

1 B-126,986
2 RUSSELL ALLEN, ET AL * IN THE DISTRICT COURT OF
3 VS. * JEFFERSON COUNTY, TEXAS
4 AMERICAN PETROFINA, ET AL * 60TH JUDICIAL DISTRICT
5
6 A-134,614
7 FRENCH HICKS, ET AL * IN THE DISTRICT COURT OF
8 VS. * JEFFERSON COUNTY, TEXAS
9 BETHLEHEM STEEL CORP., ET AL * 58TH JUDICIAL DISTRICT
10
11 B-141,242
12 ROOSEVELT SCOTT * IN THE DISTRICT COURT OF
13 VS. * JEFFERSON COUNTY, TEXAS
14 AMERICAN OPTICAL CORP., ET AL * 60TH JUDICIAL DISTRICT
15
16 A-136,143
17 KEITH GIBLIN, ET AL * IN THE DISTRICT COURT OF
18 VS. * JEFFERSON COUNTY, TEXAS
19 MOBIL OIL CORPORATION, ET AL * 58TH JUDICIAL DISTRICT
20
21 E-141,216
22 JOSEPH E. BARNARD, ET UX * IN THE DISTRICT COURT OF
23 VS. * JEFFERSON COUNTY, TEXAS
24 ALLIED-SIGNAL, INC., ET AL * 172ND JUDICIAL DISTRICT
25
26 VIDEO DEPOSITION OF JACK E. PETERSON, P.E., Ph.D.
27
28 TAKEN ON MARCH 26TH, 1993

1 A-140,498
2 JOYCE A. BORNE, ET AL * IN THE DISTRICT COURT OF
3 VS. * JEFFERSON COUNTY, TEXAS
4 ALLIED-SIGNAL, INC., ET AL * 58TH JUDICIAL DISTRICT
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11 VIDEO DEPOSITION OF
12 JACK E. PETERSON, P.E., Ph.D.
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20 On March 26th, 1993, the video deposition of
21 Jack E. Peterson, a Witness in the above-styled cause,
22 was taken at the instance of the Plaintiffs at the
23 Marriott Suites, 701 A. Street, San Diego, California,
24 pursuant to Stipulation of Counsel contained herein.
25

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1 S T I P U L A T I O N

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4 IT IS STIPULATED AND AGREED between Counsel
5 for the parties hereto that the deposition of the
6 Witness named herein is taken pursuant to Notice
7 attached hereto.

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9

10 IT IS FURTHER STIPULATED AND AGREED that
11 the Witness may sign said deposition before any duly
12 authorized and acting Notary Public for the appropriate
13 area in which signature is obtained.

14

15

16 IT IS FURTHER STIPULATED AND AGREED that
17 this deposition, or any part of same, may be used upon
18 the trial of this cause with the same force and effect
19 as if the Witness were present in Court and testifying
20 in person.

21

22

23 IT IS FURTHER STIPULATED AND AGREED that
24 all objections, other than those that relate to the form
25 of the question and responsiveness of the answer, are

1 hereby preserved and may be made at the time any
2 testimony herein is sought to be offered upon the trial
3 of this cause, despite no objection having been made at
4 the time the testimony was taken.
5
6

7 IT IS FURTHER STIPULATED AND AGREED that
8 Rick Smith, a Certified Shorthand Reporter in and for
9 the State of Texas, may act as a Certified Shorthand
10 Reporter in and for the State of California for purposes
11 of swearing the witness in this deposition.
12
13

14 IT IS FURTHER STIPULATED AND AGREED that
15 the original deposition will be given To Joseph C.
16 Blanks for safekeeping and for use at the time of trial.
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1 E X H I B I T S I N D E X

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4 DEPOSITION OF JACK E. PETERSON, P.E., Ph.D.

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7 March 26th, 1993

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11 EXHIBIT NO. DESCRIPTION PAGE

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14 280207 "Resume" of Jack E.
15 Peterson, P.E., Ph.D. 213

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1 JACK E. PETERSON, P.E., Ph.D.,
2 having been duly sworn, testified as follows, to-wit:
3 EXAMINATION BY MR. BLANKS:

4 Q. Good morning, sir. Would you please
5 introduce yourself to the Ladies and Gentlemen of the
6 Jury.

7 A. I am Jack Edwin Peterson.

8 Q. How old a man are you, Mr. Peterson?

9 A. Just 65 a couple of months ago.

10 Q. And what is your profession, sir?

11 A. I am a consulting industrial hygienist.

12 Q. How long have you been doing that kind of
13 work?

14 A. I -- I have been in industrial hygiene
15 since 1953. I have been a consultant since - oh, about
16 1970 or so.

17 Q. So that we can get acquainted, would you be
18 kind enough to just summarize in a chronological manner
19 your educational background leading on up to when you
20 started to - to go to work as an industrial hygienist.

21 A. I have a Bachelor's degree with honors in
22 chemical engineering from Washington State College, now
23 the university, in 1951; a Master of science in chemical
24 engineering from the University of Michigan in 1952,
25 and a Ph.D in industrial health from the University of

1 Michigan in 1965 - 1968. I will get these years
2 properly. I -- That is my educational background. I
3 have done other things obviously.

4 Q. Now, I see I have already gotten off on the
5 wrong foot with you by not referring to you as
6 Dr. Peterson. You will have to forgive me.

7 A. You are forgiven.

8 Q. Oh, thank you. Could you tell us then
9 about your work career and again in summary fashion ---

10 A. (Interrupting) All right.

11 Q. --- so that we can have an overview.

12 A. After I got my Masters degree in 1952, I
13 went to work for Dow Chemical in Midland, Michigan on a
14 special assignments program. This is a program where I
15 worked six weeks here and six weeks there for about a
16 year. My last such assignment was with the industrial
17 hygiene group. And I stayed with that group for the
18 remainder of my time at Dow until I left in 1965 to go
19 back to school to work on my Ph.D. in industrial health.

20 After receiving my Ph.D., I went across the
21 lake to Milwaukee where I had a joint appointment with
22 Marquette University and the Medical College of
23 Wisconsin.

24 In 1980 I left the - 1975 I left the
25 Medical College in favor of half-time consulting. In

1 1980 I left the medical - or left Marquette University
2 in favor of full-time consulting.

3 In the meantime in 1977 I had accepted a
4 10-percent-of-the-time appointment as professor in
5 occupational and environmental health sciences at the
6 University of Illinois. And that sort of petered out
7 over the years. I'm still called a visiting professor
8 with that school.

9 And in that period of time I also became a
10 clinical professor of preventive medicine at the Medical
11 College of Wisconsin. In 1984 I began doing some
12 teaching at the University of Wisconsin Parkside campus
13 in addition to consulting full time.

14 I -- I actually taught at Parkside for
15 three years as a professor of allied health. I left
16 Parkside in 1986, and I have been simply a full-time
17 consultant ever since then.

18 Q. I missed the date when you left Marquette
19 and began full-time consulting. I'm sorry.

20 A. 1980.

21 Q. And I gather you are still working as a
22 consultant in the industrial hygiene area today?

23 A. I am.

24 Q. Since you left Dow, have you served as a
25 consultant for Dow?

1 A. Yes.

2 Q. Are you currently serving as a consultant
3 for Dow in any matters?

4 A. Only in litigation.

5 Q. What - what areas of - or what sort of
6 problem areas does the litigation that you are
7 consulting on involve?

8 A. Currently there is only one case, and
9 that's one of the ones that you are involved in, the
10 Brown case; and I am retained as an expert by Dow.

11 Q. How long have you been functioning on - on
12 that case?

13 A. Oh, a week maybe, two weeks.

14 Q. Have you been retained by any other
15 companies in litigation as a consultant currently?

16 A. At any one time I'm probably working on 12
17 to 15 cases, and that is certainly the situation today.

18 Q. Any of these cases out of Beaumont?

19 A. No, none except for the Brown case.

20 Q. Have you been in the past hired as a
21 consultant or an expert in connection with a Beaumont
22 asbestos case called Thibodeaux?

23 A. No, sir.

24 Q. You don't recall ---

25 A. (Interrupting) I don't recall it.

1 Q. --- roughly this time last year being -
2 being hired as a - as a testifying expert in connection
3 with that mesothelioma case out of Jefferson County,
4 Texas?

5 A. Gee, I may have been. I don't recall it.
6 Sorry.

7 Q. Do you keep your litigation files after the
8 cases are disposed of?

9 A. Generally not.

10 Q. Are you hired to - to testify in connection
11 with this Beaumont case that we have been speaking of,
12 the current one?

13 A. Nobody has talked about testimony. I'm
14 simply consulting with the attorneys representing Dow at
15 the moment.

16 Q. So, you understand that you are serving as
17 a consulting rather than a testifying expert?

18 A. I may testify. I just don't know yet.

19 Q. I see.

20 A. We haven't talked about that.

21 Q. What - what kind of papers and things did
22 you look at to prepare for your deposition today?

23 A. Just the Brown deposition transcript.

24 Q. Did you bring a copy of that with you
25 today?

1 A. No.

2 Q. Whose testimony was it that you looked at?

3 A. Mr. Brown.

4 Q. And what - what did you learn from reading
5 that transcript that - that you can share with us now?

6 A. Not a great deal. It's very difficult to
7 get much information from that transcript. Of most
8 interest was that Mr. Brown had apparently spent some
9 time in Michigan at a Dow establishment. The amount of
10 time is not at all apparent from his deposition. It was
11 in 1964, however, I believe.

12 Q. And you were just barely still with Dow at
13 that time?

14 A. Yes, I left Dow in '65, actually in August.

15 Q. So, you spent the next roughly two to three
16 years working on your doctorate?

17 A. Yes, it took me three years.

18 Q. You weren't employed during that time?

19 A. No, I was not.

20 Q. Nor doing any consulting work for Dow
21 during that time?

22 A. No, I did no consulting work of any kind in
23 that period.

24 Q. Did you form any opinions about Mr. Brice
25 Brown and his exposures at the - or alleged exposures at

1 the Dow plant in Michigan?

2 A. I have some opinions. Mr. Brown was a
3 pipefitter and apparently was working on new
4 construction wherever he was working. He said both
5 Saginaw and Mayville. I don't know of any Dow
6 establishment in Saginaw. And I don't know of any in
7 Mayville, Michigan. I assume it was Midland. I --
8 Since he was working in new construction as a
9 pipefitter, my opinion is that his exposures to asbestos
10 would have been minimal.

11 Q. What do you base that on, sir?

12 MR. PAPPAS: Excuse me,
13 Mr. Blanks. Could I ask you to speak
14 up just a hair, please, so that we can
15 hear you down here.

16 MR. BLANKS: You may ask.

17 MR. PAPPAS: I'm asking.

18 MR. BLANKS: Okay.

19 A. The knowledge that I have of the exposures
20 of insulators handling insulation that contains asbestos
21 is that probably most of them were exposed to
22 concentrations of asbestos well below the threshold
23 limit value for asbestos at that time. And also my
24 knowledge as an industrial hygienist tells me that
25 people who were not directly handling the material were

1 exposed undoubtedly to far less than were the
2 insulators.

3 (By Mr. Blanks)

4 Q. What aspects of your experience leads you
5 to that last conclusion?

6 A. Several. First is the fact that I have had
7 occasion to measure breathing zone concentrations of
8 people doing various things, and to measure
9 concentrations of the same kinds of things in the
10 breathing zones of people who weren't doing those
11 things. Secondary people always have much lower
12 exposures than the primary people. So, that's been my
13 direct experience as an industrial hygienist.

14 Furthermore, I know something about the
15 habits of small particles or fibers drifting in the air,
16 and know that in general they disperse as a gas or a
17 vapor would; and the further you get from the source,
18 the smaller the exposure that you will have because of
19 this dispersion.

20 Q. You've mentioned measuring the breathing
21 zones of people doing different tasks. And I know you
22 are speaking somewhat generally now. Could you be more
23 specific. Have you measured - taken dust samples in the
24 breathing zones of people doing asbestos insulation
25 work? Is that what you meant to say?

1 A. No. In fact, I have not. It has been
2 other kinds of work.

3 Q. What other kinds of work would we be
4 talking about that you are generalizing from?

5 A. In the asbestos area, measuring the
6 breathing zones of people around where
7 asbestos-containing gaskets are being handled. These
8 are not insulation materials, but they do contain
9 asbestos. I have measured the breathing zones of
10 welders for welding fume and the breathing zones of
11 people in the vicinity of welders for welding fume.
12 Those are the two circumstances that come to mind.

13 Q. So, you have done no monitoring of people
14 working directly with asbestos-containing thermal
15 insulations or the cement products or the - the other
16 related products in - in an industrial setting; is that
17 so?

18 A. That's true. The only - the closest I came
19 to that was directing some work in that area.

20 Q. When and where would that have been, sir?

21 A. That was in 1984 at the Long Beach Naval
22 shipyard where I directed the activities of a group of
23 industrial hygienists monitoring the removal of
24 asbestos-containing materials from the battleship
25 MISSOURI.

1 Q. What sort of techniques were being used in
2 that task to control the dust from the - the handling or
3 removal of the insulation?

4 A. The generalized modern techniques were
5 being used; that is, the insulation was soaked with what
6 is called amended water prior to be - prior to being
7 touched. The people doing the job wore what is
8 euphemistically called moon suits and respiratory
9 protective equipment while doing the job.

10 Q. And the respiratory protective equipment
11 would have consisted of what - what sort of gear?

12 A. I don't remember at the moment.

13 Q. I mean are we talking about like an airline
14 respirator, a supplied-air source or a mechanical filter
15 respirator or what?

16 A. My recollection is that some of the people
17 wore some - the airline respirators and others did not.
18 They wore the air-purifying respirators.

19 Q. So, like the people in the moon suits that
20 were in the direct proximity or handling the insulation
21 probably had the - the air-fed respirators?

22 A. Yes.

23 Q. And those that were disposing of the
24 asbestos in the bags and - and handling it after it had
25 been removed and put in a bag were wearing filtering

1 respirators?

2 A. That's my recollection, yes.

3 Q. The amended water that you spoke of, what
4 was that; something that had like wetting agents in it?

5 A. That's correct.

6 Q. And what is the purpose of that,
7 Dr. Peterson?

8 A. The purpose of it is to wet the insulation
9 which sometimes is difficult to wet particularly if it
10 contains amosite asbestos.

11 Q. And that was the kind of insulation that
12 was in this battleship, amosite-containing insulation?

13 A. Oh, yes, certainly.

14 Q. What, like a Unibestos product?

15 A. I have no idea whose product it was. But I
16 know that when the battleship MISSOURI was insulated,
17 that the Navy called for amosite-containing insulation;
18 so, it must have been.

19 Q. What - what other industrial hygiene
20 controls or hygienic controls were used during this
21 removal besides the wetting, the wet methods and the -
22 the air-fed respirators and special clothing?

23 A. We isolated the areas that the people were
24 working in, specifically the engine room and boiler
25 room, depending upon where they were working, from the

1 rest of the ship using polyethylene sheet and made
2 sure that these areas had lower air pressures within
3 them than did the remainder of the ship so that any
4 leaks through the seals were in toward the contaminated
5 area.

6 Q. You accomplished this by means of some sort
7 of an exhaust ventilation system I suppose to maintain a
8 suction?

9 A. My memory of this is not real good because
10 I didn't plan that part of it at all. The only thing
11 that I was in charge of was monitoring the exposures of
12 these people.

13 Q. Uh-huh.

14 A. And I was only on the ship once when the
15 removal was taking place. And I don't recall a great
16 deal about how these things were accomplished.

17 Q. You have seen other asbestos abatement
18 projects along the way in the last few years I would
19 suppose?

20 A. That's correct.

21 Q. How would one -- After - after you've
22 isolated the work area, how would one maintain a
23 negative air pressure inside that work space typically?

24 A. Typically one uses a blower that takes air
25 from inside the containment volume and discharges that

1 air through high efficiency particulate aerosol filters
2 or Hepa filters to the outdoors or to the remainder of
3 the space.

4 Q. So, this would be an example of a form of
5 exhaust ventilation if we are speaking in terms of
6 general principles I suppose?

7 A. It certainly is a form of exhaust
8 ventilation. We would call it general exhaust
9 ventilation.

10 Q. And - and besides maintaining a negative
11 air pressure to where you would be not allowing any of
12 the asbestos dust to escape outside the enclosed area,
13 you are also I suppose removing the dust that is being
14 generated in the removal of the insulation and capturing
15 it in - in this high efficiency filter that you
16 mentioned?

17 A. That's the theory of what's going on.
18 Actually very little dust is generated if this job is
19 being done properly.

20 Q. Because of the wetting?

21 A. Because of the wetting and the careful
22 removal techniques that people use.

23 Q. Could you describe what you observed
24 about - in the nature of careful removal techniques.

25 A. Rather than describing how they do it, I

1 can tell you how they don't do it; that is, they don't
2 take pieces of insulation off and throw them on the
3 floor and walk on them and so forth. Instead they
4 handle each piece of insulation rather carefully,
5 removing it from the pipe or the boiler or whatever and
6 putting it in a plastic bag. The plastic bag before
7 being removed from the area is then encased in another
8 plastic bag, both of them being sealed, so that
9 asbestos-containing materials are not allowed to - to
10 get out of the area directly, except within a sealed
11 bag.

12 Q. What - what is the problem with just
13 dropping the asbestos insulation on the floor and then
14 someone stepping on it? I mean what is the consequence
15 of that?

16 A. It gets spread around is all.

17 Q. Does this end up - what, generating more
18 particles that can be turned into airborne dust at some
19 point?

20 A. Not necessarily. Just a mess to clean up.
21 And the clean up itself may do things, depending upon
22 whether the asbestos-containing material has dried out.

23 Q. I see. So, if it is dry, then just the
24 sweeping or shoveling it up in itself is a - a bit of a
25 dust-making activity, isn't it, when it's dry?

1 A. I -- I suppose it can be. I have never
2 observed it; so, I don't know.

3 Q. Did you ever observe the removal or
4 installation of asbestos insulation in a chemical plant
5 or a refinery?

6 A. No.

7 Q. So, you were telling us then that you were
8 monitoring for dust in the air where these men were
9 doing the removal in the battleship in Long Beach is
10 where we started on this digression.

11 A. That's what I was doing, yes. Or what the
12 crew was doing. I wasn't actually there doing it.

13 Q. All right, sir. Well, have you ever
14 personally monitored and - for airborne dust-containing
15 asbestos yourself?

16 A. Sure, several times.

17 Q. This would have been in connection with the
18 asbestos-containing gaskets?

19 A. Well, that's one such instance, yes.

20 Q. Can - can you tell us about any other times
21 that you recall?

22 A. I have monitored the breathing zones of
23 people installing these asbestos-containing gaskets in
24 small engines. I have monitored the brake jobs being
25 done on buses two or three times where the brake shoes

1 are asbestos-containing materials.

2 I have monitored the turning of such brake
3 shoes on lathes for buses. I recall one time when I
4 simulated or had an exposure simulated in a building
5 where a maintenance man did some work wearing air
6 sampling equipment. And there undoubtedly were more,
7 but those are the ones that come to mind.

8 Q. What was the point or the reason for -- The
9 point of or the reason for your doing the monitoring of
10 the men who were removing the asbestos insulation on the
11 battleship? And I say "you are doing it," I mean your -
12 your crew or staff doing it.

13 A. It was part of our contract.

14 Q. Well, I mean why would anybody spend money
15 doing something like that when you are using all of
16 these controls that you spoke of that - that were aimed
17 at eliminating the dust generation?

18 A. The Navy was interested in determining what
19 their - the exposures of the people would have been had
20 they not been wearing the respiratory protective
21 equipment.

22 Q. You feel like based on 30 years of
23 experience that you could have told the Navy what those
24 exposures would have been in the absence of doing
25 monitoring with any - any high level of accuracy or

1 certainty?

2 A. Probably.

3 Q. You could express it in terms of the number
4 of fibers per cc of asbestos dust in the air?

5 A. Based upon work that I had observed or had
6 been doing previously, yes. If the job is done properly
7 with the asbestos-containing material being wetted
8 properly and handled carefully, exposures even without
9 respiratory protective equipment would be quite low.

10 MR. BLANKS: I will have to
11 object to the responsiveness of that.

12 (By Mr. Blanks)

13 Q. And I will ask you, then, if that opinion
14 is based on these examples of asbestos monitoring that
15 you have personally done; that is, the gasket
16 installation and the brake work?

17 A. No. Because as I was talking, I remembered
18 another one; and that is where I monitored the removal
19 of asbestos-containing material from a building in
20 Milwaukee. And I was working with the results of that
21 monitoring and know what those results were.

22 Q. And what - what year, approximately, would
23 that have been in? Sometime in the '80's I suppose?

24 A. Probably the early '80's. I -- I just
25 don't remember.

1 Q. All right, sir.

2 A. Sorry.

3 Q. This would have been removing building
4 materials containing asbestos?

5 A. Yes.

6 Q. Can you tell us generally what kind of
7 materials we are talking about? Would it have been like
8 ceiling tiles or plasters, or do you recollect at all?

9 A. The material removed was ceiling tile,
10 acoustical plaster, thermal insulation. I'm not sure
11 whether they removed any floor tile or not.

12 Q. You say "thermal insulation," are you
13 talking like insulation that would have been used on
14 pipes or - or insulation you would put in walls and
15 ceilings?

16 A. This would be pipe insulation.

17 Q. And was this work in Milwaukee in probably
18 the early '80's done under controlled conditions as
19 well with wet - wet methods and respiratory protection
20 and so on?

21 A. Oh, yes. The method used was very similar
22 to that that was used on the MISSOURI.

23 Q. I see. So, you think you could have given
24 the Navy an accurate value for the asbestos exposures
25 that would have been - they would have had inside the

1 ship areas where they were removing the insulation
2 without doing monitoring?

3 A. Not an accurate value, no. I think I could
4 have told them that based upon the experience that I had
5 had and the material I had read, that if the work is
6 done carefully, that exposures would be below the
7 threshold limit value. But exactly what the levels
8 would be, I certainly couldn't tell them without
9 monitoring.

10 Q. And the reasons that you think the
11 exposures would have been below the threshold limit
12 values would have been in large part because the wet
13 methods were used to prevent the creation of dust I
14 suppose. Would that be true?

15 A. Well, it's - it's the whole method that -
16 that's being used that would result in relatively low
17 concentrations of asbestos-containing materials.

18 And as we talk, I can remember a couple of
19 other cases where I or people working with me monitored
20 the breathing zones of people doing such removal. And
21 almost always the concentrations that we found in the
22 breathing zones of such people were well below the
23 T.L.V. or the P.E.L. at the time.

24 Q. And that would be in cases where you are
25 using wet methods to suppress the dust creation;

1 isolation of the work space from the surrounding area;
2 exhaust ventilation as we have just discussed and
3 careful handling techniques so as not to create any more
4 dust than - than absolutely necessary in the removal of
5 materials; isn't that true?

6 A. I -- More or less true. However, the
7 isolation and the exhaust ventilation don't do anything
8 at all for the workers who are doing the job. They
9 simply prevent the spread of asbestos-containing
10 materials from the contained area to elsewhere in the
11 building or ship or wherever.

12 Q. Oh, the ventilation isn't a factor here
13 because the wet methods result in such a low amount of
14 dust in the air?

15 A. Essential ---

16 Q. (Interrupting) Is that what you are saying?

17 A. Yeah, essentially. That's right.

18 Q. I see. Now, if wet methods were not being
19 used in the ventilation by removing the - or changing
20 out the air in the room and thereby taking dust out,
21 too, would - would help to keep the exposures down, keep
22 the level down, true?

23 A. It depends on where you are making the
24 measurements and so forth. I -- I really can't give you
25 a generalized answer.

1 Q. That means that even with ventilation,
2 there would be some areas in the work space where the
3 dust concentrations would be higher than - than in
4 others?

5 A. Well, sure. In general the closer to where
6 the source is, the higher the concentration is going to
7 be. So, there will obviously be a gradation of
8 concentrations.

9 Q. In a space like the ones you have monitored
10 in, have you done area monitoring within the area so
11 that you can tell us how quickly a dust concentration
12 will decline as the distance from the - you are calling
13 the source increases?

14 A. Only those circumstances that we discussed
15 previously.

16 Q. You mean like the removals in the Milwaukee
17 building and the brake jobs and the gasket installation
18 and that sort of thing?

19 A. No, the welding and that kind of thing that
20 I was talking about. I can't recall any circumstance
21 where I or people working for me monitored the general
22 area in a containment area, if you will. We always
23 monitored outside the containment area as well as the
24 breathing zone of the people doing the work.

25 Q. Okay. So, your monitoring would be very

1 close to the - the person doing the work. That's what
2 you called a breathing zone. What - what does that
3 mean anyway? I mean I have got a picture that's just
4 right around your - your nose, your mouth. But what -
5 what do you mean when you say "breathing zone"?

6 A. Well, the Occupational Safety and Health
7 Administration defines the breathing zone as an area
8 encompassed in a one foot radius of the nose and mouth.

9 Q. So, you would monitor within a one foot
10 radius of the nose or mouth of the person that was
11 actually generating this dust?

