at times.

3 Q How do you know they were all stuck on?

4 A My experience.

5 Q So --

6 A -- I don't -- I mean --

7 Q I asked a poor question. Was there anything in the  
8 materials that were sent to you or any of the testimony in  
9 this case that led you to believe that the John Crane ones  
10 were the ones that were stuck on, or were the ones that  
11 weren't stuck on?

12 A I don't recall that either of the witnesses was,  
13 actually, asked that question.

14 Q So there wasn't any information -- so you're just  
15 assuming that it was?

16 A I don't recall that either of the witnesses was,  
17 specifically, asked whether John Crane gaskets were stuck  
18 on. It's clear from their testimony that some of the  
19 gaskets were stuck on. That's why they had to use wire  
20 brushes and power wire brushes.

21 Q Right. But you don't know whose?

22 A All of them.

23 Q That's the --

24 A All of the brands.

25 Q That's the assumption that you're making; correct?

1 A Well, first of all, the question was not asked in the  
2 deposition, to the best of my memory.

3 Q Right. So you're guessing.

4 A So I'm not guessing. I have almost 40 years of  
5 experience in this field, taking occupational histories  
6 from hundreds of people who did this kind of work. And  
7 I've read scientific articles about it and industrial  
8 hygiene articles about it. I've spent years studying  
9 this.

10 Q When was the last time you saw a patient?

11 A Well, I have not been a clinician for a long time,  
12 so --

13 Q When you say you haven't "been a clinician for a long  
14 time," what's that mean?

15 A I haven't been a treating physician for patients in a  
16 long time because my field is prevention.

17 Q Okay. Well, let me -- I guess I'm not clear. What  
18 was the last year that you saw a patient?

19 A I saw a patient -- I saw more than one patient last  
20 year. I don't know whether it was 20 or 30, but some  
21 number like that.

22 Q Where you saw -- it's your testimony here today you  
23 saw 20 or 30 patients. Did you see them in your office?

24 A No.

25 Q Well, you don't -- do you have hospital privileges

1 anywhere?

2 A No. I don't need them because I do prevention.

3 Q If you didn't see the patients in the hospital and  
4 you don't have an office, where -- where did you see them?

5 A In Port Allegany, Pennsylvania, as part of the Port  
6 Allegany Asbestos Health Program. And I saw them in a  
7 local community health center, which is an offshoot of a  
8 local hospital where I have been allowed to see patients.  
9 It's perfectly legal, nothing wrong with it because it's  
10 part of this community-established program. And some of  
11 the people that I see in that program scrape gaskets.

12 Q Okay. Now, they scrape gaskets while they are  
13 working on the Unibestos -- making the Unibestos pipe  
14 covering?

15 A No. They scrape gaskets in doing the maintenance and  
16 repair work.

17 Q Okay. Now, putting aside the Port Allegany work,  
18 when was the last time you saw a patient -- when was the  
19 last time you had a clinical practice?

20 A I had a clinical practice up until 1997.

21 Q 1997 --

22 A But it was not -- early in my career, I was seeing  
23 patients day and night, critically ill patients, patients  
24 bleeding, patients in shock, patients -- heart attacks.  
25 But as I got into prevention, the degree to which I was

1 seeing -- treating patients steadily diminished. Because  
2 what I was involved in was preventive work, which is a  
3 different kind of work.

4 Q So you haven't had a medical practice in about 18  
5 years?

6 A Since '97. Yeah, that's about right.

7 Q About 18 years.

8 A That's correct.

9 Q And before that, you -- also, as part of your work,  
10 you'd be hired by plaintiffs attorneys to provide  
11 examinations in other states; right?

12 A Yes.

13 Q And some people have called those asbestos  
14 screenings?

15 A Some people call them screenings. I don't, but they  
16 have been called that.

17 Q And that's when you -- one of those was in the Virgin  
18 Islands?

19 A Yes. That was a good one, St. Croix.

20 Q And when that happens, a plaintiffs attorney flies  
21 you down to -- or pays you to somehow get down to where  
22 the screening is. And then you look at people for him to  
23 see if they have asbestos-related disease; right?

24 A Yes.

25 Q And the purpose of that is to see if -- well, we'll

1 let -- I'll leave that one alone.

2 A The only -- I need to modify my answer because you  
3 asked it in a present tense. It's been over 10 years  
4 since I've done that. But I have no -- I have no shame  
5 about that. There's nothing wrong with doing it. I'm  
6 giving people good examinations that they might not  
7 otherwise get from a person who is a specialist in  
8 something that matters to their health.

9 Q And do you get paid by the person? You get paid --  
10 the people don't have to pay you, the plaintiffs attorneys  
11 pay you, right?

12 A Yes.

13 Q And they pay you -- and you're making -- now, you're  
14 making \$700 an hour, I think you said?

15 A Yes, I am.

16 Q I don't know if I heard that right. Did it just go  
17 up recently?

18 A No. It's been the same for about three years.

19 Q Okay. And you work -- it's my recollection you that  
20 worked about -- at the -- consulting in asbestos-related  
21 matters about 20 hours a week on average?

22 A No. That's not quite right. It's quite different  
23 now from when I was younger, because I'm past retirement  
24 age. I've made changes in my practice. I'm -- I am --

25 The question was exactly what, sir?

1 Q Now, how many hours a week do you spend doing this  
2 asbestos stuff for plaintiffs?

3 A It's probably in the neighbor -- well, actually, it's  
4 probably not far from 20 hours a week. Yes. That's  
5 probably true.

6 Q Okay. And it's been that way for a couple years?

7 A Yes. But not all of those hours are compensated  
8 hours. So it's not a guide to my earnings.

9 Q When you came out here today, did you fly, I assume?

10 A I did fly, last night.

11 Q Now, is -- your flight charge, is that part of the  
12 700?

13 A I charge for the time that I'm away from my office,  
14 yes.

15 Q No. I mean the actual cost of the plane ticket.

16 A That gets billed, yes.

17 Q Separately?

18 A Yes.

19 Q So it's not --

20 A No, not separately. It's part of the same bill.

21 Q But you know what I mean. It's not like \$700 an hour  
22 and then you spent a thousand dollars for a plane ticket  
23 and you take it out of that; right?

24 A It's an additional charge.

25 Q Yeah. And how much time have you spent working on

1 this case?

2 A Well, back when I was deposed on it, I don't recall  
3 because that was -- that was back quite a while ago. So I  
4 don't recall. I spent two or three hours re-reviewing  
5 these materials before I came down here. And then I came  
6 down here starting yesterday afternoon.

7 Q So you reviewed the materials three times, right?  
8 The first time was when you originally got it. The second  
9 time was right before your deposition. The third time was  
10 last night?

11 A No. I -- I wouldn't review it until just before the  
12 deposition.

13 Q Right. But you didn't review the material when you  
14 got it?

15 A No. I might get it months before the deposition. If  
16 I review it, by the time they're questioning me, as you  
17 are today, I would have forgotten it.

18 Q Now, when you go down and when you did your  
19 screenings, one of the things you do is you read x-rays?

20 A Yes.

21 Q Now, you're not a radiologist, right?

22 A I'm not a radiologist.

23 Q And you're a -- you talked about an A reader.  
24 There's, also, something called a B reader, right?

25 A Correct.

1 Q After you take -- after you take the A reader class,  
2 then normally you sit -- then you sit for the B reader  
3 exam; right?

4 A Yes. That's right.

5 Q And the B reader -- and that's put on by NIOSH, isn't  
6 it?

7 A Yes. NIOSH has a role in devising that examination.

8 Q And what does -- what -- the purpose of being a B  
9 reader is you can compare X-rays to determine if there's  
10 pneumoconiosis in the lung and the proper way to grade  
11 them; right?

12 A Approximately correct, yes.

13 Q And you didn't pass that exam; right?

14 A I did not pass it.

15 Q And you didn't pass it more than once; right?

16 A I didn't pass it twice.

17 Q And when you went to the Virgin Islands, you made  
18 \$150,000 for that one?

19 A No, sir. That's -- that's misleading.

20 Q How about this. You were paid 150,000 for it?  
21 What's -- were you paid 150,000?

22 A No. I wasn't paid. My practice was paid. And I  
23 don't want to sound like it's a hair-splitting quibble. I  
24 brought down a team of five or six people, including, at  
25 least, one other physician, a nurse, a couple of clerical

1 people.

2 I paid for everybody's airfares. We rented cars. We  
3 rented hotel rooms. We rented the medical clinic. We  
4 paid for X-rays. We paid for blood work. We paid for  
5 electrocardiograms. We paid for pulmonary function tests.  
6 We had to pay to ship our pulmonary function test  
7 equipment, to ship it, and then to get it past customs  
8 into St. Croix.

9 So there was a lot of expense involved.

10 Q Including -- was that one the one where you  
11 used your -- you had your daughter or your son?

12 A It was -- it was three or four trips altogether. And  
13 I brought my son as one of the clerical people and paid  
14 him for one of those trips. And another trip, I brought  
15 my daughter and paid her.

16 Q And that --

17 A And they did a good job, too.

18 Q I'm sure they did. But that was out of the 150,000.  
19 You didn't pay them out of your own pocket. You paid them  
20 out of the money that was being paid to you for this;  
21 right?

22 A Yes.

23 Q Now, you usually testify about -- in trial about 10  
24 times a year?

25 A It varies. Sometimes it's -- sometimes it's been

1 five or six in a year. And I think the peak year was like  
2 13 times. So it's in that range.

3 Q Is 10 a good average?

4 A No. I think that's a little high, but I don't  
5 remember exactly.

6 Q And for every trial that you do, there's a bunch  
7 of -- there are many depositions that you do, right?

8 A Well, for that case, I will usually only have been  
9 deposed once. But then there are other cases where I'm  
10 deposed, but there's never a trial.

11 Q Right. I was trying to go backwards. So it's the  
12 least amount of trials. And there are a lot of  
13 deposition, right?

14 A Correct.

15 Q And then even more than the depositions, there's even  
16 reports that you write?

17 A Yes. In some cases, there are reports. In other  
18 cases, there are not reports.

19 Q And there are more -- there are the most report. And  
20 as a matter of fact, you allow plaintiffs attorneys to  
21 list you on their witness list without even asking you  
22 first?

23 A I don't have any control over that. If I had control  
24 over it, I would ask them to ask me.

25 Q Have you ever told --

1 A So attorneys all over the country could be putting my  
2 name down on legal documents saying I'm going to testify  
3 in their case, and I know nothing about it.

4 Q Have you ever told a plaintiffs attorney don't --  
5 not to put me on your list?

6 A I've never been asked.

7 Q No. That wasn't my question. Have you ever told  
8 them, don't put me on your list?

9 A No. Because there are the attorneys that I choose to  
10 work with, and then there are the other attorneys that I  
11 don't even know. And how can I tell people I don't even  
12 know don't put my name on a list?

13 Q And you've been -- I'm trying to -- what I don't know  
14 is -- when did you start testifying?

15 A Oh, a good five years after I went into this field.  
16 I didn't go into this field to testify. I went into this  
17 field to study the health effects of asbestos and other  
18 toxic substances in the workplace.

19 And five years later, the attorneys came to my boss,  
20 Dr. Selikoff, and said, we'd like to have some of your  
21 people testify in trials.