12 A. Yes.

13 Q. And then the only other monitoring that was
14 done would have been outside the - the containment area,
15 outside the polyethylene wall or whatever it would be to
16 see if there was any leakage outside?

17 A. Yes, when we are talking about the removing
18 of asbestos-containing material.

19 Q. Okay. But you can't tell us then that
20 within the containment area or even within a work area
21 that is not contained, how - how quickly the
22 concentrations drop off as you move away from what you
23 are calling the source of the dust, can you?

24 A. Not for asbestos, no. I have never made
25 that measurement.

1 Q. Now, you apparently have done a good bit of
2 sampling in connection with welding operations.

3 A. I have.

4 Q. And this is - what, arc welding?

5 A. Yes.

6 Q. Who were you doing these for?

7 A. Mainly welding rod manufacturers in
8 litigation.

9 Q. Any of those in particular or just all of
10 them? There is not too many of them, are there?

11 A. Gee, I don't know. Most of the work that I
12 have done has been for attorneys working for Lincoln
13 Electric, sometimes others. That's been the main one,
14 however.

15 Q. So, what - what did you learn generally
16 about the behavior of particulates that are generated by
17 electric arc welding?

18 A. Quite a lot. Do you have anything more
19 specific in mind?

20 Q. Well, no. I was just trying to get a quick
21 education here and see how it might apply to our
22 asbestos problems since you have offered it as a
23 metaphor.

24 A. Well, when welding fume is freshly
25 generated, it is very small; that is, each particle is

1 very small. These particles for the most part are
2 respirable particles because they are small.
3 "Respirable" referring to the ability of the particle
4 to reach the deep lung on inhalation. Therefore,
5 because of their size, their low mass, they tend to move
6 with air currents.

7 In welding, arc welding, the source of the
8 particles is a source also of heat. And, therefore,
9 everything tends to rise in a plume of heated air. This
10 material readily disperses, however, once the plume
11 expands and cools; so that as the materials drift in
12 air, they can be found elsewhere within the building
13 usually, but in much lower concentration than they are
14 found in the breathing zone of the welder.

15 Q. So, these particles you say are mostly in
16 the respirable size; and that's what - what diameter
17 and - and less?

18 A. Respirable refers to particles that have an
19 aerodynamic diameter of about five micrometers or less.
20 Usually we have a lower cut off at about a tenth of a
21 micrometer because materials that are smaller than that
22 tend to behave like gas molecules; that is, they go in
23 and come right back out again.

24 Those materials that have the greatest
25 ability to remain within the lung once inhaled have

1 aerodynamic diameters on the order of two or three
2 micrometers.

3 Q. Can you tell us anything about the density
4 of these respirable particles that - that are generated
5 in electric arc welding?

6 A. The density varies to a certain extent
7 because the particles that are generated are in general
8 spherical in nature; many of them are hollow. But
9 density is one of those factors that is taken into
10 consideration when one determines aerodynamic diameter.
11 And, therefore, it is not an independent variable.

12 Q. So, you can't tell us what the density of
13 the welding particles are?

14 A. Not right offhand. I don't recall.

15 Q. How do they compare with the density of
16 asbestos fibers of the sort that you would find in
17 thermal insulation materials?

18 A. Well, again, the question really doesn't
19 arise when one is talking aerodynamic diameter because
20 the aerodynamic diameter of a particle refers to its
21 terminal velocity; that is, its settling velocity in air
22 or on other fluid. And everything is referred to a
23 sphere having a unit density, a density of one.

24 And, therefore, if a particle the same
25 diameter as this sphere we are talking about has a

1 density of three, it will fall three times as fast. It
2 will have a settling velocity greater than the density
3 of one particle will have. But when we look at
4 aerodynamic diameter rather than physical diameter,
5 density is part of the equation, if you will. So, it is
6 not independent. And it really doesn't make any
7 difference what the density is.

8 Q. How does the - the fact that these
9 particles are both heated and in a hot gas plume make a
10 difference to their dispersion?

11 A. In welding, in arc welding, the plume
12 rises. This is a common experience of lots of people
13 seeing a plume rise from a hot source. The plume then
14 disperses. As it gets cooler, the plume gets bigger and
15 bigger and bigger until eventually it just goes as much
16 horizontally as it does vertically. So, that's the way
17 we get dispersion with that kind of a plume.

18 Q. So, in fact, because of the heat factor,
19 the welding particles are going to move in still air in
20 a fashion that is in - in some important respects
21 different from what you - you would see with an asbestos
22 fiber in still air, isn't it?

23 A. Yes, because ordinarily the asbestos fiber
24 from asbestos-containing insulation doesn't have any
25 thermal source associated with it.

1 Q. Right. Now, how does wetting the
2 asbestos-containing insulation affect the behavior of
3 the particles that must inevitably be generated or
4 created when the material is being torn apart or sawed
5 or what have you to get it off?

6 MR. CELBA: Well, I'm going to
7 object to the argumentative point of
8 that.

9 MR. BLANKS: Who are you
10 representing?

11 MR. CELBA: Owens-Corning
12 Fiberglas.

13 MR. BLANKS: I should have known.

14 (By Mr. Blanks)

15 Q. All right, sir. We were saying.

16 A. If the particle is wet, then the particle
17 is very large because of the water associated with it;
18 and it probably just drops to the floor if it gets loose
19 from the asbestos-containing material. However, the
20 wetting tends to make sure that particles stick
21 together. They conglomerate. They tend to form one big
22 mass rather than a bunch of little particles no matter
23 what you do with the stuff.

24 Q. Okay. So, even in sawing it or tearing
25 pieces apart, breaking the connections, the wetting

1 tends to - to keep the material sort of cemented
2 together?

3 A. In general, that's correct.

4 Q. And the particles that do get knocked off
5 because they are wet, they tend to be heavier and bigger
6 and fall to the floor instead of being suspended in the
7 air; is that so?

8 A. Well, again, we have this tendency to stick
9 together because of the wetting; and, therefore, we
10 generate very few particles of respirable size if the
11 wetting is done properly.

12 Q. Now, when was it in Dow plants that these
13 methods of isolation, ventilation, wet methods, careful
14 handling of asbestos insulation materials, the use of
15 respiratory protective equipment such as you have
16 described, when did all of these controls come to be
17 used at Dow in connection with - with asbestos
18 insulating work?

19 A. I don't know.

20 Q. Would it be the case then that as of the
21 time you left the company in 1965 that these techniques
22 had not by then been adopted for all asbestos insulation
23 work in Dow plants?

24 A. I don't know.

25 Q. Then I gather that you don't know if any of

1 these methods were being used in Dow plants in 1965 one
2 way or the other, huh?

3 A. That's correct.

4 Q. And I'm wondering, Dr. Peterson, if your
5 consulting work for Dow since you have left them in '65
6 has - has for any reason had you back into Dow plants or
7 facilities where you would have a chance to see what
8 they have been doing in the - in the later years; that
9 is to say the last almost 30 years in handling asbestos
10 insulation materials.

11 A. No.

12 Q. Where did you actually get your training in
13 industrial hygiene?

14 A. At Dow.

15 Q. Okay. So, you really weren't introduced to
16 industrial hygiene in any depth at all in your chemical
17 engineering education?

18 A. That's correct.

19 Q. And, so, you actually learned on the job as
20 it were at Dow beginning somewhere in '52 or '53 -
21 perhaps '53 when you got into that six-week section with
22 the I. H. department, true?

23 A. That's correct.

24 Q. What other special assignments did you have
25 during that first year? What other kind of things did

1 you work on before you migrated to industrial hygiene?

2 A. Oh, I haven't thought about this for a long
3 time. I worked for -- I had one project. My first one
4 was with the -- Oh, my. I have forgotten the
5 department. My job with them was to work on the
6 distillation of benzoic acid.

7 I worked in the glycol plant where glycol
8 ethers were being made. That was the only production
9 job that I had. All the rest of them were research
10 laboratory jobs. I did some research with a material
11 called sulfan for the physical research laboratory.

12 I had a project in the metallurgical
13 laboratory dealing with the breakage of specimens of
14 metal. Those are the only ones that I recall at the
15 moment.

16 Q. What was the point of this - this variety
17 of special assignments? Was this just to help you find
18 some area of interest or help Dow to see if you had any
19 special expertise or potential or what - what was the
20 idea behind this program?

21 A. There were two ideas behind the program.
22 One was to let me become acquainted with Dow and what
23 was going on there; and, secondly, to let at least some
24 Dow people become acquainted with me and my abilities.

25 Q. Well, let's move then to your introduction

1 to industrial hygiene in the last part of your first
2 year with Dow, which I'm surmising would have been
3 sometime in 1953 probably.

4 A. That's correct.

5 Q. Who did you go to work for there?

6 A. Mr. Hoyle, Harold Hoyle.

7 Q. And what was Mr. Hoyle's position at that
8 time in 1953?

9 A. He ran the industrial hygiene group. I
10 don't know what his position was called, but he was the
11 manager of the industrial hygiene group.

12 Q. Could you tell us roughly how large the
13 group was when you started there.

14 A. The group consisted of Harold and two other
15 people: Ed Schneider and Jerry Clock when I became a
16 member of the group.

17 Q. Jerry who, sir?

18 A. Clock.

19 Q. Clock?

20 A. Yeah, C-l-o-c-k, just like o'clock.

21 Q. And were both of those gentlemen industrial
22 hygienists?

23 A. Neither one started out that way. Ed had
24 been with Harold for several years. Jerry had been
25 there for a few months; and, in fact, was only there for

1 a few months after I came on board. He was not in the
2 group very long.

3 Q. So, you ended up in effect replacing him or
4 taking his place in that he did leave soon thereafter?

5 A. In effect, yes.

6 Q. What was Mr. Schneider's background? I
7 mean had he had some professional training before he
8 joined up with Mr. Hoyle in the industrial hygiene
9 department?

10 A. I really don't recall. I don't remember.

11 Q. Had he been a long-term Dow employee to
12 your understanding?

13 A. I just don't recall. It's too long ago.

14 Q. Now, wait a minute. If we were talking
15 about 1943, I would have to give you that point. All
16 right, sir. So, sometime either in 1963 or '64 then you
17 became the No. 3 industrial hygienist in the group?

18 A. No, '53. Not '63.

19 Q. I'm sorry. I'm sorry. Excuse me. Can you
20 tell us about the other people that hired on after you
21 that you can remember, knowing that there will probably
22 be some that you can't recall and some that came and
23 went?

24 A. The person who came after me was Lawrence
25 Silverstein, Larry Silverstein. The person who came

1 after Larry was Arnold Schaffer. And by the time I
2 left, those were the only more or less permanent
3 additions to our staff. We had a number of people come
4 through the group and worked there on their own six-week
5 or eight-week assignments with their group. But
6 there -- I don't recall there being any other permanent
7 additions.

8 We had -- Oh, sorry. Charlie Powell,
9 Charles Powell was there for a few months. He was
10 supposedly going to be a permanent addition to the
11 group, but he left in favor of going to the Public
12 Health Service or someplace.

13 Q. So, by 1965 when you departed the
14 industrial hygiene group, it consisted of - what,
15 Mr. Hoyle, Mr. Schneider was still there,
16 Mr. Silverstein and Mr. Schaffer and ...

17 A. Oh, yes. We had a young lady, Lorna
18 Stolpe, who was working as an analyst for us as well.

19 Q. S-t-o-l-p-e?

20 A. Yes.

21 Q. But to my earlier question, the department
22 consisted of four or five industrial hygienists by 1965
23 and then in addition this lady who was an analyst?

24 A. Yes. That was the group in Midland. By
25 the time I left, there were industrial hygienists at

1 other Dow divisions but not in Midland.

2 Q. And when you described this lady as being
3 an analyst, what - what does that entail? Was she a
4 chemist? What - what was she?

5 A. Lorna was a chemist, yes.

6 Q. What sort of work did she do for you?

7 A. Basically analytical chemistry. She also
8 helped maintain the equipment that we had, did some
9 calibrating of equipment and so forth.

10 Q. Now, did the Midland industrial hygiene
11 group function as sort of a corporate industrial hygiene
12 group; or was its responsibility limited to the plant or
13 plants in the Michigan area?

14 A. Depends on the time frame. When I was
15 there most of the time, the Midland group functioned as
16 the industrial hygiene group for Dow Chemical regardless
17 of division or whatever. When the other divisions began
18 to have their own industrial hygiene people, we became
19 still a corporate group, but more or less in a staff
20 responsibility to the others.

21 Q. So, in the beginning this Midland
22 industrial hygiene group was the group of industrial
23 hygienists responsible for all of the Dow facilities.
24 Then as time passed, some hygienists were hired to
25 actually work in particular plants assigned to - to

1 those plants?

2 A. Yes.

3 Q. And then the Midland group sort of
4 transformed into more of a staff consulting group for
5 these individual plants, is that ...

6 A. That's as I recall it, yes.

7 Q. All right, sir. Do you recall when it was
8 that along the way that hygienists were hired to go work
9 in specific plants, even approximately?

10 A. I don't recall. I really don't - don't
11 remember.

12 Q. I'm assuming perhaps incorrectly that by
13 1965 when you left Dow to go into full-time academia,
14 that there were at least a few industrial hygienists
15 assigned to specific Dow plants. Would that be so?

16 A. That was so, yes.

17 Q. Would you recall, sir, if by 1965 there was
18 an industrial hygienist in any of the Dow Texas plants?

19 A. Yes, I believe there was.

20 Q. Can you recollect who that person was?

21 A. That was Dr. Ralph Langner. Actually Larry
22 Silverstein went to Freeport for a while to work down
23 there. It may have just been a few months. And it was
24 after that I believe that Dr. Langner was hired.

25 Q. And what is this gentleman's first name?

1 A. Ralph.

2 Q. How do you spell the last name,

3 Dr. Peterson?

4 A. L-a-n-g-n-e-r. Ralph is dead. He died of

5 cancer sometime.

6 Q. Now, was Dr. Langner a physician or a

7 Ph.D.; or what - what was his background?

8 A. I know he was not a physician. He had a

9 Ph.D., and I don't recall what in.

10 Q. Can you associate any other industrial

11 hygienists with the Dow Freeport facility?

12 A. No.

13 Q. Were there any other Dow facilities in

14 Texas that you knew of?

15 A. No.

16 Q. Did you yourself ever go to the Dow

17 Freeport plant?

18 A. Yes.

19 Q. Approximately when was that? Sometime

20 between 1953 and 1965, I know.

21 A. Probably in the early '60's, but I -- I

22 don't recall when I went.

23 Q. And what was it that - that would have

24 caused you to go down there? Instructions from above,

25 yeah. No. What - what sort of a problem would you have

1 been confronted with?

2 A. I'm not really sure. I -- I don't have any
3 recollection of why I went there. I remember going, and
4 that's about it.

5 Q. What in those years were the principal
6 products of that plant in Texas?

7 A. As I recall the products, the main products
8 were associated with the chlorination of materials found
9 in petroleum along with magnesium.

10 Q. Are you remembering that at the time you
11 first went to the Freeport plant that there wasn't
12 already an industrial hygienist assigned to that plant?

13 A. No, there was no industrial hygienist there
14 when I went there.

15 Q. So, if your recollection about going in the
16 early '60's is right, then it would follow that
17 Dr. Langner was assigned there sometime around or after
18 the early '60's, but probably before '65, huh?

19 A. That sounds logical.

20 Q. Okay.

21 A. I sure can't vouch for it, however.

22 Q. All right.

23 A. I just don't know.

24 Q. Based on your best recollection, and that's
25 all we have got to work with, what kind of uses were

1 made of asbestos in the Freeport plant?

2 A. I don't know.

3 Q. Were there any uses of asbestos in the

4 chlorination processes?

5 A. Not that I'm aware of, no.

6 Q. Did Dow make its own chlorine there?

7 A. I don't recall. I -- Oh, yes, Dow did make

8 chlorine there.

9 Q. Did they use hooker cells?

10 A. I don't know.

11 Q. Are you familiar with what hooker cells

12 are?

13 A. At one time I could have drawn you a

14 picture, but I can't anymore.

15 Q. Do you recall that they used asbestos as

16 a - as a media in those cells?

17 A. I -- I really don't. I know that there

18 were two or three kinds of electrolytic cells that used

19 asbestos; but whether the hooker cell did, I don't

20 recall.

21 Q. And you don't recall whether Dow's process

22 did or not I suppose?

23 A. I -- I never got involved with that. I

24 just don't remember.

25 Q. Do you recall that you did any kind of

1 sampling or monitoring while you were down at Freeport?

2 A. I don't recall doing so; I might well have,
3 however.

4 Q. Well, during this approximately 12 years
5 that you were with the industrial hygiene group in
6 Midland, how many different plants did you men have to
7 cover?

8 A. My recollection is that Mr. Hoyle did most
9 of the work outside of Midland. But I know that I got
10 over to Ludington once, Freeport once or twice. I'm not
11 sure. Over to Sarnia once and to Dow's Bay City plant
12 several times.

13 Q. Well, where is the Bay City plant?

14 A. In Bay City, Michigan.

15 Q. And in Midland I gather there is at least
16 one Dow production plant?

17 A. Yes.

18 Q. Be there more than one?

19 A. Well, at one time we thought that the Dow
20 plant in Midland was the largest chemical plant inside
21 one fence in the United States if not the world.

22 Q. Is that to say that there were several
23 different production units within this one - one piece
24 of property?

25 A. Many.

1 Q. But there weren't locations away from
2 Midland or away from this - this one spot in Midland? I
3 mean if we are talking about the Midland plant, we are
4 talking about many units; but - but one place, one in
5 the same place?

6 A. Well, we had wells for brine that were
7 outside of the confines of the plant. But all chemical
8 processing was done within a fence really, a fenced
9 area.

10 Q. So, during this period '53 through '65, Dow
11 had plants in about - what, five different places?

12 A. Oh, there were others as well that I didn't
13 get to.

14 Q. I'm sorry. You were just listing the ones
15 you had been to?

16 A. Yes.

17 Q. Excuse me. Can you -- Can you tell us the
18 others that you recall; that is to say ones in addition
19 to these, ones that you didn't go to?

20 A. Well, Dow was running the plant at Rocky
21 Flats, Colorado for the Atomic Energy Commission. Dow
22 had a facility in California in Pittsburg I believe.
23 There was Cliffs-Dow in Canada. Those are the only ones
24 I remember.

25 Q. What was the Dowell division, D-o-w-e-l-l?

1 A. This was a group that did fracturing of
2 strata for oil production as well I believe as the
3 refurbishing of some kinds of equipment such as heat
4 exchangers and so forth.

5 Q. So, this would be oil production
6 related ---

7 A. (Interrupting) Yes, all - all of it.

8 Q. --- equipment? Okay. Now, did you also
9 provide industrial hygiene services out of Midland for
10 the Dowell division in that period '53 to '65 or any
11 part of it?

12 A. I didn't, no.

13 Q. Did the industrial hygiene group?

14 A. Yes.

15 Q. Was there any particular person responsible
16 for that?

17 A. There was, but I don't remember who it was.

18 Q. Do you recall, Dr. Peterson, any other
19 divisions of Dow Chemical Company that got their
20 industrial hygiene services from the Midland group while
21 you were there?

22 A. No, I don't recall. There probably were,
23 but I just don't remember because I wasn't involved in
24 it.

25 Q. I see.

1 MR. ALMQUIST: Joe, why don't we
2 take a break.

3 MR. BLANKS: Well, all right.

4

5 (A BRIEF RECESS WAS TAKEN.)

6

7 (By Mr. Blanks)

8 Q. Dr. Peterson, the work you did in
9 connection with asbestos gasket installation monitoring,
10 was that done at Briggs & Stratton?

11 A. It was done at Briggs & Stratton, yes.

12 Q. They were concerned in their plant about
13 any possible asbestos exposures from the use of these
14 gaskets when they were putting their engines together?

15 A. Correct.

16 Q. Or I guess the installation of the gaskets,
17 wasn't it?

18 A. There were two kinds of jobs: One was
19 installing the gaskets; the other one was unpacking the
20 gaskets and then repackaging gaskets to be sent out as
21 replacements, if you will.

22 Q. These were gaskets that Briggs & Stratton
23 was buying from - from other vendors?

24 A. Yes.

25 Q. What did you find in connection with the

1 unpackaging of these gaskets?

2 A. In none of the jobs did I find an
3 overexposure compared to the T.L.V. or P.E.L. at the
4 time.

5 Q. This work would have been done after '68 I
6 suppose?

7 A. Yes, definitely.

8 Q. After you had left Dow and gotten your
9 Ph.D.?

10 A. Yes.

11 Q. Did you find measurable asbestos fiber dust
12 in the air, though, in connection with these - the
13 handling of these asbestos gaskets?

14 A. I don't recall whether I did or not. I
15 know if I did, the concentrations were very low; but
16 that's the only memory that I have.

17 Q. None of this - this monitoring involved the
18 removal of old gaskets I gather? It was all new - new
19 materials?

20 A. Oh, yes, at Briggs it was all new
21 material.

22 Q. What did -- What did you learn in your
23 studies of the bus brake work?

24 A. There in Milwaukee I recall that there were
25 measurable concentrations of asbestos fiber that were

1 again low. When I did this kind of work in St. Louis,
2 Missouri where they were turning the gaskets on a
3 lathe -- Or not the gaskets, turning the brake shoes on
4 a lathe, I don't recall whether I found any measurable
5 asbestos fiber or not. Again, concentrations were very
6 low.

7 Q. What sort of controls were they using to
8 deal with any dust that was being generated in - in
9 connection with the lathe work, the machining of the
10 asbestos brake parts?

11 A. None.

12 Q. This was done - what, for the city of
13 St. Louis, the municipal bus company?

14 A. Yeah, it was municipal buses. I did the
15 work for an insurance company.

16 Q. Which company was that?

17 A. I believe at that time it was Fred S. James
18 Insurance Brokers.

19 Q. Oh, okay. Did you recommend any - any sort
20 of controls be used in connection with that machining of
21 the asbestos brake parts?

22 A. I don't recall that I did. I may have. I
23 just don't know. I don't remember.

24 Q. You mentioned sampling in connection with
25 the simulated exposure of a maintenance man. Could you

1 describe that scenario to us.

2 A. That was in Kansas City. It was in
3 conjunction with a Worker's Compensation case. And
4 everything took place in a building that had quite a bit
5 of asbestos-containing insulation in it. And what I did
6 was to equip a maintenance man with an air sampling
7 device where I changed the filter two or three times on
8 his shift and had him perform those activities where he
9 might be exposed to asbestos to determine what the
10 concentrations were.

11 Q. So, if I understand you, you equipped him
12 with a personal or personnel monitoring device of some
13 sort?

14 A. Yes, he wore a pump and a filter in his
15 breathing zone.

16 Q. And then he would just go about doing his
17 normal work as a maintenance man, and you were
18 basically sampling for whatever would be ambient
19 asbestos dust in - in his workplace?

20 A. No, it wasn't quite like that. He went
21 about doing his normal work only in that I asked him to
22 do work that would expose him to places where we knew
23 there were - there was asbestos-containing insulation.

24 Q. So, you were sampling him while he was in
25 areas where the asbestos insulation was present?

1 A. Yes.

2 Q. But the work that he was doing when he was
3 being monitored didn't involve the installation or the
4 removal of the asbestos insulation? He was simply
5 working in those - those areas?

6 A. Yeah. Again, it's more complex than that.
7 One of the areas was a soffit area where he simulated
8 doing some work in the soffit area where he actually had
9 to get through about six inches of loose insulation that
10 he was walking through.

11 I also -- In that job they had had a - a
12 rain storm, and material that had been sprayed onto the
13 under side of the roof of the top floor, the ceiling of
14 the top floor, which was the machinery floor, had in
15 many areas dropped onto the floor. It had little piles
16 of asbestos-containing material on the floor of the
17 machinery room. And there I was the simulator. I put a
18 pump and a filter on me and wandered around up there for
19 an hour or so to get an air sample to see what the
20 average would be in that area. So, it was a combination
21 of the two things that I did.

22 Q. So, when you acted as the - I won't say the
23 guinea pig, but the person carrying the pump, you were
24 in an area where sprayed-on, asbestos-containing
25 insulation had fallen off from a roof deck on account of

1 some water damage?

2 A. That's right.

3 Q. And you were just moving about in that area
4 for an entertaining hour?

5 A. For an entertaining hour, yes.

6 Q. Now, the soffit area where this maintenance
7 man was working that had loose insulation in it, are we
8 talking about the kind of insulation like you would have
9 in a - above a ceiling; some sort of a mineral wool
10 insulation or fiberglass, or what - what was it?

11 A. Well, it was supposedly asbestos-containing
12 insulation. I didn't analyze any of the material. I
13 was simply told that it contained asbestos.

14 Q. On top of the soffit?

15 A. Yes, blown-in insulation just as you would
16 have in your home, except that in this case it
17 supposedly contained asbestos.

18 Q. You didn't verify that and really
19 couldn't - didn't even determine what - what the base
20 material was I suppose?

21 A. That's right. It didn't matter. What I
22 cared about was what kind of an exposure he would get to
23 asbestos by wandering through the material.

24 Q. And if there weren't, in fact, any asbestos
25 in that blown-in insulation, then naturally you wouldn't

1 be expecting to find any - any asbestos fiber or much
2 asbestos fiber in your samples?

3 A. That's correct.

4 Q. So, not knowing actually what it was, the
5 only conclusion you can really draw from those samples
6 in the soffit area is that you didn't see much asbestos
7 fiber?

8 A. In none of the samples on - on the
9 maintenance man or myself did I see much asbestos fiber.
10 And that was really the question involved in the
11 compensation suit.

12 Q. This maintenance man was alleging an
13 asbestos-related disease?

14 A. No, it was not that one. It was one of his
15 co-workers.

16 Q. I see. All right, sir. On the ship - the
17 ship project, the battleship and the removal of the
18 asbestos insulation from in the ship, was it the case
19 that the people that were wearing the - the cartridge
20 respirators I guess they were, the mechanical filter
21 respirators, were actually working outside the ship in
22 dealing with the disposal of the - the asbestos
23 insulation?

24 A. My memory is awfully vague about this
25 because as I said, I was only on board the ship once

1 when they were working there.

2 Q. Uh-huh.

3 A. And I'm not even positive that we had
4 airline respirators and air-purifying respirators. I
5 know that some people were wearing air-purifying
6 respirators, that is cartridge filters; or they might
7 even have been powered air-purifying respirators. I
8 don't remember. But I do recall that some of the people
9 I saw outside of the contained area, which I didn't
10 enter ---

11 Q. (Interrupting) Uh-huh.

12 A. --- and elsewhere on the ship were wearing
13 respirators that would allow them to move around and ---

14 Q. (Interrupting) Okay.

15 A. --- therefore, they couldn't be airline
16 respirators.

17 Q. Right. So, your best recollection would be
18 then that the - the use of the mechanical respirators
19 was outside the containment area?

20 A. Oh, certainly.

21 Q. Yeah.

22 A. They may have been used inside the
23 containment area as well. I don't know. I didn't go
24 in. They also had a - a building on the shore where all
25 of the materials were handled; that is, sometimes they

1 wouldn't remove the insulation from a pipe. They would
2 simply remove the pipe and put it in a bag and send it
3 to the shore where they had a facility set up much the
4 same way ---

5 Q. (Interrupting) Uh-huh.

6 A. --- where the insulation would actually be
7 removed.

8 Q. Under the same sort of conditions with an
9 isolated work space, negative air pressure, wet methods,
10 moon suits and so on?

11 A. Yes.

12 Q. Now, the moon suit as you call it, that
13 would be just a basic form of protective clothing I
14 guess? Is that the way you would describe it?

15 A. Well, a plastic coverall would be a - a
16 good description of it.

17 Q. What - what is the point in - in doing
18 that? I mean why would an industrial hygienist use that
19 as a - as a protective method?

20 A. Well, it actually doesn't protect that
21 person particularly. But it allows him to be cleaned
22 off so that he doesn't carry asbestos-containing
23 material outside of the containment area. This can be
24 done rather easily; that is, one can either remove the
25 coverall and throw it away; that is, dispose of it

1 properly.

2 Q. Right.

3 A. Or one can clean off the coverall.

4 Actually I don't recall which technique was used here.

5 Q. But the idea would be then to - to prevent
6 the workman who would be in the asbestos atmosphere from
7 carrying the asbestos dust that was in the air that
8 would get into his clothing out of that area and taking
9 it elsewhere?

10 A. You - you keep using asbestos as a - as a
11 characterization of this. It's asbestos-containing
12 material.

13 Q. Okay.

14 A. And to the best of my knowledge asbestos
15 only comprised about 15 percent of it. So, most of it
16 is something else ---

17 Q. (Interrupting) Uh-huh.

18 A. --- other than asbestos. But, of course,
19 asbestos is what we are concerned about.

20 Q. Right. And even a 15 percent level would
21 be - obviously you were concerned about it ---

22 MR. CELBA: (Interrupting) I'm
23 going to object to the ...

24 (By Mr. Blanks)

25 Q. --- enough to - to be using protective

1 clothing and respiratory protection and so on?

2 MR. ALMQUIST: I'm going to
3 object to the form of this one as
4 well with respect -- Are you talking
5 about on this job in 1984?

6 A. I had nothing to do with that. This was
7 set up by the Navy ---

8 (By Mr. Blanks)

9 Q. (Interrupting) Okay.

10 A. --- and the Navy was doing the job. And
11 their people were doing the job or the Navy yard people.
12 I had nothing whatsoever to do with setting up the job.
13 I simply was there to make sure that we could sample
14 breathing zones or simulated breathing zones, if you
15 will, while the people were doing the job. That's the
16 only thing I had to do with it.

17 Q. What - what do you mean by "simulated
18 breathing zones"?

19 A. Well, actually we couldn't sample in the
20 breathing zone if they were wearing respirators. We
21 sampled outside the respirators, not inside the
22 respirators ---

23 Q. (Interrupting) Oh, I see.

24 A. --- which is the true breathing zone.

25 Q. Okay. Now, you had the technique to sample

1 inside the respirator as well, didn't you?

2 A. Oh, one could do that. We - we did not do
3 it.

4 Q. Right. You were sampling outside to see
5 what they would be breathing if they weren't wearing the
6 airline respirators?

7 A. Or respirators of any kind, yes.

8 Q. But again, the point then of the protective
9 clothing is to - to leave the contaminant behind at the
10 worksite or to allow for it to be disposed of rather
11 than carried away by the workman on his clothing?
12 That - that fairly would sum up the point of that
13 control method, wouldn't it?

14 A. Sure.

15 Q. Was this a - a technique that was used at
16 Dow at anytime, the use of protective clothing or work
17 clothes that would be left at the plant and laundered so
18 the men would go home in clean clothes?

19 A. There were cases where this was done, yes.

20 Q. Even back in the - in the '50's when you
21 began working at Dow?

22 A. Yes.

23 Q. Could you think back for us to yesteryear,
24 back to that time when you started working with
25 Mr. Hoyle and recount for us what your training

1 consisted of as best you can recall.

2 A. There was several phases of my training in
3 this field. One was that I did some research on air
4 sampling methods for vapors and gases. Another was that
5 Mr. Hoyle gave me a copy of the - I think it's the 1949
6 edition of Industrial Hygiene and Toxicology written by
7 Mr. Patty to read.

8 Another was that I spent quite a bit of
9 time going out and doing jobs with Mr. Hoyle or with
10 Mr. Schneider within the confines of the Midland
11 division until I found out a little bit about what the
12 jobs entailed and how to do them.

13 Another phase was learning to give the
14 slide talk that we used quite a bit throughout the
15 plant. And I had to learn about the toxicity and
16 hazards of the various materials that were being
17 handled. That's about it. This was what I did in my
18 first year or so at Dow.

19 Q. I suppose it's obvious that in your - your
20 education up to that point that you had become familiar
21 generally with chemicals and chemistry and the toxicity
22 of - of a variety of chemicals such as you would
23 encounter in - in the Dow facilities.

24 A. It may be obviously, but it wasn't so.

25 Q. Oh, okay. Well, then, please, correct me.

1 A. In my education at the university level, we
2 learned nothing whatsoever about the toxicity and
3 hazards or hazards of materials. We probably learned a
4 very little bit in chemistry courses that some materials
5 could be more dangerous than others, but that was the
6 extent of it.

7 Q. So, even - even as to those different
8 chemicals you would be using in your laboratory classes,
9 you weren't educated about their toxicity or the harmful
10 properties that they could have?

11 A. That is correct.

12 Q. And you weren't I guess in - provided with
13 any kind of protective gear in - in the labs other than
14 maybe some gloves to keep from burning yourself or that
15 sort of thing? I mean I have not -- I have not been
16 there; so, I'm ...

17 A. I ---

18 Q. (Interrupting) I'm relying on you to tell
19 us.

20 A. I recall that we did have splash shields
21 available sometimes. Sometimes we had goggles that we
22 could wear. I recall using asbestos gloves to keep from
23 burning my hands. I can't recall any other protective
24 gear. Oh, an apron now and then, yes.

25 Q. Did you use asbestos to make Gooch filters

1 when you were in the university doing lab work?

2 A. Gee, I can't recall doing so. I -- I know
3 what a Gooch filter is, but I can't recall ever doing
4 that.

5 Q. That's something you - you would have
6 encountered at Dow in the laboratories there?

7 A. No. They may have used such things, but I
8 have encountered it in reading much more so than in
9 actual practice.

10 Q. Who was it that taught you to do air
11 sampling for contaminants?

12 A. Mr. Hoyle, Mr. Schneider.

13 Q. So, you - you were given instruction there
14 either in the lab or I guess as well as in the -
15 actually in the plant?

16 A. Yes.

17 Q. On an on-the-job training basis?

18 A. Yes.

19 Q. What - what kind of equipment did you have
20 back in the first half of the 1950's to sample for dust
21 in air?

22 A. Oh, we had several pieces of gear that
23 could be used. We had midget impingers with hand
24 cranked pumps, which could be used to take breathing
25 zone samples. We had Cascade impacters. We had the

1 A.I.S.I. paper tape sampler. We had fiberglass -
2 fibrous glass filters that we could draw air through.
3 We had the Bausch & Lomb dust counting microscope.
4 There may have been others. There are lots of ways of
5 determining particulate material in the air.

6 Q. I am just wondering what - what you would
7 have been using back in the '50's.

8 A. All of those pieces of equipment.

9 Q. How about in the '60's, did you acquire
10 some additional equipment, newer equipment for dust
11 counting or dust sampling and counting?

12 A. Well, the - the biggest acquisition was
13 that of battery powered pumps so that we could take
14 longer breathing zone samples. And most of the work
15 that we did was with gases and vapors. So, we didn't
16 concentrate on particulate sampling gear.

17 But in the '60's we - at least I was aware
18 that we began to have available to us devices that
19 provided more or less direct and automatic readout of
20 dust concentrations. Whether we actually had one of
21 those at Dow, I don't recall. I don't think so. I
22 think that that came later.

23 I -- I don't recall anything specifically
24 in the early '60's that would pertain - that was new and
25 that would pertain to dust sampling. Oh, an

1 electrostatic precipitator. We had those all the time.

2 Q. Were there any places in the Dow plant
3 during the - or any of the Dow plants during the years
4 you were there where you had built-in air sampling
5 equipment?

6 A. Yes.

7 Q. What - what would those have been?

8 A. We had one such installation. This was in
9 a plant handling vinyl and vinylidene chloride, where we
10 had a - a central - oh, we had two of them; we had one
11 in the aspirin plant well - where we had a central pump
12 that drew air from various places within the plant to
13 that central location on a serial basis where the
14 analysis was done automatically.

15 Q. I felt like my description of - of this
16 system was a little bit crude. But how did you -- How
17 would you technically refer to that - that sort of a
18 built-in monitoring system?

19 A. An automatic monitoring system.

20 Q. So, you had pumps that were drawing in air
21 through pipes that had filters at the end that you would
22 collect - take for analysis? I mean was that the ...

23 A. No.

24 Q. Okay. Well, help me out.

25 A. Basically this -- We had a pump generally,

1 one pump, that was connected to plastic tubing through a
2 manifold that was electrically operated so that the pump
3 was sampling first through one tube and then through
4 another tube, then through another tube, then through
5 another tube. The air was drawn through a series --
6 Well, each tube was connected to a quartz tube. And the
7 quartz tubes were held at red heat. And the heat caused
8 the chlorinated hydrocarbon to burn. The chlorine part
9 of it was absorbed in a solution. The conductivity of
10 that solution was measured and recorded and was
11 proportional to the concentration of the material.

12 Q. Okay. And that - that was done that way
13 because of the sort of materials that you - you were
14 sampling for?

15 A. Yes, sir.

16 Q. In other words, that was just a way of
17 collecting or of separating out the contaminant that you
18 wanted to look for?

19 A. Yes.

20 Q. Yeah. And this gave you a way then of
21 continually or periodically at least monitoring these
22 particular work areas that would have the potential
23 for - for harmful exposures to the people working there
24 I guess?

25 A. Yes.

1 Q. What sort of research did you do on air
2 sampling?

3 A. The first research I did was in conjunction
4 with the use of silica gel as an absorbent for vapors of
5 mainly halogenated hydrocarbon materials. This led to
6 the publication of my first paper in 1956.

7 Q. So, this was - was aimed at finding a new
8 medium to - to collect the material in? Is that what it
9 amounted to ---

10 A. (Interrupting) No.

11 Q. --- using a silica gel to collect it?

12 A. Yeah; that's right. But it wasn't new for
13 us. The group had been using it for quite awhile. And
14 basically the research was done to establish the
15 parameters of its proper use. What flow rates could we
16 used with what materials; how much silica gel do we need
17 to use and so forth.

18 Q. All right, sir. Did you do any other
19 research on air sampling?

20 A. I may have. I don't recall any right at
21 the moment.

22 Q. So, this would have been the one that you
23 did, the silica gel project was the one that you did
24 during that first year?

25 A. I believe so. It continued on until - when

1 I had the time to work on it, until about 1955. And
2 then I had enough data so that I could write a paper.

3 Q. In addition to Patty's 1949 text, did you -
4 did you get any other textbooks to work with or study
5 from?

6 A. Oh, yes. We had Fairhall's either
7 Toxicology or Industrial Toxicology that I recall. I
8 believe we had the Johnstone and Miller book which might
9 have been titled Occupational Medicine or something on
10 that order. There may have been others. Those are the
11 ones that come to mind.

12 Q. Do you recall any of Drinker's texts from -
13 from that time?

14 A. We may -- Well, that - that wasn't -- I
15 don't think we had any Drinker text or Hatch text in the
16 early '50's. That came in the mid to later '50's as I
17 recall.

18 Q. Are you thinking that when it came out that
19 you did, in fact, have a copy of that available to - to
20 study from?

21 A. No, I don't remember. I don't remember
22 what - what books we had. I consulted books
23 occasionally for when I needed specific information.
24 But that's -- I just don't remember beyond what I have
25 told you.

1 Q. Well, I'm -- I'm just trying to get a feel
2 for the different things that you tried to soak up in
3 that first year and how you went about acquiring the
4 expertise for this - this somewhat new field to you.

5 A. Oh, it was a very new field. No, it was
6 the apprenticeship route, followed mainly by reading
7 Patty, which was a pretty big book. And there was a lot
8 of material in there to understand and to discuss with
9 the other two fellows.

10 Q. What - what did the field work amount to
11 that you did with Mr. Hoyle and Mr. Schneider during
12 this first year in Midland?

13 A. I can't particularize it to the first year.
14 I just can't.

15 Q. Can you -- Can you generalize it for us
16 then in those first few years when you were undergoing
17 your apprenticeship?

18 A. I had a couple of kinds of field work. One
19 was to go out with one of the more experienced fellows
20 to plants and see what they were doing and how they did
21 it. Once I learned a little bit about that, I could go
22 out on my own and come back and ask questions if
23 necessary. For another, I - I went around and visited
24 all of the various plants in the Midland division.

25 Q. When you say the "Midland division," what -

1 what do you mean by that? Did that ---

2 A. (Interrupting) Those chemical processing
3 plants that were physically in Midland, Michigan.

4 Q. In the fence?

5 A. Within the fence, yes.

6 Q. Okay. That's what I thought you meant.
7 Well, I mean what - what sort of things were - were you
8 and your colleagues doing then in that middle part of
9 the '50's when you would actually go into the plants? I
10 mean were you just making walk-throughs? Were you doing
11 surveys for specific problems? Were you -- Were you
12 doing monitoring or all of the above?

13 A. All of the above.

14 Q. Were there any particular problems that you
15 recall that impressed you in those first years?

16 A. No. What I do recall is that almost
17 everything we did was on the basis of a request from a
18 plant superintendent or from the union to investigate a
19 particular plant or process to determine what the
20 exposures may have been there.

21 Q. Now, at this time in the '50's, did Dow
22 also have toxicologists working there in Midland?

23 A. Yes.

24 Q. Were they in the same organizational group
25 that industrial hygiene was in, or how did they fit

1 together?

2 A. Both toxicology and industrial hygiene
3 and - oh, three or four other groups were in the
4 biochemical research laboratory.

5 Q. Can you recall what those other - others
6 were or some of them?

7 A. One of them was the wood lab that worked
8 with wood chemicals or chemicals to use with wood. They
9 were just down the hall when we finally moved into our
10 new building.

11 Q. Like - like for treating woods,
12 preservatives, that sort of thing?

13 A. Yes.

14 Q. Okay.

15 A. We had a very small group dealing with the
16 synthesis of new chemicals that might have biological
17 activity. We had eventually a small pharmaceutical
18 group. And I think that is about it. There may have
19 been one or two others. I had very little to do with
20 them. So, I -- I just don't know.

21 Q. How -- And you called this the biochemical
22 research ...

23 A. Laboratory.

24 Q. ... laboratory.

25 A. Uh-huh.

1 Q. Did you rise to some level of
2 administrative responsibility before you left in 1965?

3 A. No.

4 Q. Can you tell us, Dr. Peterson, how the
5 industrial hygiene group in the biochemical research
6 laboratory, section or group or division or whatever it
7 was, how industrial hygiene related to the medical
8 department at Dow, if there was one?

9 A. There certainly was one, and we had no
10 direct relationship at all. As I recall, medical was
11 part of the personnel department; and we were in the
12 research area, if you will.

13 Q. How did you interact with the toxicology
14 department, if you did, in the industrial hygiene group?

15 A. Several ways. One of the ways was that
16 shortly after I was hired, maybe a year and a half or
17 two, I traded jobs with a new toxicologist, who
18 subsequently got his doctorate, which was Ted Torkelson.
19 He became an industrial hygienist for a while and I
20 became an animal inhalation toxicologist for a while.
21 So, I worked directly in the toxicology lab for that
22 period.

23 We sometimes worked with the people in
24 toxicology who were concerned with the formation of
25 labels. We had a rather close relationship with

1 toxicology throughout the time I was there anyhow. We
2 knew all of the toxicology people and they knew us well.
3 We were aware of what they were doing in general,
4 although not the details and so forth.

5 Q. So, you actually did inhalation toxicology
6 work for this period of time you were swapping out with
7 Mr. Torkelson?

8 A. Yes.

9 Q. And that would have been '53, '54, '55,
10 somewhere in - in there as best you recall?

11 A. Somewhere in the mid-'50's, yes.

12 Q. How long had Dow had an inhalation
13 toxicology lab or the capability to do inhalation
14 studies?

15 A. I don't know. It was present when I was
16 hired, and I don't recall how much before that Dow had
17 had the ability to do animal inhalation work.

18 Q. Now, you have mentioned that you worked
19 closely with the toxicology folks on labeling matters
20 among other things I think.

21 A. I mentioned that we did work sometimes on
22 that. It wasn't very often. But we would be asked what
23 our experience was with materials in the plant.

24 Q. So, the fact that they were working on
25 labels suggests to me that these would have been labels

1 for Dow products?

2 A. Always.

3 Q. And what -- What was -- What was the reason
4 that the toxicology people were concerned with that? I
5 mean were they working on warnings to go on these
6 labels?

7 A. Generally that was the area of the label
8 that we would get involved in. They wanted the label to
9 reflect knowledge we had about handling hazards of the
10 material.

11 Q. Was this the - the policy at Dow to pass on
12 to their customers the information that Dow had
13 developed about the hazards of handling these different
14 chemicals or products that you were selling?

15 A. Certainly in the formation of labels, Dow
16 was at the forefront of this. And Dow was always -
17 while I was there at any rate - completely open with
18 materials we had. At a customer's request, we would
19 always furnish any kind of information we had to Dow
20 customers.

21 Q. But I gather that in addition to waiting
22 for requests for information by putting health hazard
23 information on the labels, you were actually taking a
24 positive step to - to get that information out to the -
25 to the buyers and the users without waiting for - for a

1 question to come in?

2 A. Well, yes and no; in that labels have great
3 problems in trying to convey information. I mean there
4 is only so much you can put ---

5 Q. (Interrupting) Sure.

6 A. --- on a label, so many words that can go
7 on a label; so that we regarded the labels as being
8 supplemental to other information, if you will. We
9 weren't trying to teach with labels, let's put it that
10 way.

11 Q. You were trying to at least alert the users
12 to possible problems or hazards so that they could at
13 least inquire for additional information?

14 A. That's one way a label can be used.
15 Another is simply as reminders of material - of
16 information they already have, if you will.

17 Q. Why do you think this is an important thing
18 to do when you are selling materials that - that have
19 potential health hazards?

20 A. I didn't make this decision. This had
21 nothing to do with me. I was simply helping to provide
22 information to the tox lab about things that I knew
23 about in the plant as were the other industrial
24 hygienists.

25 Q. All right, sir. But speaking as a - as an

1 industrial hygienist and as a chemical engineer, what -
2 what is the value to the customer of having this
3 information of the sort that Dow was passing on to its
4 customers?

5 A. The most valuable part of such labels is in
6 two pieces: One is what is the material, what its name
7 is; and the other is what to do in an emergency with the
8 material. You can put all sorts of other things on the
9 label as well. But I regard these as being the most
10 important parts of labels.

11 Q. What about those materials that have
12 chronic hazards rather than acute hazards?

13 A. Boy, that's difficult. That's a tremendous
14 problem to try and get information that is useful on a
15 label.

16 Q. Was it -- Was it Dow's approach to just
17 ignore chronic health hazards associated with particular
18 products because it was difficult to get it on a label,
19 or did - was this addressed back in the '50's?

20 A. Well, basically if you have a material, a
21 solvent, for instance, that has a chronic hazard such as
22 say carbon tetrachloride, you can't really put much on a
23 label that is much more than what you put on a label for
24 a material with an acute hazard. Basically you say
25 "avoid breathing the vapor" or something on this order,

1 which would apply under either circumstance. You can't
2 really get a great deal more specific than that.

3 Q. So, I suppose if Dow, for instance, had
4 done some toxicology studies and learned that - that
5 some particular product that it was selling could cause
6 chronic health effects in laboratory animals, that this
7 is the sort of information that one way or another Dow
8 would have - would have tried to get to its customers?

9 A. All I can ---

10 MR. CELBA: (Interrupting) I am
11 going to object to the lack of
12 foundation.

13 A. Yeah. I -- I really don't know. I had
14 nothing to do with the preparation of the labels except
15 to provide to the tox person who was working on labels
16 the information that we had from the plant where people
17 were handling the stuff. And this didn't happen very
18 often.

19 (By Mr. Blanks)

20 Q. Uh-huh.

21 A. So, the philosophy is something that I
22 really can't talk about. I just don't know.

23 Q. Well, based on what you were taught at Dow
24 and in your own experience, is it - is it your view that
25 in that period that it was the - the proper thing to do

1 to pass on to customers information that you had
2 developed about the hazards of handling materials that
3 perhaps you had learned from experience in your own work
4 force? Is that something that would be appropriate to
5 tell your customers?

6 MR. CELBA: I'm going to object
7 again; lack of foundation, vague and
8 ambiguous and overly broad.

9 A. As I indicated, we were free with the kind
10 of information we developed. We had some people who
11 called us about every week asking for information, and
12 we always provided that information. So that, sure,
13 that was our philosophy, to be free, open and above
14 board with what we knew.

15 (By Mr. Blanks)

16 Q. I mean that was really the point of having
17 the tox lab in the first place, wasn't it, to learn
18 about the hazards associated with the materials that you
19 were either using in your own plants or putting out into
20 the marketplace; isn't that true?

21 A. No. The tox lab investigated the property
22 of toxicity. The industrial hygiene group investigated
23 hazard. So that what the tox lab did was to determine
24 the toxicity of materials.

25 Q. So, you had two - two different approaches

1 to what ends up being kind of a similar problem, didn't
2 you? I mean industrial hygiene was looking for
3 potential exposures and hazards in the handling of
4 materials in the plant as used - as handled in the
5 plant; right?

6 A. Hazard to our way of thinking was the
7 likelihood of injury.

8 Q. All right.

9 A. And this is what the industrial hygiene
10 group was involved with. The tox lab was involved in
11 the determination of toxicity of materials. Everything
12 has toxicity. Some things have more toxicity than
13 others.

14 Q. So, for instance, if you learned through
15 experience with your own workers that in the handling
16 of - of some material they were developing some sort of
17 a chronic disease, this is information that would be the
18 sort that a customer using the same material would need
19 to know, too, in order to work safely with it, wouldn't
20 they?

21 MR. CELBA: Well, I'm going to
22 object again. It is repetitious to
23 the previous question. Lack of
24 foundation, vague, ambiguous and
25 overly broad.

1 A. This kind of information generally was
2 published by either the tox lab or the industrial
3 hygiene group. We -- As I said, we were very open with
4 what we knew.

5 (By Mr. Blanks)

6 Q. I ...

7 A. We tried to tell people.

8 Q. All right, sir. I'm not taking issue with
9 that at all I assure you. So, for instance, if you had
10 known that your own workers were developing let's say a
11 chronic progressive lung disease as a result of handling
12 a particular material, this is not the sort of
13 information that Dow would have kept secret either from
14 its own employees or from customers who would be
15 handling the same product; is that true?

16 A. That's true.

17 Q. And if we look at it from a toxicology
18 standpoint, if Dow had done tox studies of some product
19 that it was selling and found that the inhalation of the
20 material in laboratory animals could cause a permanent
21 progressive lung disease such as, let's say asbestosis
22 as an example, then this is information that Dow, too,
23 would have properly passed on to its customers, is it
24 not?