22 He said, Okay.

23 And then they asked me. I didn't know they had  
24 already talked to Selikoff. So I went down and said,  
25 Dr. Selikoff, is it okay if I do this?

1 He said, Yes.

2 So I did it.

3 Q Okay. When?

4 A 1980 -- I'm sorry. 1981.

5 Q Since -- that's 19 -- 34 years?

6 A I can go on for a long time if you encourage me.

7 Q So you've been doing this -- you've been testifying  
8 for about 34 years?

9 A Yes, whatever that is, since 1981..

10 Q And in 34 years, you've been testifying for  
11 plaintiffs?

12 A Yes, sir, I have.

13 Q Every single trial you've ever testified for has been  
14 on behalf of plaintiffs?

15 A Well, I'm happy to testify for defendants. I've  
16 often said that. But I have no choice over -- and there  
17 are many cases where I don't believe in the plaintiffs  
18 case, and I tell them that.

19 So I'd be happy to take the witness stand in such a  
20 case. But I don't have any control over whether you or  
21 others would decide to hire me.

22 Q Okay. I'll ask the question again. You've never  
23 testified on behalf of a defendant in an asbestos case?

24 A You're correct for the reasons I stated.

25 Q You've testified for Mr. Panatier's firm a number of

- 1 times?
- 2 A Yes, I have.
- 3 Q You've testified for Weitz & Luxenberg?
- 4 A Once or twice.
- 5 Q You've testified for Connelly & Vogelzang?
- 6 A Yeah, a couple of times. Not any time recently.
- 7 Q It was in the last month or two, wasn't it?
- 8 A No. It's been years.
- 9 Q What?
- 10 A It has been years.
- 11 Q You've testified for Waters & Kraus?
- 12 A Yes.
- 13 Q They're out of Texas?
- 14 A Correct.
- 15 Q And you have a good relationship with Waters & Kraus;
- 16 right?
- 17 A I guess so.
- 18 Q As a matter of fact, Waters & Kraus, didn't one of
- 19 their attorneys try to get you to testify -- try to put
- 20 your name up so you could testify before Congress to give
- 21 you some more credibility?
- 22 A Yes.
- 23 Q And did Congress ask you to testify?
- 24 A On another occasion, yes, but not on that occasion.
- 25 Q On the occasion that Congress asked you to testify --

1 so you went down to Washington, D.C., and sat in front of  
2 a -- sat in front of a committee in Washington, D.C., and  
3 held up your hand, and went under oath, and talked to some  
4 congressmen?

5 A Not quite. It was a subcommittee. And subcommittees  
6 travel. And this one was in Trenton, New Jersey, the  
7 capital of New Jersey.

8 Q So in this one, you testified in a -- you never made  
9 it before the full committee. You were in Trenton?

10 A I testified in Trenton before a subcommittee of  
11 Congress. That's how they do their business.

12 Q And with regards --

13 A When they do it. When they do any business.

14 Q With regards to the articles that Mr. Panatier was  
15 looking at, I believe in it -- how many of these  
16 articles -- when was the last time you published an  
17 article?

18 A Well, I'm not a researcher anymore. So my last  
19 published article was in 1987.

20 Q Okay. When you say you're not a researcher -- so  
21 what does that mean, you're not a researcher anymore?

22 A I don't do research. I voluntarily left  
23 Dr. Selikoff's laboratory after a while and started my  
24 practice.

25 Q And on your CV, it says clinical assistant professor,

1 division of environmental sciences, Mount Sinai since  
2 1983?

3 A Yes, sir.

4 Q That's an unpaid volunteer position?

5 A Correct. It's an unpaid faculty position.

6 Q Well, you volunteered to -- they didn't ask you. You  
7 asked them if you could do it, right?

8 A At this point, I don't remember.

9 Q Now, you consider Dr. Selikoff to be one of -- one of  
10 the leaders in the writings about asbestos, right?

11 A I do.

12 Q And Dr. Selikoff became famous because he did  
13 research on a bunch of insulators. It was the insulator  
14 workers union, correct?

15 A He started with insulators --

16 Q That was his first --

17 A Sorry. He started with insulators. And he did a lot  
18 of research involving insulators, but then he, also,  
19 broadened out.

20 Q And I think it was like over 12,000 insulators?

21 A That what?

22 Q In the first study, in the first that he worked with?

23 A No. No, sir.

24 Q How many -- he had a big one, didn't he, that was  
25 like 12,000?

- 1 A No, sir. I mean --
- 2 Q How --
- 3 A --- you're not getting the numbers right.
- 4 Q I'm asking you. What were the numbers?
- 5 A So the first study was just the New York and New  
6 Jersey insulators. I think it was about 1,100 insulators.  
7 God bless you, ma'am.
- 8 About 1,100 insulators. And then he did the big  
9 study, and it was about 17,000 --
- 10 Q I'm sorry. It was 17,000.
- 11 A It --
- 12 Q It was a large number. And that was the first  
13 epidemiologic -- that was the first time anyone linked a  
14 specific product to a disease; right?
- 15 A No.
- 16 Q When was -- let me ask you this. That was the first  
17 epidemiologic study that linked a specific product to  
18 causing an asbestos-related disease; correct?
- 19 A No.
- 20 Q What was the first one?
- 21 A The first one was Merewether and Price, 1930,  
22 asbestos textiles and asbestosis.
- 23 Q Okay. That was a poor question. Because when you're  
24 talking about asbestos textiles -- I don't know if the  
25 jury understands what that means. That's where you take

1 the raw asbestos and you weave it into a textile; right?

2 A Yes.

3 Q And then that textile is used for -- normally, put in  
4 another type of product; right?

5 A Yes.

6 Q So Dr. Selikoff's study was the first one that he,  
7 actually, used an end product that would normally be used  
8 by someone not in the manufacturing process?

9 A Well, the textiles were not always end products  
10 either. The textiles is something that they used to make  
11 brakes with, by way of example.

12 Q Yeah. They put it in brakes.

13 A Yeah.

14 Q And brakes are the end product.

15 A And people worked with those. And in the 1930s, it  
16 was noted that people --

17 Q Let me ask a different question. I'm sorry.

18 A Okay.

19 Q It was an inartful question on my part.

20 A Sorry.

21 Q Dr. Selikoff's work with insulators was the first  
22 time that anyone had linked the use of thermal insulation  
23 to lung cancer; right?

24 A I don't, actually, recall. Because the Lynch and  
25 Smith case from right here in South Carolina, I don't

1 recall what -- in 1935, I don't recall what the person's  
2 trade had been. I can tell you that there were -- there  
3 were definitely -- among the 70 case histories, 70-plus  
4 case histories that came before the 1955 study by Dr. Doll  
5 showing a connection between asbestos exposure and lung  
6 cancer, many of those were insulators. I can't give you  
7 the exact number, but I know that some of them were.

8 Q Okay. But it was always -- it was insulation. It  
9 was insulation that was causing these in the case reports  
10 that you mentioned; right?

11 A It was insulation. But I'm not saying every case was  
12 insulation.

13 Q Do you recall any -- any articles in the medical  
14 literature, be it a case report, prior to 1970, which  
15 linked the use of gaskets directly to any disease?

16 A Well, I recall Merewether and Price in 1932 saying  
17 gaskets -- jointings, that is, as they called it -- and  
18 packings would be hazardous. But do I recall an actual  
19 case report in the 1930s having to do with gaskets? No.

20 Q Or in the '40s?

21 A No.

22 Q Or in the '50s?

23 A Well, we do know that in 1964, Hueper was warning  
24 against that again in 1964 in this conference organized by  
25 Dr. Selikoff. What was his basis of experience for that?

1 I don't know.

2 Q Well, that's in the '60s. I asked about the '50s.  
3 In the '50s, there wasn't anything?

4 A If I went and searched, I don't know what I would  
5 find. I don't recall any offhand.

6 Q In the '60s, do you recall any offhand?

7 A Of gaskets?

8 Q Uh-huh.

9 A Gaskets -- actual case history of someone sick from  
10 gaskets. Part of the problem here is that just like  
11 Mr. Seay -- if someone just like Mr. Seay was reported in  
12 a case history, they would be more likely to say, oh, this  
13 person was exposed to insulation, instead of saying this  
14 person was a gasket worker. Because most people who were  
15 gasket workers and have exposure to asbestos from gaskets,  
16 also, had exposure to asbestos in other ways, too.

17 Q One of the reasons, when you pointed out that he  
18 would be listed as someone who was exposed to insulation,  
19 is because that is looked upon as a -- why is that? Why  
20 would they leave out the gaskets and report it as an  
21 insulation exposure?

22 A For the reasons we put up on those flip charts, that,  
23 typically, the exposures to insulation are higher. But if  
24 what a person does all day is gasket work and only from  
25 time to time has insulation exposure, then their exposure

1 from the gasket work is going to be higher over the course  
2 of time.

3 Q Right. But you haven't seen any of those reports;  
4 right?

5 A That's correct. I just -- I -- I could go searching,  
6 but I don't recall.

7 Q Well, as you sit here today to tell the jury about  
8 the -- to tell the jury about your expertise in preventive  
9 medicine and occupational medicine -- and you knew you  
10 were going to be talking about state of the art, right?

11 A I did.

12 Q And so you came here prepared to tell the jury about  
13 the state of the art?

14 A Yes, I did.

15 Q Okay.

16 THE COURT: All right. We're going to take about a  
17 10-minute break.

18 (WHEREUPON, the jury was excused from open court at  
19 approximately 3:34 p.m.)

20 THE COURT: You can bring the jury back in, ma'am.  
21 Thank you.

22 (WHEREUPON, the jury came into open court at  
23 approximately 3:52 p.m.)

24 THE COURT: All right. Yes, sir.

25 MR. TIVIN: May it please the Court.

1 THE COURT: You may continue.

2 BY MR. TIVIN:

3 Q Dr. Holstein, you -- I've been kind of going  
4 backwards through your testimony. In the beginning of  
5 your testimony, you talked about the state of the art;  
6 right?

7 A Yes, sir.

8 Q And the state of the art is who knew what when, and  
9 who should have known what when, and whatever; right?

10 A Yes, sir.

11 Q Now, you would agree with me that in the 1800s, that  
12 there wasn't any Google?

13 A Yes.

14 Q And in the 1920s, it was really hard to look things  
15 up on the Internet?

16 A It was impossible.

17 Q And in the 1940s, you couldn't text your doctor and  
18 get your questions answered?

19 A Correct.

20 Q My point, obviously, is when you look back at the  
21 '30s and '40s, there was a lot of different ways of  
22 communicating between people; right?

23 A Yes.

24 Q There wasn't any way back in the '30s, '40s, '50s, or  
25 even '60s for anyone to get on the Internet and look at

1 things?

2 A I agree.

3 Q It's hard to imagine that, you know, 10, 15 years  
4 ago, in this century, it wouldn't have been uncommon for  
5 someone not to have a cell phone?

6 A I agree.

7 Q And, now, if someone doesn't have a cell phone,  
8 they're looked upon as like you're some Neanderthal?

9 A Well, I don't, but somebody might. The fight these  
10 days is to get your kids to put them down for a minute.

11 Q But the point is -- and then with the cell phones and  
12 the smartphones, everyone -- we are living now in an age  
13 of instant information?

14 A Correct.

15 Q And back in the 1800s, there wasn't instant  
16 information?

17 A I agree.

18 Q And back in the 1930s, there wasn't instant  
19 information?

20 A Unless you're face to face with a person, but I agree  
21 in general.

22 Q If someone did -- someone is over in England and  
23 someone is over in America, they might not find out about  
24 it for weeks or months?

25 A I agree.

1 Q And one of the articles -- one of the journals that  
2 you talked about was JAMA, the Journal of the American  
3 Medical Association?

4 A Yes.

5 Q And you testified that the Journal of the American  
6 Medical Association was one of the largest journals out  
7 there, right?

8 A Correct.

9 Q And that's one of the ones that you -- you would  
10 expect doctors to know about -- sorry -- I thought you  
11 wrote something down, but you didn't -- something you  
12 thought doctors would know about in America?

13 A Well, it's published in America. The answer is yes.

14 Q So you would expect a doctor in America to be more  
15 familiar -- if something was published in JAMA, you would  
16 expect them to know about it -- a better chance of them  
17 knowing about it than if it was published somewhere else;  
18 right?

19 A Widely read, so I guess the answer is yes.

20 Q Now, you testified earlier about a -- there were  
21 articles in JAMA in the 1940s that talked about asbestos?

22 A Correct.

23 Q And that's one of the things that you thought put  
24 people on notice that asbestos caused a lot of problems?

25 A Yes.

1 Q Now, I've -- you already have it in front of you.  
2 Here is an article from October of 1965. Do you see that?

3 A Yes.

4 Q And it says JAMA right there. That's the one we've  
5 been talking about, Journal of American Medical  
6 Association?

7 A Yes, sir. That's correct.

8 Q Okay. And this is an article that's written by these  
9 guys, a bunch of doctors?

10 A Yes. That's right.

11 Q They're a bunch of doctors. And these doctors --  
12 let's go back -- I'm sorry -- Go back down to the bottom  
13 again.

14 These doctors are from the University of  
15 Pennsylvania?

16 A Correct.

17 Q And the University of Pennsylvania is a  
18 well-respected medical school?

19 A That's right.

20 Q And it's in the Ivy League?

21 A It is.

22 Q You mentioned you went to Harvard, Penn is in the Ivy  
23 League, too, right?

24 A Yes, it is.

25 Q And these are the sorts of people that you would

1 expect to read JAMA and keep up with things; right?

2 A Yes.

3 Q Well, if we go to -- this is what's called a case  
4 report. And a case report is when a doctor does -- sees  
5 either -- well, let's do it the easy way.

6 What's a case report?

7 A Well, we described it to the jury before. It's where  
8 a doctor, a scientist, publishes something that seems a  
9 little unusual, a little peculiar, not previously noticed,  
10 because it seems like it's -- may be worthy of further  
11 notice.

12 Q And some case reports are when doctors have brand new  
13 treatments and they're like, hey, this treatment may work.  
14 And so they try to get it published so other doctors can  
15 look at the treatment and say, maybe this is something I  
16 could try in this situation?

17 A Correct.

18 Q In the Journal of the American Medical Association,  
19 when they publish these case reports, there is some sort  
20 of screening process. They don't just publish anything  
21 you send to them; right?

22 A Correct.

23 Q So it has to -- you would assume that it has to be  
24 okay with the editors of the magazine before they put it  
25 in the magazine?

1 A It has to be considered worthy of notice.

2 Q Okay.

3 A It has to be considered of interest. And it has to  
4 be considered reliable.

5 Q So this article -- so they would have said that  
6 pleurectomy in 1965 was worthy of notice and reliable for  
7 it to be a preliminary report to be in the -- in their  
8 magazine?

9 A A pleurectomy for the particular purpose that it was  
10 being done in this case.

11 Q Right. And this was to tell the -- tell people about  
12 a brand-new treatment that they were putting forth?

13 A That's right.

14 Q Right. And let's -- this is a girl who had heart  
15 problems; right?

16 A By that time, she was -- well, yes. The answer is  
17 yes.

18 Q She had a heart problem. She had something called  
19 systemic pulmonary anastomosis; right?

20 A Yes.

21 Q So what these doctors did is they're like we want to  
22 try and help her. So in 1960 -- 1964, they did a  
23 pleurectomy on the right side and the surface of the lung  
24 was sprinkled with powdered asbestos.

25 Doctor, did I read that correctly?

1 A You did.

2 Q So, in 1965, the editors of the Journal of the  
3 American Medical Association thought that sprinkling  
4 powdered asbestos directly on somebody's lungs was  
5 reliable and worthy of notice?

6 A Well, they thought that this article was reliable and  
7 worthy of notice. They were not passing judgment on  
8 whether this was the right treatment for somebody.

9 Q Well, if they thought it was the wrong treatment, do  
10 you really think they'd publish it in the magazine? Isn't  
11 that the sort of thing that they wouldn't publish?

12 A Well, the fact is that the doctor -- I don't want to  
13 quibble about this. The judgment that's being exerted  
14 here is by the doctors who did this procedure. The  
15 editors at the journal are just figuring out, is this  
16 something that other doctors are going to want to read  
17 about?

18 Q And my point is this, in 1965, it's difficult for  
19 information to get -- information might not have been as  
20 here to there as we've been kind of talking about. And  
21 some editors in the Journal of the American Medical  
22 Association thought it was okay to sprinkle asbestos on  
23 someone's lungs. I'm not saying it's a good idea. But  
24 I'm saying, in 1965, they didn't know it was a bad idea.

25 A They're not passing judgment on whether that's a good

1 idea or a bad idea.

2 Q Well, it's your testimony here that if they thought  
3 it was a bad idea, they would -- why would they have  
4 published it if it was a bad idea, unless the article said  
5 like don't do this?

6 A I don't -- I'm sort of feeling forced to quibble on  
7 something that's not so important. I'm ready to  
8 acknowledge that the doctors who did this procedure  
9 thought it was the best thing for this girl who was dying.  
10 And I don't have any comment -- or very little comment  
11 about what the editors of the journal were thinking.

12 Q Okay. Now, you, also, testified about the EPA,  
13 didn't you? You were asked a question about the EPA?

14 A Well, wait a minute. I didn't finish my answer.

15 Q Oh, I'm sorry. I thought you were done.

16 A So this was a desperately ill girl who had already  
17 had one major heart surgery when she was a one-year-old  
18 baby, and now was falling back into a life-threatening  
19 situation. And, in medicine, we do many things that are  
20 drastic when somebody's life is at stake. We give them  
21 poisons called chemotherapy. We do gigantic operations  
22 that in some cases leave them in some manner crippled. So  
23 it's a cost-benefit balance.

24 And these doctors felt that the risks for this girl  
25 of not doing this were outweighed by -- in other words,

1 she was in a desperate situation. When we have a  
2 desperate situation, you do desperate things.

3 Q Well, you don't know who any of those doctors are;  
4 right?

5 A No. I don't know them.

6 Q And so you have no idea what was going through their  
7 minds when they came up with this?

8 A I agree, but you don't either.

9 Q Right. I --

10 A There's no indication in here that they didn't know  
11 that asbestos was hazardous. There's no indication that  
12 they were ignorant of the health effects of asbestos.  
13 There's no indication one way or the other.

14 So you're right. I don't know what was in their  
15 mind. But you don't either. They may have been perfectly  
16 well aware of the hazards of asbestos, but concluded that  
17 this girl's life needed to be saved right here and now.

18 Q And you read the article before you got on -- you  
19 read the article during a break?

20 A I've seen it in the past.

21 Q Okay.

22 A But it's been a long time since I've seen it.

23 Q You've seen it in the past. Is -- anywhere in the  
24 article, does it say any of that stuff?

25 A It does say -- it says nothing about the state of

1 knowledge about asbestos one way or the other.

2 Q Right.

3 Now, did I just hand you another article or did I --

4 A I don't think so.

5 MR. TIVIN: Did I hand it to you?

6 MR. PANATIER: I've been highlighting it, but you can  
7 have it.

8 BY MR. TIVIN:

9 Q You talked about -- we'll get back. You talked about  
10 the EPA; right?

11 A Yes. I did talk about the EPA.

12 Q Okay. I'm going to hand you an article -- a brochure  
13 from the EPA.

14 Now, first of all, the EPA, are they the ones that  
15 talk about -- you talked about -- have -- strike that.

16 There's a -- you're aware that there's a clearance  
17 rate for asbestos in schools; right?

18 A That there's what?

19 Q You talked about asbestos in schools.

20 A A clearance rate? Is that what you said?

21 Q Right. You talked about asbestos in schools; right?

22 A Yes.

23 Q And you were talking about throwing the pencil in the  
24 ceiling, I think?

25 A I did.

1 Q You would agree with me that the EPA has said that  
2 children are allowed back in a school if there is .01  
3 fibers per cc of asbestos?

4 A Correct.

5 Q And then --

6 A No more than .01.

7 Q That .01 would be, what, a hundred times your  
8 background number, or a thousand?

9 A It would be, at least, a thousand.

10 Q So the EPA thinks that the -- that it's okay to send  
11 your kids into a school if it's a thousand times above  
12 background; right?

13 A No. I wouldn't put it that way.

14 Q Okay. The EPA allows children back into a school in  
15 it's a thousand times above your background; right?

16 A Well, the alternative is to tear down hundreds of  
17 thousands of school buildings all over the country. And  
18 the questions is, what's worse for kids? To allow them  
19 into a school that may be as high as up to .01 fibers per  
20 cc, or to have no schools?

21 Q Okay. Now, this is something that was written in the  
22 summer of 1994. Do you see that in the upper right?

23 A I do.

24 Q And it says, Asbestos in America?

25 A Yes.

- 1 Q Can you read the first sentence out loud, please?
- 2 A I'm sorry. Which page?
- 3 Q The one that says, Asbestos in America on it. You  
4 can read it off the screen if you want, but I think it's  
5 the last page.
- 6 A Okay. Asbestos in America. What would you like me  
7 to do?
- 8 Q Read the first sentence.
- 9 A Prior to 1970 --
- 10 Q Wait a minute. Read the first sentence that was put  
11 out by the EPA in 1994.
- 12 A Prior to 1970, asbestos was considered nontoxic and  
13 used for fireproofing and to insulate homes, office  
14 buildings, and schools.
- 15 Q Thanks..
- 16 A You're welcome..
- 17 Q And, finally, this is the book I believe we discussed  
18 with Dr. Brody yesterday. It's called, Asbestos and  
19 Disease.
- 20 A Yes.
- 21 Q Are you familiar with this book?
- 22 A To some degree, yes.
- 23 Q And it's -- Dr. Selikoff is one of the editors?
- 24 A Yes.
- 25 Q And you consider him an authoritative author?