25 MR. CELBA: Again, the same

1 objection; it's also argumentative.

2 A. The -- This is the kind of information that
3 Dow routinely published. We had -- The tox lab would
4 have two or three papers a year that would have this
5 kind of information in them. And this was the main
6 technique we had of disseminating this kind of
7 information other than answering questions that came in
8 to us from our peers and others in industry.

9 (By Mr. Blanks)

10 Q. All right, sir. And based upon what you
11 knew and what you had been taught at Dow and - and
12 before you got there, from the time frame of the
13 mid-1950's, wouldn't you agree that it would be improper
14 to keep from your customers information that you had -
15 had developed about the toxicity of materials you were
16 selling to them?

17 MR. CELBA: The same objection.

18 It's all speculation at this point in
19 time.

20 (By Mr. Blanks)

21 Q. Now, Dr. Peterson, the lawyer from
22 Owens-Corning Fiberglas Company is objecting that you
23 have to speculate. I'm not asking you to speculate,
24 sir. I'm asking you about your professional opinion or
25 your viewpoint from that time frame.

1 A. Well ---

2 MR. CELBA: (Interrupting)

3 Counsel, also my objection is based on

4 lack of foundation, vague, ambiguous,

5 overly board and argumentative.

6 A. I wasn't in the tox lab. I was - except

7 for a few months. I can't speak to tox lab policy. I

8 can't speak even to industrial hygiene policy because I

9 didn't set it. All I can report are my observations.

10 And I have reported to you my observations in this area

11 I believe.

12 (By Mr. Blanks)

13 Q. Speaking as an industrial hygienist, would

14 it have been important to you to know in the 1950's when

15 you were beginning your career that there had been

16 toxicological work done even a decade earlier reporting

17 on the potential of asbestos-containing insulation to

18 cause asbestosis in laboratory animals?

19 MR. CELBA: I'm going to object,

20 Counsel, on all the basis I've

21 previously stated in this record.

22 A. Probably not because I had nothing to do

23 with asbestos at Dow. Therefore, I had no particular

24 interest in this subject.

25

1 (By Mr. Blanks)

2 Q. If you had been responsible for people at
3 Dow working with asbestos-containing insulation, is this
4 the sort of information that - that would have been
5 useful to you in - in the mid-1950's?

6 MR. CELBA: The same objection
7 and improper hypothetical.

8 A. If I had been in that situation, I would
9 have gone to the literature to find what I could find in
10 the literature, yes.

11 (By Mr. Blanks)

12 Q. Dr. Peterson, do you recall being provided
13 any information in the 1950's by either Owens-Corning
14 Fiberglas Company or the Owens-Illinois Company about
15 toxicology studies done regarding Kaylo insulation and
16 its ability to cause asbestosis in laboratory animals?

17 MR. CELBA: Objection; lack of
18 foundation.

19 A. I -- I certainly didn't request such
20 information; therefore, I didn't receive it. I --
21 Subsequently I, of course, am aware that such
22 information was published in 1951 and was available in
23 the literature. I wasn't -- I wasn't aware of that at
24 the time because I was not particularly interested in
25 asbestos.

1 (By Mr. Blanks)

2 Q. So, this information you say was published
3 in the literature and was thus available to Dow in the
4 early 1950's?

5 A. Yes.

6 Q. Have you ever served as a consultant or an
7 expert witness to Owens-Corning Fiberglas Company?

8 A. I have served as an expert witness for
9 attorneys that are working for Owens-Corning Fiberglas,
10 yes.

11 Q. Are you currently, Dr. Peterson?

12 A. I don't think so. I don't recall any of
13 the cases that I'm working on that are O.C.F. cases, no.

14 Q. When was the last time as best you can
15 recollect that you did work for Owens-Corning Fiberglas
16 Company in connection with an asbestosis or an asbestos
17 disease case?

18 A. This Spring.

19 Q. Is that case over with?

20 A. Yes.

21 Q. What - what did they hire you to do?

22 A. To talk about ---

23 MR. CELBA: (Interrupting) I'm
24 going to object, Counsel. Who are you
25 referring to hiring, Counsel,

1 attorneys I assume? You have to ---

2 (By Mr. Blanks)

3 Q. (Interrupting) Sir?

4 MR. CELBA: It's vague and
5 ambiguous as to "they." My objection
6 stands on the record.

7 (By Mr. Blanks)

8 Q. The Owens-Corning Fiberglas lawyer is
9 objecting as to who hired you, the vagueness of the
10 question. As I understood it, you were being paid by
11 lawyers being paid by Owens-Corning Fiberglas Company or
12 one of their insurance companies to testify in
13 connection with asbestos disease cases; is that correct?

14 MR. CELBA: I'm going to object,
15 Counsel. You are argumentative at
16 this point in time.

17 (By Mr. Blanks)

18 Q. Is that correct, sir?

19 A. I have testified in deposition and trial
20 regarding industrial hygiene of asbestos for attorneys
21 working for Owens-Corning Fiberglas, yes.

22 Q. All right, sir. And what - what generally
23 are - are the nature of the opinions that you express
24 when you are testifying on behalf of Owens-Corning
25 Fiberglas Company in asbestos disease cases?

1 MR. CELBA: I'm going to object
2 as vague and overly broad,
3 indefinite.

4 A. Well, in the first place, the - my
5 testimony is a matter of public record. And, therefore,
6 you can easily find it. In the second place, just about
7 everything that I testified to is to what we knew about
8 in industrial hygiene in the '50's and '60's.
9 (By Mr. Blanks)

10 Q. All right, sir. So, what testimony do you
11 give on behalf of Owens-Corning Fiberglas as to what is
12 known about industrial hygiene aspects of asbestos in
13 the 1950's?

14 MR. CELBA: The same objections;
15 overly broad.

16 A. Basically what the threshold limit value
17 is; what are threshold limit values; where do they come
18 from; what techniques does one use to sample air for
19 asbestos and why - this kind of thing. It's industrial
20 hygiene with relationship - relationship to asbestos.
21 (By Mr. Blanks)

22 Q. Do you give opinions in this testimony
23 about the reasonableness of the conduct of Owens-Corning
24 Fiberglas Company in - in connection with its marketing
25 and production of asbestos insulation, its failure to

1 warn about the hazards of asbestos insulation that were
2 known to it in the 1940's and 1950's?

3 MR. CELBA: I think that's a bit
4 argumentative, Counsel, don't you
5 think? That's one objection. I also
6 object to the lack of foundation and
7 vague and ambiguous as to the
8 reasonableness.

9 (By Mr. Blanks)

10 Q. We can certainly appreciate why the lawyer
11 for Owens-Corning Fiberglas here today is objecting,
12 Dr. Peterson. But I would like an answer about the kind
13 of opinions that you expressed about the conduct of that
14 company in the sale of asbestos insulation materials.

15 A. In general ---

16 MR. CELBA: (Interrupting) The
17 same objection.

18 A. In general I don't express opinions about
19 the conduct of any asbestos manufacturing company.

20 (By Mr. Blanks)

21 Q. Have you served as an expert witness for
22 any other asbestos insulation company in litigation?

23 A. Yes, I -- I was at one time retained by
24 attorneys representing Owens-Illinois. I -- That was in
25 the early '80's, and I haven't done that for quite

1 awhile.

2 Q. So, you say you testified for
3 Owens-Illinois in asbestos litigation in the early '80's
4 but don't recall having done so since then?

5 A. That's correct.

6 Q. You will recall their product was one that
7 went under the trade name of Kaylo?

8 A. Yes.

9 Q. Is this a product that was used in Dow
10 facilities at anytime that you know of?

11 A. I don't know.

12 Q. Do you have any personal knowledge about
13 what particular brands of asbestos insulation materials
14 were used in Dow plants during any years at all?

15 A. No.

16 Q. How many times or in how many cases do you
17 recollect that you were retained by Owens-Illinois or
18 lawyers that were trying to defend them in asbestos
19 litigation?

20 A. One.

21 Q. All right, sir. And did you testify in a
22 trial?

23 A. No.

24 Q. When was it that you started testifying on
25 behalf of Owens-Corning Fiberglas Company in asbestos

1 litigation?

2 A. The late '80's is the best I can estimate
3 that.

4 Q. So, there was a half a decade gap in there
5 more or less when you weren't testifying for asbestos
6 companies?

7 A. I did some testifying on behalf ---

8 MR. CELBA: (Interrupting) I'm
9 going to object to the form of the
10 question. It's argumentative.

11 A. --- on behalf of a group of asbestos
12 companies, and I don't have the slightest idea who
13 comprised that group in that period of time.

14 (By Mr. Blanks)

15 Q. So, in the mid-'80's you recall testifying
16 for a group of asbestos companies?

17 A. Yes.

18 Q. All right, sir. Did you express opinions
19 about the reasonableness of their conduct in failing to
20 put warnings on their products to the effect that
21 asbestos dust inhalation could cause permanent or fatal
22 lung disease?

23 MR. CELBA: I object to the form,
24 and it's argumentative.

25 A. I testified as to nothing about warnings or

1 labels or whatever. This is not my area of expertise.

2 (By Mr. Blanks)

3 Q. Did you testify that the products were safe
4 to use, that the normal handling of the asbestos
5 insulations didn't pose any - any risk of harm to
6 workers?

7 MR. CELBA: I object;
8 argumentative.

9 A. My testimony in general was with regard to
10 the industrial hygiene aspects of evaluating exposures
11 to asbestos when handling asbestos-containing materials.
12 (By Mr. Blanks)

13 Q. And what - what is the gist of this
14 testimony, Dr. Peterson; that - that there is no hazard
15 posed to workers from an industrial hygiene standpoint
16 when handling asbestos insulation?

17 MR. CELBA: I object;
18 argumentative. Also it's vague,
19 ambiguous, overly broad.

20 (By Mr. Blanks)

21 Q. Are you looking up for divine inspiration?

22 A. No, I'm listening to the rain.

23 MR. CELBA: I object to the form
24 of that last question about divine
25 inspiration.

1 A. The fact of the matter is that I have
2 testified about the information that we had available in
3 the literature. It was concerned with the relationship
4 of handling asbestos-containing insulation materials and
5 the potential hazards that this handling posed
6 particularly with reference to the Fleischer paper and
7 so forth.

8 (By Mr. Blanks)

9 Q. So, was the - the substance of this
10 testimony that in the '50's when you came on the scene
11 that - that there wasn't information in the literature
12 that would suggest that asbestos insulation posed any
13 hazard to people working with it or around it?

14 A. The -- Not necessarily. The best piece of
15 information we had was the Fleischer, Viles, Gade and
16 Drinker paper, which was a rather complete industrial
17 hygiene survey of the use of asbestos-containing
18 materials in shipyards. And the conclusion of that
19 paper was that these materials could be handled with
20 little or no hazard to the people involved.

21 Q. That being people that had been involved
22 with it for only the war time years; correct?

23 A. The paper was published in 1946; and that
24 was the period involved, yeah.

25 Q. And most of workers that were studied in

1 that paper had only worked with asbestos insulation
2 during that war time period; isn't that true?

3 A. I recall some of the workers had had 20 or
4 30 years such experience. So ---

5 Q. (Interrupting) Yes, sir.

6 A. --- most of them had not; that's correct.

7 Q. And the ones that had had the 20 or 30
8 years experience did, in fact, have asbestos, didn't
9 they?

10 MR. CELBA: Well, I object;
11 argumentative.

12 A. It's been a long time since I have read the
13 paper. I don't recall that much detail about it.

14 (By Mr. Blanks)

15 Q. In any event, you would not just rely on
16 the - the concluding paragraphs or paragraphs of a -
17 what you'd call a rather complete industrial hygiene
18 survey to - to relay the full meaning of the study,
19 would you?

20 MR. CELBA: Well, I object;
21 argumentative.

22 A. No. In general when I read a paper, I read
23 a paper.

24 (By Mr. Blanks)

25 Q. All right, sir. So, it would be misleading

1 to just rely solely on the concluding paragraph for the
2 findings of the paper?

3 MR. CELBA: Object;
4 argumentative. And also it's vague
5 and ambiguous as to who is relying on
6 what at this point in time.

7 (By Mr. Blanks)

8 Q. Do - do you have any problem understanding
9 me or the objections from the Owens-Corning Fiberglas
10 lawyer, ones that lead you to - to want a further
11 explanation from me?

12 A. Well, I don't know ---

13 MR. CELBA: (Interrupting) I
14 object to that question, Counsel, to
15 the form. It's argumentative. And
16 that's vague and ambiguous.

17 A. I -- I don't usually in depositions or at
18 trial argue with attorneys. So, this is a somewhat new
19 experience.

20 No. If one is going to look at a paper and
21 rely on part of it, one generally looks at the summary
22 or the abstract of the paper. And furthermore, in that
23 particular paper, the last part of it is conclusions.
24 As I recall, there are several conclusions. And this is
25 the summing up of the people who were closest to the

1 information and who knew most about it. And, therefore,
2 I would regard that as being the reliable part of the
3 paper.

4 (By Mr. Blanks)

5 Q. Sure. Is it your opinion then that it's
6 reasonable to permit men to do asbestos insulation work
7 for say five years without providing them with proper
8 hygienic controls based on the conclusion of the - the
9 Fleischer-Drinker paper?

10 MR. ALMQUIST: I'm going to
11 object to the form of the question
12 because it doesn't specify a time
13 period.

14 MR. CELBA: I join in that
15 objection.

16 A. I -- Your question is - started out is it;
17 and, no, today it isn't. We know much more about
18 asbestos today and its hazards than we did in 1946.

19 (By Mr. Blanks)

20 Q. Do you think that it is reasonable to have
21 done that in the mid-1950's, Dr. Peterson?

22 A. I don't see why not.

23 Q. All right, sir. Is it the fact that the
24 exposures are only for a few years rather than an entire
25 work life that leads you to believe that's reasonable?

1 A. No. Mr. Blanks, the knowledge of the
2 latency of problems with asbestos has come about over a
3 period of time. In the 1950's and the 1940's we knew
4 very little about this. And, therefore, in the '50's
5 that would have been a reasonable conclusion.

6 So long as one stays below the threshold
7 limit value, which at that time was five million
8 particles per cubic foot, one could handle asbestos
9 insulating materials or whatever safely. That's the
10 best we knew.

11 Q. So, you are saying that as long as you
12 handled it and the total dust levels were below five
13 million particles per cubic foot, that it was being
14 handled safely in the '50's?

15 A. No, that the asbestos dust levels were
16 below five million particles per cubic foot.

17 Q. Is that what you were taught when you
18 started at Dow, that the five million particle per cubic
19 foot standard was to - to be five million particles of
20 asbestos per cubic foot rather than five million
21 particles of total dust?

22 A. Well, sure; that's what it says in the
23 T.L.V. list.

24 Q. That's what it said back in the '50's?

25 A. To the best of my knowledge, yes.

1 Q. All right, sir. Is this something that
2 Doctor - that Mr. Hoyle taught you; or do you recollect?

3 MR. CELBA: I'm going to object,
4 Counsel. He answered why he's -- He
5 gave you a reason for his answer. He
6 said that's what it said in the T.L.V.
7 Now you are becoming argumentative.

8 A. I -- I don't recall ever discussing a
9 T.L.V. of asbestos with Mr. Hoyle.
10 (By Mr. Blanks)

11 Q. All right, sir. Did - did Mr. Hoyle give
12 you a list of maximum allowable concentrations, a table
13 to use as guidelines in 1953 or '54 when you started
14 there?

15 A. I -- I certainly had access to such a
16 table. Where - where that access came from, I don't
17 have the slightest idea.

18 Q. Isn't it really the case, Dr. Peterson,
19 that the first time you have heard of the idea that the
20 five million particles was not total dust but was to be
21 five million particles of asbestos was from one of the
22 Owens-Corning Fiberglas lawyers that you were working
23 for?

24 MR. CELBA: I object;
25 argumentative.

1 A. No, sir, not by a long shot. The threshold
2 limit value list said the T.L.V. for asbestos is five
3 million particles per cubic foot in this particular era
4 we are talking about. That's where I learned it.

5 (By Mr. Blanks)

6 Q. When you were testifying on behalf of
7 Owens-Illinois in connection with asbestos cases in the
8 early '80's, did their lawyers tell you that they had -
9 had had a study begun at the Saranac laboratories in the
10 early part of 1943 to consider the toxicity of the new
11 Kaylo product?

12 A. Yes.

13 Q. Did they give you copies of the
14 correspondence that they had with Dr. Gardner at Saranac
15 about that study?

16 A. I don't believe the attorneys had
17 correspondence with Dr. Gardner.

18 Q. Did they give you copies of the preliminary
19 reports on the toxicity studies?

20 A. It's been 10 or 12 years since I did this
21 kind of work, and I don't recall precisely what
22 information I had from them.

23 Q. Did the Owens-Illinois lawyers give you any
24 information about cases of asbestosis in people that had
25 been using their products or had been working with

1 insulation during the 1940's?

2 A. As I say, I don't recall in any detail at
3 all what information I had. I have read an awful lot of
4 material since then; and what happened then, I don't
5 recall.

6 Q. Have you kept any of those papers that the
7 Owens-Illinois lawyers gave you about the Kaylo studies?

8 A. I know that I have a copy of the - the
9 Gardner paper. And I have a copy of a subsequent paper.
10 I have forgotten who the author was.

11 Q. Have - have you brought those with you
12 today, sir?

13 A. No, sir.

14 Q. Do you have them with you at home?

15 A. I have them at home.

16 Q. All right, sir. I'm just wondering why you
17 didn't think those were responsive to the - the Subpoena
18 that was served on you?

19 A. I brought as much as I could carry. And
20 that's all I can tell you. There is -- I have a library
21 at home. I simply couldn't bring everything that I had.

22 Q. All right, sir.

23 A. Besides, I was fully confident that you
24 would have copies of those papers anyway.

25 Q. Well, I'm -- I'm just curious about what -

1 what, in fact, you do have along these lines. And,
2 though, you were kind enough to bring various articles
3 you authored; we were not limiting the request to that.
4 But perhaps we can resolve this amicably with Dow's
5 attorneys and you during the recess rather than take our
6 time with it now.

7 Well, in the more recent times when you were
8 working for the Owens-Corning Fiberglas lawyers, did
9 they make known to you when - when you were being their
10 expert witness and being paid by them to testify that
11 they had had reports of insulators who had developed
12 asbestosis back as early as 1944?

13 MR. CELBA: I object;
14 argumentative.

15 A. No Owens-Corning Fiberglas specific
16 information was presented to me.
17 (By Mr. Blanks)

18 Q. Wait a minute. Through all this time that
19 you have testified for Owens-Corning Fiberglas, they
20 have not - their lawyers or Owens-Corning Fiberglas has
21 not provided you with information about what they had in
22 their files concerning cases of asbestosis in the '40's
23 or the '50's?

24 A. That's correct.

25 MR. CELBA: Counsel, I object as

1 argumentative. This is just being
2 done for I don't know what purpose.

3 MR. BLANKS: Well, I can
4 understand ...

5 MR. CELBA: (Interrupting) Other
6 than making an argumentative record
7 for the Court. You could -- How about
8 saving this for your closing
9 argument?

10 (By Mr. Blanks)

11 Q. Do you know this lawyer from Owens-Corning
12 Fiberglas who keeps making these objections,
13 Dr. Peterson?

14 MR. CELBA: I object to the form
15 of the question, Counsel.

16 (By Mr. Blanks)

17 Q. Have you -- Sir?

18 A. Yes, I know him.

19 Q. Have you worked with him before in - in
20 asbestos litigation?

21 MR. CELBA: The same objection.

22 A. Yes.

23 (By Mr. Blanks)

24 Q. What - what is his name?

25 A. Steve Celba.

1 Q. Where is he from?

2 A. Milwaukee.

3 Q. How many cases have you worked with him on,
4 approximately?

5 A. Five or six perhaps. I don't recall
6 exactly.

7 Q. Does this go back over a few years time?

8 A. Yes, two or three years, something on that
9 order.

10 Q. What - what - what other kind of
11 information has he provided you about Owens-Corning
12 Fiberglas Company and its knowledge of asbestos hazards
13 from the past?

14 MR. CELBA: I'm going to object,
15 Counsel. I believe the testimony was
16 that I've provided him nothing with
17 respect to Owens-Corning Fiberglas.

18 A. My -- Well, this is correct. I have been
19 providing nothing whatsoever. My -- This is not my area
20 of expertise. My area of expertise is industrial
21 hygiene. And this is what I have testified to.

22 (By Mr. Blanks)

23 Q. Is it pertinent to an industrial hygienist
24 to know that there have been cases of occupational
25 disease in - in a group of workers that he's testifying

1 about?

2 MR. CELBA: I object as to
3 argumentative. And it's vague and
4 ambiguous as to what the word
5 "pertinent" means. Pertinent to
6 what ---

7 A. (Interrupting) Not necessarily.

8 MR. CELBA: --- and when?

9 (By Mr. Blanks)

10 Q. All right, sir. So, it wouldn't be
11 important to you to know about cases of asbestosis among
12 insulators in - when you are giving testimony in - in
13 asbestos disease cases among insulators. Is that what
14 you are saying?

15 MR. CELBA: The same objection;
16 repetitious and argumentative.
17 Counsel, at this point in time you are
18 badgering the witness.

19 MR. BLANKS: Call -- Go ahead and
20 call the Judge.

21 MR. CELBA: I don't have to call
22 the Judge. I'm making a record. What
23 do you want me to call the judge for?

24 A. My -- This gets into an area of philosophy.
25 It gets into an area of interest. It gets into areas of

1 expertise. And for the most part I don't put much
2 reliance in case reports in the literature, which is
3 what you apparently are referring to with regard to any
4 disease or its possible cause. What I tend to rely upon
5 as an industrial hygienist is industrial hygiene
6 surveys, epidemiological studies and the like. And in
7 fact, I tend not to put much credence in an
8 epidemiological study unless it has been replicated
9 somewhere.

10 So that the case reports that one can find
11 here and there are not particularly meaningful to me.

12 (By Mr. Blanks)

13 Q. All right, sir. What - what reliance do
14 you place on toxicological data?

15 MR. CELBA: I'm going to object
16 to vague and ambiguous as to what
17 "toxicological data" you have
18 reference to.

19 A. It depends upon who has done it; how they
20 have done it; how many animals were used and a whole lot
21 of things that you didn't specify.

22 (By Mr. Blanks)

23 Q. Okay. How about the toxicological studies
24 that were done at Dow; were those of - of a sort, of a
25 quality that - that you would rely upon?

1 A. Sure.

2 Q. How about the toxicological work that was
3 done at Saranac laboratories during the '40's and the
4 '50's ---

5 MR. CELBA: (Interrupting) I am
6 going ...

7 (By Mr. Blanks)

8 Q. --- is that the sort of - of work that you
9 would rely upon?

10 MR. CELBA: I'm going to object
11 as to vague and ambiguous as to what
12 toxicological and definite work was
13 done at Saranac laboratories. That
14 seems to be overbroad in nature.

15 A. Saranac had at that time - Saranac labs had
16 a good reputation. Although I -- In the '50's I knew
17 little more about Saranac Lake than that.

18 (By Mr. Blanks)

19 Q. All right, sir.

20 A. So, in that period of time I would have
21 really no basis to say yes or no.

22 Q. Were you provided with any - any evidence
23 when you were testifying on behalf of Owens-Corning
24 Fiberglas to show that - that Owens-Corning Fiberglas
25 made known to their customers and the users of their

1 products that asbestos insulation, particularly Kaylo,
2 should be handled as a hazardous material?

3 MR. CELBA: I object to the form.
4 It's repetition. It's been asked and
5 answered.

6 A. Yeah, I -- I have been provided with no
7 information regarding Owens-Corning Fiberglas;
8 essentially none.

9 (By Mr. Blanks)

10 Q. So, in other words, they have intentionally
11 kept you ignorant about the information they had in
12 their files about asbestos?

13 MR. CELBA: Are you surprised
14 that I'm objecting at this point in
15 time to argumentative? And again,
16 it's repetitious.

17 A. Well, in the first place I don't know what
18 their motives are. I have no way of knowing what their
19 motives are. In the second place, I have plenty to do
20 without reading company files and stuff. And I would
21 just as soon avoid it personally.

22 I don't care because whatever I would find
23 in Owens-Corning Fiberglas files would have nothing
24 whatsoever to do with me as an industrial hygienist
25 unless that material were presented by industrial

1 hygienists or occupational physicians.

2 (By Mr. Blanks)

3 Q. So, even though you are taking their money
4 to testify in lawsuits on their behalf - "their" meaning
5 Owens-Corning Fiberglas - you do not consider it
6 pertinent to your industrial hygiene testimony to know
7 what Owens-Corning Fiberglas knew during these same
8 years that you are testifying about?

9 MR. CELBA: I object; repetitious
10 and argumentative.

11 A. That's correct.

12 MR. CELBA: What is that Judge's
13 number?

14 (By Mr. Blanks)

15 Q. Did you ever meet any of the employees or
16 former employees of Owens-Corning Fiberglas during ---

17 MR. CELBA: (Interrupting) I
18 object ...

19 (By Mr. Blanks)

20 Q. --- any years?

21 MR. CELBA: ... as to repetitious.

22 It has been asked and answered.

23 A. Yes.

24 MR. CELBA: It's argumentative.

25 A. Yes. In fact, I know that I have met two

1 Owens-Corning Fiberglas employees. There may have been
2 others.

3 (By Mr. Blanks)

4 Q. Could you tell me who they were.

5 A. One was a young lady named Kathy Johnson
6 with whom I worked for about a year by correspondence on
7 a project after she had left O.C.F. And before he went
8 to work for O.C.F., I went to school with Dr. Konzen.

9 Q. Dr. Konzen?

10 A. Yes.

11 Q. First name was what?

12 A. John I believe.

13 Q. You never met Ed Ames, did you?

14 A. The name is not familiar.

15 Q. Did you ever meet a gentleman named Hazard?

16 A. Bill Hazard didn't work for O.C.F.; but,
17 yes, I know Bill.

18 Q. Who do you associate him with?

19 A. Owens-Illinois.

20 Q. Owens-Illinois. Did you meet him then in
21 connection with your litigation, or had you known him
22 before?

23 A. Oh, I -- I have never talked to him with
24 respect to litigation. I have known him since the late
25 '50's anyway.

1 Q. Was he still with Owens-Illinois when you
2 last knew of him?

3 A. Yes.

4 Q. Did he, too, testify in any of these cases
5 that you were involved in?

6 A. Not that I'm aware of. I am usually not
7 aware of who testifies in addition to myself. But I
8 don't think he did. I just don't know.

9 Q. Dr. Peterson, based on - on what you knew
10 or what you know about what was known in the 1950's or
11 what was believed about the - the hazards of asbestos
12 insulation and its handling, do you think that in the -
13 in that period that it would - would have been
14 reasonable for a company that knew that asbestos
15 insulation could, in fact, cause disease in - in
16 insulators and other people working with the material to
17 keep that knowledge from their customers and from the
18 users of the products?

19 MR. CELBA: I'm going to object.
20 It assumes facts not in evidence.
21 It's also repetitious and it's
22 argumentative and lack of foundation
23 perhaps.

24 A. I'm afraid I'm a long way from being in a
25 position to tell companies what to do or what not to do.

1 And I have never been in such a position. Decisions --
2 In general as a scientist and an industrial hygienist, I
3 am all for education. I'm all for complete disclosure
4 of information in this area. I also recognize that I am
5 not a - a manager or a President of a company and have
6 no input to such people.

7 (By Mr. Blanks)

8 Q. Yes, sir.

9 A. That's all.

10 Q. So, based on what you believe to be the
11 case in the '50's, is it your professional opinion that
12 it would have been reasonable during that time to
13 withhold from users of asbestos insulation products
14 information to the contrary of what you - you think was
15 the general belief at the time?

16 MR. CELBA: The same objection
17 as previously stated and lack of
18 foundation with respect to this - what
19 this witness just testified to.

20 A. In the '50's information that asbestos
21 could cause asbestosis was well known. I certainly was
22 aware of this, although I had no particular interest in
23 asbestos as a Dow industrial hygienist. How this
24 information could be kept from the scientific community
25 and the industrial hygiene community is beyond me. And

1 I don't know why anybody would try to do such a thing.
2 Therefore, I would consider it nonsense.

3 (By Mr. Blanks)

4 Q. So, if I understood you, you are saying
5 that - that what was known, for example, at
6 Owens-Corning Fiberglas and Owens-Illinois in this era
7 about the capability of asbestos insulation to cause
8 disease was in the literature; and, therefore, knowable
9 to companies like Dow and - and others?

10 MR. ALMQUIST: I'm going to
11 object to that - the form of that
12 question because I think it totally
13 misstates the witness' testimony. He
14 has rendered no such testimony.

15 MR. CELBA: I join in the
16 objection.

17 A. I have no way of knowing what was known at
18 Owens-Corning or Owens-Illinois truly, so that I really
19 can't answer your question.

20 (By Mr. Blanks)

21 Q. Okay. So, you don't know whether they
22 actually published what they knew or did not?

23 MR. CELBA: Counsel, I am going
24 to object; argumentative again and
25 lack of foundation.

1 A. I know that Owens-Illinois sponsored animal
2 research on Kaylo. I know that the results of that
3 research were published. I -- I don't see what you are
4 getting at honestly. So, I have no evidence or even
5 intimation that Owens-Illinois attempted or would want
6 to attempt to withhold information about their product.
7 I know nothing as I have said about O.C.F.

8 (By Mr. Blanks)

9 Q. You know that this information then was
10 available to Dow in the published literature?

11 MR. ALMQUIST: What information
12 are you speaking about?

13 (By Mr. Blanks)

14 Q. The one we have just described; the 1952 or
15 '51 report that you have referred to.

16 A. Well, sure, we subscribed at Dow to the
17 Archives of Environmental Health or whatever it was
18 called at that point. So, sure, it was available to us;
19 certainly.

20 MR. ALMQUIST: Lunch break.

21 MR. BLANKS: Okay.

22

23 (A LUNCH BREAK WAS TAKEN.)

24

25

1 (By Mr. Blanks)

2 Q. During your years at Dow was it the case,
3 Dr. Peterson, that - that you had available to you a
4 wide range of - of professional journals in the field of
5 occupational health and industrial hygiene?

6 A. Yes.

7 Q. The company maintained a pretty complete
8 technical library, did it?

9 A. Yes.

10 Q. Did they have a librarian to help you to
11 get things that either weren't there or to help you find
12 things that were there in the library?

13 A. As I recall several librarians.

14 Q. And wasn't there also some sort of a - a
15 reference system that Dow had, a technical reference
16 index or something like that?

17 A. There was something called the central
18 research index, which was really a repository of reports
19 from everywhere at Dow to the best of my knowledge. I
20 don't think it had anything else in it, just Dow
21 reports.

22 Q. Oh, it was internal documents?

23 A. Yes.

24 Q. I see. So, a way of organizing the
25 research work and reports on such work that had been

1 done at Dow for the use of Dow professionals or
2 employees?

3 A. Yes, to the best of my knowledge. Although
4 I -- All I had was input to it. I never had anything
5 from it.

6 Q. Was it your practice during those years you
7 were an industrial hygienist at Dow to try to stay
8 abreast of the - of the literature in your field?

9 A. As best as I could, yes.

10 Q. And were you as best you could fairly
11 successful at doing that?

12 A. I think so.

13 Q. Do you recall any of the professional
14 journals that you followed during those years in the
15 '50's and the '60's?

16 A. I became a member of the American
17 Industrial Hygiene Association as soon as I could in
18 1956, and from then on had what was first called the
19 A.I.H.A. Quarterly, later the A.I.H.A. Journal, which
20 was my magazine. At the biochem research lab we had
21 subscriptions to several other journals, particularly
22 the A.M.A. Archives of Environmental Health.

23 We had the Industrial Hygiene Digest or
24 Industrial Health Digest, whatever it was called. We
25 subscribed to the Journal of the American Medical

1 Association. We had at the biochemical lab index
2 Medicus and possibly chemical abstracts -- No, we
3 probably had biological abstracts, not chem abstracts
4 and this kind of thing.

5 Q. Were you thinking of the Industrial Hygiene
6 Foundation's publication called the Industrial Hygiene
7 Digest?

8 A. Yes.

9 Q. Did you yourself attend any meetings or
10 functions of the Industrial Hygiene Foundation?

11 A. No, sir.

12 Q. You were active in your association, the
13 American Industrial Hygiene Association, were you not?

14 A. Yes, I was.

15 Q. What did that involvement consist of during
16 that - that first decade of your practice?

17 A. I became a member of the Hygienic Guides
18 Committee in the late '50's or mid-'50's and remained a
19 member until just about the time I left Dow. The last
20 three years or so I was chairman of that group. We
21 started a local section of the American Industrial
22 Hygiene Association in Midland. And as I recall, I went
23 through all the offices in the local section. And there
24 were probably other activities, but those are the ones
25 that stick in my mind.

1 Q. You would have been a fairly regular
2 attender of the annual meetings as well?

3 A. No, we took turns going to the annual
4 meetings so that I went to about one out of three.

5 Q. And then whoever went that year would bring
6 back the printed material that was handed out then if
7 there was any and notes and discuss with the colleagues
8 who were left behind topics of interest that were
9 covered I suppose?

10 A. Theoretically that is the way it worked,
11 and sometimes it actually did work that way when we had
12 time to do such things. At the conferences, there
13 wasn't a great deal of printed material handed out as I
14 recall.

15 Q. That would be followed -- That would follow
16 later in the journal or the quarterly?

17 A. Yes, if one presented a paper at the annual
18 conference, the journal had first crack at publishing
19 that paper. And -- Oh, quite a few of those papers were
20 published; but some of them weren't. And the only way
21 to know what was there was to attend the presentation of
22 the paper.

23 Q. I see. Is it the case, Dr. Peterson, that
24 you personally have never taken a midget impinger sample
25 of dust-containing asbestos?

1 A. Well, yes and no. I have never taken a
2 midget impinger sample for asbestos-containing dust.
3 However, I'm well aware that all air contains some
4 asbestos; and, therefore, every midget impinger sample I
5 took does contain some asbestos I'm sure or did.

6 Q. When did you become aware that all air as
7 you say contained some asbestos?

8 A. Oh, probably four or five years ago,
9 something on that order.

10 Q. So that we are clear then, you never used a
11 midget impinger to sample for asbestos in air?

12 A. That's correct.

13 Q. Did you have an opportunity over the lunch
14 hour to visit with the attorney for Owens-Corning
15 Fiberglas who is here today?

16 A. No sir.

17 Q. Had you talked with him before this
18 deposition began about your testimony today?

19 A. Oh, no.

20 Q. When was the last time you have seen that -
21 that lawyer?

22 A. Earlier this Spring when I testified for
23 him in Wisconsin.

24 Q. Was that in a trial or in a deposition?

25 A. In a trial.

1 Q. Is that just a case just involving asbestos
2 insulation companies as opposed to let's say chemical
3 companies, refineries, that sort of thing; or do you
4 have any idea?

5 A. I -- Gee, I don't know who all the
6 defendants were. I have no particular interest in that;
7 so, I don't know.

8 Q. When you testify such as you did recently,
9 do you give any opinions; or do you just state facts as
10 you recall them?

11 MR. CELBA: I'm going to object.
12 This is repetitious.

13 A. I answer questions.
14 (By Mr. Blanks)

15 Q. Yes, sir.

16 A. If the questions call for an opinion, I
17 give an opinion. But I -- I don't focus on this - this
18 kind of thing at all.

19 Q. On whether it's an opinion or it's a fact
20 statement?

21 A. That's right.

22 Q. Well, usually experts are hired to - to
23 give opinions. And that's why I was asking.

24 A. I understand that, and ---

25 MR. CELBA: (Interrupting) I

1 object to the statement of Counsel.

2 (By Mr. Blanks)

3 Q. You understand that?

4 A. I understand it.

5 MR. CELBA: I object to the form
6 of the question.

7 (By Mr. Blanks)

8 Q. So, are there any - any areas where you -
9 you do give opinions about Owens-Corning products,
10 asbestos products?

11 A. Not per se, no.

12 Q. In your testimony for Owens-Corning
13 Fiberglas, do you give opinion testimony about
14 Owens-Corning's conduct?

15 MR. CELBA: I object;
16 repetitious.

17 A. No.

18 (By Mr. Blanks)

19 Q. Have you ever offered opinions then about
20 the conduct of the - the asbestos victims who are suing
21 Owens-Corning Fiberglas?

22 MR. CELBA: I object;
23 argumentative.

24 A. I -- I don't recall doing so.

25

1 (By Mr. Blanks)

2 Q. Well, what -- What do you, in fact, then
3 give opinions about? That's - that's what I would like
4 to understand.

5 MR. CELBA: I'm going to
6 object; vague, ambiguous, indefinite
7 and overly broad.

8 A. One area that I have given opinions about
9 is whether the T.L.V. for asbestos dust in air is a
10 T.L.V. for asbestos or a T.L.V. for total dust, for
11 instance.

12 (By Mr. Blanks)

13 Q. All right, sir. Before we come back to
14 that, could you share with me any other sorts of
15 opinions you recall giving in your testimony for
16 Owens-Corning Fiberglas.

17 MR. CELBA: The same objection.

18 A. I have given the same kinds of opinions
19 that we have already gone through here. For instance,
20 that the person who is closest to the source of a
21 material in air is the one who is undoubtedly exposed to
22 the greatest concentrations of such materials. I have
23 talked - given opinions concerning the aerodynamic
24 properties of particles in the air. This - this is kind
25 of industrial hygiene related material.

1 (By Mr. Blanks)

2 Q. All right, sir. Can you -- I mean that's -
3 that's helpful. Can you recall anything - any other
4 general sorts of opinions that you express in this
5 category?

6 MR. CELBA: The same objection.

7 A. Not right offhand, no. Those are the
8 things that come to mind. But again, gee, file
9 testimony is really available to anybody; and - and you
10 can get that.

11 (By Mr. Blanks)

12 Q. Do you have copies of any of your trial
13 testimony?

14 A. I don't believe I have, no. I might have
15 one or two such things, but I ordinarily don't keep this
16 kind of information around. I have run out of storage
17 space.

18 Q. Do you find that - that the Owens-Corning
19 Fiberglas lawyers have available for your review your
20 prior trial and deposition testimony when you ask for
21 it?

22 MR. CELBA: Well, that assumes
23 facts not in evidence, that he asked
24 for it, Counsel.

25 A. I don't recall ever asking for it. So,

1 I -- I really don't know whether they have it or not.

2 (By Mr. Blanks)

3 Q. Has it -- Have they ever provided
4 transcripts of your prior testimony to you to look at,
5 to review?

6 A. Probably. I don't recall the
7 circumstances, but I would be surprised if that weren't
8 the case.

9 Q. All right, sir. So, you think that these
10 transcripts would be readily available from
11 Owens-Corning Fiberglas through its attorneys I suppose?

12 A. You will have to talk to them. I can't
13 speak for them.

14 Q. Now, you mentioned briefly before lunch
15 that it was your understanding that the so-called
16 threshold limit value for asbestos, which you said was
17 five million particles per cubic foot during past years,
18 was for asbestos particles and not for the total dust
19 count. Is that accurately recounting what you said?

20 A. I don't recall using the word particles.

21 Q. All right, sir.

22 A. But you used it properly; and, therefore, I
23 would go along with your statement.

24 Q. Well, in a - in a - in a nutshell then what
25 is the opinion you have expressed in the past about the

1 T.L.V. for asbestos, being one for total dust or for
2 asbestos?

3 A. Well, the T.L.V. for total dust was 50
4 million particles per cubic foot in this era until about
5 1971. And the T.L.V. for asbestos dust was five million
6 particles per cubic foot. That's hardly an opinion.
7 It's in the T.L.V. booklets. But apparently this is
8 challenged by some people.

9 Q. Now, you -- You said the T.L.V. for total
10 dust was 50 million particles?

11 A. Yes, sir, per cubic foot.

12 Q. For total dust of - of all kinds in the
13 work - work environment? I don't understand what you
14 are referring to.

15 A. The T.L.V. for total dust that - that does
16 not contain pneumoconiosis-producing materials such as
17 silica or asbestos and does not contain materials that
18 are otherwise toxic; in other words, the inert dusts.

19 Q. So, you are saying in the guidelines for
20 workplace exposures there is a 50 million particle per
21 cubic foot standard, or there was, for dust that didn't
22 contain any toxic contaminants?

23 MR. CELBA: Well, I'm going to
24 object ---
25

1 (By Mr. Blanks)

2 Q. (Interrupting) Is that - is that ...

3 MR. CELBA: --- he just gave the
4 answer, and you are restating it
5 incorrectly. Now, go ahead.

6 MR. BLANKS: Well, perhaps you
7 could state it correctly for us.

8 A. Well, again, I didn't mention ---

9 MR. CELBA: (Interrupting) He did
10 state it correctly. But go ahead.

11 A. I did mention the word toxic, and I know
12 this is a bone of contention as well in these kinds of
13 proceedings. The standards in the T.L.V. list for
14 mineral dusts had a T.L.V. for total dust for materials
15 that were not pneumoconiosis producing and which did not
16 contain otherwise toxic materials a standard of 50
17 million particles per cubic foot. The standard for
18 silica varied with the concentration of silica in the
19 dust, and the standard for asbestos dust was five
20 million particles per cubic foot.

21 (By Mr. Blanks)

22 Q. Am I understanding from this then that -
23 that you don't regard either asbestos or silica to be
24 toxic materials?

25 A. In my lexicon toxicity is a property of

1 matter. It is something possessed by everything to a
2 greater or lesser extent. And under those
3 circumstances, silica and asbestos and other mineral
4 dusts are toxic. However, the effect of these materials
5 is exerted in general by something other than their
6 ability to be toxic or the effect that we worry about.
7 And in that respect, they aren't toxic. So, however you
8 want to take it, that's the way I have talked about it
9 and feel about it.

10 Q. Well, I just want to be able to communicate
11 with you.

12 A. Uh-huh.

13 Q. And it doesn't do any good for us to be
14 talking passed each other. So, your view is that
15 virtually every - every material, every compound is
16 toxic?

17 A. Not virtually. Everything is toxic, yes.

18 Q. Okay.

19 A. Yes, absolutely. Water is toxic.

20 Q. Okay.

21 A. Oxygen is toxic. If you start eating table
22 clothes, they are toxic as well.

23 Q. Okay. So, basically then you are defining
24 toxic to be - to be meaningless for purposes of - of
25 assessing or talking about the hazards of materials.

1 So, we have to speak in some other term; right?

2 MR. CELBA: I object to the form.

3 It's argumentative, whether you view
4 it as meaningless or not.

5 A. No, I think it is meaningless because we
6 have to talk about the toxicity of materials and
7 toxicity varies. Toxicity is an extrinsic property of
8 matter in the same way that mass is an extrinsic
9 property of matter. And you can't say you could ignore
10 mass and say it isn't there. It certainly is. Toxicity
11 is there as well.

12 Some materials have more of this property
13 than others just as some materials have greater mass
14 than others. The amount of mass or the amount of
15 toxicity, if you will, depends upon the amount of
16 material present; which makes it an extrinsic property.
17 (By Mr. Blanks)

18 Q. Well, I -- I really don't mean to be
19 arguing with you, but you - you spoke of the total dust
20 standard of 50 million particles to mean dust that
21 didn't contain either a pneumoconiosis-causing dust such
22 as asbestos or silica and dust that didn't contain other
23 toxic materials. I think that was your wording.

24 A. Materials that were otherwise toxic ---

25 Q. (Interrupting) Materials ...

1 A. --- than being a pneumoconiosis producing.

2 Q. All right. So, that pretty well rules out
3 all other materials in the universe. What - what does
4 it mean when you say "materials that are otherwise
5 toxic"?

6 A. Oh, there are all sorts of materials that
7 exist in particulate form that are otherwise toxic that
8 exert their toxicity by being inhaled and winding up in
9 the lungs or the stomach and getting to the body that
10 way.

11 Q. Well, I follow you. I'm just wondering
12 using your definition what then other particulates can
13 you name that - that's not toxic.

14 A. Oh, I'm sorry. Of course, everything is
15 toxic. The mineral dusts, total dust standard was 50
16 million particles per cubic foot for materials that did
17 not produce pneumoconiosis and were not otherwise toxic;
18 that is, did not exert any particular effect by virtue
19 of their toxicity on the body; that their effects were
20 exerted simply because there was too much dust, if you
21 will - materials such as chalk, for instance, or
22 charcoal; things that are essentially physiologically
23 inert and would exert their effects on the body by
24 simply being too much in the respiratory tract.

25 Q. Okay. Now, you said the silica standard

1 varied with the concentration of free silica in the
2 silica dust.

3 MR. ALMQUIST: I don't think he's
4 testified to that, Mr. Blanks. I
5 think that's ...

6 THE WITNESS: You are right, I
7 didn't.

8 (By Mr. Blanks)

9 Q. All right.

10 A. I just said silica. And if we are going to
11 be particular about it, we can talk about
12 crystalline-free silica; and the standard did - it
13 didn't start out that way but eventually it became a
14 standard that depended upon the percentage of
15 crystalline-free silica in the dust that one inhaled.

16 Q. And for asbestos of - was there any - any
17 variation for the asbestos standard with respect to the
18 percentage of asbestos in the dust that one inhaled?

19 A. Not directly in the T.L.V. list, no.

20 Q. You are saying the T.L.V. list simply
21 specified that the - the guideline, maximum amount -
22 maximum allowable concentration then, then threshold
23 limit value later was five million particles per cubic
24 foot of asbestos?

25 A. Sure. And the same standard applied to

1 silica, for pure silica, five million particles per
2 cubic foot.

3 Q. Did this five-million-particle standard for
4 asbestos refer to particles of any particular size or
5 dimension?

6 A. No, except that people who were using the
7 standard were really expected to use the method for air
8 sampling upon which the standard was based, which was
9 the midget impinger.

10 Q. Now, where - where is that information
11 found? What - what reference can you give me for that
12 proposition?

13 A. I can't. It's simply that - one of those
14 things that industrial hygienists were expected to know.
15 We have as I mentioned earlier this morning literally
16 dozens of ways of sampling air for dust, for particulate
17 material. Each one of these methods will give a
18 different result. Therefore, if you are going to get a
19 result that is comparable to the results upon which the
20 standard is based, you must use a method that is
21 comparable to the method so used.

22 Q. In the 1950's when you started doing
23 industrial hygiene work or had your training, there
24 weren't dozens of - of ways to measure for dust in the
25 air, were there?

1 A. Yeah, probably.

2 Q. Which ones did you learn of?

3 A. We have already talked about them, the
4 methods that we had at Dow; and those were the ones that
5 I knew.

6 Q. Which ones would you use or were you taught
7 to use to measure for asbestos dust in air?

8 A. We -- I happened to use a filter method for
9 asbestos dust in the air.

10 Q. This was in the '50's?

11 A. This was in '58.

12 Q. What -- Could you tell me more about the
13 filter method. I mean what - what did this entail?

14 A. This was a method that used a mixed
15 cellulose ester membrane filter as the material through
16 which air was drawn to capture the dust. Then that
17 filter was examined microscopically to determine the
18 amount of asbestos or, in fact, the amount of - the
19 number of dust particles on it if you want to look at it
20 that way.

21 Q. Just using a light field microscope?

22 A. Yes.

23 Q. And this is the method that you were taught
24 to use at Dow, or is this just one that you stumbled on
25 to or what?

1 A. No, it's just one that I happened to use
2 when I did the sampling that I did do.

3 Q. Well, now, earlier you told me I think that
4 you hadn't done any sampling for asbestos dust at Dow.
5 And I apologize if I'm misrecollecting. What - what are
6 you referring to now, sir?

7 A. You asked me if I had done any asbestos
8 dust sampling at Dow with a midget impinger, and I said
9 no; and I have not.

10 Q. So, you have done some sampling for
11 asbestos dust at Dow?

12 A. Yes, I took -- I did this once as I recall.

13 Q. And what was the occasion of that?

14 A. This was a -- There was a gentleman who
15 worked in one of the technical service departments who
16 became ill, and the medical department asked the
17 industrial hygiene group to determine his exposures to
18 everything that he was working with. This was done in -
19 earlier in 1954 I believe. And I did it. I was chosen
20 to do the job in 1958.

21 Q. You say something was done earlier in 1954.
22 What - what did you mean? You lost me there.

23 A. There was a survey of his exposures done by
24 one of the other Dow industrial hygienists.

25 Q. Oh, four years earlier?

1 A. Yes.

2 Q. I see. Okay. And what - what kind of work
3 was he doing that would have involved a potential
4 asbestos exposure?

5 A. He was working with floor tile
6 formulations, the object being that Dow apparently
7 wanted to get into this kind of business by furnishing
8 resins to floor tile manufacturers. In order to do
9 this, they had to show manufacturers of vinyl asbestos
10 tile, for instance, that Dow resins were at least as
11 good or better than and cheaper than or whatever the
12 materials that they were using. So, he was playing
13 around with asbestos floor tile or vinyl asbestos floor
14 tile type formulations.

15 Q. Did Dow actually set up a little production
16 line to - to make some sample asbestos, vinyl asbestos
17 floor tile?

18 A. I wouldn't call it a production line, no.
19 It was done on a laboratory scale by this gentleman and
20 a helper as I recall at the most a few times a month.
21 So, it wasn't a production line ---

22 Q. (Interrupting) Okay.

23 A. --- by a long shot.

24 Q. Sort of a little - not even a pilot plant,
25 but at - you said it was in a laboratory?

1 A. It was in a laboratory, yeah.

2 Q. But simulating what you would be doing in
3 actually producing the vinyl asbestos tile I suppose?

4 A. No, that wasn't the intent. The intent was
5 to produce a material that would be similar to that
6 produced when vinyl asbestos tile was produced, using
7 somewhat similar techniques; but certainly not identical
8 techniques by a long shot. There wasn't any attempt
9 made to copy production techniques that - to the best of
10 my knowledge.