- 1 A I do.
- 2 Q You consider that he's one of the -- he was one of  
3 the leaders in asbestos medicine?
- 4 A Yes, he was.
- 5 Q And when he published -- you considered it to be at  
6 the forefront of asbestos medicine when he published it?
- 7 A Not always, but often.
- 8 Q Now, this book was published in 1978?
- 9 A Yes.
- 10 Q I can show you if you --
- 11 A No. I believe you.
- 12 Q Okay.
- 13 A I was with Dr. -- I mean, I was part of  
14 Dr. Selikoff's department when it was published.
- 15 Q And there's a preface that's written by Irving  
16 Selikoff and Douglas H.K. Lee; right?
- 17 A Yes.
- 18 Q And Douglas H.K. Lee was the coeditor; right?
- 19 A Correct.
- 20 Q And in the preface -- have you -- I'll show it to  
21 you. I don't -- or do you want me to put it on the  
22 screen? Either way is --
- 23 A It's your call. Do whatever you want to do.
- 24 Q We'll put it on the screen.
- 25 Here's the preface. That -- you would agree that's

1 the preface?

2 A I do.

3 Q Starting the second paragraph, In 1978 -- this is  
4 where he writes -- he wrote, The time has come when such a  
5 comprehensive review of disease caused by exposure to  
6 asbestos is not really possible, but badly needed, right?

7 A Yes.

8 Q With the number of articles on the subject in the  
9 world literature at about 3,000, it is manifestly absurd  
10 to expect every person who has some responsibility for or  
11 interest in disease prevention to be familiar with all the  
12 aspects covered, or to be forced to resolve many of the  
13 conflicting views presented.

14 That's what it says?

15 A Yes.

16 Q And then he wrote, Even those who have expert  
17 knowledge of one aspect, be it clinical effects or  
18 engineering control, may well need guidance on other  
19 aspects, right?

20 A Yes. That's what it says.

21 Q And that's what he wrote in 1978 for the preface for  
22 his book, right?

23 A Correct.

24 Q Now, in the book, there's, also, a section -- and I  
25 know you've seen this before -- on progress and

1 introducing substitutes for asbestos-containing materials;  
2 right?

3 A Specified by the Navy department.

4 Q Right. Okay.

5 A Yeah.

6 Q Is that what it says?

7 A Yes. That's what it says.

8 Q And on the second page, it says, High-temperatures  
9 jointing and packing materials?

10 A Yes, it does.

11 Q And that's the jointing -- you mentioned jointing.  
12 That was what the English called gaskets?

13 A Correct.

14 Q And it says, with regards to -- in 1978, the year  
15 that it was published -- this -- strike that.

16 When the book was published in 1978, the chart that  
17 is contained within the book says, No health hazard in  
18 forms used in shipyard applications.

19 That's what it says, right?

20 A That's what it says.

21 Q And is there any difference -- can you think of any  
22 difference in the way a gasket would be used in a shipyard  
23 and the way it would be used in a polyester plant?

24 A It would be pretty similar in most respects.

25 MR. TIVIN: Thank you, sir.

1 Pass the witness.

2 THE WITNESS: Thank you.

3 THE COURT: Yes, sir. Mr. Young.

4 MR. YOUNG: Thank you, Your Honor.

5 CROSS-EXAMINATION

6 BY MR. YOUNG:

7 Q Dr. Holstein, it seems like it's been 34 years since  
8 you started this morning, but I'm going to try to get you  
9 out of here. You know I'm Lane Young, correct?

10 A Yes, you are.

11 Q We've met before.

12 A Yes.

13 Q And it's been a while.

14 A It's been a while, but we've met before.

15 Q Okay. I'm going to shift gears on you a little bit  
16 here. And I want to ask you some questions that are going  
17 to involve Daniel Construction Company. Okay.

18 A Yes, sir.

19 Q Mr. Seay's employer.

20 A Yes, sir.

21 Q You looked at some stuff about the facts of this case  
22 in addition to the medical records and things, right?

23 A I looked at --

24 Q -- you looked at some depositions?

25 A I'm sorry.

1 Q Sorry.

2 A I thought you were done. I'm sorry.

3 Q I talk slower than everybody else. I apologize.

4 A I talk too fast sometimes.

5 Q But you looked at some depositions and things;

6 correct?

7 A I did.

8 Q Okay. And so you are knowledgeable that the Celanese

9 plant that's involved in this case, they were making

10 polyester fiber; correct?

11 A Yes.

12 Q Not asbestos products?

13 A Correct.

14 Q Okay. And we know -- the ladies and gentlemen of the

15 jury know this, but -- that Mr. Seay, he was working for

16 Daniel, not Celanese; correct?

17 A Correct.

18 Q Okay. The whole time that we're dealing with here?

19 A He was working for Daniels on Celanese premises.

20 Q Right.

21 A Yes.

22 Q And Celanese employees were making the polyester

23 fiber. And Mr. Seay and the large number of Daniel

24 employees there, they were doing maintenance work on the

25 plant; correct?

1 A Yes.

2 Q Okay. And the maintenance work on the plant is what  
3 involved the asbestos products that we've heard about all  
4 day; correct?

5 A Yes, sir. That's correct.

6 Q Okay. And you indicated earlier this morning that  
7 you had not ever talked to Mr. Seay before he passed away;  
8 is that correct?

9 A Correct.

10 Q Okay. And you, also, hadn't talked to any of his  
11 coworkers; is that right?

12 A That's, also, correct.

13 Q Okay. And you haven't made any investigation to talk  
14 to any Daniel employees about what went on out there at  
15 Celanese in the '70s; correct?

16 A I have not done any independent investigation.

17 Q Okay. To find out, for example, what programs Daniel  
18 did or did not have in effect to make sure their workers  
19 had a safe workplace. You haven't investigated that;  
20 right?

21 A Nothing beyond the testimony of Mr. Thompson and  
22 Mr. Seay.

23 Q Do you know who Don Buck is?

24 A It escapes me.

25 Q Okay. Well, the ladies and gentlemen of the jury

1 will hear from him next week. But I want you to assume  
2 for the purposes of this question that Mr. Buck works for  
3 Daniel. All right.

4 A Okay.

5 Q And I want you to assume that he's going to testify  
6 in this case, and has testified, that Daniel had a duty  
7 and an obligation to provide Mr. Seay safe workplace at  
8 Celanese. You would agree with that; right?

9 A I do.

10 Q Okay. I think you told us -- you may -- let me hurry  
11 up so we can get out of here.

12 We've pretty much come to an agreement that,  
13 according to the social security records, Mr. Seay started  
14 work at Celanese for Daniel in mid to late '71; right?

15 A Well, I never saw those social security records, but  
16 I'll take your word for it.

17 Q Okay. Just assume that's true for me. Will you do  
18 that?

19 A Certainly.

20 Q Okay. And so it would be fair to tell the ladies and  
21 gentlemen of the jury that if he started in mid to late  
22 '71 and worked until '78 or thereabouts, that,  
23 essentially, the whole time he was there, OSHA was in  
24 effect. Do you agree with that?

25 A Basically, true.

1 Q Okay. I mean --

2 A It was just coming into existence when he went to  
3 work at -- at Daniels -- is it Daniel or Daniels?

4 Q Daniel.

5 A Daniel.

6 Q Now, it's Fluor Daniel, but it's Daniel.

7 A So he went to work for Daniel on the Celanese  
8 premises right around the same time that OSHA was coming  
9 into existence.

10 Q Okay. And I think you told us earlier that it's your  
11 understanding that Daniel had built a number of fiber  
12 plants and other plants during their existence. Do you  
13 recall that?

14 A I don't.

15 Q Not today, but in your deposition.

16 A Oh, I don't recall that at all.

17 Q Okay. Well, you don't have any information for us  
18 that Daniel was not a large and well-respected  
19 construction company in the 1970s, do you?

20 A I have no idea whether it was well respected or not.  
21 I do -- I do conclude indirectly that it was fairly large.

22 Q Okay. And Daniel was Mr. Seay's employer the whole  
23 time that we're dealing with, right?

24 A That's my understanding, yes, sir.

25 Q Okay. And we can agree that Daniel was obligated by

1 OSHA to provide a safe workplace to Mr. Seay at Celanese;  
2 correct?

3 A Yes.

4 Q And we can agree that, under OSHA, Daniel had the  
5 responsibility -- primary responsibility for Mr. Seay's  
6 safety while he was working at Celanese; correct?

7 A OSHA -- OSHA recognized that there were complex  
8 situations where employees of one company would be working  
9 on the premises of other companies, and understood that  
10 there -- that that would create joint responsibility for  
11 safety.

12 Just as, for instance, a lineman works for a public  
13 utility, but might be on public property, might be on  
14 private property. And in those cases, the safety of that  
15 person is a joint responsibility.

16 Q Okay. But you agree with me that under OSHA, Daniel  
17 had a responsibility to provide Mr. Seay a safe workplace  
18 while he was at Celanese; correct?

19 A I would phrase it differently. I would say that the  
20 acts of Congress that created OSHA gave OSHA the right to  
21 enact rules and regulations for employers much more than  
22 for anybody else.

23 Q Okay.

24 A So they had limited legal powers when it came to  
25 other parties besides employers.

1 Q If there was an OSHA violation that involved some  
2 work Daniel was doing while they were at Celanese from '71  
3 to '78, Daniel would be responsible for that fine, right?

4 A For the fine?

5 Q Yes.

6 A That -- I don't know one way or the other.

7 Q Okay. And it would be fair to say that under OSHA,  
8 Daniel had an obligation to warn Mr. Seay about the  
9 dangers of asbestos, correct?

10 A Under OSHA, it did. But it did not -- it was not the  
11 only one to have such a responsibility.

12 Q And we can agree, can we not, that if Daniel had  
13 followed the regulatory scheme established by OSHA,  
14 including what -- the things that you talked about earlier  
15 this morning, elimination, substitution, changing work  
16 practices, and protection, then Mr. Seay's risk of  
17 contracting mesothelioma would have been significantly  
18 reduced, correct?

19 A I agree.

20 Q And you told the ladies and gentlemen of the jury  
21 earlier about your work at Port Allegany, correct?

22 A I did.

23 Q Okay. And you were helping the employers out there  
24 to make sure there was a safe workplace and people weren't  
25 getting sick, right?

1 A No. I was trying to deal with the aftermath of the  
2 exposures to asbestos after those had stopped.

3 Q Okay. You didn't see anything in the information you  
4 read that Daniel had told Mr. Seay about any of the OSHA  
5 requirements in effect while he was there; correct?

6 A With regard to asbestos, that's correct.

7 Q Okay. And you didn't see anything in any of the  
8 information that you've looked at that indicated that  
9 Mr. Seay had been provided a respirator to wear by Daniel  
10 when he was in the vicinity of the insulation work we  
11 talked about a lot today; correct?

12 A I agree.

13 Q You had talked to the ladies and gentlemen of the  
14 jury some about OSHA earlier today. Do you recall that?

15 A I do.

16 MR. YOUNG: Sorry, Your Honor. I tried to learn how  
17 to use this during the break.

18 BY MR. YOUNG:

19 Q And this is the 1972 OSHA. Do you see that? You're  
20 familiar with this; correct?

21 A I am.

22 Q And it would be correct that it says, Establishment  
23 of a respiratory -- respirator program. The employer  
24 shall establish a respirator program in accordance with  
25 the requirements of the American National Standards

1 Practice, et cetera; correct?

2 A Under certain circumstances, that would be the  
3 requirement, yes.

4 Q Okay. And you're not able to tell us that you saw  
5 anything in this case that indicated that Daniel had  
6 established a respirator program for Mr. Seay while he was  
7 there; correct?