11 Q. Just trying to end up with a finished
12 product that would be akin to what would be produced ---

13 A. (Interrupting) Yes.

14 Q. --- in the factory?

15 A. That's correct.

16 Q. Did Dow ultimately go into this business of
17 making vinyl asbestos floor tile?

18 A. I'm not privy to that information; but to
19 the best of my knowledge, no.

20 Q. Dow was ---

21 A. (Interrupting) Oh, Dow never tried to make
22 vinyl asbestos floor tile.

23 Q. Oh, they were going to make a vinyl
24 component to sell to the floor tile makers?

25 A. Correct.

1 Q. I see. So, you yourself actually took some
2 samples around this gentleman's work area while he was
3 doing the formulation of the vinyl asbestos tile?

4 A. Yes, I did.

5 Q. Why - why did you use this filter method
6 instead of using the midget impinger?

7 A. I used the filter method as a short cut so
8 that I could look at the results of the sampling. And
9 if the total dust concentration found on the filter was
10 less than the standard - the T.L.V. for asbestos, I
11 wouldn't have to go further and actually sample and have
12 the sample analyzed for asbestos.

13 Q. Now, why would that be so?

14 A. The standard for asbestos is or was five
15 million particles per cubic foot. If I sampled for
16 total dust and the total dust concentrations were less
17 than five million particles per cubic foot, obviously
18 then the asbestos dust concentration was less than five
19 million particles per cubic foot and I did not have to
20 sample specifically for asbestos.

21 Q. Okay. That - that makes sense. But why
22 not just go ahead and use the midget impinger and do it
23 the way that the standards called for?

24 A. There are many reasons for that. The first
25 one being that it is difficult to get good midget

1 impinger samples, particularly breathing zone samples,
2 because the person whom one is sampling - whose
3 breathing zone one is sampling has to in essence wear a
4 midget impinger that has liquid in it. And the liquid
5 can be either -- Well, that's beside the point. If he
6 bends over at the wrong time, the liquid gets sucked up
7 into the pump. And it's just easier, a lot easier to
8 use a filter method.

9 If, in fact, I had had to sample
10 specifically for asbestos dust, I would have used a
11 midget impinger. But it turned out that the
12 concentrations were well below five million particles
13 per cubic foot; therefore, there was no need to sample
14 specifically for asbestos.

15 Q. Was it also difficult to get midget
16 impinger samples for area monitoring purposes?

17 A. No. No. One could set those up. I -- I
18 just didn't. That's all.

19 Q. Okay. If you were going to take a sample
20 in the breathing zone of the worker, what - what would
21 you do, just come up near him with the midget impinger,
22 come within a - a foot of his nose or mouth and - and
23 just collect a sample?

24 A. That's the way we did it before we had
25 battery powered pumps, yes.

1 Q. How long does it actually take to collect a
2 sample like that, one sample?

3 A. Well, one tries to sample long enough so
4 that the impinger collects enough dust to count. In --
5 As a matter of fact, generally such samples run in the
6 order of 15 or 20 minutes in duration.

7 Q. I see. Now, how about when you are using
8 this filter method, what do you use to collect that
9 sample? I mean what draws the air across the filter?

10 A. An electric pump of some kind. Once we had
11 small battery powered pumps that could be carried on the
12 belt, these were used. Before we had battery powered
13 pumps, we had pumps we could plug into the wall and draw
14 air through the filter.

15 Q. How long does it take to collect one of
16 those samples?

17 A. Again, it depends upon what one is looking
18 for. You try to sample at a high enough flow rate for a
19 long enough period of time to get something on the
20 filter that you can analyze.

21 Q. Okay. Was it the case that this filter
22 method you used in 1958 to monitor the man who is using
23 asbestos to formulate - to work with the vinyl tile
24 formulation was capable of capturing asbestos particles,
25 asbestos dust?

1 A. Yes. In fact, the membrane filter method
2 is very, very close to being 100 percent efficient for
3 all kinds of dusts. It is far more efficient at
4 capturing dust than is the midget impinger.

5 Q. And, so, looking at that filter, the
6 membrane filter -- So, looking through the microscope at
7 the membrane filter you can then see asbestos dust
8 particles if they are present?

9 A. Well, you see dust particles. You don't --
10 You can't tell by looking whether they are asbestos or
11 not. In fact, I didn't do the analytical work. This
12 was done by another Dow lab that specialized in
13 microscopic analysis.

14 Q. Did you yourself ever do any counts while
15 you were at Dow for asbestos particles or fibers?

16 A. No, sir.

17 Q. That was always done by somebody else in -
18 in the lab?

19 A. Well, as I said, I only took the sampling
20 under the one circumstance. And always is a pretty big
21 word to use for a single occasion.

22 Q. Okay. This is your - your only experience
23 at Dow with sampling air for asbestos?

24 A. To the best of my knowledge, yes.

25 Q. All right.

1 A. That's the only report that anyone has
2 found in the Dow files.

3 Q. And no - no others come to your mind?

4 A. No. In fact, many years ago I started in
5 depositions saying that I recalled doing sampling for
6 asbestos once; and I couldn't remember where or when.
7 And since I have read the report, my memory has been
8 refreshed.

9 Q. When did you get to read the report?

10 A. Oh, probably two or three years ago,
11 something on that order.

12 Q. So, in your training by Mr. Hoyle then,
13 you were taught to collect samples. I mean that - that
14 much you made clear. I'm wondering if he also taught
15 you then how to count the samples, to count for
16 particles in dust samples?

17 A. No, he did not.

18 Q. Did anyone teach you that?

19 A. When I was working on my Masters degree, I
20 did some counting of microscopic particles. These
21 happened to be droplets of water rather than fibers or
22 particles of solid material. And I did learn how to do
23 it then. But I never even looked through a microscope
24 when I was at Dow. There were other people we could
25 have do that.

1 Q. Well, okay. I -- I don't mean that to be
2 critical. I was just curious.

3 So, I guess it's safe to say then that
4 before - as of the time you left Dow in 1965 to go back
5 to school, you had never seen an asbestos particle or
6 fiber from - from an air sample?

7 A. I may have seen photographs,
8 microphotographs or photomicrographs in journal
9 articles. But in - in real time, no, I never did. I
10 didn't look through microscopes. That's a tough job.

11 Q. Now, you told us a few minutes ago that you
12 really couldn't tell when looking at the membrane filter
13 sample if the particles were asbestos or not. What
14 do -- What do you base that on?

15 A. Gee, quite a lot of reading; and also a
16 knowledge that the particle's size and shape gives very
17 little clue as to its origin. So that even a particle
18 that looks fibrous in nature, for instance, could be a
19 textile fiber. It doesn't have to be an asbestos fiber.
20 And you can't tell the difference under the microscope
21 to the best of my knowledge.

22 Q. Can you refer us, Dr. Peterson, to any
23 published literature from the '50's or even the '60's
24 that - that supports what you say that the threshold
25 limit value for asbestos of five million particles

1 referred to five million asbestos particles as opposed
2 to a total dust of five million particles containing
3 asbestos?

4 A. I doubt if the question ever arose.

5 Q. Is that a "no"?

6 A. That's a no.

7 Q. Is it - is - is this matter specifically
8 addressed in any of the - the guideline publications
9 that contain the T.L.V.'s; do you know?

10 MR. CELBA: I'm going to object.
11 It's an argumentative type of question
12 in that you are assuming there was a
13 question created by it. This
14 individual has testified there was
15 not. I object to the form of the
16 question.

17 A. The - the only thing I can think of that
18 addressed this particular kind of question was the 1938
19 Dreessen report upon which the standard was based where
20 the concentration of asbestos in the dust that people in
21 these textile plants were breathing was on the order of
22 90 percent of the dust, something on that order; and,
23 therefore, this standard is based on essentially pure
24 asbestos in the air.

25

1 (By Mr. Blanks)

2 Q. And that information about the - the
3 percentage of the dust that was asbestos and so forth
4 came from the samples that Dreessen was taking in those
5 plants?

6 A. Yes. I don't think Dreessen did any
7 sampling, but ...

8 Q. The Dreessen group, whoever he was
9 reporting on?

10 A. Yes.

11 Q. So, at least at Dow and in your mind the
12 five million particle standard was one for total
13 asbestos and not total dust?

14 A. Oh, of course.

15 Q. Okay. And that was the case through all
16 the years that you worked there and as far as you know
17 thereafter?

18 A. Sure. I'll go back and say that there were
19 many times when we would or could have taken total dust
20 samples with the idea being that if the concentration
21 were less than five million particles per cubic foot,
22 that there was no need to take a sample specific to
23 asbestos.

24 Q. Okay. But where you were sampling for
25 asbestos, that's what you were counting and reporting or

1 that's what would have been counted and reported at Dow;
2 that is, the asbestos content of the sample?

3 A. Oh, sure, if - if, in fact, that could be
4 done. And quite often it could not be done because the
5 amount of material that we collect in an impinger or on
6 a filter is minute. And ordinarily the information that
7 relates to how much of that material is asbestos comes
8 from a different source, at least in those days it did
9 because we didn't have electron microscope probes and so
10 forth where one could analyze individual particles that
11 we have today.

12 Q. Now, wait. What are you telling me? You
13 are telling me you could see the asbestos particles to
14 count them or you couldn't?

15 A. No, you could see them, sure.

16 Q. And you could count them?

17 A. And you could count them.

18 Q. Uh-huh.

19 A. But you don't know whether they are
20 asbestos or not when you look at them under the
21 microscope and count them. All you -- All you see is
22 particles. And I have to go back and correct myself. I
23 did look through microscopes occasionally, and that's
24 when I used the B & L dust counter; and then I had to do
25 the counting.

1 But what you see is particles. And you
2 don't have any real clue as to what they are from the
3 sample, the air sample that you have taken. The
4 technique at that time was to use what are called rafter
5 samples. And one can find references to rafter samples
6 in the literature. This is where the dust has
7 accumulated somewhere, and you take a handful of it and
8 have it - it analyzed to determine how much asbestos is
9 in the dust, for instance. And then you apply that
10 percentage to the air samples one takes.

11 This is the technique that was used by the
12 Dreessen crew in 1938. And it's a perfectly acceptable
13 way of doing things.

14 Q. Was this the approach you used at Dow when
15 sampling for asbestos to - to take rafter samples or ...

16 A. It's an approach that we could have used.
17 As I told you, I only did it once; and I don't know
18 what the other fellows did. I don't have direct
19 knowledge.

20 Q. Well, have you heard about any asbestos
21 sampling done at Dow let's say in connection with
22 insulation activities?

23 A. I understand that Mr. Hoyle took some
24 samples. I was not aware of it at the time. And it
25 may have been after my time there. I -- I don't

1 remember.

2 Q. When do you think it became possible to
3 actually see the asbestos dust in the samples that you
4 collected ---

5 MR. CELBA: (Interrupting) I'm
6 going to ...

7 (By Mr. Blanks)

8 Q. --- to distinguish them from ...

9 MR. CELBA: ... object to the
10 form of that as misconstruing the
11 testimony of this witness.

12 (By Mr. Blanks)

13 Q. When do you think, Dr. Peterson, it became
14 possible to distinguish the asbestos particles from
15 other dust particles in a sample collected from the air?

16 MR. CELBA: The same objection.

17 A. I really can't point at a date or even an
18 era. All I can say is that with the advent of the
19 electron microprobe it became possible to determine the
20 elemental composition of individual particles. This
21 method is far too time-consuming and expensive to use
22 for most air sampling, however. So, I -- I don't know
23 that this can be done today with an air sample with any
24 great amount of success, the ordinary air sample we
25 take.

1 (By Mr. Blanks)

2 Q. Was - was it the approach at Dow in the
3 '50's when you were there to - to measure for asbestos
4 dust in connection with insulating activities?

5 A. Well, I never did. And I -- I don't know
6 that anybody else did either.

7 Q. Do you know when this was first done at
8 Dow?

9 A. No, not right offhand.

10 Q. Was it the - the policy at Dow to expose
11 workers to concentrations of pneumoconiosis-producing
12 dust in excess of the T.L.V. in the 1950's?

13 A. No.

14 Q. Did that happen at Dow?

15 A. I imagine so.

16 Q. What did the industrial hygiene department
17 do to be - to be certain that exposures to dust like
18 asbestos or free silica were not above the standard or
19 the guideline of the 1950's?

20 A. Well, in the first place industrial hygiene
21 is far from a certain activity. There is no way one can
22 be certain about anything which is why I answered your
23 question "I imagine so" when you asked it. I have no
24 way of telling whether people were ever exposed above
25 the numerical value of the T.L.V.

1 If the question had arisen, and I'm not at
2 all sure that it did - in fact, it certainly did not to
3 me - we would have checked the literature. We would
4 have found the Fleischer-Drinker report and found that
5 in general insulators were not at risk and we would have
6 said, "Fine, that probably applies to our people, too."
7 But I don't think the question ever arose when I was
8 there.

9 Q. You - you think that it would have been
10 reasonable in the 1950's to rely on the
11 Fleischer-Drinker article about shipyard insulators to
12 conclude that insulators in Dow plants would not be at
13 risk from asbestos exposure?

14 A. Rely upon is a difficult phrase to handle.
15 The technique used in that particular survey was using
16 the B & L microscope which gives you extremely
17 conservative results. People on board ship in general
18 are in much more confined places than people in a
19 chemical plant. And under those circumstances it
20 appears to me now and it probably would have appeared to
21 me then that conservatively one could say the chances of
22 being overexposed at Dow were nil.

23 Q. And that would have been your view in the
24 1960's as well?

25 A. Sure, probably.

1 Q. Apparently you never felt the need to
2 confirm that - that notion by taking samples of people
3 doing insulating work. And you don't recall your
4 colleagues doing any during the '50's, do you?

5 A. I do not recall my colleagues doing
6 anything. And the business about not feeling a need to
7 do it, I'm - I'm not sure the question ever crossed my
8 mind as to the possibility of doing it or a reason for
9 doing it.

10 Q. Is that because you were working on other
11 things or ...

12 A. We were all awfully busy.

13 Q. All right, sir.

14 A. Always.

15 Q. Well, I can appreciate that three men and
16 even five men would be awfully busy in those years.

17 A. We were.

18 Q. Can you tell us whether or not
19 asbestos-containing insulation was being used in Dow
20 plants in the 1950's when you began doing industrial
21 hygiene work?

22 A. Not from my own knowledge, no. I don't
23 have any idea whether it was or not.

24 Q. Have you ever heard that that was the case?

25 A. Yes, certainly. I read Mr. Hoyle's

1 deposition, and I know that at one point he became aware
2 of this. I certainly wasn't aware of it.

3 Q. You weren't aware of it until you read
4 Mr. Hoyle's deposition?

5 A. That's about right.

6 Q. It's your impression that thinking back now
7 that none of the other industrial hygienists were aware
8 of the presence of asbestos insulation in Dow plants
9 during the '50's?

10 MR. ALMQUIST: I'm going to
11 object to the question. It calls for
12 speculation on the part of the witness
13 in the sense that it asks him to
14 speculate as to what somebody else's
15 knowledge or opinion was.

16 A. The best -- To the best of my recollection
17 we never discussed the subject. And I have no way of
18 knowing what the other industrial hygienists knew or
19 felt.

20 (By Mr. Blanks)

21 Q. What things did you do to acquaint yourself
22 with the scope of the potential occupational health
23 hazards in Dow plants when you started your - your
24 training there in 1953?

25 A. Well, you will recall that I told you that

1 one of the things I did in my training was to visit all
2 of the production plants. And I also visited pilot
3 plants and semi-plants for walk-throughs, if you will.
4 And that was probably the best introduction I had to the
5 potential for hazards in those areas.

6 Q. Do you recall seeing thermal insulation in
7 the - in the Dow units, the production units?

8 A. Sure.

9 Q. But you didn't learn then and have really
10 never learned to your personal knowledge what - what
11 that insulation was made of?

12 A. That is correct.

13 Q. Did you observe during these walk-throughs
14 in the plants people applying insulation or removing
15 insulation?

16 A. No, not that I can recall.

17 Q. Did you have fabricating shops anywhere in
18 the Dow plants that - that would be a place where people
19 would work on the - the asbestos insulation or
20 insulation, cut it, fit it, shape it?

21 A. I don't recall any such fabrication
22 facilities, no.

23 Q. As you look back today, do you think that
24 the industrial hygiene group should have - should have
25 known or found out in the 1950's that the insulation in

1 the plants did contain asbestos?

2 A. I don't -- I don't see how I can go back
3 and - and change things in the '50's even if I would
4 want to. All I can tell you is that we didn't. And I
5 at that time saw no reason to do so. And I don't see
6 how I could change my mind from the present going back.

7 Q. I see. But by that time you also knew that
8 asbestos was a cause of asbestosis, a lung disease that
9 could be fatal, did you not?

10 A. Yes, I did know that.

11 Q. And by that time you knew that asbestos was
12 regarded as being a probable carcinogen, did you not?

13 MR. ALMQUIST: What time are you
14 talking about, Mr. Blanks?

15 MR. BLANKS: I'm talking about in
16 the 1950's when this gentleman began
17 his career under the tutelage of
18 Mr. Hoyle.

19 A. No, I had no idea that asbestos was a
20 probable carcinogen at that time.

21 (By Mr. Blanks)

22 Q. Did you regard it at that time as being a
23 possible carcinogen?

24 A. No.

25 Q. Did you think it even to be suspected of

1 being a carcinogen?

2 A. No.

3 Q. At what point in your career did you come
4 to a state of awareness that asbestos was - was regarded
5 as a probable carcinogen?

6 A. 1965.

7 Q. What was the occasion of that,
8 Dr. Peterson?

9 A. I left Dow and went back to school. And
10 when I got to Ann Arbor, the ability of asbestos to
11 cause mesothelioma was the topic of conversation. We
12 all discussed it. We were all surprised at it. To the
13 best of my knowledge I certainly was. But I became
14 aware at that time of Dr. Selikoff's work.

15 Q. Now, having since then learned more and
16 perhaps learned more of the literature, do you - do you
17 have an opinion that you have ever expressed before
18 about when it became established that asbestos was a
19 probable carcinogen?

20 MR. CELBA: It assumes facts not
21 in evidence.

22 A. No.

23 (By Mr. Blanks)

24 Q. You have never done any review of the
25 literature to - to acquaint yourself with that?

1 A. I have done a review of the literature.
2 However, I have never been asked that opinion in
3 deposition or in Court.

4 Q. Have you formed an opinion based on your
5 review of the literature?

6 A. I -- Not really because it depends upon an
7 awful lot of things. It depends upon a knowledge of
8 hindsight in the first place. All - all I can talk
9 about really in trying to put myself back in the '50's
10 and '60's is what I did know. And I did not have any
11 idea whatsoever that asbestos could cause cancer. So
12 far as I'm concerned that knowledge came to me in 1965.

13 Q. Okay. I accept that.

14 A. Okay.

15 Q. I'm not - not arguing with that point. I'm
16 just wondering if you have since done any studying that
17 would cause you to have an opinion about when you could
18 have known that had you been following the literature.

19 MR. ALMQUIST: And I think you
20 have asked that question, and he's
21 answered it already at least twice.

22 MR. CELBA: I join in the
23 objection.

24 A. No, not really. I just don't think of
25 things that way. That's a legal way of looking at

1 things, and I don't think of them that way. I'm an
2 industrial hygienist.

3 (By Mr. Blanks)

4 Q. Knowing what you know today as an
5 industrial hygienist, what do you think Dow should have
6 been doing in the mid-1950's to control for potential
7 asbestos exposures in its plants?

8 A. Probably what Dow was doing at the time.
9 I -- Dow had no way of doing things differently to the
10 best of my knowledge.

11 Q. In the mid-1950's when you started at Dow
12 did Dow have the capability of using wet methods to
13 handle asbestos insulation in its plants?

14 A. Sure, of course.

15 Q. Wetting agents were known to exist then,
16 were they not?

17 A. Well, back then about the only wetting
18 agent we had around that was commonly available was
19 soap.

20 Q. Detergent?

21 A. We didn't have much in the way of
22 detergents in the early '50's.

23 Q. Okay.

24 A. There were some available. But, sure, wet
25 methods could be used; and wet methods were being used

1 with silica, for instance. If the question had
2 arisen -- Well, there is a lot of ifs; and I -- I don't
3 deal in ifs generally.

4 Q. Okay.

5 A. I try not to.

6 Q. And in 1953 or thereabouts Dow would have
7 had the capability to provide its insulators with
8 protective clothing while doing asbestos work; wouldn't
9 that be true?

10 A. Well, of course. But as I have indicated
11 the protective clothing isn't to protect the insulator
12 or the worker. It's to prevent the spread of the
13 material more than anything else.

14 Q. Yes, sir.

15 A. So ---

16 Q. (Interrupting) Such as, for example,
17 carrying asbestos dust home to the laundry room where
18 people in the house could be exposed to it?

19 A. Well, I suppose that's one of the scenarios
20 that one could think about.

21 Q. And I suppose Dow had the capability to
22 provide airline respirators for people working with
23 asbestos in - in the mid-1950's; isn't that so?

24 A. Well, it would depend to a great extent
25 upon where they were doing the work. I -- If the work

1 was being done inside of a building, sure, airline
2 respirators could have been provided. If the work is
3 being done on the high temperature steam lines that ran
4 throughout the plant, probably not. It probably would
5 have been impractical to provide airline respirators.

6 Q. So, certainly Dow had the capability to
7 provide mechanical filter respirators in the early
8 1950's to protect against mineral dusts such as
9 asbestos; isn't that so?

10 A. Yes, such respirators were available.

11 Q. And in any event, as an industrial
12 hygienist you would view respirators generally as being
13 your - the last line of defense against dust exposures,
14 wouldn't you?

15 MR. CELBA: I'm going to object
16 as vague and ambiguous and
17 argumentative.

18 (By Mr. Blanks)

19 Q. I can see why Counsel for Owens-Corning
20 Fiberglas would object to that, Dr. Peterson. But would
21 you agree with me or not, sir?

22 MR. CELBA: I'm going to move to
23 strike your observation, Counsel,
24 although it's appreciated.

25 A. The -- It depends on the circumstances.

1 There - there are times and circumstances where an air -
2 an air-purifying respirator is really the only
3 protection that one can have. And under those
4 circumstances it's the first line of defense.

5 (By Mr. Blanks)

6 Q. Those would be situations where you
7 couldn't through some other means of control eliminate
8 the - the exposure; isn't that right?

9 A. If you will change your question to reduce
10 rather than eliminate, I will go along with it. We - we
11 can't really eliminate exposures to anything. Somebody
12 once sat down and calculated that each breath we take
13 contains 200 molecules of air that passed through the
14 lungs of Cleopatra. When things get into the air, they
15 get dispersed and we breathe them. You can't eliminate
16 exposures to me as a scientist. You can reduce them.

17 Q. Certainly if the asbestos fiber had been
18 eliminated as an ingredient in insulation products such
19 as Kaylo, that at least would have eliminated the
20 potential for exposure to asbestos from the use of the
21 Owens-Corning insulation product, would it not?

22 MR. CELBA: I object. It's
23 argumentative; lack of
24 foundation; calls for speculation;
25 it's vague and ambiguous.

1 A. I don't even know that Kaylo could be made
2 without asbestos in it. So, your - your question is
3 difficult to answer if not impossible. I can't answer
4 it.

5 MR. ALMQUIST: We have been going
6 another hour here. Let's take a
7 break, if we could. I need to get up.

8 MR. BLANKS: Okay.

9
10 (A BRIEF RECESS WAS TAKEN.)

11
12 (By Mr. Blanks)

13 Q. We were -- We were discussing respirators
14 and circumstances where they might be your only line of
15 defense or your first line of defense. I was asking you
16 as a general rule, you would prefer to use other control
17 measures where they would work before having to trust a
18 respirator to protect a worker from a hazardous dust
19 exposure, wouldn't you?

20 MR. CELBA: Well, I'm going to
21 object. It's been asked and answered.
22 It's repetitious, and it's
23 argumentative.

24 A. Where they would work and where they could
25 be available one would have to add before I could agree

1 with your statement or your question.

2 (By Mr. Blanks)

3 Q. All right, sir.

4 A. But other than that, sure. We try to use
5 other techniques of control before we use personal
6 protective devices of any kind except for safety
7 glasses.

8 Q. Okay. At Dow you had the capability in the
9 early '50's when you went there to - to isolate work
10 areas that had asbestos insulation being handled, didn't
11 you?

12 A. If the areas were indoors, one could
13 isolate them. We didn't have available to us the
14 techniques we have today to isolate sections of
15 pipeline, for instance, all by themselves. So that if
16 one were out of doors, isolation would have been a very
17 difficult thing to do.

18 Q. Would it be difficult to isolate the work
19 area from other workmen by simply not allowing them in
20 the area when the asbestos dust was being generated?
21 That would be a form of isolation, wouldn't it?

22 A. Yes and no. The problem there is that you
23 might have to consider maintaining such isolation over
24 extended periods of time which would mean really a - a
25 plant shutdown perhaps to do something. And that might

1 be difficult. Each - each circumstance really has to be
2 looked at in its entirety. One can't take a little
3 piece of it and say "This is always the way to do
4 something" or "This is never the way to do something."