8 A I -- some of those questions, I did not see answered.  
9 But to the extent that there were such questions, I agree  
10 with you.

11 Q Okay. And, of course, you haven't talked to anybody  
12 at Daniel, so you don't know what they would say; correct?

13 A Only Mr. Thompson and Mr. Seay.

14 Q And then look down here. Do you see where it says  
15 Monitoring?

16 A I do.

17 Q Within six months of the publication of this section,  
18 every employer shall cause every place of employment where  
19 asbestos fibers are released to be monitored in such a way  
20 as to determine whether every employee's exposure to  
21 asbestos fibers is below the limits prescribed in  
22 paragraph B of this section. If the limits are exceeded,  
23 the employer shall immediately undertake compliance  
24 program.

25 And the employer in our situation, Dr. Holstein,

1 would be Daniel; correct?

2 A Yes.

3 Q All right. And it goes on and it talks about  
4 notification to the employees. The employer should provide  
5 medical exams. The employer should provide changing  
6 rooms, all sorts of things; right?

7 A Yes.

8 Q That the employer is supposed to do as of June 7th,  
9 1972, to make sure that Mr. Seay has a safe workplace  
10 insofar as asbestos is concerned; correct?

11 A Yes, sir.

12 Q Okay. And as I understand it, you're not in a  
13 position to say what Daniel did and what Daniel didn't do;  
14 correct?

15 A Well, from Mr. Thompson and Mr. Seay, I have the  
16 impression that Daniel did few of those things.

17 Q On direct examination this morning, you said -- I  
18 want to make sure that you agree that I wrote this down  
19 right -- Your supervisor should warn you about dangers on  
20 the job, including asbestos. Is that what you said?

21 A What I said?

22 Q Yes.

23 A I don't know whether I meant -- whether I singled out  
24 supervisors or not. I did -- I would, certainly, have  
25 said that those in authority should -- should give those

1 warnings.

2 Q All right. And --

3 A But I -- well, okay. That's --

4 Q Go ahead.

5 A That's, basically, my answer.

6 Q Okay. And in this situation, Mr. Seay's supervisor  
7 would have been a Daniel employee; correct?

8 A Yes. Well, but, also, he had -- he testified that  
9 their daily work orders came from a super who came from  
10 Hoechst Celanese, and another person I think he called  
11 maybe a planner or something from Daniel. The two of them  
12 would get together every morning. And then the orders  
13 would come down as to what they were going to do that day.

14 Q All right. But then Daniel was in charge of how it  
15 was done; right?

16 A Daniel was in charge of how it would be done, but the  
17 orders came down from both companies.

18 Q And you saw, from what you reviewed in this case,  
19 that the construction contract between Daniel and Celanese  
20 required Daniel to comply with OSHA; right? Correct?

21 A I never saw the construction contract.

22 Q Okay. So you don't recall testifying about that?

23 A I don't think I did. Because I didn't see the  
24 construction --

25 Q It would not be --

1 A -- the construction contract.

2 Q It would not be unusual for a contract like that to  
3 require compliance with OSHA; correct?

4 A Based on the ones I've seen, I agree.

5 Q Okay. And you talked about Merewether and Price  
6 early on in your testimony?

7 A I did.

8 Q Do you recall that?

9 A Yes, sir.

10 Q And the recommendations that they made about how to  
11 more safely use and work with asbestos. Do you remember  
12 that?

13 A Yes, sir, I do.

14 Q Okay. The watering down, ventilation, respirators,  
15 that type of stuff?

16 A Yes, sir.

17 Q Okay. And I can't add in my head. But, in 1971,  
18 essentially, what happened is OSHA codified and made into  
19 a rule or regulation that the government could enforce a  
20 lot of the same stuff; right?

21 A Yes.

22 Q Okay. If you work with insulation, you need  
23 ventilation. Working with a dusty product, wet it down.  
24 If you're worried about whether there's asbestos hazard,  
25 have a respirator program. I mean, a lot of the exact

1 same things that had been talked about before; correct?

2 A I agree.

3 Q Okay. And we can, certainly, agree that all that's  
4 the kind of stuff that Daniel should have been doing every  
5 day to make sure that Mr. Seay had a safe workplace under  
6 OSHA from an asbestos standpoint; correct?

7 A Some of them, they should have been doing.

8 Q It was obvious from what you looked at that Daniel  
9 was working with thermal insulation; correct?

10 A Yes.

11 Q Okay. And, certainly, Daniel could have implemented  
12 a respirator program and required Mr. Seay to wear a  
13 respirator; correct?

14 A I don't -- I didn't see any reason why not. But I  
15 didn't know all the facts concerning Daniel.

16 Q And, certainly, we can agree that under OSHA, if  
17 Mr. Seay was either fabricating or working with  
18 asbestos-containing thermal insulation or in the vicinity  
19 where that work was being done, that proper precautions  
20 under OSHA should have been implemented by Daniel to  
21 protect him --

22 A Yes, sir --

23 Q -- right?

24 A -- I have agreed with that.

25 MR. YOUNG: Okay. Thank you, Dr. Holstein.

1 Your Honor, that's all the questions I have.

2 THE WITNESS: Thank you, sir.

3 THE COURT: Mr. Panatier.

4 MR. PANATIER: Thank you, Your Honor.

5 (Pause.)

6 MR. PANATIER: I'm not going to hit it again.

7 THE WITNESS: That's how I fix things. I just keep  
8 hitting them.

9 MR. PANATIER: I screwed up again. Hold on. One --  
10 one click?

11 THE WITNESS: If that doesn't work, you kick it.

12 MR. PANATIER: Yeah. Let's see if the old  
13 unplug-and-replug works.

14 MR. TIVIN: I was expressly told not to just keep  
15 hitting the button.

16 MR. PANATIER: Hey. Look, it says, Additional  
17 Issues.

18 REDIRECT EXAMINATION

19 BY MR. PANATIER:

20 Q Okay. So we're going to talk about some additional  
21 issues, but let's back up.

22 All right. So I want to ask you first about some of  
23 the questions that Mr. Tivin asked you about Ronnie  
24 Thompson. Okay.

25 A Okay.

1 Q So we're going to back up a little bit. And you were  
2 shown this section of his testimony. The question was,  
3 So you would have had to remove these gaskets from  
4 pumps?

5 So, first of all, we know they're talking about pumps;  
6 right?

7 A Correct.

8 Q Now, was there a variety of equipment that these guys  
9 worked on, not just pumps?

10 A Yes.

11 Q Okay. So for the question they're talking about, can  
12 you estimate how many -- the percentage of time that the  
13 gaskets would not just come out of a pump easily, that he  
14 had to use the putty knife and the wire brush?

15 Now, it's kind of a convoluted sentence. But he  
16 says, 25 percent of the time they wouldn't come out  
17 easily; right?

18 A That's what it seems to say, yes.

19 Q But then the follow-up question is, I mean, it was a  
20 lot. I mean, it was a lot.

21 And he says, Yeah, it was a lot.

22 Okay. So he says 25 percent is a lot. 75 percent  
23 would be the other side of 25 percent; right?

24 A Correct.

25 Q Okay. Let's compare that with what Mr. Seay said.

1 He was shown this picture. And the jury saw this  
2 testimony.

3 Q Could you take a look at that, sir?

4 A Yes. That's -- that's a good example of what  
5 90 percent of your gaskets look like when you're replacing  
6 them.

7 Q Right?

8 A Yes.

9 Q So -- and what are we looking at there?

10 A We are looking at a corroded, baked-on gasket on a  
11 flange.

12 Q Is that the type of gasket that would just fall out?

13 A Not at all.

14 Q Is that the type of gasket that a worker would have  
15 to scrape, wire brush, and potentially power wire brush  
16 off?

17 A Absolutely. You have to get that metal face clean,  
18 spic-and-span clean, or the next one is going to leak.

19 Q Okay. And if what Mr. Thompson really meant was this  
20 only happened 25 percent of the time, then, perhaps, these  
21 guys were working at different plants?

22 A Right. Right.

23 Q Okay. Now, there are factors you have to consider to  
24 determine how much asbestos is released from a gasket;  
25 right?

1 A Yes.

2 Q Mr. Tivin spent time talking to you about some  
3 studies that showed lower levels, and some studies that  
4 showed higher levels; right?

5 A Yes.

6 Q One of the studies he showed you was a study by Fred  
7 Boelter. Do you recall that?

8 A Correct. Yes, I do.

9 Q And this is that study right here?

10 A Yes.

11 Q And in the bottom corner, you can see, This project  
12 is funded by Coltec Industries. Do you recall who they  
13 are?

14 A Coltec. No, I don't.

15 Q The parent company of Garlock. Do you know who  
16 Garlock is?

17 A Yes. Oh, I know what Colt Industries was --

18 Q Okay.

19 A -- but this is Coltec. Okay. Yes, the parent  
20 company of Garlock, one of the leading gasket  
21 manufacturers.

22 Q And you understand that Mr. Boelter testified for  
23 Garlock in gasket litigation?

24 A Yes, I do.

25 Q All right. So we'll take that into consideration.

1 Now, the types of things that influence how much dust  
2 comes off of a gasket may include how adhered to the  
3 flange it is; right?

4 A Correct.

5 Q Some of them might have been in cold water service,  
6 maybe they weren't in for a long time, maybe there was low  
7 pressure, and they don't stick as much?

8 A Correct.

9 MR. TIVIN: I would just object to the leading.

10 THE COURT: Sustained.

11 BY MR. PANATIER:

12 Q Others, based on other types of scenarios, it's  
13 possible would stick more; is that fair?

14 A I agree.

15 Q Okay. In what types of scenarios would they stick  
16 more?

17 A Higher temperature, higher pressure, they were in  
18 service long -- for a longer period of time. Those would  
19 be the major factors. Also, when they first apply them,  
20 sometimes they put a nonstick substance on the -- on the  
21 gaskets. I don't think they -- it worked that well, but  
22 that could be a factor. I've identified the major  
23 factors.

24 Q Mr. Seay is not identifying gaskets that just fell  
25 out of the flange; correct?

1 A At what point?

2 Q When he was working.

3 A Oh, absolutely not -- not in response to that picture  
4 that you showed that he saw.

5 Q So what I want to show you is -- I want to show  
6 you -- because I have the pictures of what Fred Boelter's  
7 gaskets look like, that he was, actually, pulling off of  
8 these flanges. So I want to just ask you --

9 MR. TIVIN: Just objection to the foundation before  
10 you show the picture. If it's in the article, that's  
11 fine. If you want to show something else, I --

12 MR. PANATIER: I'm presenting it to him. I'm going  
13 to ask him if these are the types of gaskets that you  
14 would expect to be cooked on or not. And then ask him the  
15 follow-up questions and whether or not you'd have to use  
16 mechanical energy to get them off.

17 MR. TIVIN: There's still a foundation that has to be  
18 laid that these are the gaskets in Boelter's study, which  
19 is what he was representing.

20 MR. PANATIER: I'm, obviously, presenting this as a  
21 hypothetical to assume that these are those gaskets.

22 THE COURT: All right. Overruled.

23 BY MR. PANATIER:

24 Q Okay. So these are the gaskets that Boelter took  
25 out. And there's the --

1 MR. TIVIN: I object, Your Honor, that this is --  
2 objection.

3 MR. PANATIER: That's the folder they were in, Your  
4 Honor. I'm just demonstrating that's what they came out  
5 of.

6 THE COURT: Well, let me ask y'all up here something  
7 real quick.

8 THE WITNESS: Your Honor, may I quickly go to the  
9 men's room while you have this sidebar?

10 THE COURT: Yes.

11 Well, why don't we take just about a five-minute  
12 break so we can let everybody get comfortable.

13 Go ahead.

14 Don't talk about the case. Continue to keep an open  
15 mind.

16 (WHEREUPON, the jury was excused from open court at  
17 approximately 4:35 p.m.)

18 THE COURT: We'll take a break.

19 (WHEREUPON, a break was taken.)

20 THE COURT: We can bring the jury back in.

21 Thank you.

22 (WHEREUPON, the jury came into open court at  
23 approximately 4:42 p.m.)

24 THE COURT: All right. Yes, sir. You may continue.

25 MR. PANATIER: All right. Thank you.

1 BY MR. PANATIER:

2 Q To finish up this gasket issue, if a gasket falls  
3 right out of the flange, generally speaking, or is not  
4 stuck to the flange, compared to one that is stuck to the  
5 flange, which one is going to take more work to get off?

6 A The one that's stuck.

7 Q Okay. Now, you were -- you were asked about this  
8 article about -- it was a case report where some doctors  
9 said, here's what we did for a little girl who had an  
10 extreme medical condition; right?

11 A Correct.

12 Q And they -- they, actually, sprinkled powdered  
13 asbestos on her -- was it on her pleura or --

14 A On her lung.

15 Q On her lung?

16 A Yes.

17 Q And it was for a heart condition; right?

18 A Yes.

19 Q Okay. Anytime doctors do new and novel things and  
20 they think it's interesting, a lot of time they submit it  
21 to journals, right?

22 A Correct.

23 Q Do the journals rubber stamp them and say, we think  
24 this works, or what are they doing?

25 A They're just figuring out, are these reputable people

1 and is this of interest to our readers?

2 Q Okay. And, in fact, as far as medicine goes, we do  
3 lots of things that, actually, cause harm to the body  
4 to -- but depending on the situation, we choose to do them  
5 because we might be able to help somebody; right?

6 A Of course.

7 Q That -- you brought up chemotherapy; right?

8 A Yes.

9 Q And, in fact, in this case, Mr. Seay had talc  
10 injected into his chest -- chest area; right?

11 A Correct.

12 Q To prevent the liquid from building back up; true?

13 A Yes.

14 Q You would not do that unless there was an extreme  
15 scenario; right?

16 A Exactly.

17 Q You were asked again about the Selikoff and Lee book.  
18 Okay. I'm not going to open it up again. Do you remember  
19 this?

20 A I do.

21 Q We saw this yesterday. Now, you understand that John  
22 Crane was selling asbestos-containing gaskets; right?

23 A I do.

24 Q Okay. Who was in a better position in 1978, 1972,  
25 1960 to test John Crane's gaskets to see what kind of

1 asbestos they released or what levels --

2 MR. TIVIN: Objection. Beyond the scope.

3 MR. PANATIER: Your Honor, I'm asking about this  
4 very -- Your Honor, I'm asking about --

5 THE COURT: Yes. Overruled.

6 BY MR. PANATIER:

7 Q Who was in a better position to test John Crane's  
8 gaskets in the '60s or '70s, Dr. Selikoff or John Crane?

9 A John Crane.

10 Q Are you aware that they did?

11 A No. I've never seen any data that they did.

12 Q Okay. Moving on to the issue of Mr. Seay's employer,  
13 Daniel and Celanese. Okay.

14 A Yes.

15 Q Now, you testified, look, Daniel could have done much  
16 more for Mr. Seay; right?

17 A I did, yes.

18 Q And you talked about the fact that Celanese --  
19 there's a shared responsibility for worker safety; right?

20 A Correct.

21 Q Okay. So here's a -- kind of the question area I  
22 want to ask you about, if Celanese had taken precautions  
23 for the asbestos they owned.

24 So you were asked, if Daniel had taken these  
25 precautions, could they have reduced the amount of

1 asbestos that Mr. Seay was exposed to? And you said yes;  
2 right?

3 A Correct.

4 Q If Celanese had had a policy that said, look, if  
5 you're a contractor and you're in an area where there's  
6 asbestos, leave that to us, would that have helped prevent  
7 his asbestos disease?

8 MR. YOUNG: Objection, Your Honor. Foundation.  
9 Beyond -- way beyond the scope.

10 THE COURT: Overruled.

11 THE WITNESS: Absolutely. It would have helped.

12 BY MR. PANATIER:

13 Q If Celanese had been -- well, and let me ask you.  
14 You saw where it said, All employers shall monitor all  
15 employees potentially exposed to asbestos. Do you recall  
16 seeing that?

17 A Yes.

18 Q That included Daniel; right?

19 A Correct.

20 Q And that included Celanese for anybody who was around  
21 while any asbestos was being worked on; right?

22 A True. Any of their people.

23 Q Right. Was there anything preventing Celanese, to  
24 your knowledge of the OSHA standard, for placing warning  
25 placards in areas where they knew they had purchased and

1 specified asbestos on the piping and equipment?

2 MR. YOUNG: Same objection, Your Honor. Foundation.  
3 Scope.

4 MR. PANATIER: Your Honor, he was cross-examined on  
5 these issues between Celanese and --

6 THE COURT: All right. Overruled.

7 THE WITNESS: No. Nothing at all prevented them from  
8 taking their own measures to protect their own employees  
9 and anybody else who might, also, benefit.

10 BY MR. PANATIER:

11 Q Okay. You're not under the impression that Celanese  
12 was ignorant that asbestos was in the plant, are you?

13 A No.

14 Q Okay. Now, I want you to assume that the contract  
15 said -- as Mr. Young pointed out, it did say that Daniel  
16 had to have a safety program and follow OSHA. Can you  
17 assume that?

18 A I'll assume that, yes.

19 Q Can you, also, assume that it said you have to follow  
20 the owner's safety rules, the owners being Celanese?

21 A I'll assume that, too.

22 Q Okay. So if the owners had safety rules pertaining  
23 to areas where asbestos is present, then that was  
24 something that Daniel could have addressed with their  
25 employees; fair?

1 MR. YOUNG: Same objection, Your Honor. Assumes  
2 facts. No foundation.

3 THE COURT: Overruled.

4 THE WITNESS: Yes. That's something Celanese could  
5 have insisted on, that Daniel follow its own -- follow its  
6 safety rules. Because that's what the contract said,  
7 according to what you asked me to assume.

8 BY MR. PANATIER:

9 Q All right. Last issue. You were asked about the --  
10 this newsletter from the EPA in 1994?

11 A Yes.

12 Q Do you know who was writing this?

13 A This is a lay publication by its appearance. But I  
14 don't know who, actually, wrote it.

15 Q Okay. So it's a -- it's a mailer. In fact, it's  
16 a -- you can see it's -- it's got the little fold line  
17 where it can be mailed.

18 A And bulk-rate postage. Yes, I see that.

19 Q Okay. They have a sentence that says, Prior to 1970,  
20 asbestos was considered nontoxic; right?

21 A Yes.

22 Q This was prior to 1970; right?

23 A Yes.

24 Q Are you -- do you feel safe in telling this jury,  
25 under oath, that no one here concluded that asbestos is

1 simply nontoxic?

2 A I didn't follow the question. Too many negatives.

3 Q Yeah, there were.

4 Do you know -- let me just ask you. Do you know  
5 whether or not anyone in the Selikoff conference -- let's  
6 see -- six years prior to 1970 concluded asbestos was not  
7 toxic?

8 A There's no indication in that book that anybody had  
9 the opinion that asbestos is nontoxic.

10 Q In fact, as an occupational medicine doctor, what is  
11 the conclusion about asbestos being toxic or not that you  
12 draw from this conference that happened six years before  
13 1970?

14 A That it's highly toxic.

15 Q All right. When OSHA made asbestos the number one  
16 substance they were going to address, was it because it  
17 was nontoxic?

18 MR. TIVIN: Objection. I'll sustain my -- why they  
19 did it or -- no foundation he knows why they did it.

20 MR. PANATIER: I can ask it in a different way.

21 THE COURT: Okay.

22 MR. PANATIER: I'll ask it in a different way.

23 BY MR. PANATIER:

24 Q From your knowledge of OSHA and its handling of  
25 asbestos -- first of all, have they ever said asbestos is

1 nontoxic?

2 A They've never said that ever in their existence.

3 Q And have you ever known OSHA in -- for any of the  
4 substances that you are aware that it regulates to pass an  
5 emergency standard for a nontoxic substance?

6 A Did they ever pass an emergency standard for a  
7 nontoxic substance?

8 Q To your knowledge.

9 A No. They only passed emergency standards for things  
10 that were serious, that were emergencies.

11 MR. PANATIER: No further questions.

12 THE WITNESS: Thank you, sir.

13 MR. TIVIN: Extremely brief, Your Honor.

14 RE-CROSS-EXAMINATION

15 BY MR. TIVIN:

16 Q Dr. Holstein, you were talking about the -- I'll  
17 stand up. I'm sorry.

18 Dr. Holstein, you were talking about the different  
19 things that can cause a gasket to adhere more. Do you  
20 remember that?

21 A Yes.

22 Q And you've talked about the -- what was going through  
23 the line; right? That's one thing?

24 A No. I talked about heat and pressure.

25 Q And time --

1 A So the heat depends in part on what's going through  
2 the line.

3 Q Heat, pressure, and time. We'll say there was three.

4 A Yes.

5 Q Do you know what the heat was on any of the lines  
6 that Mr. Seay worked on?

7 A All over the map, depending on what part of the  
8 process it was.

9 Q Do you know what any -- can you give me a range of  
10 the temperatures that were used in Celanese?

11 A No.

12 Q Okay. Do you know what the pressure was on any of  
13 those lines?

14 A Again, highly variable, depending on what the process  
15 was.

16 Q Can you give me a range? Do you know anything about  
17 it?

18 A No. I can't give you the numbers.

19 Q And, finally, do you know how long any of those  
20 gaskets were in in any of those Celanese plants?

21 A To some degree, yes. Because they had scheduled  
22 maintenance --

23 Q They had scheduled maintenance. But does that mean  
24 they would replace that gasket every single time they  
25 would shut down?

1 A Yes. That's for when they shut down --

2 Q So you're saying when they had a shutdown, they  
3 replaced every gasket in the plant?

4 A Every gasket in the part that they shut down.

5 Q Okay.

6 A No. Every gasket in the machinery that they worked  
7 on --

8 Q And --

9 A -- if they didn't work on the machinery, they didn't  
10 replace the gasket. If they worked on the machinery for  
11 any purpose whatsoever, they would replace the gasket  
12 during a shutdown.

13 Q Right. But you have no idea how -- what was the  
14 preventative maintenance schedule for any machine.

15 A I'm sorry.

16 Q You don't know what the preventative maintenance  
17 schedule was for any machine at the Celanese plant, do  
18 you?

19 A Well, the witnesses told us. They said that --

20 Q There was a shutdown every six months. But he didn't  
21 say what he was working on every six months. He just said  
22 there was a shutdown every six months.