5 Q. Yes, sir. And we are just now discussing
6 the things that Dow would have been capable of doing by
7 way of hygienic controls in the early 1950's when you
8 got there. And I'm not trying to prescribe them as
9 something you should have done in every instance. I
10 mean do you understand?

11 A. Sure. Well, in general Dow had good
12 capabilities.

13 Q. You had the capability to use exhaust
14 ventilation to control asbestos dust in connection with
15 insulating activities?

16 A. Yes.

17 Q. Again, back in the early '50's?

18 A. Yes.

19 Q. I assume from what you have told me about
20 the equipment, the equipment that was in the industrial
21 hygiene group when you arrived that you had at Dow had
22 the capability to monitor or sample for asbestos dust in
23 air?

24 A. We did.

25 Q. And would it have been the case,

1 Dr. Peterson, that in the early 1950's that Dow had the
2 capability to do medical monitoring of its workers who
3 were potentially exposed to asbestos?

4 A. Certainly.

5 Q. Now, could you share with us then,
6 Dr. Peterson, any of these different techniques for
7 controlling exposures to asbestos dust in air that were,
8 in fact, used at Dow in the 1950's that - that you know
9 of.

10 A. As I have said, I'm not aware of any work
11 that we did with asbestos-containing materials.

12 Q. By that you mean you are not aware of any
13 work that the industrial hygiene group did with respect
14 to controlling exposures to asbestos-containing
15 materials?

16 A. And more than that, I'm not aware of any
17 work that Dow people did with asbestos-containing
18 materials.

19 Q. Would you know, sir, whether any
20 contractors on Dow premises did work with
21 asbestos-containing materials at Dow?

22 A. I have no direct knowledge of that one way
23 or the other.

24 Q. Is that something that would have not been
25 of any concern to the industrial hygiene group during

1 the '50's; that is to say potential exposures to
2 contractor employees on Dow premises?

3 A. You are getting into an area where I really
4 can't respond because I was not the person directing the
5 industrial hygiene group. I was just one of those who
6 did what he was told to do: "Go out and do some
7 sampling, evaluate exposures here" and so forth.

8 Q. Do you recall doing any sampling or
9 evaluations for exposures to contractor employees on Dow
10 premises?

11 A. No, I don't.

12 Q. Is it your recollection that in say the
13 1955 period that Dow regarded asbestos insulation as
14 being a potentially hazardous material?

15 A. I don't know that Dow had any asbestos
16 insulation around to regard as a hazardous material.

17 Q. All right, sir. Do you have an answer to
18 my question, though?

19 A. No, I don't. I - I -- As I said, I don't
20 know that Dow had any asbestos insulation around to
21 regard one way or the other. Is it hazardous? It
22 depends upon circumstances. Is there a likelihood of
23 injury is what we meant by hazard and what I mean by
24 hazard today.

25 And Dow may have had asbestos-containing

1 materials around. And where -- The only place - place I
2 know where asbestos, per se, was used was in the
3 chlor-alkali plant. And I know that only from reading
4 Mr. Hoyle's deposition.

5 Q. Was that a Midland plant?

6 A. Yes.

7 Q. Well, sir, were you aware in 1953 or '54 or
8 '55 that asbestos insulation was a potentially hazardous
9 material?

10 MR. CELBA: I'm going to object
11 to the form of the question as vague
12 and ambiguous, indefinite, overly
13 broad.

14 A. I didn't know ---

15 MR. CELBA: (Interrupting) And
16 argumentative.

17 A. Yes. I don't know there was such a thing
18 as asbestos-containing insulation at that time.

19 (By Mr. Blanks)

20 Q. When do you think you first learned that
21 there was such a thing as asbestos-containing
22 insulation, approximately?

23 A. I have no idea. I just don't know.
24 Eventually the knowledge came to me, but I don't know
25 where it came from or what the circumstances were.

1 Q. Do you think that would have been after you
2 left Dow and went back to school and heard about the
3 mesothelioma cases?

4 A. No. In fact, it may well have been later
5 than that. It may well have been when I was retained by
6 attorneys for O.I. I just don't know.

7 Q. All right, sir. Do - do you have any
8 recollection that would suggest that - that Mr. Hoyle in
9 the 1950's regarded asbestos insulation material as
10 being a potentially hazardous material?

11 MR ALMQUIST: I object to the
12 form of the question as calling
13 for speculation on the part of the
14 witness as to what some other person
15 regarded or knew.

16 MR. CELBA: I join in the
17 objection. It's argumentative.

18 A. I don't know what Mr. Hoyle knew.
19 (By Mr. Blanks)

20 Q. I understand that you might not know with
21 the kind of scientific certainty that you are used to
22 dealing with about what Mr. Hoyle knew or didn't know.
23 But I was asking you, sir, what your impression was
24 about Mr. Hoyle's awareness as to asbestos insulation
25 being a potentially hazardous material in the

1 mid-1950's.

2 MR. ALMQUIST: The same
3 objection.

4 (By Mr. Blanks)

5 Q. If you had one.

6 MR. CELBA: The same objection.

7 A. I don't. I have no idea.

8 (By Mr. Blanks)

9 Q. Mr. Hoyle never expressed to you any -
10 anything about asbestos insulation being a potentially
11 hazardous material?

12 A. I don't ---

13 Q. (Interrupting) To your recollection.

14 A. I don't recall ever discussing insulation
15 materials with Mr. Hoyle under any circumstances.

16 Q. If you had been informed by Owens-Illinois
17 in say 1953 that - or by Owens-Corning Fiberglas in 1953
18 that asbestos should be regarded as a potentially
19 hazardous material, do you think it likely that you then
20 would have at least made inquiry about whether there was
21 any of that material in Dow plants?

22 MR. CELBA: I object. It's
23 repetitious, vague, ambiguous, overly
24 broad, indefinite. Calls for
25 speculation; lack of foundation and

1 improper hypothetical.

2 A. As I have indicated, soon after I joined
3 the industrial hygiene crew, I became aware that
4 asbestos could cause asbestosis. If Owens-Illinois or
5 O.C.F. or anybody else had told me this, I would have
6 been - I would have regarded it as superfluous
7 information.

8 (By Mr. Blanks)

9 Q. Did the fact that asbestos could cause
10 asbestosis mean to you that the insulation containing
11 asbestos should be handled as a potentially hazardous
12 material?

13 MR. CELBA: The same objection as
14 previously stated.

15 A. Yes, in that just about everything that one
16 looks at or monkeys around with can be so handled.
17 (By Mr. Blanks)

18 Q. I'm sorry. I don't follow that. You are
19 saying that - that everything you handle should be
20 treated as a potentially hazardous material; the table
21 cloth, the glass of water? I mean what - what are you
22 saying, Dr. Peterson?

23 A. I am saying that just about anything we
24 deal with has the capability of causing harm. How we
25 deal with it depends upon the perceived probability of

1 that harm occurring. And without analyzing
2 circumstances, I can't say whether a material is
3 potentially hazardous or not. Potential exists for
4 everything. So, saying potentially hazardous is
5 meaningless really.

6 Q. You think the potentials for hazard are
7 essentially identical between all things or what?

8 A. Oh, no, not by a long shot.

9 Q. Do you think that insulation containing
10 asbestos is less potentially hazardous than the
11 insulation that doesn't have asbestos in it or maybe has
12 fiberglass in it?

13 MR. CELBA: I object. It's
14 argumentative and lack of foundation.

15 A. If asbestos-containing insulation is
16 sitting here in a block on this table and is
17 undisturbed, the hazard associated with it is zero; and,
18 therefore, it need not be handled as a potentially
19 hazardous material. So, it all depends on what is being
20 done with the material and how it's being handled, what
21 the circumstances are.

22 (By Mr. Blanks)

23 Q. And in your experience the asbestos
24 insulation in order to be put to use in a chemical plant
25 has to be handled, doesn't it, sir?

1 MR. CELBA: I'm going to object
2 to lack of foundation.

3 A. I have never seen asbestos-containing
4 material being handled in a chemical plant; therefore, I
5 don't have any experience in that area.

6 (By Mr. Blanks)

7 Q. You have seen it being handled on
8 battleships, haven't you?

9 MR. CELBA: The same objection.
10 It's argumentative, too.

11 A. Yes, I have seen it being handled on a
12 battleship.

13 (By Mr. Blanks)

14 Q. You can perceive that it obviously had to
15 have been taken out of a container and been put on the
16 pipe in order to get there in the first place I suppose?

17 MR. CELBA: I'm going to object,
18 Counsel. His testimony was he
19 only - he did not see application or
20 installation of new insulation on that
21 battleship.

22 MR. BLANKS: Is this an objection
23 to form or what?

24 MR. CELBA: Well, I'm just --
25 Misconstruing his testimony. You said

1 he saw them take it out of the box.
2 I'm just saying his testimony was that
3 he never saw it being applied. So,
4 how could he see it taken out of the
5 box?

6 Now, you are being
7 argumentative at this point in time
8 over a question we have had repetition
9 many times before. So, keep trying I
10 guess.

11 (By Mr. Blanks)

12 Q. Does that help you to answer, Dr. Peterson,
13 hearing the - the speaking objection from the
14 Owens-Corning Fiberglas lawyer that you worked for just
15 a few months ago?

16 MR. CELBA: I object to the
17 comments and move to strike.

18 A. No.

19 (By Mr. Blanks)

20 Q. How much money have you made from
21 Owens-Corning Fiberglas or their hired attorneys over
22 the years, Dr. Peterson? Do you have any idea?

23 MR. CELBA: I object to the form.
24 It's argumentative.

25 A. No.

1 (By Mr. Blanks)

2 Q. Do you keep records of these things?

3 A. I have records ---

4 Q. (Interrupting) Do they pay ...

5 A. --- that go back a couple of years.

6 Q. And you have been working for them for more
7 than a couple of years, haven't you?

8 A. I don't really know. Two or three years,
9 something on that order.

10 Q. Well, are you telling this Jury that - that
11 had Owens-Corning or Owens-Illinois told you back in
12 1953 that asbestos-containing Kaylo insulation, for
13 example, could cause asbestosis in animals and therefore
14 should be regarded as a potentially hazardous material
15 that - that that would have been of no value to you,
16 would not have added to your useful store of knowledge
17 as a - as a young industrial hygienist?

18 MR. CELBA: Counsel, this is
19 repetitious. You know you have asked
20 this question at least four times in
21 this deposition. I restate all my
22 objections to the previously
23 stated questions that were exactly
24 like this.

25 And I am sure that Dr. Peterson

1 would like to incorporate his answer
2 then. And at this point in time you
3 are just badgering the witness through
4 this repetition.

5 MR. BLANKS: Carry on
6 Owens-Corning Fiberglas, carry on.
7 Make your speaking objections.

8 A. As I indicated previously when you asked
9 the question, I would have regarded it as being
10 superfluous information.

11 (By Mr. Blanks)

12 Q. And I suppose based on what you learned
13 from Mr. Hoyle and others that Dow didn't need to be
14 told in 1953 or 1948 when - when Owens-Illinois first
15 learned it that - that Kaylo should be regarded as a
16 potentially hazardous material either, would that be -
17 would that be your view, sir?

18 MR. CELBA: The same objection.

19 MR. ALMQUIST: I object to the
20 form of the question in that it is
21 different from asbestos.

22 MR. BLANKS: It's what?

23 MR. ALMQUIST: The form of the
24 question is improper. I think it
25 misstates his prior testimony and

1 misstates the facts on the record.

2 It's vague, ambiguous and
3 confusing.

4 A. I'm sure that if I had known that, No. 1,
5 Dow was using Kaylo; No. 2, that Kaylo contained
6 asbestos; No. 3, that in use, asbestos was released, I
7 would have regarded Kaylo as a potential source of
8 exposure to asbestos; that if the exposure were
9 prolonged and repeated often enough, might give rise to
10 asbestosis. I did not know most of those things.

11 (By Mr. Blanks)

12 Q. Is it your view, Dr. Peterson, that it's
13 better to discover from animal testing that some
14 material can cause serious disease than to wait and
15 discover it later in industrial workers?

16 MR. CELBA: I object.

17 Repetitious again. Lack of
18 foundation. Calls for
19 speculation. Vague and ambiguous.

20 A. I am a proponent of toxicology, which is
21 using in this particular kind of case animals as
22 surrogates for humans. I'm also aware that not
23 everything can be done with animals; and, therefore, we
24 have to have the science of epidemiology.

25

1 (By Mr. Blanks)

2 Q. It was possible, wasn't it, though, to
3 develop asbestosis in laboratory animals exposed to
4 insulation materials containing asbestos - wasn't it?

5 A. Yes.

6 Q. And speaking as an industrial hygienist
7 presumably responsible for the health of numerous
8 industrial workers working for Dow, for example, you
9 would much prefer to be forewarned about a potential
10 hazard than to have to discover it later in your own
11 work force, would you not, sir?

12 MR. CELBA: Again, it's
13 repetitious. We raise our previously
14 noted objections to this line of
15 questions about what this witness
16 would have preferred to hear about or
17 know about. We have raised those
18 objections, then we raise them
19 again ---

20 MR. BLANKS: (Interrupting) You
21 have made your objection. You can
22 stop your monologue,
23 Mr. Owens-Corning.

24 MR. CELBA: I think I have made
25 my record.

1 A. I prefer to have as much information as I
2 can get always - as I can get and understand and use
3 regardless.

4 (By Mr. Blanks)

5 Q. Do you prefer to pass that information
6 along to the workers that you are charged with
7 protecting as well?

8 MR. CELBA: I object. Vague and
9 ambiguous.

10 A. I certainly did when I had such a charge.
11 (By Mr. Blanks)

12 Q. Let me show you a letter from 1948
13 addressed to a Mr. U. E. Bowes at the Owens-Illinois
14 Glass Company that is marked as Plaintiffs' Exhibit
15 481116 0110CF. Have you ever seen a letter like this.
16 (Tendering)

17 A. (Reviewing)

18 MR. CELBA: I'm going to object.
19 Lack of foundation.

20 A. All I can say is I have probably seen it
21 before.

22 (By Mr. Blanks)

23 Q. Where do you think you saw it? Would that
24 have been at Dow?

25 A. Oh, no. No.

1 MR. CELBA: The same objection.

2 Lack of foundation.

3 A. I - I would have seen it as one of the
4 pieces of information given to me by the attorneys for
5 Owens-Illinois in the '80's sometime.

6 (By Mr. Blanks)

7 Q. So, you think that the lawyers from
8 Owens-Illinois would have showed you this letter to
9 Mr. Bowes apparently coming from Dr. Vorwald?

10 MR. CELBA: The same objection.

11 (By Mr. Blanks)

12 Q. Is that right?

13 A. I suspect that. I - I can't guarantee it.
14 It has been a long time since I have looked at that
15 material.

16 Q. Has - has your - your lawyer -- The lawyer
17 here that is objecting from Owens-Corning, the one
18 that's hired you before to testify for Owens-Corning,
19 has he ever shown you a copy of - of this November
20 letter, Dr. Peterson?

21 MR. CELBA: I'm going to object
22 to the form of the question. Counsel,
23 again, you are prolonging this
24 deposition. You are badgering the
25 witness. He's already said he's never

1 received any information from me; and,
2 yet, you ask the same question again.
3 What is the purpose?

4 A. No.

5 (By Mr. Blanks)

6 Q. Do you have at your home any papers that
7 the Owens-Corning Fiberglas lawyers or any of them have
8 given you, sir?

9 MR. CELBA: The same objection.

10 Repetitious. It's been asked and
11 answered.

12 A. No.

13 (By Mr. Blanks)

14 Q. Do you have at your home any documents that
15 you - that you understand or - or suspect to be
16 documents from or to Owens-Corning or Owens-Illinois
17 regarding asbestos or asbestos hazards.

18 MR. CELBA: The same objection.

19 Repetitious; asked and answered.

20 A. I may have some Owens-Illinois documents.
21 Let's -- I haven't looked at that stuff for a long, long
22 time; and I really don't know what I have. But I may
23 have some Owens-Illinois documents. I certainly don't
24 have any O.C.F. documents.

25

1 (By Mr. Blanks)

2 Q. You understand that O.C.F. actually
3 acquired the Kaylo line from Owens-Illinois, don't you,
4 sir?

5 A. I do.

6 Q. You understand that O.C.F. also acquired
7 various documents, correspondence and files about Kaylo
8 from, O.I., don't you?

9 MR. CELBA: I object. Counsel,
10 you know that's argumentative, vague
11 and ambiguous as to what documents;
12 and lack of foundation with respect to
13 this witness.

14 A. I don't know what O.C.F. received from O.I.
15 I have no way of knowing.

16 (By Mr. Blanks)

17 Q. Do you know if they received anything?

18 MR. CELBA: The same objection.

19 A. They received a process.

20 (By Mr. Blanks)

21 Q. Have you been told by their lawyers that
22 O.C.F. never got any documents from O.I. about Kaylo or
23 its health hazards?

24 MR. CELBA: Objection. It's
25 argumentative.

1 A. No.

2 (By Mr. Blanks)

3 Q. Could you tell me, Dr. Peterson, just what
4 industrial hygienic controls Dow was using in the
5 mid-1950's in connection with the handling of thermal
6 insulation materials in its plants.

7 A. No.

8 Q. Do you know if they were using any hygienic
9 controls for people handling thermal insulation in Dow
10 plants in the 1950's?

11 A. No.

12 Q. Did you learn in the 1960's of any hygienic
13 controls used in connection with handling, putting in,
14 taking out, cleaning up thermal insulation in Dow
15 plants?

16 A. No.

17 Q. Did you learn from reading Mr. Hoyle's
18 deposition that there was some monitoring done for
19 asbestos dust in the air in connection with insulation
20 work done at Dow?

21 A. Yes.

22 Q. Had you ever - ever heard of that before -
23 before you read the deposition?

24 A. No.

25 Q. Did you see any written report of this

1 asbestos monitoring project that Mr. Hoyle had done at
2 Dow after - well, not after you left, but whenever it
3 was?

4 A. I - I may have seen such a report; but if
5 so, it was quite recently.

6 Q. Do you recall who Roy Degesaro is or was?

7 A. The way it's pronounced is Degesaro. Yes,
8 I know -- I know Roy, let's put it that way.

9 Q. He was there at Dow while you were still
10 there?

11 A. No, I believe Roy was hired after I left.

12 Q. I see. Mr. Hoyle taught you, didn't he, in
13 the 1950's when you were his apprentice that the values
14 for threshold limits or maximum allowable concentrations
15 were - were really just a guideline, didn't he?

16 A. We undoubtedly discussed that topic, and
17 this kind of a philosophy arose. I prefer the use of
18 the word target rather than guideline, but guideline is
19 all right.

20 Q. You understood that it wasn't a fine line
21 between safe and dangerous, didn't you?

22 A. Yes.

23 Q. That it had to be used with discretion and
24 judgment?

25 A. Yes.

1 Q. And that even at exposures below the
2 threshold limit value that you could anticipate that
3 some workers could potentially develop an occupational
4 disease? You had that understanding, too, didn't you,
5 sir?

6 MR. CELBA: I'm going to object.
7 Lack of foundation. It's vague and
8 ambiguous and indefinite about the
9 circumstances which you relate to this
10 witness.

11 MR. BLANKS: That's right. It
12 might have been on a Wednesday instead
13 of a Thursday.

14 A. The ---

15 MR. CELBA: (Interrupting) And
16 other things.

17 A. There are many materials that have
18 threshold limit values that do not cause occupational
19 disease in any reasonable concentration. And,
20 therefore, that kind of an admonition applies to some
21 materials but certainly not all on the list.

22 (By Mr. Blanks)

23 Q. With respect to the pneumoconiosis-causing
24 materials, asbestos, silica, you would agree, wouldn't
25 you, that exposures below the threshold limit value can

1 cause - cause disease such as asbestosis for asbestos
2 exposure?

3 MR. CELBA: I'm going to object
4 to the form. It's vague, ambiguous
5 and calls for speculation. Lack of
6 foundation.

7 MR. ALMQUIST: And also it's not
8 limited as to time.

9 A. The way you phrased the question, I have to
10 say no.

11 (By Mr. Blanks)

12 Q. How would you -- What would I have to ask
13 in order to get you to say yes?

14 MR. CELBA: I am going to object
15 to the form of the question. I have
16 never heard a question like that.

17 MR. BLANKS: Well, you have
18 now.

19 MR. CELBA: I know.

20 MR. BLANKS: Welcome to Beaumont.

21 MR. CELBA: It's a learning
22 experience.

23 MR. BLANKS: Welcome to Beaumont,
24 Mr. Celba.

25

1 (By Mr. Blanks)

2 Q. Dr. Peterson, did you understand, sir, that
3 the T.L.V. for asbestos did not - was not -- That didn't
4 guarantee that exposures below the T.L.V. would - would
5 not result in disease, did it?

6 A. No.

7 Q. You understood that some people could be
8 exposed below the T.L.V. and still develop asbestosis,
9 did you not?

10 MR. CELBA: I'm going to object
11 to the form of the question. It's
12 speculation. Lack of foundation.
13 Vague and ambiguous, indefinite.

14 A. The T.L.V. is not a guarantee. I
15 understand that. On the other hand, the -- I also am
16 aware today that the five million particle per cubic
17 foot T.L.V. was based on the wrong kind of sampling
18 method. And, therefore, concentrations below that level
19 might well have caused some degree of asbestosis in some
20 people under some circumstance. That's the best I can
21 say.

22 (By Mr. Blanks)

23 Q. But you understood in the 1950's when you
24 first learned about maximum allowable concentrations
25 that in some individuals - some individuals who might be

1 more susceptible than others, disease could occur at
2 exposures below the threshold limit value? Didn't you
3 appreciate that fact in the 1950's, sir?

4 MR. CELBA: The same objection,
5 also argumentative.

6 A. I disagree with your use of the phrase
7 "maximum allowable concentration" because in the early
8 '50's I believe that that phrase was changed to
9 threshold limit value, which is a much better
10 description of what is going on. With that alteration,
11 sure, I would agree.

12 (By Mr. Blanks)

13 Q. Do you understand or have any awareness of
14 what the guideline was called in Texas during the 1950's
15 for mineral dust exposure?

16 A. No, I have no idea.

17 Q. It would be reasonable to conclude I
18 suppose that Dow since it operated down in Texas would
19 at least have been - been aware of the health
20 regulations that would have governed its plant back at
21 that time, would it not?

22 A. It might be reasonable, but I don't know
23 that's the case.

24 Q. Did you encounter any situations where Dow
25 was knowingly violating the - the local health

1 department regulations that - you know, that were in the
2 industrial hygiene area?

3 A. In Texas or ---

4 Q. (Interrupting) Anywhere.

5 A. --- Midland or anywhere? No.

6 Q. Did you understand in the 1950's,
7 Dr. Peterson, that there were cases reported in the
8 literature of asbestosis resulting from long term
9 exposures below the five million particle per cubic foot
10 guideline?

11 MR. CELBA: I object to the form
12 as being argumentative. It assumes
13 facts not in evidence.

14 A. I -- I'm not sure really. I -- I know --
15 Well, I'm just not sure even today. At one time I had a
16 reasonable familiarity with this literature, but I -- I
17 don't anymore. So, I -- I just don't have an opinion in
18 that area.

19 (By Mr. Blanks)

20 Q. Based on your expertise as an industrial
21 hygienist, would - would you agree that - that since you
22 couldn't rely even in the 1950's on the threshold limit
23 values to protect all of the workers from developing a
24 disease, that it was necessary to use a medical
25 monitoring program to support your industrial hygiene

1 program and watch for signs of disease?

2 MR. CELBA: I'm going to object
3 to the form as being argumentative and
4 misconstruing the testimony of this
5 witness.

6 A. You are getting into an area of philosophy
7 again. And I can't agree that a medical monitoring
8 program is always necessary or desirable if that's what
9 you are implying.
10 (By Mr. Blanks)

11 Q. Under what circumstances is a medical
12 monitoring program desirable in - in conjunction with an
13 industrial hygiene program?

14 A. A medical monitoring program is desirable
15 where it is at least practical or possible that the
16 physicians will pick up signs of disease of one kind or
17 another before industrial hygienists are aware of
18 overexposures or where an epidemiological study is being
19 undertaken.

20 Q. How would you need a medical monitoring
21 program in conjunction with an epidemiology study? I
22 don't understand that.

23 A. Well, an epidemiological ---

24 MR. CELBA: (Interrupting) I'm
25 going to object to the question about

1 whether or not Counsel understands
2 commenting about his testimony.

3 Therefore, I move to strike that.

4 A. Epidemiology really is based upon medical
5 monitoring if you will. So, I don't understand why you
6 don't understand.

7 (By Mr. Blanks)

8 Q. Okay. Well, I think you were explaining to
9 me when a medical monitoring program would be
10 appropriate as part of an industrial hygiene program.
11 You told me that you didn't think it was always a good
12 idea or always necessary, and you were explaining to us
13 when - when it would be.

14 A. That ---

15 Q. (Interrupting) Does that ---

16 MR. CELBA: (Interrupting) I'm
17 going to object there. There was a
18 response to no question asked other
19 than the comment. I move to strike
20 the comment.