23 A Yes. So --

24 Q So if you're saying at a shutdown, he worked on all  
25 the equipment in the plant, does that mean they -- gaskets

1 connect everything together; right?

2 A No.

3 Q Did they take the whole plant apart?

4 A No. They're saying there were shutdowns of certain  
5 lines and certain pieces of the operation every six  
6 months.

7 Q Right. But you don't know if pump A was being -- the  
8 preventative maintenance schedule for pump A. You have no  
9 idea?

10 A Well, I agree. But I know that pumps, and valves,  
11 and condensers, and vessels were being worked on during  
12 these shutdowns. And when that would happen, they'd be  
13 working on gaskets.

14 Q Right. But my point -- my point is you don't know  
15 the time between the preventative maintenance. You don't  
16 know -- you don't know how long a gasket was lasting --  
17 any particular gasket was in there when Mr. Seay was  
18 working on it; right?

19 A They testified that there were total shutdowns every  
20 two to three years of an entire line. And that there were  
21 partial shutdowns every six months. And then there were,  
22 also, unscheduled breakdowns. And then there were just  
23 smaller repairs that had to be done.

24 Q Right. But you don't know what the time -- you don't  
25 know how old any particular gasket he worked on was;

1 right?

2 A Sure I do. If the preventive  
3 maintenance schedules --

4 Q Well, tell me, what was the length of time of the  
5 gasket that he worked on that he power wire-brushed on  
6 that he described in his -- in -- the first gasket that he  
7 described in his deposition that he power wire-brushed  
8 off, how old was that one?

9 A When they had preventive medicine --

10 Q No. My question is, how old was that one?

11 A But you interrupted me in my answer to your last one.

12 Q I withdraw that question. I'll ask you a new  
13 question.

14 How old was the first gasket that he replaced?

15 A I don't know.

16 Q How old was the second gasket that he replaced?

17 A I don't know. But I can darn sure tell you that some  
18 of those gaskets were stuck on. He testified --

19 Q I didn't ask about it being stuck on. I asked how  
20 old they were. And my point is, you don't know how old  
21 any of them were, right?

22 A I know the -- I know partial information on that.

23 Q But you can't say that they were two months -- you  
24 can't say if it was two weeks old or a year and a half  
25 old. You just don't know. None of us know because none

1 of us have the information; right?

2 A I disagree, sir.

3 Q And what information do you have that lets you know  
4 how old these gaskets were?

5 A Well, when they would do a shutdown of an entire line  
6 every two or three years, those gaskets, some of them  
7 would be -- would have been on there for two to three  
8 years.

9 Q Okay. So we know the oldest, it was two to three  
10 years. Some of them could have been emergency pieces of  
11 equipment. They could have done it the week before;  
12 right? You just don't know. My point is, there's not  
13 enough information to know.

14 A I disagree. And I've given my basis for disagreeing.

15 Q Okay. Do --

16 A And I don't know why we're quibbling over this at 5  
17 minutes before 5:00. Because we have clear-cut testimony  
18 that some of the gaskets were stuck on and needed to be  
19 worked on.

20 Q I'm not asking about the gaskets being stuck on.

21 A Okay. Sorry.

22 Q I'm asking, do you know how old they were? You said  
23 that those are the three things you have to look at, the  
24 temperature, the pressure, and how old it was. And I'm  
25 just saying you don't know the temperature of any of the

1 lines. You don't know the pressure of any of the lines.  
2 And you don't know how old any of the lines were, right?

3 A I know some of them were darn hot. That's a  
4 technical term. And I know that some of them weren't so  
5 hot, which is another technical term.

6 Q So can you give me a range? I mean, do the darn hot  
7 ones bake on, or do the semi-hot ones bake them on?

8 A I can't give you numbers.

9 Q Okay. That's my point. You don't know any of the  
10 information that you said is important to determine if a  
11 gasket is going to bake on.

12 Thank you.

13 A Thank you, sir.

14 MR. PANATIER: Your Honor, may I just ask one  
15 follow-up?

16 MR. TIVIN: I'll withdraw the last question.

17 THE COURT: I'm not sure if it was a question or not.

18 But go ahead.

19 MR. PANATIER: I'm sorry.

20 MR. YOUNG: I am going to be brief because I don't  
21 have any more questions. So --

22 THE COURT: Okay. Thank you, Mr. Young.

23 MR. YOUNG: I just didn't want to get left out.

24 MR. TIVIN: Are you going re-redirect now?

25 THE COURT: I think we did say that, there's no

1 re-redirect.

2 MR. PANATIER: Oh, okay.

3 May the witness be excused, Your Honor?

4 THE COURT: So thank you.

5 THE WITNESS: Thank you, Your Honor.

6 THE COURT: You're excused, sir.

7 THE WITNESS: Sir, you've got a couple of your papers  
8 up here.

9 MR. TIVIN: Okay. Thanks.

10 I'll come get them when everyone's...

11 THE COURT: Let me just speak with the lawyers up  
12 here real quick about the scheduling.

13 (WHEREUPON, a bench conference was held.)

14 THE COURT: All right. Ladies and gentlemen, we have  
15 about -- we've covered a lot of ground, obviously. And  
16 the estimate now is that we should have the case to you by  
17 next Thursday. The lawyers tell me that they're right on  
18 track to do that.

19 We can stay another 30 minutes today and finish up  
20 one of the deposition of the earlier witnesses. It's up  
21 to y'all. I'll let y'all make that call.

22 Do you want to stay for --

23 JUROR #11, ADAJHA BLACK: No.

24 THE COURT: -- 30 minutes and do it or --

25 JUROR #11, ADAJHA BLACK: No.

1 THE COURT: Okay. Well...

2 (Pause.)

3 (WHEREUPON, there was a short discussion amongst the  
4 jurors that was out of the hearing of the court  
5 reporter.)

6 UNIDENTIFIED JUROR: Yes..

7 JUROR #11, ADAJHA BLACK: I object. I have somewhere  
8 to be.

9 THE COURT: All right. Well, this is --

10 JUROR #130, MATTHEW MASON: Do you guys want to do  
11 it?

12 JUROR #11, ADAJHA BLACK: I don't want --

13 UNIDENTIFIED JUROR: We'll leave it up --

14 JUROR #11, ADAJHA BLACK: -- to stay.

15 UNIDENTIFIED JUROR: -- to him. We'll leave it up to  
16 him.

17 JUROR #130, MATTHEW MASON: Who wants to stay?

18 UNIDENTIFIED JUROR: Yes.

19 (Pause.)

20 (WHEREUPON, there was a short discussion amongst the  
21 jurors that was out of the hearing of the court  
22 reporter.)

23 JUROR #130, MATTHEW MASON: We're staying.

24 THE COURT: Okay. It's just 30 minutes. We'll  
25 finish that up.

1 MR. PANATIER: Can I approach, Your Honor?

2 THE COURT: Yes.

3 (WHEREUPON, a bench conference was held.)

4 THE COURT: We've got -- they tell me they're  
5 confident of the schedule. So we don't need to stick  
6 around. I don't want to belabor everything. Everybody is  
7 probably worn out by this point.

8 So we'll just come back tomorrow. Just be back at  
9 9:15.

10 And, ma'am -- ma'am, why don't you let everybody else  
11 get out first.

12 Thank you.

13 UNIDENTIFIED JUROR: Me?

14 THE COURT: I'm talking to the lady in the red  
15 there -- or the orange.

16 UNIDENTIFIED JUROR: Her?

17 THE COURT: Yes.

18 (WHEREUPON, the jury was excused from open court at  
19 approximately 5:02 p.m.)

20 THE COURT: Jury charges. Y'all -- somebody has  
21 already submitted some, but --

22 MR. PANATIER: We have.

23 MR. TIVIN: We submitted ours.

24 MS. MCVEY: I think you've got everyone's.

25 MR. YOUNG: You should have ours, Judge.

1 THE COURT: Okay. I think we do.  
2 I suspect everybody's got the one from the last -- I  
3 think Muldoon trial.  
4 Does everybody have that?  
5 So just to expedite things --  
6 MR. TIVIN: We don't have Muldoon. We have Garvin.  
7 MS. MCVEY: Garvin may be more similar to the facts  
8 of this case than...  
9 THE COURT: So Muldoon was the last one.  
10 MR. PANATIER: Muldoon was a friction --  
11 THE COURT: Y'all can look at both of them.  
12 MR. TIVIN: Yeah.  
13 MR. PANATIER: Muldoon was a friction case.  
14 MR. YOUNG: That wasn't a premises case.  
15 THE COURT: I understand that. But I'm talking about  
16 the general --  
17 MR. ELLIOTT: Negligence and all.  
18 THE COURT: So I'm just trying to make it easier on  
19 everybody.  
20 MR. TIVIN: Sure.  
21 THE COURT: So if y'all look at Garvin and Muldoon  
22 and see what you want in addition to that, that might be  
23 an easier way to do it.  
24 MR. TIVIN: Okay.  
25 THE COURT: That way, we don't have to totally

1 reinvent the wheel.

2 MR. YOUNG: Judge, I think our office was in all the  
3 cases, because we're a thorn in your side. But I think we  
4 tried to use as much of those as we could in ours,  
5 realizing that we have premises Defendants. So we can get  
6 all that to Mr. Tivin at the hotel, all the charges from  
7 those two cases.

8 THE COURT: Well, there's no rush. I just thought we  
9 could center it better.

10 MS. SHOFNER: And I think that in Muldoon, we took  
11 the Garvin charges, and then we sort of did a redline  
12 version for you --

13 THE COURT: Right.

14 MS. SHOFNER: -- to look at where we had identified  
15 what we thought was already covered from the general  
16 charges, and then what we wanted added with the cites.

17 THE COURT: Yes.

18 MS. SHOFNER: Is that how you'd like for us to see if  
19 we could present that --

20 MS. MCVEY: That's, actually, not what y'all did.  
21 Y'all took Garvin and you presented like 20 more -- I  
22 mean, papers, like we did this time. So we're happy to do  
23 it however you --

24 MS. SHOFNER: But I think in the end, we, actually,  
25 combined what we presented. And then all on a redline

1 version -- I didn't know how that would be easiest for  
2 everybody.

3 THE COURT: Well I know since y'all are such good  
4 lawyers -- and I'm not saying that anything but seriously.  
5 I just know that when we get down to the crunch time there  
6 at the end, everybody is going to be worn out, except me,  
7 of course. And -- because I haven't been doing the hard  
8 work like y'all have.

9 But, at any rate, I think it makes -- it's a lot more  
10 efficient if we have some kind of redline thing. And  
11 y'all -- maybe y'all can agree on the premises charge. I  
12 don't know. I haven't looked at them yet.

13 MR. YOUNG: I guess we'll get a directed verdict.  
14 Just kidding, Judge.

15 THE COURT: Well, this is all hypothetical.

16 MR. COLLIER: Your Honor, may I mark this offer of  
17 proof for Dr. Holstein as Court's Exhibit No. 3?

18 (WHEREUPON, Court's Exhibit No. 3 was marked for  
19 identification and admitted into evidence.)

20 (Pause.)

21 MR. YOUNG: Your Honor, let the record reflect that  
22 Court's Exhibit No. 3 is the testimony that we would have  
23 elicited from Dr. Holstein in our offer of proof on the  
24 mucociliary escalator issue. But the parties and the  
25 Court have agreed we could just tender the testimony from

1 his deposition, which would be the same that he would have  
2 given here as our offer of proof on that issue for  
3 Dr. Holstein.

4 Thank you, Your Honor.

5 THE COURT: Okay. So 9:15, 9:15 in the morning.

6 (WHEREUPON, the proceedings were concluded at  
7 approximately 5:07 p.m., to be reconvened on  
8 Friday, October 2, 2015.)

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1 John Crane would join. I have a feeling that when she  
2 voted that the other people just voted because she voted  
3 one way, so everyone else just instantly did the opposite.

4 MR. PANATIER: Adajha Black. She's Juror #3, but she  
5 was Juror #11.

6 There's clearly some strife there. I don't know -- I  
7 don't know yet if it's disruptive, but I wouldn't oppose  
8 excusing her. I am not going to move for it, but I  
9 certainly do not oppose it.

10 THE COURT: Okay. Thank you.

11 I don't know about the sleeping. I mean, I've seen  
12 her with her eyes closed. But as the Gullah saying goes,  
13 not every shut eye is sleeping, not every goodbye is gone.  
14 So I don't know about that.

15 But I do believe that there was palpable tension when  
16 she volunteered her opinion yesterday about whether to  
17 stay. And she appears to be antagonistic towards not only  
18 her fellow jurors, but everybody else in the courtroom.  
19 And she doesn't seem to be concerned that other people  
20 have obligations as well.

21 So I would excuse her. I just think she's probably  
22 better off not serving on this particular jury.

23 Do we have everybody here?

24 THE BAILIFF: What number is that?

25 THE COURT: #11.

1 MR. PANATIER: Before they come in, I just wanted to  
2 speed things up. I've got the transcripts for the videos  
3 that are going to be played.

4 What court number are we up to?

5 THE COURT REPORTER: 4.

6 MR. PANATIER: So the next one is 4?

7 THE COURT REPORTER: Yes.

8 MR. PANATIER: So this one -- the video cuts for  
9 Charles Laubly will be 4. The video cuts for Dr. Kradin  
10 will be 5. And the video cuts for George McKillop will be  
11 6.

12 And those are all just Court's Exhibits of the  
13 transcripts of the videos we're going to play this morning  
14 so the court reporters don't have to take it down.

15 (WHEREUPON, Court's Exhibit Nos. 4, 5, and 6 were  
16 marked for identification and admitted into evidence.)

17 MR. PANATIER: We'll finish with Ronnie Thompson from  
18 a few days ago. That's got about 46 minutes.

19 Then we have three more videos. Dr. Kradin is an  
20 hour and 40 minutes. Laubly is 17 minutes. And there's  
21 one more. McKillop is about an hour. I added it all  
22 together for all the video today. It's 3 hours and 45  
23 minutes.

24 THE COURT: Did you use your calculator?

25 MR. PANATIER: Of course. 3 hours and 45 minutes.

1           And then we have two live witnesses. We have Linda  
2 Seay and Angie Keene. And those would each be fairly  
3 short.

4           So I was going to propose that we can -- we can go  
5 until lunch, you know, with all video, take a lunch. That  
6 would get us 45 minutes of video after lunch, and do the  
7 two live witnesses. Or if Your Honor wanted to, we could  
8 just go a few breaks, not do lunch, and just go straight  
9 through. But I don't have a preference. But that might  
10 be an option.

11           THE COURT: Well, let's just see how far we get.

12           MR. PANATIER: Okay.

13           THE COURT: I'd probably be leaning towards not doing  
14 a lunch.

15           MR. PANATIER: Well, we'll stop between each video.  
16 And you tell us when to stop for good, if you want to take  
17 a break.

18           MR. YOUNG: Right. Judge, I don't mean to be -- but  
19 would you be okay with us leaving, even if it's early, if  
20 we do that?

21           THE COURT: I'm not sure what you're asking me. Once  
22 you get through with all the --

23           MR. YOUNG: Yeah.

24           THE COURT: Yeah, I mean.

25           MR. YOUNG: Okay.

1 MR. PANATIER: We had planned to have an early day  
2 because that's it for our evidence, but for the corporate  
3 reps next week, so.

4 THE COURT: Okay. So --

5 MR. YOUNG: And, Judge, could we just go ahead and  
6 put on the record that, you know, we're holding the case  
7 open for our corporate rep. That we're not waiving the  
8 right to move for a directed verdict at the close of the  
9 Plaintiffs case until they, actually, rest --

10 THE COURT: Yeah.

11 MR. YOUNG: -- after our corporate reps.

12 MR. PANATIER: We agree to that. We stipulate to  
13 that.

14 THE COURT: Okay.

15 MR. YOUNG: Thank you, Your Honor.

16 THE COURT: Juror #11, can you tell her to bring all  
17 her stuff and come out here, please?

18 THE BAILIFF: Yes, sir.

19 (WHEREUPON, Juror #11, Adajha Black, entered the  
20 courtroom.)

21 THE COURT: All right, ma'am. You're excused.  
22 Thank you very much for your service.

23 Okay. You can bring the jury out.

24 (WHEREUPON, Juror #11, Adajha Black, exited the  
25 courtroom.)

1 THE COURT: Good morning, ladies and gentlemen.  
2 We're going to get underway. I think the plan is --  
3 from what I've been forecast by the attorneys is we have a  
4 number of witnesses today. Some of them will be appearing  
5 by video. But we're going to try to push through and take  
6 shorter breaks.

7 And, hopefully, we'll -- they're still ahead of  
8 schedule. So, hopefully, we can end early today. We  
9 probably won't take lunch in the hopes of getting through  
10 by the early afternoon and letting everybody go home.

11 Does that suit everybody?

12 (WHEREUPON, the jurors indicated in the affirmative.)

13 THE COURT: Yes, sir. Mr. Panatier.

14 MR. PANATIER: Thank you, Your Honor.

15 Good morning, everybody.

16 The first thing I'm going to do is just read in a  
17 stipulation on the reasonable and necessary costs of  
18 medical treatment for Mr. Seay. The parties have  
19 stipulated that Mr. Seay's medical bills, the reasonable  
20 and necessary medical bills, were \$280,457.91. We'll put  
21 that up at the end so you don't have to memorize it.

22 Your Honor, we're going to now continue the  
23 deposition -- the video deposition of Ronnie Thompson.

24 And let us know if that's too loud.

25 Okay. Go ahead.

1 (WHEREUPON, Court's Exhibit No. 2 resumed being  
2 played in open court.)

3 MR. PANATIER: Your Honor, that's the conclusion of  
4 Ronnie Thompson's deposition. We can start the next  
5 deposition now, if you'd like.

6 THE COURT: It lasts how long, you said?

7 MR. PANATIER: This one is Dr. Kradin. He's a  
8 pathologist. So it's got our direct and the  
9 cross-examination. And it's about an hour and 42.

10 THE COURT: Is everybody okay? Do you want to take a  
11 little break?

12 JUROR #130, MATTHEW MASON: We're good.

13 THE COURT: I can't see over there. Do y'all want to  
14 take a short break? How about let's just take about a  
15 five-minute break, and then we'll resume.

16 (WHEREUPON, the jury was excused from open court at  
17 approximately 10:18 a.m.)

18 THE COURT: Let's take about five minutes.

19 (WHEREUPON, a break was taken.)

20 THE COURT: Okay. We're ready to go.

21 Are they ready?

22 THE BAILIFF: Yes.

23 THE COURT: Okay. Thank you.

24 (WHEREUPON, the jury came into open court at  
25 approximately 10:26 a.m.)

1 THE COURT: All right. Yes, sir.

2 MR. PANATIER: At this time, the Plaintiffs call  
3 Dr. Richard Kradin by video, a pathologist. And this is  
4 our direct examination and the Defendants  
5 cross-examination.

6 (WHEREUPON, Court's Exhibit No. 5 was played in open  
7 court.)

8 MR. PANATIER: Your Honor, at this time, we would  
9 offer Dr. Kradin as an expert in pathology and  
10 pulmonology.

11 MR. COLLIER: No objection.

12 MR. ELLIOTT: No objection.

13 THE COURT: Okay. He's qualified.

14 MR. PANATIER: Go ahead.

15 (WHEREUPON, Court's Exhibit No. 5 continued to be  
16 played in open court.)

17 MR. PANATIER: We're just going to skip to section.  
18 Our editing messed up a little bit. But we can skip it  
19 real fast. It will just take a minute.

20 (Pause.)

21 MR. PANATIER: Okay. We've got it.

22 (WHEREUPON, Court's Exhibit No. 5 continued to be  
23 played in open court.)

24 MR. PANATIER: That's the end of that video, Your Honor.

25 THE COURT: Okay. Ladies and gentlemen, we'll take

1 a -- about a 15- or 20-minute break. The -- what I  
2 decided to do was, with the Clerk's help, order y'all just  
3 some food back -- that you have back there, just in  
4 gratitude for your patience and cooperation.

5 And thank you for your service.

6 Now, before you think I'm really generous, remember  
7 that we paid for that with your tax money. So we have, in  
8 fact, accomplished the ultimate government act. We're  
9 bribing you with your own money.

10 We'll take about a 20-minute break.

11 Thank you.

12 (WHEREUPON, the jury was excused from open court at  
13 approximately 12:12 p.m.)

14 THE COURT: We'll go ahead and take about a 20-minute  
15 break.

16 (WHEREUPON, a break was taken.)

17 THE COURT: Mr. Panatier, you've got about 20  
18 minutes -- I'm sorry. How much longer is the --

19 MR. PANATIER: Okay. So I'm going to do the  
20 corporate rep for John Crane next -- or, no, I'm sorry --  
21 an older corporate rep for Celanese that's like 17  
22 minutes. Then I'm going to put on Angie Keene for 15  
23 minutes. Then I'm going to put on the video of George  
24 McKillop, the corporate rep for John Crane, and then Linda  
25 Seay. And then I'll be done today.

1 THE COURT: How much is that last video?

2 MR. PANATIER: The last video is one hour, McKillop.

3 THE COURT: Okay. So you can go ahead and bring the  
4 jury in.

5 MR. COLLIER: Your Honor, I need to -- can I do this  
6 offer of proof for Dr. Kradin real quick?

7 THE COURT: Yeah. Go ahead.

8 MR. PANATIER: Does it include my questions? You can  
9 do this anytime.

10 MR. COLLIER: Okay. I'll wait.

11 MR. PANATIER: Okay.

12 MR. COLLIER: I'm not sure what questions you have.  
13 Because I just pulled out the specific questions. But I  
14 can give you the deposition, if you want to look at it.

15 (WHEREUPON, the attorneys had an off-the-record  
16 discussion among themselves that was out of the hearing  
17 of the court reporter.)

18 (WHEREUPON, the jury came into open court at  
19 approximately 12:48 p.m.)

20 THE COURT: So it sounds like, from what I've been  
21 told, that we have about two more hours left today. So  
22 we'll try to push through that. It might be a little  
23 longer, but that's the good faith estimate.

24 So, yes, sir, Mr. Panatier.

25 MR. PANATIER: Thank you, Your Honor.