21 (By Mr. Blanks)

22 Q. All right. Dr. Peterson, are you telling
23 me that an epidemiology program is a necessary part or a
24 desirable part of - of a good industrial hygiene
25 program?

1 A. No. But where epidemiology is being
2 attempted, if you will, it is best done in conjunction
3 with an industrial hygiene program monitoring exposures
4 to whatever is being looked at.

5 Q. And that would entail the - the doctors
6 being involved? Okay.

7 A. Yes, sir.

8 Q. All right. But you said then that you
9 thought a medical monitoring program would be desirable
10 in the case where the doctors would pick up the disease
11 before the industrial hygienist became aware of the
12 exposures that were causing the disease I think?

13 MR. CELBA: I'm going to object
14 to that ---

15 MR. BLANKS: (Interrupting) Go
16 back and re-read his answer so we can
17 quell these Owens-Corning objections
18 and get on with the testimony, please,
19 Mr. Reporter.

20 MR. REPORTER: "Under what
21 circumstances is a medical monitoring
22 program desirable in - in conjunction
23 with an industrial hygiene program?

24 "ANSWER: A medical monitoring
25 program is desirable where it is at

1 least practical or possible that the
2 physicians will pick up signs of
3 disease of one kind or another before
4 industrial hygienists are aware of
5 overexposures."

6 (By Mr. Blanks)

7 Q. Okay. Having heard what you answered
8 earlier, I'm wondering then, Dr. Peterson, how it would
9 be that an industrial hygienist would make himself aware
10 of overexposures in a plant like a Dow plant to say a
11 material such as insulation, thermal insulation.

12 A. By monitoring exposures.

13 Q. Can you think of any other ways that an
14 industrial hygienist could confidently satisfy himself
15 that he had or didn't have overexposures in the handling
16 of thermal insulation in an industrial setting?

17 MR. CELBA: I'm going to object.
18 Lack of foundation and vague and
19 ambiguous as to plants and
20 circumstances.

21 A. Because of a lamentable shortage of
22 industrial hygienists we sometimes must rely upon what
23 is published in the literature. And we have already
24 talked about what was available in the literature with
25 regard to the handling of asbestos-containing insulation

1 materials. And that kind of information is one way that
2 industrial hygienists could become aware of either a
3 hazard or a lack of hazard associated with a particular
4 kind of job without doing any monitoring.

5 (By Mr. Blanks)

6 Q. So, you are suggesting that - that where a
7 company didn't have enough industrial hygienists to
8 monitor for overexposures or even to quantify the
9 exposures at all, that they would have to just fall back
10 on what had been published about similar work and then
11 form a conclusion about what was happening in their
12 plant based on what somebody else had published about
13 another - another workplace?

14 MR. CELBA: I'm going to object.
15 Lack of foundation, and it's
16 misconstruing his testimony;
17 argumentative and repetitious.

18 A. I prefaced my answer by saying that there
19 is a lamentable lack of industrial hygienists. Because
20 of that we have to prioritize what we are doing. And in
21 general all industrial hygienists who are out there at
22 work try to handle the things that they regard as being
23 the most serious problems first. And where the
24 literature indicates that, for instance, handling
25 asbestos-containing insulation is not a hazard, that

1 doesn't appear high on a priority list. It might be on
2 a list somewhere. It might be one of the things that
3 one would like to do, but the telephone rings and
4 something else interferes.

5 That's - that's the way this kind of thing
6 works. It may be imperfect; and, in fact, it is
7 imperfect, but that's the way it goes.

8 (By Mr. Blanks)

9 Q. But relying on an article such as your
10 favorite, the Fleischer-Drinker, et cetera, article ---

11 A. (Interrupting) It's far from my favorite.
12 I handed you a bunch of articles that are much more my
13 favorite.

14 Q. The ones you wrote?

15 A. Of course.

16 Q. All right, sir.

17 MR. CELBA: I move to strike
18 Counsel's comment.

19 (By Mr. Blanks)

20 Q. But the - an article such as - as the ones
21 you referred to earlier really don't give you knowledge
22 about the actual exposures or overexposures that people
23 working in your plant are facing from the handling of
24 thermal insulation, do they?

25 A. No.

1 MR. CELBA: Object; vague,
2 ambiguous, indefinite, argumentative.

3 A. My answer stands, no.
4 (By Mr. Blanks)

5 Q. And, therefore, if the industrial hygienist
6 because of other priorities, because of lack of
7 resources, because he's just spread too thin, for
8 whatever reason can't monitor exposures, then obviously
9 it would follow that he is going to be unaware of
10 overexposures if they are occurring, would you agree?

11 MR. CELBA: I object; lack of
12 foundation, argumentative, vague and
13 ambiguous. It also calls for
14 speculation.

15 A. If overexposures are occurring and they
16 aren't monitored, obviously one cannot become aware of
17 those, yes.
18 (By Mr. Blanks)

19 Q. And then the only remaining means to learn
20 of the fact of overexposures if they be there would be
21 through a medical monitoring program, would it not,
22 Dr. Peterson?

23 MR. CELBA: The same objection as
24 previously stated.

25 A. Yes.

1 (By Mr. Blanks)

2 Q. And by the same token, sir, would not a
3 medical monitoring program be another means of
4 validating or testing the effectiveness of the controls,
5 if you were using any, that you had in place to - to
6 limit exposures to a hazardous material?

7 MR. CELBA: The same objection.

8 A. That is the ordinary reason given for a
9 medical monitoring program. In my experience mostly
10 since Dow, I don't find that to be a very efficacious
11 use of medical facilities.

12 (By Mr. Blanks)

13 Q. You just don't think it's an efficient use?

14 A. Yes; that's correct. It's too crude
15 unfortunately.

16 Q. You mean because the - the signs of
17 occupational disease many times show up much too late
18 for the industrial hygienist to do anything about -
19 about it?

20 A. Well, if the physicians find a sign, it
21 means that something has occurred that shouldn't have.
22 But that isn't too late for industrial hygienists to
23 find out about it. The two are -- They are two
24 different things entirely.

25 Q. You are saying that if - if the

1 physician -- Excuse me. You are saying that if the
2 physician detects signs of occupational disease in the
3 work force in your plant, for example, that's
4 information that would be immediately useful to the
5 industrial hygienist? Yes?

6 MR. CELBA: I object; calls for
7 speculation; lack of foundation;
8 vague, ambiguous and indefinite.

9 A. In general, yes.

10 (By Mr. Blanks)

11 Q. Even though with respect to the - the
12 worker that has a chronic disease such as asbestosis,
13 there is nothing at that point that the industrial
14 hygienist can do to - to improve the situation of that
15 worker except stop his exposures, would that be true?

16 MR. CELBA: The same objection,
17 argumentative.

18 A. Yes.

19 (By Mr. Blanks)

20 Q. And just so I'm not unsure about this,
21 was - was it the case that at Dow during - during any
22 years there that - that there was a medical monitoring
23 program for workers in the Dow plants?

24 A. My recollection is that anyone who felt a
25 need for a medical examination could have that

1 examination.

2 Q. Was there any class or - or subset of
3 workers that the industrial hygiene group recommended
4 have medical monitoring or be part of a medical
5 monitoring program?

6 A. There may well have been, and I don't
7 recall.

8 Q. Do you recall that the medical department
9 provided any kind of biological monitoring for any group
10 of Dow employees while you were there?

11 A. Yes; in fact, that was done.

12 Q. What - what - what sort of monitoring was
13 done?

14 A. Monitoring for cholinesterase levels -
15 c-h-o-l-i-n-e-s-t-e-r-a-s-e - cholinesterase levels in
16 people handling cholinesterase inhibiting insecticides
17 is one. There may have been others, but that is one I
18 was associated with.

19 Q. Is that one that the industrial hygiene
20 group recommended, or do you know how that came to be
21 done?

22 A. I just don't recall.

23 Q. Tell me about the slide talk that you used
24 throughout the plant.

25 A. A slide talk consisted of three parts as I

1 recall. The first part of it was slides that depicted
2 work done by the toxicology group in determining this
3 property of toxicity.

4 Secondly, we talked a bit without slides or
5 we might have had one or two about the work of the
6 industrial hygiene group in evaluating hazards.

7 And, thirdly, we talked about the potential
8 hazards of materials that were being handled by the
9 group that we were speaking to.

10 Finally, the fourth phase of the
11 three-phase system was that we asked for questions and
12 answered them.

13 Q. Was this a - an approach or a program that
14 had been underway when you arrived?

15 A. Yes.

16 Q. And was it still going on in - in the '60's
17 when you left the company?

18 A. Yes.

19 Q. What - what was the point of this little
20 slide talk program?

21 A. It began as an introduction to an
22 industrial hygiene survey of a plant or a process. And
23 that was what it was developed to do. It became a
24 popular presentation and was requested by many groups.
25 And, of course, when it was requested either by the

1 group or by the safety representative of that group, we
2 we were happy to present the talk.

3 Q. So, if I follow you, if you were going to
4 go do a survey of a particular unit in the plant, then
5 this talk would - would be presented to the people
6 working in that unit before the survey began?

7 A. That's correct.

8 Q. And covered -- You would speak to all of
9 the employees in the unit?

10 A. Yes. And for that reason, the talk was
11 usually given at least twice and maybe three times to
12 cover all employees.

13 Q. And then I think you said it expanded to
14 where it became a part of the ongoing safety program at
15 the plant?

16 A. Well, I -- I wouldn't put it that way. The
17 safety department was aware that we had the talk, and
18 they were aware that it was popular. They encouraged
19 safety meetings, and this became a popular presentation
20 at safety meetings.

21 Q. You found that the - the ordinary workmen
22 in the plants were - were interested about the potential
23 hazards that they faced in the workplace?

24 A. I really can't put myself in the place of
25 an ordinary workman. And all I know is that they showed

1 up at the safety meetings and asked questions and
2 appeared interested, yes.

3 Q. Well, that's what -- That's what I was
4 inquiring about. I mean they struck you as being
5 interested in - in that information, the information of
6 that sort?

7 A. Yes. As I said, it was a popular program.

8 Q. You - you have told us earlier that you
9 placed little reliance on case reports in the literature
10 in developing your opinions about what is hazardous and
11 what is not. Could you explain - explain to us why that
12 is, Dr. Peterson.

13 A. The first awareness of a problem, of a
14 hazard may come about because of case reports in the
15 literature where physicians come across something that
16 is odd; they write up whatever they have found and
17 attribute a potential cause for this usually in their
18 write-up.

19 Sometimes they incorporate past write-ups
20 by other physicians. Probably as often as they are
21 right about the cause, they are wrong about the cause.
22 And, therefore, we have to have something that is more
23 scientific and more thorough to follow case reports.
24 And that's why just case reports, per se, don't mean a
25 great deal to me; and, in fact, I very seldom read case

1 reports.

2 Q. What do you - or what did you rely on to
3 develop your - your knowledge about occupational health
4 hazards?

5 A. I put far more reliance on epidemiological
6 surveys of people where the industrial hygiene was also
7 used in conjunction with the survey to show what
8 exposures actually were rather than what exposures were
9 inferred. And as I indicated previously, I'm skeptical
10 enough so that I like to see epidemiological surveys
11 replicated before they really make a lot of sense to me.

12 Q. How - how long does it take to do an
13 epidemiology study of a sort that would be valid to you?

14 A. It depends on the variety that one is
15 doing. Whether one is doing it retrospectively or
16 prospectively; that is, looking back into the past or
17 trying to follow a group into the future, it can be a
18 year or two for a retrospective study; it can be decades
19 for a prospective study.

20 Q. I mean it could take more than a year or
21 two just to gather the data for a look-back study,
22 couldn't it?

23 A. Sometimes.

24 Q. And when was it that epidemiology studies
25 of occupational diseases came to be available or

1 commonplace?

2 A. I really can't answer that question. I
3 know that, for instance, the Dreessen study is an
4 epidemiological survey with good industrial hygiene.
5 So, this technique was available in 1938 anyway.

6 Q. Can you think of any - any epidemiology
7 studies after Dreessen that would be relevant to
8 asbestos disease hazards?

9 A. Not to a great extent. The
10 Fleischer-Drinker paper is an epidemiological survey as
11 well.

12 Q. You - you would characterize
13 Fleischer-Drinker's paper as an epidemiology survey?

14 A. Well, at least partially because they
15 looked at the medical histories of the people.

16 Q. Now, why do you think it's important to
17 have some industrial hygiene data in connection with the
18 epidemiology study?

19 A. Because unless we have that, we don't know
20 much about exposures. And unless we know something
21 about exposures, we can't know what is necessary for
22 control.

23 Q. Do you think, Dr. Peterson, that if you did
24 an epidemiology study let's say of all the workers in -
25 in certain refineries, a mortality study let's say,

1 without industrial hygiene data to tell you which groups
2 of those people had exposures to what materials, could
3 you draw any - any valid conclusions about let's say
4 asbestos as being a cause of disease in that group of
5 workers?

6 MR. CELBA: I'm going to object
7 as vague and ambiguous, indefinite
8 and calls for speculation; lack of
9 foundation.

10 A. I know that epidemiologists sometimes try
11 to do this. I find that this kind of work is usually
12 unconvincing.

13 (By Mr. Blanks)

14 Q. I mean if you wanted to look at the
15 incidence of let's say asbestos-related cancer among
16 people working in a refinery, wouldn't you naturally
17 want to look at the people that actually had asbestos
18 exposures?

19 A. Of course.

20 Q. Do you know about any of Dow's involvements
21 in the American Petroleum Institute, Dr. Peterson?

22 MR. ALMQUIST: Objection to the
23 form; it assumes that there was an
24 involvement.

25 MR. BLANKS: I think you need to

1 make yourself aware of that,

2 Mr. Almquist.

3 A. No.

4 (By Mr. Blanks)

5 Q. Did you ever do any work with the American
6 Petroleum Institute?

7 A. No.

8 Q. Ever attend any of their meetings?

9 A. No.

10 Q. Ever get any of their publications?

11 A. Oh, I may have. I -- I don't know. I
12 certainly made no attempt to get their publication.

13 Q. Do you remember their Toxicological Reviews
14 from the late '40's and the early '50's that they were
15 publishing?

16 A. I have no current memory of such things,
17 no.

18 Q. Does there come a point in - in your mind
19 when you had enough case reports of a particular kind of
20 a disease to give them credence?

21 A. No, not really. I think that this is an
22 area where science is necessary, not simply medicine.

23 Q. When you say "science," you mean statistics
24 in the form of epidemiology studies, number crunching or
25 what?

1 A. Science is an approach. It is a technique.
2 Medicine is not science. Medicine is a practical
3 discipline, if you will.

4 Q. What - what does an epidemiology study
5 amount to except the gathering of a group of individual
6 case reports?

7 A. Oh, there usually are never case reports in
8 an epidemiology study.

9 Q. What do you consider, the report of - of
10 one individual's death from a - with a particular
11 diagnosis?

12 A. Well, unless it's in the literature as an
13 individual sort of thing, it isn't a case report. So,
14 just by definition, you are not talking about a case
15 report in epidemiological studies.

16 Q. Okay. We are using terms of art. But, in
17 fact, an epidemiology study does look at reports of
18 individual deaths or - or diseases, does it not?

19 A. Yes.

20 Q. It uses -- That's the underlying data that
21 the epidemiologist works with, true?

22 A. That's one portion of the underlying data,
23 yes.

24 Q. What else does the epidemiologist use?

25 A. Oh, gee, they use all sorts of demographic

1 information such as age, sex, maybe height and weight
2 along with information that they hope will be related to
3 exposures in some way or other, such as duration of
4 employment, time since first employment and so forth.
5 So, they look at a lot of things that one doesn't see in
6 case reports, for instance.

7 Q. Yes, sir. And the purpose is to bring
8 together a large number of reports of disease or death
9 and then try to draw some conclusions based on
10 statistical probability and such; right?

11 A. Well, you - you are asking me to be an
12 epidemiologist; and I'm not. I would much rather you
13 ask these questions of an epidemiologist because I could
14 get way off in left field, and I would rather not.

15 Q. But - but as far as you were concerned, no
16 number of case reports of let's say lung cancer in
17 connection with asbestosis or asbestos exposures would
18 have been sufficient to persuade you that asbestos could
19 be a cause of lung cancer, is that so?

20 A. Yes, that's so.

21 Q. So, no matter how many deaths have been
22 reported in respected medical journals, no matter how
23 many bodies have been counted up by the authors who were
24 surveying the literature, you, Dr. Peterson, would
25 remain unconcerned that asbestos just might be a cause

1 of lung cancer?

2 MR. CELBA: I object to the
3 question as being argumentative.

4 A. I didn't say that.

5 MR. PAPPAS: And it assumes facts
6 not in evidence.

7 (By Mr. Blanks)

8 Q. You would be waiting, in fact, for an
9 epidemiology study to tell you that, yes, there appeared
10 to be a causal relationship; is that true?

11 MR. PAPPAS: The same objection.

12 MR. ALMQUIST: The same
13 objection.

14 MR. CELBA: I join.

15 A. That's what I have said.

16 (By Mr. Blanks)

17 Q. Well, I can I think understand this as a -
18 a philosophical point of view. But how do you apply
19 that philosophy to your practice of industrial hygiene?
20 Do you wait then until you have absolute certainty about
21 a causal connection between a contaminant and death or
22 disease before you start to - to put in controls, before
23 you start to warn the workers that they might be at risk
24 from getting cancer?

25 MR. CELBA: The same objection.

1 I move to strike all the comments.

2 MR. PAPPAS: The same objection.

3 A. There is no such thing as absolute
4 certainty in either medicine or the science of
5 industrial hygiene. A long time ago a physician in
6 Germany named Koch, K-o-c-h, formulated some postulates
7 about how one shows that a particular disease is
8 actually caused by a particular organism. And until all
9 of Koch's postulates are satisfied, one is simply not
10 sure.

11 There - there are many instances where
12 people have been wrong in their case reports about the
13 cause of disease. And if we had relied upon those and
14 only those, we would have spent lots of time, effort and
15 energy pursuing a red herring down a trail somewhere.
16 This isn't the way to do it.

17 (By Mr. Blanks)

18 Q. Would that have been the case with the case
19 reports of lung cancer deaths in connection with
20 asbestosis, Dr. Peterson?

21 MR. ALMQUIST: I object. It's
22 calling for speculation.

23 A. And I ---

24 (By Mr. Blanks)

25 Q. (Interrupting) Would - would Dow have been

1 pursuing a red herring if it had responded to case
2 reports of lung cancer in connection with asbestosis and
3 implemented stricter controls in its plants?

4 MR. ALMQUIST: I object to it as
5 being argumentative and calls for
6 speculation on the part of the
7 witness.

8 A. You - you are asking me to use hindsight
9 and say in this particular circumstance things could
10 have been done differently and better. One can always
11 use hindsight for that purpose.

12 (By Mr. Blanks)

13 Q. Do you think things could have been done
14 differently and better, Dr. Peterson?

15 A. With hindsight certainly.

16 Q. Do you think that the methods existed and
17 were known to Dow in the mid-1950's to control for
18 exposures to asbestos from insulation dust?

19 A. Sure, but I don't see why they would have
20 been used.

21 Q. Do you think, sir, that they - they might
22 have been used in the 1960's when Mr. Hoyle measured
23 asbestos dust concentrations above the threshold limit
24 value?

25 A. I -- I don't know that he did. I know

1 that -- I would rather -- My memory is not perfect. He
2 may well have had some samples that were above the
3 numerical value of the T.L.V. I don't think he showed
4 that the average exposures were above the T.L.V.

5 Q. Is that all that - that you as an
6 industrial hygienist would be concerned with then would
7 be average exposures, Dr. Peterson?

8 A. No, of course not. I'm concerned with all
9 sorts of things.

10 Q. Would you be satisfied to know that on
11 average you were only exposing workers to asbestos
12 concentrations just - just slightly below the asbestos
13 guideline?

14 MR. ALMQUIST: I object to that
15 as mischaracterizing the findings.

16 A. One tenet of industrial hygiene is to
17 reduce exposures where the reduction of exposures is
18 practical. And, therefore, no, I'm not satisfied under
19 such circumstances. On the other hand, the best
20 information we have on the effects of exposures is
21 represented by the T.L.V. And if we are below the
22 T.L.V., the chances are very good that no one is being
23 injured; and that we can apply whatever resources we
24 have to other things, to other problems where exposures
25 are above the T.L.V. We don't have infinite resources.

1 (By Mr. Blanks)

2 Q. Didn't you tell me earlier, though, that
3 even at exposures below the T.L.V. you could say with
4 almost the same degree of certainty that at least some
5 people would get disease?

6 A. No, sir, I didn't say that. I said that
7 the T.L.V. - staying below the T.L.V. did not guarantee
8 that one would not get disease. But there is no almost
9 certainty that someone is going to get disease.

10 Q. How about just under the T.L.V.; how about
11 one tenth - one point under the T.L.V.?

12 A. The T.L.V. is not a fine line between safe
13 and dangerous whether you are going below it or above
14 it.

15 Q. If we look back at average exposures again,
16 if you know that the average exposure to people doing
17 asbestos insulation work is four point nine million
18 particles per cubic foot, does that satisfy you as an
19 industrial hygienist that the controls are adequate to
20 protect all the men doing that work?

21 A. No, that tells me I need to do more air
22 sampling to determine precisely what is going on and
23 which people are being overexposed and which people are
24 not, what jobs are causing overexposures and what
25 aren't. There are all sorts of things that industrial

1 hygienists do under these circumstances.

2 Q. You ---

3 THE WITNESS: (Interrupting) And I
4 would like to take a break.

5 MR. BLANKS: Yes, sir.

6

7 (A BRIEF RECESS WAS TAKEN.)

8

9 MR. BLANKS: Mr. Almquist, it is
10 apparent to me now at a quarter to
11 4:00 that I have got at least another
12 day and a half of inquiry to make of
13 Dr. Peterson; and I suspect that some
14 others here may want to, perhaps you
15 yourself, perhaps even Owens-Corning
16 Fiberglas.

17 I'm suggesting that we adjourn at
18 this time and resume again when
19 Dr. Peterson's schedule permits.

20 MR. ALMQUIST: We are -- It's now
21 a quarter until 4:00 as you have
22 indicated. We are prepared to go to
23 5:00 today. And Dr. Peterson's
24 schedule will allow him to come back
25 and - and testify day-to-day beginning

1 at 9:30 tomorrow morning to complete
2 the deposition.

3 And, so, we have that - you
4 know, we are here and prepared to
5 continue the deposition until its
6 conclusion.

7 MR. BLANKS: I appreciate that.
8 But we are not inclined to resume
9 tomorrow. Some near time in the
10 future when it's mutually convenient I
11 think would be preferable.

12 Unfortunately we didn't
13 anticipate that we would need more
14 than a day or even a full day with
15 Dr. Peterson. But the breadth of his
16 experience now indicates that more
17 time is required.

18 So, I decline to return in the
19 morning. And my brief survey of other
20 attorneys here suggests that they are
21 similarly disinclined to resume
22 tomorrow, particularly in light of
23 the fact that we have been deposing
24 all week out of town, or at least
25 since Tuesday.

1 MR. ALMQUIST: Well, I will
2 object to the last comment as being
3 hearsay, Mr. Blanks.

4 MR. PAPPAS: It's not hearsay
5 because it's true.

6 MR. BLANKS: That's it.

7 MR. PAPPAS: Let me also state
8 for the record that Lone Star
9 Industries reserves the objection to
10 the use of this witness' deposition
11 until such time as it's been
12 completed; and would object to the use
13 of the deposition at trial if it's not
14 completed.

15
16 (THE DEPOSITION WAS RECESSED.)

17
18 REPORTER'S NOTE: (UPON COMPLETION OF THE
19 DEPOSITION, PLAINTIFFS' EXHIBIT 280207
20 PetJacE WAS MARKED FOR IDENTIFICATION.
21 SAME WILL BE FOUND AT THE CONCLUSION OF
22 THIS DEPOSITION.)

23
24
25

1 THE STATE OF_____:

2 COUNTY OF_____:

3

4 I, JACK E. PETERSON, Ph.D., hereby certify
5 that I have read the foregoing transcript of my
6 testimony given in the foregoing numbered and styled
7 case, and that same is true and correct to the best of
8 my knowledge and belief.

9 I further certify that any and all
10 corrections have been made on a separate page and
11 initialed by me.

12

13 This_____day of_____, 1993

14

15

16 _____
17 JACK E. PETERSON, Ph.D.

18 SWORN TO AND SUBSCRIBED BEFORE ME this
19 _____day of_____, 1993.

20

21 _____
NOTARY PUBLIC

22

23

24

25

1 STATE OF_____:

2 COUNTY OF_____:

3

4 I, RICK SMITH, a Certified Shorthand
5 Reporter for the State of Texas, hereby certify pursuant
6 to the Texas Rules of Civil Procedure and/or agreement
7 of the parties present to the following:

8 That this deposition transcript is a true
9 record of the testimony given by JACK E. PETERSON,
10 Ph.D., the Witness named herein, on March 26, 1993,
11 after said witness was duly sworn by me.

12 SWORN TO AND SUBSCRIBED by me in Beaumont,
13 Texas, on this the _____day of
14 _____, 1993.

15

16

17

18

RICK SMITH, CSR

19

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